

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

Sebastian Rahtz (deceased)

Heiko Oberdiek (inactive)

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

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

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## 1 Documentation overview for hyperref

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


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

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

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

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

Source code documentation:

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

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

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

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### 3 File 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 \RequirePackage{nameref}[2012/07/28]

```

```

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

```

## 4.2 Version check

\Hy@VersionChecked

```

257 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

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

```

```

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

```

\Hy@@VersionCheck

```

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

```

### 4.3 Checks with regular expressions

```

305 \ltx@ifundefined{pdfmatch}{%
306 \def\Hy@Match#1#2#3#4#5{%
307 }{%
308 \def\Hy@Match#1#2#3{%
309 \begingroup
310 \edef\~{\ltx@backslashchar\string~}%
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?}%
320 \edef\{{\ltx@backslashchar\ltx@leftbracechar}%
321 \edef\}{\ltx@rightbracechar}%
322 \edef\\{\ltx@backslashchar\ltx@backslashchar}%
323 \let\ \ltx@space
324 \ifcase\pdfmatch#2{#3}{#1} %
325 \endgroup
326 \expandafter\ltx@secondoftwo
327 \or
328 \endgroup
329 \expandafter\ltx@firstoftwo
330 \else
331 \Hy@Warning{%
332 Internal error: Wrong pattern!\MessageBreak
333 --> #3 <--\MessageBreak
334 Pattern check ignored%
335 }%
336 \endgroup
337 \expandafter\ltx@firstoftwo
338 \fi
339 }%
340 }

```

## 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`.

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

`\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.

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

`\Hy@AtEndOfPackage`

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

`\Hy@AtBeginDocumentHook`

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

`\Hy@AtEndOfPackageHook`

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

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

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

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

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

## 4.5 Switches

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

```

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

```

Defaults for the switches are now set.

```

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

```



```

419 \Hy@pdfescapeformfalse
420 \Hy@hyperfiguresfalse
421 \Hy@pdffitwindowfalse
422 \Hy@hyperfootnotesttrue
423 \Hy@hyperindextrue
424 \Hy@hypertextnamestrue
425 \Hy@implicitttrue
426 \Hy@linktocpagefalse
427 \Hy@localanchornamefalse
428 \Hy@pdfmenubartrue
429 \Hy@naturalnamesfalse
430 \Hy@nestingfalse
431 \Hy@pdfnewwindowsetfalse
432 \Hy@pdfnewwindowfalse
433 \Hy@pageanchortrue
434 \Hy@pdfpagelabelstrue
435 \Hy@pdfstringfalse
436 \Hy@plainpagesfalse
437 \Hy@raiselinksfalse
438 \Hy@setpagesizetrue
439 \Hy@texhtfalse
440 \Hy@psdextrafalse
441 \Hy@pdftoolbartrue
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 T<sub>E</sub>X's view PDF strings are written to a file and are expanded only in its mouth. Stomach commands that cannot be expanded further aren't executed, they are written verbatim. But the PDF reader that reads such a string isn't a T<sub>E</sub>X interpreter!

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

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

`\MakeUppercase` and `\MakeLowercase` do not work by expansion in legacy code but if the `expl3` code is available we can handle them.

`\uppercaseUnsupportedInPdfStrings`  
`\lowercaseUnsupportedInPdfStrings`

```

472 \ExplSyntaxOn
473 \@ifundefined{text__uppercase:n}{}
474 {
475   \def\MakeUppercaseUnsupportedInPdfStrings#1{\use:e {\text__uppercase:n {#1}}}
476   \def\MakeLowercaseUnsupportedInPdfStrings#1{\use:e {\text__lowercase:n {#1}}}
477 }
478 \ExplSyntaxOff

```

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

- The result should obey the rules of the PDF specification for strings.
- The string can safely be processed by T<sub>E</sub>X, because the tokens have only cat-codes 10 until 12.

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

```

479 \def\pdfstringdef#1#2{%

```

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

```

480   \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.

```
481 \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.

```
482 \edef\0{\string\0}%
483 \edef\1{\string\1}%
484 \edef\2{\string\2}%
485 \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.

```
486 \ifHy@unicode
487 \edef\8{\string\8}%
488 \edef\9{\string\9}%
489 \fontencoding{PU}%
490 \HyPsd@UTFviii
491 \def\ifpdfstringunicode##1##2{##1}%
492 \else
493 \fontencoding{PD1}%
494 \def\ifpdfstringunicode##1##2{##2}%
495 \fi
496 \let\utf@viii@undeferr\HyPsd@utf@viii@undeferr
497 \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).

```
498 \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).

```
499 \let\@inmathwarn\HyPsd@inmathwarn
```

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

```
500 \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.

```
501 \let\{\textbraceleft
502 \let\}\textbraceright
503 \let\\\textbackslash
504 \let\#\textnumbersign
505 \let\$\textdollar
506 \let\%\textpercent
507 \let\&\textampersand
508 % \let\~\textasciitilde
509 \let\_ \textunderscore
510 \let\P\textparagraph
511 \let\ldots\textellipsis
512 \let\dots\textellipsis
513 \ltx@ifundefined{textEncodingNoboundary}%
514 {}{\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.

```
515 \def\{\pdfstringdefWarn\}%
516 \def\newline{\pdfstringdefWarn\newline}%
```

**Logos.** Because the box shifting used in the T<sub>E</sub>X logo does not work while writing to a file, the standard T<sub>E</sub>X logos are redefined. We use the direct PU code to avoid problems if \textepsilon is not defined.

```

517 \def\TeX{\TeX}%
518 \def\LaTeX{La\TeX}%
519 \def\LaTeXe{%
520   \LaTeX2%
521   \ifHy@unicode\83\265\else e\fi
522 }%
523 \def\eTeX{%
524   \ifHy@unicode\83\265\else e\fi
525   -\TeX%
526 }%
527 \def\SliTeX{Sli\TeX}%
528 \def\MF{Metafont}%
529 \def\MP{Metapost}%

```

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

```

530 \let\fontencoding\@gobble
531 \let\fontfamily\@gobble
532 \let\fontseries\@gobble
533 \let\fontshape\@gobble
534 \let\fontsize\@gobbletwo
535 \let\selectfont\@empty
536 \let\usefont\@gobblefour
537 \let\emph\@firstofone
538 \let\textnormal\@firstofone
539 \let\textrm\@firstofone
540 \let\textsf\@firstofone
541 \let\texttt\@firstofone
542 \let\textbf\@firstofone
543 \let\textmd\@firstofone
544 \let\textit\@firstofone
545 \let\textsc\@firstofone
546 \let\textsl\@firstofone
547 \let\textup\@firstofone
548 \let\normalfont\@empty
549 \let\rmfamily\@empty
550 \let\sffamily\@empty
551 \let\ttfamily\@empty
552 \let\bfseries\@empty
553 \let\mdseries\@empty
554 \let\itshape\@empty
555 \let\scshape\@empty
556 \let\slshape\@empty
557 \let\upshape\@empty
558 \let\em\@empty
559 \let\rm\@empty
560 \let\Huge\@empty
561 \let\LARGE\@empty
562 \let\Large\@empty
563 \let\footnotesize\@empty

```

```

564 \let\huge\@empty
565 \let\large\@empty
566 \let\normalsize\@empty
567 \let\scriptsize\@empty
568 \let\small\@empty
569 \let\tiny\@empty
570 \let\mathversion\@gobble
571 \let\phantom\@gobble
572 \let\vphantom\@gobble
573 \let\hphantom\@gobble

```

### Package pifont.

```

574 \let\ding\HyPsd@ding
575 \let\Cube\HyPsd@DieFace
576 %* \HyPsd@DieFace -> \epsdice (epsdice)
577 %* \HyPsd@DieFace -> \fcdice (hhcount)

```

### Environments.

```

578 \def\begin##1{\csname##1\endcsname}%
579 \def\end##1{\csname end##1\endcsname}%

```

### Package color.

```

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

```

### Upper- and lowercase.

```

581 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
582 \def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}%

```

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

```

583 \ifHy@psdextra
584 \ifHy@unicode
585 \csname psdmapshortnames\endcsname
586 \csname psdaliasnames\endcsname
587 \fi
588 \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)).

```

589 \let\foreignlanguage\@secondoftwo
590 \let\textlatin\@firstofone
591 \ltx@ifundefined{language@group}{\}%
592 \let\bbl@info\@gobble
593 \csname HyPsd@babel@\language@group\endcsname
594 }%
595 \let\@safe@activetrue\relax
596 \let\@safe@activesfalse\relax

```

Disable \cyr, used in russianb.ldf.

```

597 \let\cyr\relax

```

**Package german.**

```
598 \let\glqq\textglqq
599 \let\grqq\textgrqq
600 \let\glq\textglq
601 \let\grq\textgrq
602 \let\flqq\textflqq
603 \let\frqq\textfrqq
604 \let\flq\textflq
605 \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}

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

**AMS classes.**

```
607 \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.

```
608 \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.

```
609 \let\label\@gobble
610 \let\index\@gobble
611 \let\glossary\@gobble
612 \let\href\HyPsd@href
613 \let\@mkboth\@gobbletwo
```

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

```
614 \let\ref\HyPsd@ref
615 \let\pageref\HyPsd@pageref
616 \let\nameref\HyPsd@nameref
617 \let\autoref\HyPsd@autoref
```

**Miscellaneous commands.**

```
618 \let\leavevmode\@empty
619 \let\mbox\@empty
```

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

```
620 \def\halign{\pdfstringdefWarn\halign\@gobble}%
621 \let\ignorespaces\HyPsd@ignorespaces
622 \let\Hy@SectionAnchorHref\@gobble
623 \let\ensuremath\@firstofone
```



### Patch for cjk bookmarks.

```
624 \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  $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ '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`).

```
625 \Hy@pdfstringtrue
626 \pdfstringdefPreHook
```

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

```
627 \HyPsd@LetUnexpandableSpace\space
628 \HyPsd@LetUnexpandableSpace\ %
629 \HyPsd@LetUnexpandableSpace~%
630 \HyPsd@LetUnexpandableSpace\nobreakspace
```

### Package xspace.

```
631 \ltx@ifundefined{@xspace}{%
632 \let\xspace\HyPsd@ITALCORR
633 }{%
634 \let\xspace\HyPsd@XSPACE
635 }%
636 \let\/\HyPsd@ITALCORR
637 \let\bgroup\/%
638 \let\egroup\/%
```

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

```
639 \let\discretionary\@gobbletwo
```

`\@ifstar` is defined in  $\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$  as follows:

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

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

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

```
640 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
641 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
642 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
643 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'xargs':

```
644 \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).

```
645 \begingroup
646 \let\GenericError\@gobblefour
647 \let\GenericWarning\@gobbletwo
648 \let\GenericInfo\@gobbletwo
```

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

```
649 \ifx\nofrenchguillemets\undefined
650 \else
651 \nofrenchguillemets
652 \fi
```

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

```

653 \let\Hy@temp\xdef
654 \let\def\HyPsd@DefCommand
655 \let\gdef\HyPsd@DefCommand
656 \let\edef\HyPsd@DefCommand
657 \let\xdef\HyPsd@DefCommand
658 \let\futurelet\HyPsd@LetCommand
659 \let\let\HyPsd@LetCommand
660 \Hy@temp#1{#2}%
661 \endgroup

```

### 6.2.3 Postprocessing

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

```

662 \ifx#1\@empty
663 \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.

```

664 \HyPsd@ProtectSpaces#1%
665 \let\HyPsd@String\@empty
666 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
667 \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.

```

668 \let\HyPsd@SPACEOPTI\relax
669 {%
670 \let\HyPsd@String\@empty
671 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@end
672 \global\let#1\HyPsd@String
673 }%
674 \expandafter\HyPsd@RemoveMask\expandafter
675 |\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.

```

676 \expandafter
677 \HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
678 \let\HyPsd@String\@empty
679 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
680 \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.

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

```

682 \ifHy@unicode
683 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
684 \HyPsd@SPACEOPTI#1%
685 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
686 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
687 {\HyPsd@SPACEOPTI\80\273}#1%
688 \else
689 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
690 \expandafter\HyPsd@Subst\expandafter{%
691 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
692 \string\273}\HyPsd@SPACEOPTI\273}#1%
693 \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.

```

694 \ifHy@unicode
695 \HyPsd@StringSubst{\}){\80\051}#1%
696 \HyPsd@Subst){\80\051}#1%
697 \let\HyPsd@empty\relax
698 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
699 {\HyPsd@empty\80\051}#1%
700 \else
701 \HyPsd@StringSubst{\}){\051}#1%
702 \HyPsd@Subst){\051}#1%
703 \let\HyPsd@empty\relax
704 \HyPsd@StringSubst{\051}{\HyPsd@empty\string\})}#1%
705 \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`.

```

706 \expandafter\HyPsd@Subst\expandafter{\//}\HyPsd@empty#1%
707 \ltx@ifundefined{@xspace}{%
708 }{%
709 \let\HyPsd@xspace\relax
710 \expandafter\HyPsd@Subst\expandafter

```

```

711      {\HyPsd@XSPACE}\HyPsd@xspace#1%
712      \let\HyPsd@xspace\HyPsd@doxspace
713    }%
714    \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.

```

715    \HyPsd@Subst{---}\textemdash#1%
716    \HyPsd@Subst{--}\textendash#1%
717 %    \HyPsd@Subst{fi}\textfi#1%
718 %    \HyPsd@Subst{fl}\textfl#1%
719    \HyPsd@Subst{!`}\textexclamdown#1%
720    \HyPsd@Subst{?`}\textquestiondown#1%

```

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

```

721    \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.

```

722    \ifHy@unicode
723      \HyPsd@StringSubst{\textparenleft#1%
724      \HyPsd@Subst{\textparenleft#1%
725    \else
726      \HyPsd@StringSubst{\{050\}#1%
727      \HyPsd@Subst{\{050\}#1%
728      \HyPsd@StringSubst{\050\}\string\}\#1%
729    \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.

```

730    \ifHy@unicode
731      \edef\HyPsd@SPACEOPTI{\80\040}%
732    \else
733      \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
734    \fi

```

```

735 \xdef#1{#1\@empty}%
736 \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.

```

737 \endgroup
738 \begingroup
739 \ifHy@unicode
740 \HyPsd@ConvertToUnicode#1%

```

**Try conversion back to PDFDocEncoding.**

```

741 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
742 \ltx@ifUndefined{StringEncodingConvertTest}{%
743 }{%
744 \EdefUnescapeString\HyPsd@temp#1%
745 \iftutex
746 \let\HyPsd@UnescapedString\HyPsd@temp
747 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
748 {utf16be}{ascii-print}{%
749 \EdefEscapeString\HyPsd@temp\HyPsd@temp
750 \global\let#1\HyPsd@temp
751 \HyPsd@EscapeTeX#1%
752 \Hy@unicodedefalse
753 }{%
754 \HyPsd@EscapeTeX#1%
755 }%
756 \else
757 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
758 {utf16be}{pdfdoc}{%
759 \EdefEscapeString\HyPsd@temp\HyPsd@temp
760 \global\let#1\HyPsd@temp
761 \HyPsd@EscapeTeX#1%
762 \Hy@unicodedefalse
763 }{}%
764 \fi
765 }%
766 \fi
767 \fi

```

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

```

768 \pdfstringdefPostHook#1%
769 \endgroup
770 }

```

\Hy@pdfstringdef

```

771 \def\Hy@pdfstringdef#1#2{%
772 \pdfstringdef\Hy@gtemp{#2}%
773 \let#1\Hy@gtemp
774 }

```

## 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

```
775 \@ifpackageloaded{linguex}{%
776   \let\HyLinguex@OrgB\b
777   \let\HyLinguex@OrgC\c
778   \let\HyLinguex@OrgD\d
779   \def\HyLinguex@Restore{%
780     \let\b\HyLinguex@OrgB
781     \let\c\HyLinguex@OrgC
782     \let\d\HyLinguex@OrgD
783   }%
784   \Hy@AtEndOfPackage{%
785     \pdfstringdefDisableCommands{%
786       \ltx@ifundefined{oldb}{\let\b\oldb}%
787       \ltx@ifundefined{oldc}{\let\c\oldc}%
788       \ltx@ifundefined{oldd}{\let\d\oldd}%
789     }%
790   }%
791 }{%
792   \let\HyLinguex@Restore\relax
793 }%
```

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

\Hy@SaveCatcodeSettings

```
794 \def\Hy@SaveCatcodeSettings#1{%
795   \expandafter\edef\csname Hy@cat@#1\endcsname{%
796     \endlinechar=\the\endlinechar\relax
797     \catcode32 \the\catcode32\relax % (space)
798     \catcode34 \the\catcode34\relax % "
799     \catcode35 \the\catcode35\relax % #
800     \catcode37 \the\catcode37\relax % (percent)
801     \catcode40 \the\catcode40\relax % (
802     \catcode41 \the\catcode41\relax % )
803     \catcode42 \the\catcode42\relax % *
804     \catcode46 \the\catcode46\relax % .
805     \catcode58 \the\catcode58\relax % :
806     \catcode60 \the\catcode60\relax % <
807     \catcode61 \the\catcode61\relax % =
808     \catcode62 \the\catcode62\relax % >
809     \catcode64 \the\catcode64\relax % @
810     \catcode91 \the\catcode91\relax % [
811     \catcode92 \the\catcode92\relax % (backslash)
812     \catcode93 \the\catcode93\relax % ]
813     \catcode123 \the\catcode123\relax % {
814     \catcode124 \the\catcode124\relax % |
815     \catcode125 \the\catcode125\relax % }
816   }%
```



```

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

```

`\Hy@RestoreCatcodeSettings`

```

838 \def\Hy@RestoreCatcodeSettings#1{%
839 \csname Hy@cat@#1\endcsname
840 \expandafter\let\csname Hy@cat@#1\endcsname\relax
841 }

```

### 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.

```

842 \@ifundefined{T@PD1}{%
843 \Hy@SaveCatcodeSettings{pd1}%
844 \input{pd1enc.def}%
845 \Hy@RestoreCatcodeSettings{pd1}%
846 \HyLinguex@Restore
847 }{}
848 \DeclareFontFamily{PD1}{pdf}{}
849 \DeclareFontShape{PD1}{pdf}{m}{n}{<-> cmr10 }{}
850 \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`.

```

851 \def\HyPsd@LoadUnicode{%
852   \@ifundefined{T@PU}{%
853     \Hy@SaveCatcodeSettings{pu}%
854     \input{puenc.def}%
855     \Hy@RestoreCatcodeSettings{pu}%
856     \HyLinguex@Restore
857   }{%
858     \DeclareFontFamily{PU}{pdf}{}%
859     \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{%
860     \DeclareFontSubstitution{PU}{pdf}{m}{n}%
861     \HyPsd@LoadExtra
862     \let\HyPsd@LoadUnicode\relax
863   }

```

`\HyPsd@LoadExtra`

```

864 \def\HyPsd@LoadExtra{%
865   \ifHy@psdextra
866     \ltx@iffileloaded{puenc.def}{%
867       \ltx@iffileloaded{puenc-greekbasic.def}{}%
868       \Hy@SaveCatcodeSettings{pu}%
869       \input{puenc-greekbasic.def}%
870       \Hy@RestoreCatcodeSettings{pu}%
871       \Hy@SaveCatcodeSettings{psdextra}%
872       \input{psdextra.def}%
873       \Hy@RestoreCatcodeSettings{psdextra}%
874       \let\HyPsd@LoadExtra\relax
875     }{%
876     \fi
877   }

```

## 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.

```

878 \def\texorpdfstring{%
879   \ifHy@pdfstring
880     \expandafter\@secondoftwo
881   \else
882     \expandafter\@firstoftwo
883   \fi
884 }

```

## 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`.

```
885 \@ifundefined{pdfstringdefPreHook}{%
886   \let\pdfstringdefPreHook\@empty
887 }{}
888 \@ifundefined{pdfstringdefPostHook}{%
889   \let\pdfstringdefPostHook\@gobble
890 }{}
```

`\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`.

```
891 \def\pdfstringdefDisableCommands{%
892   \begingroup
893     \makeatletter
894     \HyPsd@DisableCommands
895 }
```

`\HyPsd@DisableCommands`

```
896 \long\def\HyPsd@DisableCommands#1{%
897   \ltx@GlobalAppendToMacro\pdfstringdefPreHook{#1}%
898   \endgroup
899 }
```

`\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`.

```
900 \def\pdfstringdefWarn#1{%
901   \expandafter\noexpand\csname<>-string#1\endcsname
902 }
```

## 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.

```
903 \begingroup
904 \catcode0=12 %
905 \def\x{\endgroup
906 \def\HyPsd@ignorespaces{%
907 \romannumeral\expandafter`\expandafter^^@%
908 \romannumeral^^^@%
909 }%
910 }%
911 \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.

```
912 \newif\ifHy@next
913 \</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.

```
914 \*package>
```

### 6.5.3 CJK patch

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

`\HyPsd@CJKhook`

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

```

917 \ltx@ifpackageloaded{CJK}{%
918   \let\CJK@kern\relax
919   \let\CJKkern\relax
920   \let\CJK@CJK\relax
921   \ifHy@CJKbookmarks
922     \HyPsd@CJHook@bookmarks
923   \fi
924   \HyPsd@CJHook@unicode
925 }{}%
926 }

```

#### 6.5.4 CJK bookmarks

`\HyPsd@CJHook` 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 ( $\geq 0x40$ ).

```

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

```

```

958 }%
959 \endgroup

```

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

```

960 \def\HyPsd@CJKActiveChars#1{%
961   \ifx#1!%
962     \let\HyPsd@CJKActiveChars\relax
963   \else
964     \edef#1{\noexpand\Hy@cjkpu\string#1}%
965   \fi
966   \HyPsd@CJKActiveChars
967 }

```

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

```

968 \def\HyPsd@DecimalToOctal#1{%
969   \ifcase #1 %
970     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
971     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
972     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
973     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
974     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
975     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
976     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
977     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
978     \or @\or A\or B\or C\or D\or E\or F\or G%
979     \or H\or I\or J\or K\or L\or M\or N\or O%
980     \or P\or Q\or R\or S\or T\or U\or V\or W%
981     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
982     \or \140\or a\or b\or c\or d\or e\or f\or g%
983     \or h\or i\or j\or k\or l\or m\or n\or o%
984     \or p\or q\or r\or s\or t\or u\or v\or w%
985     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
986     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
987     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
988     \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
989     \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
990     \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
991     \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
992     \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
993     \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
994     \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
995     \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
996     \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
997     \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
998     \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
999     \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1000    \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1001    \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1002    \fi
1003 }

```

### 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```
1004 \def\HyPsd@CJKhook@unicode{%
1005   \let\Unicode\HyPsd@CJK@Unicode
1006   \let\CJKnumber\HyPsd@CJKnumber
1007   \let\CJKdigits\HyPsd@CJKdigits
1008 }
```

\HyPsd@CJK@Unicode

```
1009 \def\HyPsd@CJK@Unicode#1#2{%
1010   \ifnum#1<256 %
1011     \HyPsd@DecimalToOctalFirst{#1}%
1012     \HyPsd@DecimalToOctalSecond{#2}%
1013   \else
1014     \933%
1015     \expandafter\expandafter\expandafter\HyPsd@HighA
1016     \intcalcDiv{#1}{4}!%
1017     \933%
1018     \ifcase\intcalcMod{#1}{4} %
1019       4\or 5\or 6\or 7%
1020     \fi
1021     \HyPsd@DecimalToOctalSecond{#2}%
1022   \fi
1023 }

1024 \def\HyPsd@HighA#1!{%
1025   \expandafter\expandafter\expandafter\HyPsd@HighB
1026   \IntCalcDiv#1!64!!%
1027   \expandafter\expandafter\expandafter\HyPsd@HighD
1028   \IntCalcMod#1!64!!%
1029 }
1030 \def\HyPsd@HighB#1!{%
1031   \expandafter\expandafter\expandafter\HyPsd@HighC
1032   \IntCalcDec#1!!%
1033 }
1034 \def\HyPsd@HighC#1!{%
1035   \IntCalcDiv#1!4!%
1036   \@backslashchar
1037   \IntCalcMod#1!4!%
1038 }
1039 \def\HyPsd@HighD#1!{%
1040   \ifcase\IntCalcDiv#1!8! %
1041     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1042   \fi
1043   \ifcase\IntCalcMod#1!8! %
1044     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1045   \fi
1046 }
1047 \def\HyPsd@DecimalToOctalFirst#1{%
1048   \9%
1049   \ifcase#1 %
1050     000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1051     \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%
```

```

1052 \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1053 \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1054 \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1055 \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1056 \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1057 \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1058 \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1059 \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1060 \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1061 \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1062 \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1063 \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1064 \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
1065 \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1066 \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1067 \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1068 \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1069 \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1070 \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1071 \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1072 \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1073 \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1074 \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1075 \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1076 \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1077 \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1078 \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1079 \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1080 \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1081 \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1082 \fi
1083 }
1084 \def\HyPsd@DecimalToOctalSecond#1{%
1085 \ifcase #1 %
1086 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1087 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1088 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1089 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1090 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1091 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1092 \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1093 \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1094 \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1095 \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1096 \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1097 \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1098 \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1099 \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1100 \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1101 \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1102 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1103 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1104 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1105 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%

```



```

1106 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1107 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1108 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1109 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1110 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1111 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1112 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1113 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1114 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1115 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1116 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1117 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1118 \fi
1119 }

1120 \def\HyPsd@CJKnumber#1{%
1121 \ifnum#1<\z@
1122 \CJK@minus
1123 \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1124 \else
1125 \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1126 \fi
1127 }

1128 \def\HyPsd@@CJKnumber#1{%
1129 \ifcase#1 %
1130 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1131 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1132 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1133 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1134 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1135 \CJK@ten\CJK@nine
1136 \else
1137 \ifnum#1<10000 %
1138 \HyPsd@CJKnumberFour#1!\@empty{20}%
1139 \@empty
1140 \else
1141 \ifnum#1<100000000 %
1142 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1143 \IntCalcDiv#1!10000!%
1144 !\{20}%
1145 \CJK@tenthousand
1146 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1147 \IntCalcMod#1!10000!%
1148 !\CJK@zero{10}%
1149 \@empty
1150 \else
1151 \expandafter\HyPsd@CJKnumberLarge
1152 \number\IntCalcDiv#1!100000000!\expandafter!%
1153 \number\IntCalcMod#1!100000000!!%
1154 \fi
1155 \fi
1156 \fi
1157 }

1158 \def\HyPsd@CJKnumberLarge#1!#2!{%
1159 \HyPsd@CJKnumberFour#1!\{20}%

```

```

1160 \CJK@hundredmillion
1161 \ifnum#2=\z@
1162 \else
1163 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1164 \IntCalcDiv#2!10000!%
1165 !\CJK@zero{10}%
1166 \CJK@tenthousand
1167 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1168 \IntCalcMod#2!10000!%
1169 !\CJK@zero{10}%
1170 \@empty
1171 \fi
1172 }
1173 \def\HyPsd@CJKnumberFour#1!#2#3{%
1174 \ifnum#1=\z@
1175 \expandafter\@gobble
1176 \else
1177 \ifnum#1<1000 %
1178 #2%
1179 \HyPsd@CJKnumberThree#1!#{#3}%
1180 \else
1181 \HyPsd@@CJKnumber{\IntCalcDiv#1!1000!}%
1182 \CJK@thousand
1183 \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1184 \IntCalcMod#1!1000!%
1185 !\CJK@zero{10}%
1186 \fi
1187 \fi
1188 }
1189 \def\HyPsd@CJKnumberThree#1!#2#3{%
1190 \ifnum#1=\z@
1191 \else
1192 \ifnum#1<100 %
1193 #2%
1194 \HyPsd@CJKnumberTwo#1!#{#3}%
1195 \else
1196 \HyPsd@@CJKnumber{\IntCalcDiv#1!100!}%
1197 \CJK@hundred
1198 \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1199 \IntCalcMod#1!100!%
1200 !\CJK@zero{10}%
1201 \fi
1202 \fi
1203 }
1204 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1205 \ifnum#1=\z@
1206 \else
1207 \ifnum#1<#3 %
1208 #2%
1209 \HyPsd@@CJKnumber{#1}%
1210 \else
1211 \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1212 \CJK@ten
1213 \ifnum\IntCalcMod#1!10!=\z@

```

```

1214     \else
1215     \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1216     \fi
1217 \fi
1218 \fi
1219 }

1220 \def\HyPsd@CJKdigits#1{%
1221 \ifx*#1\relax
1222 \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1223 \else
1224 \HyPsd@@CJKdigits\CJK@null{#1}%
1225 \fi
1226 }

1227 \def\HyPsd@@CJKdigits#1#2{%
1228 \ifx\#2\%
1229 \else
1230 \HyPsd@@@CJKdigits#1#2\@nil
1231 \fi
1232 }%
1233 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1234 \HyPsd@CJKdigit#1{#2}%
1235 \ifx\#3\%
1236 \expandafter\@gobble
1237 \else
1238 \expandafter\@firstofone
1239 \fi
1240 {%
1241 \HyPsd@@@CJKdigits#1#3\@nil
1242 }%
1243 }

1244 \def\HyPsd@CJKdigit#1#2{%
1245 \ifcase#2 %
1246 #1\or
1247 \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1248 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1249 \fi
1250 }

```

### 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}

1251 \def\HyPsd@inmathwarn#1#2{%
1252   \ifx#2\expandafter
1253     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1254       \HyPsd@GLYPHERR
1255       \expandafter\@gobble\string#1%
1256       >%
1257       \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1258     \else
1259       \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1260     \fi
1261   \else
1262     \expandafter#2%
1263   \fi
1264 }
1265 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1266 \def\HyPsd@EndWithElse#1\else\else}

\HyPsd@add@accent
1267 \def\HyPsd@add@accent#1#2{%
1268   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1269   #2%
1270 }%

```

### 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`.

```
1271 \def\HyPsd@LetUnexpandableSpace#1{%
1272   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1273 }
```

`\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.

```
1274 \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.

```
1275 \edef\HyPsd@XSPACE{\string#\string X}
1276 \edef\HyPsd@ITALCORR{\string#\string I}
1277 \edef\HyPsd@GLYPHERR{\string#\string G}
```

### 6.5.9 `\hspace` fix

`\HyPsd@hspace`

```
1278 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}
```

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

```
1279 \def\HyPsd@@hspace#1*#2\END{%
1280   \ifx\#2\%
1281     \HyPsd@hspacetest{#1}%
1282   \else
1283     \expandafter\HyPsd@hspacetest
1284   \fi
1285 }
```

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

```
1286 \def\HyPsd@hspacetest#1{\ifdim\dimexpr#1\relax>\z@\space\fi}
```

### 6.5.10 Fix for AMS classes

```
1287 \ltx@ifundefined{tocsection}{%
1288   \let\HyPsd@AMSclassfix\relax
1289 }{%
1290   \def\HyPsd@AMSclassfix{%
```

```

1291 \let\tocpart\HyPsd@tocsection
1292 \let\tocchapter\HyPsd@tocsection
1293 \let\tocappendix\HyPsd@tocsection
1294 \let\tocsection\HyPsd@tocsection
1295 \let\tocsubsection\HyPsd@tocsection
1296 \let\tocsubsubsection\HyPsd@tocsection
1297 \let\tocparagraph\HyPsd@tocsection
1298 }%
1299 \def\HyPsd@tocsection#1#2#3{%
1300 \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1301 #3%
1302 }%
1303 }

```

### 6.5.11 Reference commands

`\HyPsd@href`

```

1304 \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.

```

1305 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%

```

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

```

1306 \def\HyPsd@@ref#1*#2\END{%
1307 \ifx\#2\%
1308 \HyPsd@@@ref{#1}%
1309 \else
1310 \expandafter\HyPsd@@@ref
1311 \fi
1312 }%

```

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

```

1313 \def\HyPsd@@@ref#1{%
1314 \expandafter\ifx\csname r@#1\endcsname\relax
1315 ??%
1316 \else
1317 \expandafter\expandafter\expandafter
1318 \@car\csname r@#1\endcsname\@nil
1319 \fi
1320 }

```

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

```

1321 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

```

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

```

1322 \def\HyPsd@@pageref#1*#2\END{%
1323 \ifx\#2\%
1324 \HyPsd@@@pageref{#1}%
1325 \else
1326 \expandafter\HyPsd@@@pageref
1327 \fi
1328 }

```

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

```

1329 \def\HyPsd@@@pageref#1{%
1330   \expandafter\ifx\csname r@#1\endcsname\relax
1331     ??%
1332   \else
1333     \expandafter\expandafter\expandafter\expandafter
1334     \expandafter\expandafter\expandafter\@car
1335     \expandafter\expandafter\expandafter\@gobble
1336     \csname r@#1\endcsname{}\@nil
1337   \fi
1338 }
```

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

```

1339 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}
```

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

```

1340 \def\HyPsd@@nameref#1*#2\END{%
1341   \ifx\#2\%
1342     \HyPsd@@@nameref{#1}%
1343   \else
1344     \expandafter\HyPsd@@@nameref
1345   \fi
1346 }
```

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

```

1347 \def\HyPsd@@@nameref#1{%
1348   \expandafter\ifx\csname r@#1\endcsname\relax
1349     ??%
1350   \else
1351     \expandafter\expandafter\expandafter\expandafter
1352     \expandafter\expandafter\expandafter\@car
1353     \expandafter\expandafter\expandafter\@gobbletwo
1354     \csname r@#1\endcsname{}\@nil
1355   \fi
1356 }
```

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

```

1357 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}
```

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

```

1358 \def\HyPsd@@autoref#1*#2\END{%
1359   \ifx\#2\%
1360     \HyPsd@@@autoref{#1}%
1361   \else
1362     \expandafter\HyPsd@@@autoref
1363   \fi
1364 }
```

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

```

1365 \def\HyPsd@@@autoref#1{%
1366   \expandafter\ifx\csname r@#1\endcsname\relax
```

```

1367 ??%
1368 \else
1369 \expandafter\expandafter\expandafter\HyPsd@autorefname
1370 \csname r@#1\endcsname\}\}\}\@nil
1371 \expandafter\expandafter\expandafter
1372 \@car\csname r@#1\endcsname\@nil
1373 \fi
1374 }

```

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

```

1375 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1376 \ifx\#4\%
1377 \else
1378 \HyPsd@@autorefname#4.\@nil
1379 \fi
1380 }

```

`\HyPsd@@autorefname`

```

1381 \def\HyPsd@@autorefname#1.#2\@nil{%
1382 \ltx@ifundefined{#1autorefname}{%
1383 \ltx@ifundefined{#1name}{%
1384 }{%
1385 \csname#1name\endcsname\space
1386 }%
1387 }{%
1388 \csname#1autorefname\endcsname\space
1389 }%
1390 }

```

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

```

\HyPsd@DefCommand
\HyPsd@LetCommand 1391 \begingroup
1392   \def\x#1#2{%
1393     \endgroup
1394     \let#1\def
1395     \def\HyPsd@DefCommand##1##2###{%
1396       #1%
1397       \expandafter\noexpand
1398       \csname\expandafter\@gobble\string##1\@empty\endcsname
1399       \@gobble
1400     }%
1401     \let#2\let
1402     \def\HyPsd@@LetCommand##1{%
1403       \expandafter\ifx\csname##1\expandafter\endcsname
1404         \csname iftrue\endcsname
1405         \pdfstringdefWarn\let
1406         \expandafter\@gobble
1407       \else
1408         \expandafter\ifx\csname##1\expandafter\endcsname
1409           \csname iffalse\endcsname
1410           \pdfstringdefWarn\let
1411           \expandafter\expandafter\expandafter\@gobble
1412         \else
1413           #2%
1414           \expandafter\noexpand
1415           \csname##1\expandafter\expandafter\expandafter\endcsname
1416         \fi
1417       \fi
1418     }%
1419   }%
1420   \expandafter\x\csname <def>-command\expandafter\endcsname
1421     \csname <let>-command\endcsname
1422   \def\HyPsd@LetCommand#1{%
1423     \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1424     \expandafter\expandafter\expandafter{%
1425       \expandafter\@gobble\string#1\@empty
1426     }%
1427   }

```

### 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).

```
1428 \def\HyPsd@ifnextchar#1{%
1429   \pdfstringdefWarn#1%
1430   \expandafter\@gobbletwo\@gobble
1431 }
```

#### 6.5.14 `\@protected@testoptifnextchar`

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

```
1432 \def\HyPsd@protected@testopt#1{%
1433   \pdfstringdefWarn#1%
1434   \@gobbletwo
1435 }
```

## 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:

```
1436 \def\HyPsd@Warning#1{%
1437   \begingroup
1438   \let\space\ltx@space
1439   \Hy@Warning{#1}%
1440   \endgroup
1441 }
```

### 6.6.2 Protecting spaces

```
1442 \RequirePackage{etexcmds}[2007/09/09]
1443 \ifetex@unexpanded
1444   \expandafter\@secondoftwo
1445 \else
1446   \expandafter\@firstoftwo
1447 \fi
1448 {%
```

`\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`.

```
1449 \def\HyPsd@ProtectSpaces#1{%
1450   \iftrue
```

```

1451 \expandafter\HyPsd@@ProtectSpacesFi
1452 \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1453 \fi
1454 }%

```

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

```

1455 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1456 \fi
1457 \ifx\scrollmode#2\scrollmode
1458 \HyPsd@RemoveMask#1\HyPsd@End#3%
1459 \else
1460 \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1461 \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1462 \fi
1463 }%

```

### 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.

```

1464 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1465 \toks@ \expandafter{#1}%
1466 \xdef#2{\the\toks@}%
1467 }%

1468 }{%
1469 \let\HyPsd@fi\fi
1470 \def\HyPsd@ProtectSpaces#1{%
1471 \xdef#1{%
1472 \iftrue
1473 \expandafter\HyPsd@@ProtectSpacesFi
1474 \expandafter|\expandafter\@empty#1| %
1475 \HyPsd@fi
1476 }%
1477 \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1478 }%
1479 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1480 \fi
1481 \etex@unexpanded{#1}%
1482 \ifx\scrollmode#2\scrollmode
1483 \else
1484 \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1485 \HyPsd@fi
1486 }%
1487 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1488 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1489 }%
1490 }

```

### 6.6.3 Remove grouping braces

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

```
1491 \def\HyPsd@RemoveBraces#1{%
1492   \ifx\scrollmode#1\scrollmode
1493   \else
1494     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1495   \fi
1496 }
```

`\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`.

```
1497 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1498   \fi
1499   \def\Hy@temp@A{#1#2}%
1500   \def\Hy@temp@B{#3}%
1501   \ifx\Hy@temp@A\Hy@temp@B
1502     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1503       \HyPsd@String#1%
1504     }%
1505     \ifx\scrollmode#2\scrollmode
1506     \else
1507       \Hy@ReturnAfterFiFiEnd{%
1508         \HyPsd@RemoveBraces{#2}%
1509       }%
1510     \fi
1511   \else
1512     \def\Hy@temp@A{#1}%
1513     \HyPsd@AppendItalcorr\HyPsd@String
1514     \ifx\Hy@temp@A\@empty
1515       \Hy@ReturnAfterElseFiFiEnd{%
1516         \HyPsd@RemoveBraces{#2}%
1517       }%
1518     \else
1519       \HyPsd@ProtectSpaces\Hy@temp@A
1520       \HyPsd@AppendItalcorr\Hy@temp@A
1521       \Hy@ReturnAfterFiFiEnd{%
1522         \expandafter\HyPsd@RemoveBraces\expandafter
1523           {\Hy@temp@A#2}%
1524       }%
1525     \fi
1526   \fi
1527   \Hy@ReturnEnd
1528 }
```

`\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`.

```

1529 \def\HyPsd@AppendItalcorr#1{%
1530   \expandafter\HyPsd@@AppendItalcorr\expandafter{\/}#1%
1531 }
1532 \def\HyPsd@@AppendItalcorr#1#2{%
1533   \expandafter\def\expandafter#2\expandafter{#2#1}%
1534 }
```

#### 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>.

```

1535 \ltx@ifundefined{directlua}{%
1536 }{%
1537   \expandafter\ifx\csname\endcsname\relax\fi
1538 }
```

#### 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`.

```

1539 \begingroup
1540   \catcode`\Q=\active
1541   \let Q\ltx@empty
1542   \gdef\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1543     \global\let\HyPsd@Rest\relax
1544     \ifcat\relax\noexpand#1\relax
1545       \ifx#1\protect
1546       \else
1547         \ifx#1\penalty
1548           \setbox\z@=\hbox{%
1549             \afterassignment\HyPsd@AfterCountRemove
1550             \count@=#2\HyPsd@End
1551           }%
1552         \else
1553           \ifx#1\kern
1554             \setbox\z@=\hbox{%
1555               \afterassignment\HyPsd@AfterDimenRemove
1556               \dimen@=#2\HyPsd@End
1557             }%
```

```

1558     \else
1559     \ifx#1\hskip
1560     \setbox\z@=\hbox{%
1561     \afterassignment\HyPsd@AfterSkipRemove
1562     \skip@=#2\HyPsd@end
1563     }%
1564     \else
1565     \HyPsd@CatcodeWarning{#1}%
1566     \fi
1567   \fi
1568 \fi
1569 \fi
1570 \else
1571 \ifcat\noexpand#1\noexpandQ% active character
1572 \expandafter\expandafter\expandafter\def
1573 \expandafter\expandafter\expandafter\HyPsd@String
1574 \expandafter\expandafter\expandafter{%
1575 \expandafter\HyPsd@String\string#1%
1576 }%
1577 \else
1578 \ifcat#1A% letter
1579 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1580 \HyPsd@String#1%
1581 }%
1582 \else
1583 \ifcat#1 % SPACE
1584 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1585 \HyPsd@String\HyPsd@SPACEOPTI
1586 }%
1587 \else
1588 \ifcat$#1%
1589 \HyPsd@CatcodeWarning{math shift}%
1590 \else
1591 \ifcat&#1%
1592 \HyPsd@CatcodeWarning{alignment tab}%
1593 \else
1594 \ifcat^#1%
1595 \HyPsd@CatcodeWarning{superscript}%
1596 \else
1597 \ifcat_#1%
1598 \HyPsd@CatcodeWarning{subscript}%
1599 \else
1600 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1601 \HyPsd@String#1%
1602 }%
1603 \fi
1604 \fi
1605 \fi
1606 \fi
1607 \fi
1608 \fi
1609 \fi
1610 \fi
1611 \ifx\HyPsd@Rest\relax

```

```

1612 \ifx\scrollmode#2\scrollmode
1613 \else
1614 \Hy@ReturnAfterFiFiEnd{%
1615 \HyPsd@CheckCatcodes#2\HyPsd@End
1616 }%
1617 \fi
1618 \else
1619 \ifx\HyPsd@Rest\@empty
1620 \else
1621 \Hy@ReturnAfterFiFiEnd{%
1622 \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1623 }%
1624 \fi
1625 \fi
1626 \Hy@ReturnEnd
1627 }%
1628 \endgroup

```

### Remove counts, dimens, skips.

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

```

1629 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1630 \gdef\HyPsd@Rest{#1}%
1631 }

```

`\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.

```

1632 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1633 \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1634 \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1635 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1636 \else
1637 \ifdim\dimen@=\z@
1638 \else
1639 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1640 \fi
1641 \gdef\HyPsd@Rest{#1}%
1642 \fi
1643 }

```

`\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).

```

1644 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1645 \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1646 \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1647 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1648 \else
1649 \ifdim\skip@=\z@
1650 \else
1651 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1652 \fi

```

```

1653 \gdef\HyPsd@Rest{#1}%
1654 \fi
1655 }

```

### Catcode warnings.

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

```

1656 \def\HyPsd@CatcodeWarning#1{%
1657 \HyPsd@Warning{%
1658   Token not allowed in a PDF string (%)
1659   \ifHy@unicode
1660     Unicode%
1661   \else
1662     PDFDocEncoding%
1663   \fi
1664   }:%
1665   \MessageBreak removing `\'HyPsd@RemoveCmdPrefix#1'%
1666 }%
1667 }
1668 \begingroup
1669 \catcode`\|=0 %
1670 \catcode`\|=12 %
1671 |gdef|HyPsd@RemoveCmdPrefix#1{%
1672 |expandafter|HyPsd@@RemoveCmdPrefix
1673 |string#1|@empty\<>-|@empty|@empty
1674 }%
1675 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1676 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

1677 \def\HyPsd@RemoveSpaceWarning#1{%
1678 \HyPsd@Warning{%
1679   Token not allowed in a PDF string (%)
1680   \ifHy@unicode
1681     Unicode%
1682   \else
1683     PDFDocEncoding%
1684   \fi
1685   }:%
1686   \MessageBreak #1\MessageBreak
1687   removed%
1688 }%
1689 }

```

\HyPsd@ReplaceSpaceWarning

```

1690 \def\HyPsd@ReplaceSpaceWarning#1{%
1691 \HyPsd@Warning{%
1692   Token not allowed in a PDF string (%)
1693   \ifHy@unicode
1694     Unicode%
1695   \else
1696     PDFDocEncoding%
1697   \fi
1698   }:%

```



```

1699 \MessageBreak #1\MessageBreak
1700 replaced by space%
1701 }%
1702 }

```

### 6.6.5 Check for wrong glyphs

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

```

1703 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1704 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1705 \HyPsd@String#1%
1706 }%
1707 \ifx\\#2\\%
1708 \else
1709 \ltx@ReturnAfterFi{%
1710 \HyPsd@GlyphProcessWarning#2\@empty
1711 }%
1712 \fi
1713 }
1714 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1715 \HyPsd@@@GlyphProcessWarning#1++>%
1716 \HyPsd@GlyphProcess#2\@empty
1717 }
1718 \def\HyPsd@@@GlyphProcessWarning#1+#2+#3>{%
1719 \ifx\\#2\\%
1720 \HyPsd@Warning{%
1721 Glyph not defined in %
1722 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1723 removing ` \@backslashchar#1'%
1724 }%
1725 \else
1726 \HyPsd@Warning{%
1727 Composite letter ` \@backslashchar#1+#2'\MessageBreak
1728 not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
1729 \MessageBreak
1730 removing ` \@backslashchar#1'%
1731 }%
1732 \fi
1733 }

```

### 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`.

```

1734 \def\HyPsd@spaceopti#1{ % first space
1735 \ifx\HyPsd@spaceopti#1%
1736 \040%
1737 \else
1738 #1%
1739 \fi

```

```
1740 }%
```

### 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.
1741 \def\HyPsd@Subst#1#2#3{%
1742 \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1743 \fi
1744 ##1%
1745 \ifx\scrollmode##2\scrollmode
1746 \else
1747 #2%
1748 \HyPsd@@ReplaceFi##2\END
1749 \fi
1750 }%
1751 \xdef##3{%
1752 \iftrue
1753 \expandafter\HyPsd@@ReplaceFi#3#1\END
1754 \fi
1755 }%
1756 }
```

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

```
1757 \def\HyPsd@StringSubst#1{%
1758 \expandafter\HyPsd@Subst\expandafter{\string#1}%
1759 }
```

`\HyPsd@EscapeTeX`

```
1760 \begingroup
1761 \lccode`\!=`%%
1762 \lccode`\|=`%%
1763 \lccode`\(= `{
1764 \lccode`\)=`}%
1765 \lccode`0=\ltx@zero
1766 \lccode`1=\ltx@zero
1767 \lccode`3=\ltx@zero
1768 \lccode`4=\ltx@zero
1769 \lccode`5=\ltx@zero
1770 \lccode`7=\ltx@zero
1771 \lowercase{\endgroup
1772 \def\HyPsd@EscapeTeX#1{%
1773 \HyPsd@Subst!{|045}#1%
1774 \HyPsd@Subst({|173}#1%
1775 \HyPsd@Subst){|175}#1%
1776 }%
1777 }
```

### 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.

```

1778 \def\HyPsd@doxspace#1{%
1779   \ifx#1\relax\else
1780     \ifx#1.\else
1781       \ifx#1:\else
1782         \ifx#1,\else
1783           \ifx#1;\else
1784             \ifx#1!\else
1785               \ifx#1?\else
1786                 \ifx#1/\else
1787                   \ifx#1-\else
1788                     \ifx#1'\else
1789                       \HyPsd@SPACEOPTI
1790                     \fi
1791                   \fi
1792                 \fi
1793               \fi
1794             \fi
1795           \fi
1796         \fi
1797       \fi
1798     \fi
1799   \fi
1800   #1%
1801 }%
```

### 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.

```

1802 \begingroup
1803   \catcode`\|=0 %
1804   \catcode`\|=12 %
```

`\HyPsd@ConvertToUnicode`

```

1805 |gdef|HyPsd@ConvertToUnicode#1{%
1806   |xdef#1{%
1807     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1808   }%
1809   |ifx#1|@empty
1810   |else
1811     |xdef#1{%
1812       \376\377%
1813       #1%
1814     }%
1815   |fi
1816 }%
```

\HyPsd@DoConvert

```

1817 |gdef|HyPsd@DoConvert#1{%
1818 |ifx#1|@empty
1819 |else
1820 |ltx@ReturnAfterFi{%
1821 |ifx#1\%%
1822 \%%
1823 |expandafter|HyPsd@DoEscape
1824 |else
1825 |HyPsd@Char{#1}%
1826 |expandafter|HyPsd@DoConvert
1827 |fi
1828 }%
1829 |fi
1830 }%

```

\HyPsd@DoEscape

```

1831 |gdef|HyPsd@DoEscape#1{%
1832 |ifx#19%
1833 |expandafter|HyPsd@GetTwoBytes
1834 |else
1835 |ltx@ReturnAfterFi{%
1836 |ifx#18%
1837 00%
1838 |expandafter|HyPsd@GetTwoBytes
1839 |else
1840 #1%
1841 |expandafter|HyPsd@GetOneByte
1842 |fi
1843 }%
1844 |fi
1845 }%

```

\HyPsd@GetTwoBytes

```

1846 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1847 #1\#2#3#4%
1848 |HyPsd@DoConvert
1849 }%

```

\HyPsd@GetOneByte

```

1850 |gdef|HyPsd@GetOneByte#1#2{%
1851 #1#2%
1852 |HyPsd@DoConvert
1853 }%
1854 |endgroup

```

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

```

1855 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1856 \xdef#4{#4#1#2}%
1857 \HyPsd@@ConvertToUnicode#3\END#4%
1858 }

```

\HyPsd@Char

```
1859 \begingroup
1860 \catcode0=9 %
1861 \catcode`\^=7 %
1862 \catcode`\^^=12 %
1863 \def\x{~~~~0000}%
1864 \expandafter\endgroup
1865 \ifx\x\@empty
1866 \def\HyPsd@Char#1{%
1867 \ifnum`#1<128 %
1868 \@backslashchar 000#1%
1869 \else
1870 \ifnum`#1<65536 %
1871 \expandafter\HyPsd@CharTwoByte\number`#1%
1872 \else
1873 \expandafter\expandafter\expandafter\HyPsd@CharSurrogate
1874 \intcalcSub{`#1}{65536}!%
1875 \fi
1876 \fi
1877 }%
1878 \def\HyPsd@CharTwoByte#1!{%
1879 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1880 \IntCalcDiv#1!256!!%
1881 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1882 \IntCalcMod#1!256!!%
1883 }%
1884 \def\HyPsd@CharOctByte#1!{%
1885 \@backslashchar
1886 \IntCalcDiv#1!64!%
1887 \intcalcDiv{\IntCalcMod#1!64!}{8}%
1888 \IntCalcMod#1!8!%
1889 }%
1890 \def\HyPsd@CharSurrogate#1!{%
1891 \@backslashchar 33%
1892 \IntCalcDiv#1!262144!%
1893 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1894 \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
1895 \@backslashchar 33%
1896 \expandafter\expandafter\expandafter\IntCalcAdd
1897 \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
1898 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1899 \IntCalcMod#1!256!!%
1900 }%
1901 \else
1902 \def\HyPsd@Char#1{%
1903 \@backslashchar 000#1%
1904 }%
1905 \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.

```
1906 \ifcsname UTFviii@loop\endcsname
1907 \def\HyPsd@expand@utfvii{%
```

```

1908 \count@"C2
1909 \@tempcnta"F5
1910 \def\UTFviii@tmp{\expandafter\def\expandafter~\expandafter{~}}%
1911 \UTFviii@loop
1912 }
1913 \else
1914 \def\HyPsd@expand@utfvii{}
1915 \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`

```

1916 \begingroup
1917 \lccode`~=`^^f4\relax
1918 \lowercase{\endgroup
1919 \def\HyPsd@UTFviii{%
1920 \HyPsd@expand@utfvii
1921 \let\UTFviii@two@octets\HyPsd@UTFviii@two
1922 \let\UTFviii@three@octets\HyPsd@UTFviii@three
1923 \let\UTFviii@four@octets\HyPsd@UTFviii@four
1924 \ifx~\HyPsd@UTFviii@ccxliv@undef
1925 \let~\HyPsd@UTFviii@ccxliv@def
1926 \fi
1927 \let\unichar\HyPsd@unichar
1928 }%
1929 }%
1930 \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
1931 \edef\HyPsd@UTFviii@ccxliv@def{%
1932 \noexpand\UTFviii@four@octets\string ^^f4%
1933 }%

```

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.

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

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

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

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

$$(5)$$

```

1934 \def\HyPsd@UTFviii@two#1#2{%
1935 \expandafter\HyPsd@UTFviii@@two

```

```

1936 \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter| %
1937 \number`#1\expandafter| %
1938 \number\dimexpr.125\dimexpr`#2sp\expandafter\relax\expandafter| %
1939 \number`#2 \@nil
1940 }%
1941 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
1942 \expandafter\8%
1943 \number\numexpr #1-48\expandafter\relax
1944 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1945 \number\numexpr #3-8*%
1946 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1947 \number\numexpr #4-8*#3\relax
1948 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

1949 \def\HyPsd@UTFviii@three#1#2#3{%
1950 \expandafter\HyPsd@UTFviii@@three
1951 \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter| %
1952 \number`#1\expandafter| %
1953 \number\ifnum\numexpr`#2-128\relax <32 0\else 1\fi\expandafter| %
1954 \number\dimexpr.25\dimexpr`#2sp\expandafter\relax\expandafter| %
1955 \number`#2\expandafter| %
1956 \number\dimexpr.125\dimexpr`#3sp\expandafter\relax\expandafter| %
1957 \number`#3 \@nil
1958 }%
1959 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1960 \expandafter\9%
1961 \number\numexpr #1-56\expandafter\relax
1962 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1963 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1964 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1965 \number\numexpr #6-16\expandafter\relax
1966 \number\numexpr #7-8*#6\relax
1967 }%

```

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

```

```

1968 \def\HyPsd@UTFviii@four#1#2{%

```

```

1969 \expandafter\HyPsd@@UTFviii@four\number
1970 \numexpr-1+(\`#1-240)*4+\dimexpr.0625\dimexpr`#2sp-128sp%
1971 \expandafter|\number
1972 \numexpr`#2-16*\dimexpr.0625\dimexpr`#2sp| %
1973 }%
1974 \def\HyPsd@@UTFviii@four#1|#2|#3{%
1975 \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1976 \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1977 \ifodd#2 %
1978 \number\dimexpr(#2-1)/2\relax
1979 \else
1980 \number\dimexpr#2/2\relax
1981 \fi
1982 \number\dimexpr\ifodd#2 4+\fi
1983 \dimexpr.0625\dimexpr`#3sp-128sp\relax\relax\relax
1984 \933%
1985 \expandafter\HyPsd@@@UTFviii@four\number
1986 \numexpr`#3-16*\dimexpr.0625\dimexpr`#3sp| %
1987 }%
1988 \def\HyPsd@@@UTFviii@four#1|#2{%
1989 \number\dimexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1990 \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1991 \number\dimexpr.125\dimexpr`#2sp-128sp\relax\relax
1992 \number\dimexpr`#2-8*\dimexpr.125\dimexpr`#2sp\relax\relax\relax
1993 }%

```

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

```

1994 \def\HyPsd@unichar#1{%
1995 \ifHy@unicode
1996 \ifnum#1>"10FFFF %
1997 \HyPsd@UnicodeReplacementCharacter % illegal
1998 \else
1999 \ifnum#1>"FFFF %

```

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

```

2000 \expandafter\HyPsd@unichar\expandafter{%
2001 \number\dimexpr 55296+%
2002 \dimexpr.0009765625\dimexpr\dimexpr\number#1sp-\p@
2003 \relax\relax\relax
2004 }%

```

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

```

2005 \expandafter\HyPsd@unichar\expandafter{%
2006 \number\dimexpr#1-9216%
2007 -1024*\dimexpr.0009765625\dimexpr\dimexpr\number#1sp-\p@
2008 \relax\relax\relax
2009 }%
2010 \else
2011 \ifnum#1>"7FFF %
2012 \9%
2013 \expandafter\HyPsd@unichar@first@byte\expandafter{%
2014 \number
2015 \dimexpr.00390625\dimexpr\dimexpr\number#1sp\relax\relax
2016 }%

```



```

2017 \else
2018 \8%
2019 \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
2020 \fi
2021 \expandafter\HyPsd@unichar@second@byte\expandafter{%
2022 \number
2023 \numexpr#1-256*\number
2024 \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
2025 }%
2026 \fi
2027 \fi
2028 \else
2029 .% unsupported (Unicode -> PDF Doc Encoding)
2030 \fi
2031 }%
2032 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
2033 \def\HyPsd@unichar@first@byte#1{%
2034 \number\dimexpr.015625\dimexpr#1sp\relax\relax
2035 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2036 \number
2037 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2038 \relax\relax\relax
2039 }%
2040 }%
2041 \def\HyPsd@unichar@second@byte#1{%
2042 \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2043 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2044 \number
2045 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2046 \relax\relax\relax
2047 }%
2048 }%
2049 \def\HyPsd@unichar@octtwo#1{%
2050 \number\dimexpr.125\dimexpr#1sp\relax\relax
2051 \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2052 \relax\relax\relax
2053 }%

```

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

```

2054 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2055 \ifx\@gobble#1%
2056 \else
2057 [Please insert \textbackslash PrerenderUnicode%
2058 \textbraceleft#1\textbraceright\space
2059 into preamble]%
2060 \fi
2061 }%

```

#### 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.

```

2062 \def\HyPsd@DieFace#1{%
2063   \ifHy@unicode
2064     \ifnum#1<1 %
2065       \HyPsd@UnicodeReplacementCharacter
2066     \else
2067       \ifnum#1>6 %
2068         \9046\205%
2069         \expandafter\expandafter\expandafter
2070         \HyPsd@DieFaceLarge\intcalcSub{#1}{6}!%
2071       \else
2072         \9046\20\intcalcDec{#1}%
2073       \fi
2074     \fi
2075   \else
2076     .% Die faces are not part of PDFDocEncoding
2077   \fi
2078 }
```

\HyPsd@DieFaceLarge

```

2079 \def\HyPsd@DieFaceLarge#1!{%
2080   \ifnum#1>6 %
2081     \expandafter\ltx@firstoftwo
2082   \else
2083     \expandafter\ltx@secondoftwo
2084   \fi
2085   {%
2086     \9046\205%
2087     \expandafter\expandafter\expandafter
2088     \HyPsd@DieFaceLarge\IntCalcSub#1!6!!%
2089   }{%
2090     \9046\20\IntCalcDec#1!%
2091   }%
2092 }
```

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

```

2093 \def\HyPsd@MoonPha#1{%
2094   \ifcase\intcalcNum{#1} %
2095     \HyPsd@UnicodeReplacementCharacter
2096   \or % 1
2097   % U+1F31A NEW MOON WITH FACE; \MoonPha{1} (china2e)
2098   \9330\074\9337\032%
2099   \or % 2
2100   \HyPsd@UnicodeReplacementCharacter
2101   \or % 3
2102   % U+1F31D FULL MOON WITH FACE; \MoonPha{3} (china2e)
```

```

2103 \9330\074\9337\035%
2104 \or % 4
2105 % U+1F31C LAST QUARTER MOON WITH FACE; \MoonPha{4} (china2e)
2106 \9330\074\9337\034%
2107 \else
2108 \HyPsd@UnicodeReplacementCharacter
2109 \fi
2110 }
2111 %* \HyPsd@MoonPha -> \MoonPha

```

## 6.6.12 Support for package pifont

\HyPsd@ding

```

2112 \def\HyPsd@ding#1{%
2113 \ifHy@unicode
2114 \ifnum#1<32 %
2115 \HyPsd@UnicodeReplacementCharacter
2116 \else
2117 \ifnum#1>254 %
2118 \HyPsd@UnicodeReplacementCharacter
2119 \else
2120 \ifnum#1<127 %
2121 \expandafter\expandafter\expandafter
2122 \HyPsd@@ding\intcalcNum{#1}!%
2123 \else
2124 \ifnum#1>160 %
2125 \expandafter\expandafter\expandafter
2126 \HyPsd@@ding\intcalcNum{#1}!%
2127 \else
2128 \HyPsd@UnicodeReplacementCharacter
2129 \fi
2130 \fi
2131 \fi
2132 \fi
2133 \else
2134 .% Dingbats are not part of PDFDocEncoding
2135 \fi
2136 }

```

\HyPsd@@ding

```

2137 \def\HyPsd@@ding#1!{%
2138 \ltx@ifundefined{HyPsd@ding@#1}{%
2139 \ifnum#1<127 %
2140 \9047%
2141 \HyPsd@DecimalToOctalSecond{\IntCalcSub#1!32!}%
2142 \else
2143 \ifnum#1<168 %
2144 \9047\14\IntCalcSub#1!160!%
2145 \else
2146 \ifnum#1>181 %
2147 \9047\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!64!}%
2148 \else
2149 % 172..181 -> U+2460..U+2469
2150 \9044\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!76!}%
2151 \fi

```

```

2152     \fi
2153     \fi
2154   }{%
2155     \csname HyPsd@ding@#1\endcsname
2156   }%
2157 }

2158 \@namedef{HyPsd@ding@32}{\space}
2159 % U+260E BLACK TELEPHONE
2160 \@namedef{HyPsd@ding@37}{\9046\016}% U+260E
2161 % U+261B BLACK RIGHT POINTING INDEX
2162 \@namedef{HyPsd@ding@42}{\9046\033}% U+261B
2163 % U+261E WHITE RIGHT POINTING INDEX
2164 \@namedef{HyPsd@ding@43}{\9046\036}% U+261E
2165 % U+2605 BLACK STAR
2166 \@namedef{HyPsd@ding@72}{\9046\005}% U+2605
2167 % U+25CF BLACK CIRCLE
2168 \@namedef{HyPsd@ding@108}{\9045\317}% U+25CF
2169 % U+25A0 BLACK SQUARE
2170 \@namedef{HyPsd@ding@110}{\9045\240}% U+25A0
2171 % U+25B2 BLACK UP-POINTING TRIANGLE
2172 \@namedef{HyPsd@ding@115}{\9045\262}% U+25B2
2173 % U+25BC BLACK DOWN-POINTING TRIANGLE
2174 \@namedef{HyPsd@ding@116}{\9045\274}% U+25BC
2175 % U+25C6 BLACK DIAMOND
2176 \@namedef{HyPsd@ding@117}{\9045\306}% U+25C6
2177 % U+25D7 RIGHT HALF BLACK CIRCLE
2178 \@namedef{HyPsd@ding@119}{\9045\327}% U+25D7
2179 \@namedef{HyPsd@ding@168}{\textclubsuitblack}%
2180 \@namedef{HyPsd@ding@169}{\textdiamondsuitblack}%
2181 \@namedef{HyPsd@ding@170}{\textheartsuitblack}%
2182 \@namedef{HyPsd@ding@171}{\textspadesuitblack}%
2183 \@namedef{HyPsd@ding@213}{\textrightarrow}%
2184 \@namedef{HyPsd@ding@214}{\textleftarrow}%
2185 \@namedef{HyPsd@ding@215}{\textupdownarrow}%
2186 \@namedef{HyPsd@ding@240}{\HyPsd@UnicodeReplacementCharacter}

```

## 7 Support of other packages

### 7.1 Package subfigure

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

```

2187 \@ifpackageloaded{subfigure}{%
2188   \ltx@ifundefined{sub@label}{%
2189     \Hy@hypertextnamesfalse
2190   }{%
2191     \renewcommand*{\sub@label}[1]{%
2192       \@bsphack
2193       \subfig@oldlabel{#1}%
2194     \if@filesw
2195       \begingroup
2196       \edef\@currentlabstr{%
2197         \expandafter\strip@prefix\meaning\@currentlabelname

```

```

2198     }%
2199     \protected@write\@auxout{}\@auxout{\string\newlabel{sub@#1}{%
2200     \string\newlabel{sub@#1}{%
2201     {\@nameuse{\@thesub\@capytype}}%
2202     {\thepage}%
2203     {%
2204     \expandafter\strip@period\@currentlabstr
2205     \relax.\relax\@@@%
2206     }%
2207     {\@currentHref}%
2208     }%
2209     }%
2210     }%
2211     \endgroup
2212     \fi
2213     \@esphack
2214     }%
2215     }%
2216     }{}

```

## 7.2 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}{linktopage}[true]{%
2465   \Hy@boolkey{linktopage}{#1}%
2466   \ifHy@linktopage
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@linktopage
2477   \let\Hy@linktoc\Hy@linktoc@page
2478 \else
2479   \let\Hy@linktoc\Hy@linktoc@section
2480 \fi
2481 \define@key{Hyp}{linktoc}{%
2482   \@ifundefined{Hy@linktoc@#1}{%
2483     \Hy@Warning{%
2484       Unexpected value `#1' of \MessageBreak
2485       option `linktoc' instead of `none', \MessageBreak
2486       `section', `page' or `all'%
2487     }%
2488   }{%
2489     \expandafter\let\expandafter\Hy@linktoc
2490     \csname Hy@linktoc@#1\endcsname
2491   }%
2492 }
2493 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2494 \let\XR@ext\relax
2495 \define@key{Hyp}{verbose}[true]{%
2496   \Hy@boolkey{verbose}{#1}%
2497 }

```

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

```

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

```

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

```

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

```

```

2503 }
2504 \def\Hy@breaklinks@unsupported{%
2505   \ifx\Hy@setbreaklinks\@gobble
2506     \ifHy@breaklinks
2507       \Hy@WarningNoLine{%
2508         You have enabled option `breaklinks'.\MessageBreak
2509         But driver ``\Hy@driver.def' does not support this.\MessageBreak
2510         Expect trouble with the link areas of broken links%
2511       }%
2512     \fi
2513   \fi
2514 }

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

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

Determines whether an automatic anchor is put on each page
2525 \define@key{Hyp}{pageanchor}[true]{%
2526   \Hy@boolkey{pageanchor}{#1}%
2527 }

Are the page links done as plain arabic numbers, or do they follow the formatting
of the package? The latter loses if you put in typesetting like \textbf or the like.
2528 \define@key{Hyp}{plainpages}[true]{%
2529   \Hy@boolkey{plainpages}{#1}%
2530 }

Are the names for anchors made as per the HyperTeX system, or do they simply
use what LATEX 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 coun-
ters.
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@pdfmajorversion{\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\Hy@Opt@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{nativpdf}{%
2734   \Hy@Opt@CheckDvi{nativpdf}{%
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{httexture}%
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\cyrry\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\cyrz\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{d{j}{o}d{a}n}%
3166 \def\subparagraphautorefname{d{j}{o}d{a}n}%
3167 \def\FancyVerbLineautorefname{d\`ong}%
3168 \def\theoremautorefname{DJ{}}\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\acconos\textalpha\textrho\texttau\texteta\textmu\textalpha}%
3179 \def\chapterautorefname{\textkappa\textepsilon\textphi\acconos\textal-

```

```

    pha\textlambda\textalpha\textiota\textomicron}%
3180 \def\sectionautorefname{\textepsilon\textnu\acctonos\textomicron\texttau\texteta\texttau\textalpha}%
    \def\subsectionautorefname{\textupsilon\textpi\textomicron\textepsilon\textnu\ac-
3181 ctonos\textomicron\texttau\texteta\texttau\textalpha}%
    \def\subsubsectionautorefname{\textupsilon\textpi\textomicron-\textupsilon\textpi\textomicron\text
3182 \def\paragraphautorefname{\textpi\textalpha\textrho\acctonos\textalpha\textgamma\text-
3183 rho\textalpha\textphi\textomicron\textvarsigma}%
    \def\subparagraphautorefname{\textupsilon\textpi\textomicron\textpi\text-
3184 alpha\textrho\acctonos\textalpha\textgamma\textrho\textalpha\textphi\textomi-
    cron\textvarsigma}%
3185 \def\FancyVerbLineautorefname{\textgamma\textrho\textalpha\textmu\textmu\ac-
    ctonos\texteta}%
3186 \def\theoremautorefname{\textTheta\textepsilon\acctonos\textomega\text-
    rho\texteta\textmu\textalpha}%
3187 \def\pageautorefname{\textsigma\textepsilon\textlambda\acctonos\textiota\textdelta\text-
    alpha}%
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{alineae}%
3202 \def\subparagraphautorefname{deelalineae}%
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{français}{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 toclevel@\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@unicodedefalse
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\expandafter\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       \edef\EscapeName\HyInfo@Key{##1}%
3840       \edef\x{%
3841         \toks@{%
3842           \the\toks@
3843           /\HyInfo@Key(\cename HyInfo@Value@##1\endcename)%
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}{pdflinkmargin}{\setpdflinkmargin{#1}}
3858 \let\setpdflinkmargin\@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-zM-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 `pdfang' (RFC 3066)%

```

```

4081     }%
4082     \let\@pdfang\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\@pdfang\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 \beginngroup
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@activetrue
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@implicit
4328 \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4329 \else
4330 \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4331 \def\MaybeStopEarly{%
4332   \Hy@Message{Stopped early}%
4333   \Hy@AtBeginDocument{%
4334     \PDF@FinishDoc
4335     \gdef\PDF@FinishDoc{}%
4336   }%
4337 \endinput
4338 }%
4339 \Hy@AtBeginDocument{%
4340   \let\autoref\ref
4341   \let\autopageref\pageref
4342   \ifx\@pdfpagemode\@empty
4343     \gdef\@pdfpagemode{UseNone}%
4344   \fi
4345   \global\Hy@backreffalse
4346 }%
4347 \Hy@AtEndOfPackage{%
4348   \global\let\ReadBookmarks\relax
4349   \global\let\WriteBookmarks\relax
4350 }%
4351 \fi
4352 \Hy@DisableOption{implicit}

```

#### 15.4.1 Driver loading

```

4353 \Hy@AtEndOfPackage{%
4354   \@ifpackageloaded{tex4ht}{%
4355     \def\Hy@driver{htex4ht}%
4356     \Hy@texhttrue
4357   }{}%

```

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.

```

4358 \ifx\Hy@driver\@empty
4359 \else
4360   \ifx\pdfextension\@undefined
4361     \def\Hy@temp{hpdftex}%
4362   \else
4363     \def\Hy@temp{hluatex}%
4364   \fi
4365 \ifpdf
4366   \ifx\Hy@driver\Hy@temp
4367   \else
4368     \Hy@WarningNoLine{%
4369       Wrong driver `\'Hy@driver.def';\MessageBreak
4370       pdfTeX is running in PDF mode.\MessageBreak
4371       Forcing driver `\'Hy@temp.def'%
4372     }%
4373     \let\Hy@driver\Hy@temp

```

```

4374 \fi
4375 \else
4376 \ifx\Hy@driver\Hy@temp
4377 \Hy@WarningNoLine{%
4378 Wrong driver `\'Hy@driver.def';\MessageBreak
4379 pdfTeX is not running in PDF mode.\MessageBreak
4380 Using default driver%
4381 }%
4382 \let\Hy@driver\@empty
4383 \fi
4384 \fi
4385 \fi
4386 \ifHy@texht
4387 \else
4388 \ifx\Hy@driver\@empty
4389 \else
4390 \def\Hy@temp{hxtex}%
4391 \ifxetex
4392 \ifx\Hy@driver\Hy@temp
4393 \else
4394 \Hy@WarningNoLine{%
4395 Wrong driver `\'Hy@driver.def';\MessageBreak
4396 XeTeX is running.\MessageBreak
4397 Forcing driver `\'Hy@temp.def' for XeTeX%
4398 }%
4399 \let\Hy@driver\Hy@temp
4400 \fi
4401 \fi
4402 \fi
4403 \fi
4404 \ifx\Hy@driver\@empty
4405 \else
4406 \def\Hy@temp{hvtexhtm}%
4407 \ifnum\ifvtex\OpMode\else\m@ne\fi=10 %
4408 \ifx\Hy@driver\Hy@temp
4409 \else
4410 \Hy@WarningNoLine{%
4411 Wrong driver `\'Hy@driver.def';\MessageBreak
4412 VTeX is running in HTML mode.\MessageBreak
4413 Forcing driver `\'Hy@temp.def'%
4414 }%
4415 \let\Hy@driver\Hy@temp
4416 \fi
4417 \else
4418 \ifx\Hy@driver\Hy@temp
4419 \Hy@WarningNoLine{%
4420 Wrong driver `\'Hy@driver.def';\MessageBreak
4421 VTeX is not running in HTML mode.\MessageBreak
4422 Using default driver%
4423 }%
4424 \let\Hy@driver\@empty
4425 \fi
4426 \fi
4427 \fi

```

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

```

4428 \let\HyOpt@DriverType\ltx@empty
4429 \ifx\HyOpt@CustomDriver\ltx@empty
4430 \ifx\Hy@driver\@empty
4431 \def\HyOpt@DriverType{ (autodetected)}%
4432 \providecommand*{\Hy@defaultdriver}{hdvips}%
4433 \ifpdf
4434 \ifx\pdfextension\@undefined
4435 \def\Hy@driver{hpdftex}%
4436 \else
4437 \def\Hy@driver{hluatex}%
4438 \fi
4439 \else
4440 \ifxetex
4441 \def\Hy@driver{hxetex}%
4442 \else
4443 \ifnum\ifvtex\OpMode\else\m@ne\fi=10 %
4444 \def\Hy@driver{hvtexhtm}%
4445 \def\MaybeStopEarly{%
4446 \Hy@Message{Stopped early}%
4447 \Hy@AtBeginDocument{%
4448 \PDF@FinishDoc
4449 \gdef\PDF@FinishDoc{}}%
4450 }%
4451 \endinput
4452 }%
4453 \else
4454 \ifnum\ifvtex\OpMode\else\m@ne\fi=\@ne
4455 \def\Hy@driver{hvtex}%
4456 \else
4457 \ifnum\ifvtex\OpMode\else\m@ne\fi=\tw@
4458 \def\Hy@driver{hvtex}%
4459 \else
4460 \ifx\HyOpt@DriverFallback\ltx@empty
4461 \let\Hy@driver\Hy@defaultdriver
4462 \def\HyOpt@DriverType{ (default)}%
4463 \else
4464 \begingroup
4465 \toks@\expandafter{\HyOpt@DriverFallback}%
4466 \edef\x{\endgroup
4467 \noexpand\kvsetkeys{Hyp}{\the\toks@}}%
4468 }%
4469 \x
4470 \ifx\Hy@driver\ltx@empty
4471 \let\Hy@driver\Hy@defaultdriver
4472 \def\HyOpt@DriverType{ (default)}%
4473 \else
4474 \def\HyOpt@DriverType{ (fallback)}%
4475 \fi
4476 \fi
4477 \fi
4478 \fi
4479 \fi
4480 \fi

```

```

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

```

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.

```

4523 \newif\ifHy@DvipdfmxOutlineOpen
4524 \ifxetex
4525 \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4526 \else
4527 \chardef\SpecialDvipdfmxOutlineOpen\@ne
4528 \Hy@DvipdfmxOutlineOpen>true
4529 \fi
4530 \fi
4531 \begingroup\expandafter\expandafter\expandafter\endgroup

```

```

4532 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
4533 \else
4534 \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4535 \Hy@DvipdfmxOutlineOpentru
4536 \fi
4537 \fi

```

### 15.4.2 Bookmarks

```

4538 \def\WriteBookmarks{0}
4539 \def\@bookmarkopenstatus#1{%
4540 \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:

```

4541 \ifnum#1<\expandafter\@firstofone\expandafter
4542 \number\@bookmarksopenlevel} % explicit space
4543 \else
4544 -%
4545 \fi
4546 \else
4547 -%
4548 \fi
4549 }
4550 \ifHy@bookmarks
4551 \Hy@Info{Bookmarks ON}%
4552 \ifx\@pdfpagemode\@empty
4553 \def\@pdfpagemode{UseOutlines}%
4554 \fi
4555 \else
4556 \let\@bookmarkopenstatus\ltx@gobble
4557 \Hy@Info{Bookmarks OFF}%
4558 \Hy@AtEndOfPackage{%
4559 \global\let\ReadBookmarks\relax
4560 \global\let\WriteBookmarks\relax
4561 }%
4562 \ifx\@pdfpagemode\@empty
4563 \def\@pdfpagemode{UseNone}%
4564 \fi
4565 \fi
4566 \Hy@DisableOption{bookmarks}

```

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

```

4567 \def\Hy@CatcodeWrapper#1{%
4568 \let\Hy@endWrap\ltx@empty
4569 \def\TMP@EnsureCode##1##2{%
4570 \edef\Hy@endWrap{%
4571 \Hy@endWrap
4572 \catcode##1 \the\catcode##1\relax
4573 }%
4574 \catcode##1 ##2\relax
4575 }%
4576 \TMP@EnsureCode{10}{12}% ^^J
4577 \TMP@EnsureCode{33}{12}% !
4578 \TMP@EnsureCode{34}{12}% "
4579 \TMP@EnsureCode{36}{3}% $ (math)

```

```

4580 \TMP@EnsureCode{38}{4}% & (alignment)
4581 \TMP@EnsureCode{39}{12}% '
4582 \TMP@EnsureCode{40}{12}% (
4583 \TMP@EnsureCode{41}{12}% )
4584 \TMP@EnsureCode{42}{12}% *
4585 \TMP@EnsureCode{43}{12}% +
4586 \TMP@EnsureCode{44}{12}% ,
4587 \TMP@EnsureCode{45}{12}% -
4588 \TMP@EnsureCode{46}{12}% .
4589 \TMP@EnsureCode{47}{12}% /
4590 \TMP@EnsureCode{58}{12}% :
4591 \TMP@EnsureCode{59}{12}% ;
4592 \TMP@EnsureCode{60}{12}% <
4593 \TMP@EnsureCode{61}{12}% =
4594 \TMP@EnsureCode{62}{12}% >
4595 \TMP@EnsureCode{63}{12}% ?
4596 \TMP@EnsureCode{91}{12}% [
4597 \TMP@EnsureCode{93}{12}% ]
4598 \TMP@EnsureCode{94}{7}% ^ (superscript)
4599 \TMP@EnsureCode{95}{8}% _ (subscript)
4600 \TMP@EnsureCode{96}{12}% `
4601 \TMP@EnsureCode{124}{12}% |
4602 \TMP@EnsureCode{126}{13}% ~ (active)
4603 #1\relax
4604 \Hy@EndWrap
4605 }

```

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

```

4606 \Hy@AtBeginDocument{%
4607   \ifHy@ocgcolorlinks
4608     \kvsetkeys{Hyp}{colorlinks}%
4609     \ifHy@pdfa
4610       \Hy@Warning{%
4611         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4612         using `colorlinks' instead of `ocgcolorlinks'%
4613       }%
4614       \Hy@ocgcolorlinksfalse
4615     \fi
4616   \fi
4617   \ifHy@ocgcolorlinks
4618   \else
4619     \Hy@DisableOption{ocgcolorlinks}%
4620   \fi
4621   \ifHy@colorlinks
4622     \def\@pdfborder{0 0 0}%
4623     \let\@pdfborderstyle\@empty
4624     \Hy@CatcodeWrapper{%
4625       \RequirePackage{color}%
4626     }%
4627     \def\Hy@colorlink#1{%
4628       \begingroup
4629       \HyColor@UseColor#1%
4630     }%
4631     \def\Hy@endcolorlink{\endgroup}%

```

```

4632 \Hy@Info{Link coloring ON}%
4633 \else
4634 \ifHy@frenchlinks
4635 \def\Hy@colorlink#1{\begingroup\fontshape{\scdefault}\selectfont}%
4636 \def\Hy@endcolorlink{\endgroup}%
4637 \Hy@Info{French linking ON}%
4638 \else

```

for grouping consistency:

```

4639 \def\Hy@colorlink#1{\begingroup}%
4640 \def\Hy@endcolorlink{\endgroup}%
4641 \Hy@Info{Link coloring OFF}%
4642 \fi
4643 \fi
4644 \Hy@DisableOption{colorlinks}%
4645 \Hy@DisableOption{frenchlinks}%
4646 \ifHy@texht
4647 \else

```

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

```

4648 \ifHy@implicit
4649 \let \T@Ref\HyRef@Ref
4650 \def\@refstar#1{%
4651 \NR@ref@showkeys{#1}%
4652 \HyRef@StarSetRef{#1}\@firstoffive
4653 }
4654 \def\@pagerefstar#1{%
4655 \NR@ref@showkeys{#1}%
4656 \HyRef@StarSetRef{#1}\@secondoffive
4657 }
4658 \def\@namerefstar#1{%
4659 \NR@ref@showkeys{#1}%
4660 \HyRef@StarSetRef{#1}\@thirdoffive
4661 }
4662 \def\@Refstar#1{%
4663 \NR@ref@showkeys{#1}%
4664 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
4665 }%
4666 \else
4667 \fi
4668 \fi
4669 }
4670 \Hy@AtBeginDocument{%
4671 \ifx\ReadBookmarks\relax
4672 \else
4673 \Hy@CatcodeWrapper\ReadBookmarks
4674 \fi
4675 }
4676 \ifHy@backref
4677 \RequirePackage{backref}%
4678 \else
4679 \let\Hy@backout\@gobble
4680 \fi
4681 \Hy@DisableOption{backref}

```



```

4682 \Hy@DisableOption{pagebackref}
4683 \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`.

```

4684 \begingroup
4685 \endlinechar=-1 %
4686 \catcode`\^^A=14 %
4687 \catcode`\^^M\active
4688 \catcode`\%\active
4689 \catcode`\#\active
4690 \catcode`\_\active
4691 \catcode`\$\active
4692 \catcode`\&\active
4693 \gdef\hyper@normalise{^^A
4694   \begingroup
4695   \catcode`\^^M\active
4696   \def^^M{ }^^A
4697   \catcode`\%\active
4698   \let%\@percentchar
4699   \let%\@percentchar
4700   \catcode`\#\active
4701   \def#{\hyper@hash}^^A
4702   \def\#{\hyper@hash}^^A
4703   \@makeother\&^^A
4704   \edef&{\string&}^^A
4705   \edef\&{\string&}^^A
4706   \edef\textunderscore{\string_}^^A
4707   \let_\textunderscore
4708   \catcode`\_\active
4709   \let_\textunderscore
4710   \let~\hyper@tilde
4711   \let~\hyper@tilde
4712   \let\textasciitilde\hyper@tilde
4713   \let\\@backslashchar
4714   \edef$\string$}^^A
4715   \Hy@safe@activetrue
4716   \hyper@n@rmalise
4717 }^^A
4718 \catcode`\#=6 ^^A
4719 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4720 \gdef\hyper@n@rmalise#1#2{^^A
4721   \def\Hy@tempa{#2}^^A
4722   \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4723     \ltx@ReturnAfterElseFi{^^A
4724       \hyper@@normalise{#1}^^A

```

```

4725     }^^A
4726     \else
4727         \ltx@ReturnAfterFi{^^A
4728             \hyper@@normalise{#1}{#2}^^A
4729         }^^A
4730     \fi
4731 }^^A
4732 \gdef\hyper@@normalise#1#2{^^A
4733     \edef\Hy@tempa{^^A
4734         \endgroup
4735         \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4736     }^^A
4737     \Hy@tempa
4738 }^^A
4739 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4740     #1^^A
4741     \ifx\limits#2\limits
4742     \else
4743         \ltx@ReturnAfterFi{^^A
4744             \Hy@RemovePercentCr #2\@nil
4745         }^^A
4746     \fi
4747 }^^A
4748 \endgroup
4749 \providecommand*\hyper@chars{%
4750     \let\#\hyper@hash
4751     \let\%\@percentchar
4752     \Hy@safe@activetrue
4753 }

4754 \def\hyperlink#1#2{%
4755     \hyper@@link{}{#1}{#2}%
4756 }

4757 \def\Hy@VerboseLinkStart#1#2{%
4758     \ifHy@verbose
4759         \begingroup
4760             \Hy@safe@activetrue
4761             \xdef\Hy@VerboseGlobalTemp{(#1) `#2'}%
4762             \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4763             \xdef\Hy@VerboseGlobalTemp{%
4764                 \Hy@VerboseGlobalTemp, %
4765                 line \the\inputlineno
4766             }%
4767         \endgroup
4768         \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4769         \@onelevel@sanitize\Hy@VerboseLinkInfo
4770     \fi
4771 }

4772 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4773 \def\Hy@VerboseLinkStop{%
4774     \ifHy@verbose
4775         \begingroup
4776             \edef\x{\endgroup
4777                 \write\m@ne{%

```

```

4778      Package `hyperref' Info: %
4779      End of reference \Hy@VerboseLinkInfo.%
4780    }%
4781  }%
4782  \x
4783  \fi
4784 }

4785 \def\Hy@VerboseAnchor#1{%
4786   \ifHy@verbose
4787     \begingroup
4788       \Hy@safe@activetrue
4789       \Hy@Info{Anchor `\'HyperDestNameFilter{#1}'}%
4790     \endgroup
4791   \fi
4792 }

4793 \def\Hy@AllowHyphens{%
4794   \relax
4795   \ifhmode
4796     \penalty\@M
4797     \hskip\z@skip
4798   \fi
4799 }

4800 \DeclareRobustCommand*\href{1}[]{}%
4801   \begingroup
4802     \setkeys{href}{#1}%
4803     \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4804   }
4805   \def\Hy@href#{%
4806     \hyper@normalise\href@
4807   }
4808   \begingroup
4809     \catcode`\$=6 %
4810     \catcode`\#=12 %
4811     \gdef\href@#1{\expandafter\href@split$1##\}%
4812     \gdef\href@split$1#$2#$3\\$4{%
4813       \hyper@@link{$1}{$2}{$3}{$4}%
4814     }
4815   }%
4816   \endgroup

Option 'page'.
4817 \define@key{href}{page}{%
4818   \def\Hy@href@page{#1}%
4819 }
4820 \let\Hy@href@page\@empty
4821 \newcount\c@Hy@tempcnt
4822 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4823 \def\Hy@MakeRemoteAction{%
4824   \ifx\Hy@href@page\@empty
4825     \def\Hy@href@page{0}%
4826   \else
4827     \setcounter{Hy@tempcnt}{\Hy@href@page}%
4828     \ifnum\c@Hy@tempcnt<\@ne

```

```

4829 \Hy@Warning{%
4830   Invalid page number (\theHy@tempcnt)\MessageBreak
4831   for remote PDF file.\MessageBreak
4832   Using page 1%
4833 }%
4834 \def\Hy@href@page{0}%
4835 \else
4836 \global\advance\c@Hy@tempcnt\m@ne
4837 \edef\Hy@href@page{\theHy@tempcnt}%
4838 \fi
4839 \fi

```

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

```

4840 \ifx\Hy@href@nextactionraw\@empty
4841 \else
4842 \Hy@pdfnewwindowsettrue
4843 \Hy@pdfnewwindowtrue
4844 \fi
4845 }

```

Option ‘pdfremotestartview’.

```

4846 \define@key{href}{pdfremotestartview}{%
4847 \setkeys{Hyp}{pdfremotestartview={#1}}}%
4848 }

```

Option ‘pdfnewwindow’.

```

4849 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4850 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4851 \newif\ifHy@href@ismap
4852 \define@key{href}{ismap}[true]{%
4853 \ltx@ifundefined{Hy@href@ismap#1}{%
4854 \Hy@Error{%
4855   Invalid value (#1) for key `ismap'.\MessageBreak
4856   Permitted values are `true' or `false'.\MessageBreak
4857   Ignoring `ismap'%
4858 } \@ehc
4859 }{%
4860 \csname Hy@href@ismap#1\endcsname
4861 }%
4862 }

```

Option ‘nextactionraw’.

```

4863 \let\Hy@href@nextactionraw\@empty
4864 \define@key{href}{nextactionraw}{%
4865 \edef\Hy@href@nextactionraw{#1}%
4866 \ifx\Hy@href@nextactionraw\@empty
4867 \else
4868 \Hy@Match\Hy@href@nextactionraw{%
4869   ~(\HyPat@ObjRef/|<<.*[/S[/].+>>|
4870   \[( ?\HyPat@ObjRef/|<<.*[/S[/].+>>)+ ?)]$%
4871 }%
4872 \Hy@Warning{Invalid value for `nextactionraw':.\MessageBreak
4873 \Hy@href@nextactionraw\MessageBreak

```

```

4874     The action is discarded%
4875   }%
4876 }%
4877 \ifx\Hy@href@nextactionraw\@empty
4878 \else
4879   \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4880 \fi
4881 \fi
4882 }
4883 \def\HyPat@ObjRef/{.+}

```

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

```

4884 \RequirePackage{url}
4885 \let\HyOrg@url\url
4886 \def\Hurl{\begingroup \Url}
4887 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
4888 \def\nolinkurl@#1{\Hurl{#1}}
4889 \DeclareRobustCommand*\url{\hyper@normalise\url@}
4890 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}
4891 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
4892 \providecommand\hyper@image[2]{#2}
4893 \def\hypertarget#1#2{%
4894   \ifHy@nesting
4895     \hyper@@anchor{#1}{#2}%
4896   \else
4897     \hyper@@anchor{#1}{\relax}#2%
4898   \fi
4899 }

```

`\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.

```

4900 \DeclareRobustCommand*\hyperref{%
4901   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
4902 }
4903 \def\Hy@babelnormalise#1[#2]{%
4904   \begingroup
4905     \Hy@safe@activetrue
4906     \let\protect\@unexpandable@protect
4907     \edef\Hy@tempa{%
4908       \endgroup
4909       \noexpand#1[#2]}%
4910   }%
4911   \Hy@tempa
4912 }
4913 \def\@hyperref{\hyper@normalise\@hyperref}
4914 \def\@hyperref#1#2#3{%
4915   \edef\ref@one{\ifx\\#2\\else#2.\fi#3}%
4916   \expandafter\tryhyper@link\ref@one\\{#1}%

```

```

4917 }
4918 \def\tryhyper@link#1\#2{%
4919   \hyper@@link{#2}{#1}%
4920 }

4921 \def\hyperdef{\@ifnextchar[{\label@hyperdef}{\@hyperdef}}
4922 \def\@hyperdef#1#2#3{%, category, name, text
4923   \ifx\#1\%
4924     \def\Hy@AnchorName{#2}%
4925   \else
4926     \def\Hy@AnchorName{#1.#2}%
4927   \fi
4928   \ifHy@nesting
4929     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4930   \else
4931     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}{#3}%
4932   \fi
4933 }

```

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.

```

4934 \let\hyperrefundefinedlink\@firstofone
4935 \def\label@hyperref[#1]{%
4936   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
4937 }%
4938 \def\label@@hyperref#1#2#3{%
4939   \ifx#1\relax
4940     \protect\G@refundefinedtrue
4941     \@latex@warning{%
4942       Hyper reference `#2' on page \thepage \space undefined%
4943     }%
4944     \begingroup
4945       \hyperrefundefinedlink{#3}%
4946     \endgroup
4947   \else
4948     \hyper@@link{\expandafter\@fifthoffive#1}%
4949     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
4950   \fi
4951 }
4952 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
4953                               % anchor text
4954   \@bsphack
4955   \ifx\#2\%
4956     \def\Hy@AnchorName{#3}%
4957   \else
4958     \def\Hy@AnchorName{#2.#3}%
4959   \fi
4960   \if@filesw
4961     \protected@write\@auxout{}{%
4962       \string\newlabel{#1}{\Hy@AnchorName}{}}%
4963   }%
4964   \fi
4965   \@esphack
4966   \ifHy@nesting

```

```

4967 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
4968 \else
4969 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
4970 \fi
4971 }

```

`\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`

```

4972 \ExplSyntaxOn
4973 \cs_new:Npn \hyperget #1 #2
4974 {
4975   \use:c { __hyp_get_#1:n } { #2}
4976 }
4977
4978 \cs_new:Npn \__hyp_get_anchor:n #1
4979 {
4980   \HyperDestNameFilter
4981   {
4982     \cs_if_exist:cTF {r@#1}
4983     {
4984       \tl_item:cn {r@#1}{4}
4985     }
4986     {
4987       Doc-Start
4988     }
4989   }
4990 }
4991 \cs_new:Npn \__hyp_get_pageanchor:n #1
4992 {
4993   \HyperDestNameFilter
4994   {
4995     \cs_if_exist:cTF {r@#1}
4996     {
4997       page. \tl_item:cn {r@#1}{2}
4998     }
4999     {
5000       Doc-Start
5001     }
5002   }
5003 }
5004 \cs_new:Npn \__hyp_get_currentanchor:n #1
5005 {
5006   \HyperDestNameFilter { \@currentHref }
5007 }
5008 \ExplSyntaxOff

```

## 16.1 Link box support for XeTeX

```

5009 \newdimen\XeTeXLinkMargin
5010 \setlength{\XeTeXLinkMargin}{2pt}
5011 \ifxetex
5012   \font\XeTeXLink@font=pzdr at 1sp\relax
5013   \newcommand*{\XeTeXLink@space}{%
5014     \begingroup
5015       \XeTeXLink@font
5016       \@xxxii
5017     \endgroup
5018   }%
5019   \newcommand{\XeTeXLinkBox}[1]{%
5020     \begingroup
5021       \leavevmode
5022       \sbox\z@{#1}%
5023       \begingroup
5024         \dimen@=\dp\z@
5025         \advance\dimen@\XeTeXLinkMargin
5026         \setbox\tw@=\llap{%
5027           \hb@xt@\XeTeXLinkMargin{%
5028             \lower\dimen@\hbox{\XeTeXLink@space}%
5029           \hss
5030         }%
5031       }%
5032       \dp\tw@=\dp\z@
5033       \ht\tw@=\ht\z@
5034       \copy\tw@
5035     \endgroup
5036     \copy\z@
5037     \dimen@=\ht\z@
5038     \advance\dimen@\XeTeXLinkMargin
5039     \setbox\tw@=\rlap{%
5040       \hb@xt@\XeTeXLinkMargin{%
5041         \hss
5042         \raise\dimen@\hbox{\XeTeXLink@space}%
5043       }%
5044     }%
5045     \dp\tw@=\dp\z@
5046     \ht\tw@=\ht\z@
5047     \copy\tw@
5048   \endgroup
5049 }%
5050 \else
5051   \newcommand*{\XeTeXLinkBox}[1]{%
5052     \begingroup
5053       \leavevmode
5054       \sbox\z@{#1}%
5055       \copy\z@
5056     \endgroup
5057   }%
5058 \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.

```

5059 \def\hyper@@link{\let\Hy@reserved@a\relax
5060 \ifnextchar{\hyper@link@}{\hyper@link@[link]}%
5061 }
5062 % #1: type
5063 % #2: URL
5064 % #3: destination name
5065 % #4: text
5066 \def\hyper@link@[#1]#2#3#4{%
5067 \ltx@ifempty{#4}{% link text
5068   \Hy@Warning{Suppressing empty link}%
5069 }{%
5070   \begingroup
5071   \protected@edef\Hy@tempa{#2}%
5072   \edef\Hy@tempb{#3}%
5073   \ifx\Hy@tempa\ltx@empty
5074     \ifx\Hy@tempb\ltx@empty
5075       \Hy@Warning{Suppressing link with empty target}%
5076       \toks@{%
5077         \endgroup
5078         \ltx@secondoftwo
5079       }%
5080     \else
5081       \toks@{%
5082         \endgroup
5083         \hyper@link{#1}%
5084       }%
5085     \fi
5086   \else
5087     \toks@{%
5088       \endgroup
5089       \expandafter\hyper@readexternallink#2\\{#1}%
5090     }%
5091   \fi
5092   \Hy@safe@activesfalse
5093   \toks@\expandafter{%
5094     \the\expandafter\toks@
5095     \expandafter{\Hy@tempb}{#4}%
5096   }%
5097   \the\toks@
5098 }%
5099 }

```

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.

```

5100 \def\hyper@readexternallink#1\\#2#3#4{%

```

```

5101 \begingroup
5102   \let\\\relax
5103 \expandafter\endgroup
5104 \expandafter\@hyper\@readexternallink#1\{\#2}\{\#3}\{\#4}%
5105 }
5106 \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.

```

5107 \@hyper\@readexternallink{\#2}\{\#3}\{\#4}\#1::\{\#1}%
5108 }

```

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

```

5109 \def\@pdftempwordfile{file}%
5110 \def\@pdftempwordrun{run}%
5111 \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**:

```

5112 \ifx\\\#6\\\%
5113   \@hyper\linkfile file:\#7\\\{\#3}\{\#2}\{\#7}%
5114 \else
5115   \ifx\\\#4\\\%
5116     \@hyper\linkfile file:\#7\\\{\#3}\{\#2}\{\#7}%
5117   \else

```

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

```

5118   \def\@pdftempa{\#4}%
5119   \ifx\@pdftempa\@pdftempwordfile
5120     \@hyper\linkfile\#7\\\{\#3}\{\#2}\{\#7}%
5121   \else

```

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

```

5122     \ifx\@pdftempa\@pdftempwordrun
5123       \ifHy@pdfa
5124         \Hy@Error{%
5125           PDF/A: Launch action is prohibited%
5126         }\@ehc
5127     \begingroup
5128       \leavevmode
5129       \#2%
5130     \endgroup

```

```

5131      \else
5132      \@hyper@launch#7\{\#3}\#2}%
5133      \fi
5134      \else

```

otherwise its a URL

```

5135      \hyper@linkurl{\#3}\#7\ifx\#2\else\hyper@hash#2\fi}%
5136      \fi
5137      \fi
5138      \fi
5139      \fi
5140 }

```

By default, turn run: into file:

```

5141 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
5142 \hyper@linkurl{\#2}{%
5143 \Hy@linkfileprefix
5144 #1%
5145 \ifx\#3\%
5146 \else
5147 \hyper@hash
5148 #3%
5149 \fi
5150 }%
5151 }

```

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

```

5152 \def\@hyper@linkfile file:#1\#2#3#4{%
5153 %file url,link string, name, original uri
5154 \filename@parse{\#1}%
5155 \ifx\filename@ext\relax
5156 \edef\filename@ext{\XR@ext}%
5157 \fi
5158 \def\use@file{\filename@area\filename@base.\filename@ext}%
5159 \Hy@ifStringEndsWith\filename@ext\XR@ext{%
5160 \hyper@linkfile{\#2}\use@file{\#3}%
5161 }{%
5162 \ifx\@baseurl\@empty
5163 \hyper@linkurl{\#2}{%
5164 #4\ifx\#3\else\hyper@hash#3\fi
5165 }%
5166 \else
5167 \hyper@linkurl{\#2}\use@file\ifx\#3\else\hyper@hash#3\fi}%
5168 \fi
5169 }%
5170 }

5171 \def\Hy@ifStringEndsWith#1#2{%
5172 \begingroup
5173 \edef\x{\#1}%
5174 \@onelevel@sanitize\x
5175 \edef\x{.\x}%
5176 \edef\y{\#2}%
5177 \@onelevel@sanitize\y
5178 \edef\y{.\y}%

```

```

5179 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
5180 \endgroup
5181 \ifx\relax##2\relax
5182 \expandafter\ltx@secondoftwo
5183 \else
5184 \expandafter\ltx@firstoftwo
5185 \fi
5186 }%
5187 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
5188 }

5189 \def\Hy@StringLocalhost{localhost}
5190 \@onelevel@sanitize\Hy@StringLocalhost
5191 \def\Hy@CleanupFile#1{%
5192 \edef#1{#1}%
5193 \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
5194 }
5195 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
5196 \begingroup
5197 \toks@{\endgroup}%
5198 \def\x{#1}%
5199 \ifx\x\@empty
5200 \def\x{#2}%
5201 \ifx\x\@empty
5202 \toks@{\endgroup\def#5{/#3}}%
5203 \else
5204 \@onelevel@sanitize\x
5205 \ifx\x\Hy@StringLocalhost
5206 \toks@{\endgroup\def#5{/#3}}%
5207 \fi
5208 \fi
5209 \fi
5210 \the\toks@
5211 }

```

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.

```

5212 \long\def\hyper@@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
5213 \long\def\@hyper@@@anchor#1\relax#2#3\relax{%
5214 \ifx\#1\%
5215 #2\Hy@Warning{Ignoring empty anchor}%
5216 \else
5217 \def\anchor@spot{#2#3}%
5218 \let\put@me@back\@empty
5219 \ifx\relax#2\relax
5220 \else
5221 \ifHy@nesting
5222 \else
5223 \ifcat a\noexpand#2\relax
5224 \else

```

```

5225     \ifcat 0\noexpand#2 \relax
5226     \else
5227 %     \typeout{Anchor start is not alphanumeric %
5228 %         on input line\the\inputlineno%
5229 %     }%
5230     \let\anchor@spot\@empty
5231     \def\put@me@back{#2#3}%
5232     \fi
5233     \fi
5234     \fi
5235     \fi
5236     \ifHy@activeanchor
5237     \anchor@spot
5238     \else
5239     \hyper@anchor{#1}%
5240     \fi
5241     \expandafter\put@me@back
5242     \fi
5243     \let\anchor@spot\@empty
5244 }
5245 \let\anchor@spot\ltx@empty

```

## 18 Option ‘destlabel’

```

5246 \ifHy@destlabel

```

```

\hyper@newdestlabel

```

```

5247 \def\hyper@newdestlabel#1#2{%
5248 \begingroup
5249 \Hy@safe@activetrue
5250 \edef\x{\endgroup
5251 \noexpand\@newl@bel{HyDL}{#1}{#2}%
5252 }%
5253 \x
5254 }%

```

```

\hyper@destlabel@hook

```

```

5255 \providecommand*\hyper@destlabel@hook{}%

```

```

\Hy@DestRename

```

```

5256 \newcommand*\Hy@DestRename[2]{%
5257 \ltx@ifundefined{HyDL!#1}{%
5258 \begingroup
5259 \Hy@safe@activetrue
5260 \edef\dest@name{#1}%
5261 \edef\label@name{#2}%
5262 \hyper@destlabel@hook
5263 \Hy@IsNotEmpty{dest@name}{%
5264 \Hy@IsNotEmpty{label@name}{%
5265 \global\expandafter
5266 \let\csname HyDL!#1\endcsname\ltx@empty
5267 \if@files
5268 \protected@write\@auxout{}{%

```

```

5269         \string\hyper@newdestlabel
5270         {#1}%
5271         {\label@name}%
5272     }%
5273     \fi
5274 }%
5275 }%
5276 \endgroup
5277 }{}%
5278 }%

```

#### \HyperDestRename

```

5279 \newcommand*{\HyperDestRename}[2]{%
5280     \AtBeginDocument{%
5281         \Hy@DestRename{#1}{#2}%
5282     }%
5283 }%
5284 \AtBeginDocument{%
5285     \let\HyperDestRename\Hy@DestRename
5286 }%

```

#### \Hy@IsNotEmpty

```

5287 \def\Hy@IsNotEmpty#1{%
5288     \ltx@ifundefined{#1}\ltx@gobble{%
5289         \expandafter\ifx\csname#1\endcsname\ltx@empty
5290         \expandafter\ltx@gobble
5291     \else
5292         \expandafter\ltx@firstofone
5293     \fi
5294 }%
5295 }%

5296 \ltx@GlobalAppendToMacro\label@hook{%
5297     \HyperDestRename\@currentHref\label@name
5298 }%

```

#### \HyperDestLabelReplace

```

5299 \def\HyperDestLabelReplace#1{%
5300     \ltx@ifundefined{HyDL@#1}{%
5301         #1%
5302     }{%
5303         \csname HyDL@#1\endcsname
5304     }%
5305 }%

```

#### \HyperDestNameFilter

```

5306 \let\HyperDestNameFilter\HyperDestLabelReplace
5307 \else

```

#### \hyper@newdestlabel

```

5308 \let\hyper@newdestlabel\ltx@gobbletwo

```

#### \HyperDestLabelReplace

```

5309 \let\HyperDestLabelReplace\ltx@firstofone

```

`\HyperDestRename`

@gobbletwo

5310 `\fi`

5311 `\Hy@DisableOption{destlabel}`

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

5312 `\AddLineBeginAux{%`

5313 `\string\providecommand\string\hyper@newdestlabel[2]{}%`

5314 `}`

## 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.

5315 `\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

5316 `\def\HyField@NewFlag#1#2{%`

5317 `\lowercase{\HyField@NewOption{#2}}%`

5318 `\lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%`

5319 `}`

`\HyField@NewFlagOnly`

5320 `\def\HyField@NewFlagOnly#1#2{%`

5321 `\lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%`

5322 `}`

`\HyField@NewOption` #1: option name

5323 `\def\HyField@NewOption#1{%`

5324 `\expandafter\newif\csname ifFld@#1\endcsname`

5325 `\define@key{Field}{#1}[true]{%`

5326 `\lowercase{\Field@boolkey{#1}}{#1}%`

5327 `}%`

5328 `}`

\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

```

5329 \def\HyField@NewBitsetFlag#1#2#3#4{%
5330   \begingroup
5331   \count@=#4\relax
5332   \advance\count@\m@ne
5333   \def\x##1{%
5334     \endgroup
5335     \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
5336     \expandafter\ifx\csname HyField@#3@#1\endcsname\relax
5337       \expandafter\edef\csname HyField@#3@#1\endcsname{%
5338         (\number#4) #2%
5339       }%
5340     \else
5341       \expandafter\edef\csname HyField@#3@#1\endcsname{%
5342         \csname HyField@#3@#1\endcsname
5343         /#2%
5344       }%
5345     \fi
5346   }%
5347   \expandafter\x\expandafter{\the\count@}%
5348 }
```

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

```

5349 \def\HyField@UseFlag#1#2{%
5350   \lowercase{\HyField@@UseFlag{#2}}{#1}%
5351 }
```

\HyField@@UseFlag

```

5352 \def\HyField@@UseFlag#1#2{%
5353   \bitsetSetValue{HyField@#2}{%
5354     \csname HyField@#2@#1\endcsname
5355   }{%
5356     \csname ifFld@#1\endcsname 1\else 0\fi
5357   }%
5358 }
```

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

```

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

\HyField@@SetFlag

```

5362 \def\HyField@@SetFlag#1#2{%
5363   \bitsetSetValue{HyField@#2}{%
5364     \csname HyField@#2@#1\endcsname
5365   }{1}%
5366 }
```

\HyField@PrintFlags



```

5367 \def\HyField@PrintFlags#1#2{%
5368   \ifHy@verbose
5369     \begingroup
5370     \let\Hy@temp\@empty
5371     \let\MessageBreak\relax
5372     \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5373     \bitsetGetSetBitList{HyField@#1}\do{%
5374       \edef\Hy@temp{%
5375         \Hy@temp
5376         \csname HyField@#1@\x\endcsname\MessageBreak
5377       }%
5378     }%
5379   \edef\x{\endgroup
5380     \noexpand\Hy@Info{%
5381       Field flags: %
5382       \expandafter\ifx\@car#1\@nil S\else/\fi
5383       #1 %
5384       \bitsetGetDec{HyField@#1} %
5385       (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5386       \Hy@temp
5387       for #2%
5388     }%
5389   }\x
5390 \fi
5391 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5392 \HyField@NewFlag{Ff}{ReadOnly}{1}
5393 \HyField@NewFlag{Ff}{Required}{2}
5394 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5395 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5396 \HyField@NewFlag{Ff}{Radio}{16}
5397 \HyField@NewFlag{Ff}{Pushbutton}{17}
5398 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5399 \HyField@NewFlag{Ff}{Multiline}{13}
5400 \HyField@NewFlag{Ff}{Password}{14}
5401 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5402 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5403 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5404 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5405 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5406 \HyField@NewFlag{Ff}{Combo}{18}
5407 \HyField@NewFlag{Ff}{Edit}{19}
5408 \HyField@NewFlag{Ff}{Sort}{20}
5409 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5410 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5411 \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.

```
5412 \newif\ifFld@popdown
5413 \define@key{Field}{popdown}[true]{%
5414   \lowercase{\Field@boolkey{#1}}{popdown}%
5415 }
```

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.

```
5416 \HyField@NewFlag{F}{Invisible}{1}
5417 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5418 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5419 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5420 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5421 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5422 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5423 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5424 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

5425 \ifHy@pdfa
5426   \def\HyField@PDFAFflagWarning#1#2{%
5427     \Hy@Warning{%
5428       PDF/A: Annotation flag `#1' must\MessageBreak
5429       be set to `#2'%
5430     }%
5431   }%
5432   \Fld@invisiblefalse
5433   \def\Fld@invisibletrue{%
5434     \HyField@PDFAFflagWarning{invisible}{false}%
5435   }%
5436   \Fld@hiddenfalse
5437   \def\Fld@hiddentrue{%
5438     \HyField@PDFAFflagWarning{hidden}{false}%
5439   }%
5440   \Fld@printtrue
5441   \def\Fld@printfalse{%
5442     \HyField@PDFAFflagWarning{print}{true}%
5443   }%
5444   \Fld@nozoomtrue
5445   \def\Fld@nozoomfalse{%
5446     \HyField@PDFAFflagWarning{nozoom}{true}%
5447   }%
5448   \Fld@norotatetrue
5449   \def\Fld@norotatefalse{%
5450     \HyField@PDFAFflagWarning{norotate}{true}%
5451   }%
5452   \Fld@noviewfalse
5453   \def\Fld@noviewtrue{%
5454     \HyField@PDFAFflagWarning{noview}{false}%
5455   }%
```

5456 \fi

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

```
5457 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5458 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5459 \HyField@NewFlag{Submit}{GetMethod}{4}
5460 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5461 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5462 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
5463 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5464 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5465 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5466 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5467 \HyField@NewFlag{Submit}{ExclFKey}{12}
5468 \HyField@NewFlag{Submit}{EmbedForm}{14}

5469 \define@key{Field}{export}{%
5470   \lowercase{\def\Hy@temp{#1}}%
5471   \@ifundefined{Fld@export@\Hy@temp}{%
5472     \@onelevel@sanitize\Hy@temp
5473     \Hy@Error{%
5474       Unknown export format `'\Hy@temp'.\MessageBreak
5475       Known formats are `FDF', `HTML', `XFDF', and `PDF'%
5476     }\@ehc
5477   }{%
5478     \let\Fld@export\Hy@temp
5479   }%
5480 }
5481 \def\Fld@export{fdf}
5482 \@namedef{Fld@export@fdf}{0}%
5483 \@namedef{Fld@export@html}{1}%
5484 \@namedef{Fld@export@xfdf}{2}%
5485 \@namedef{Fld@export@pdf}{3}%
```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```
5486 \def\HyField@FlagsSubmit{%
5487   \bitsetReset{HyField@Submit}%
5488   \ifcase\@nameuse{Fld@export@\Fld@export} %
5489     % FDF
5490     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5491     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5492     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5493     \HyField@UseFlag{Submit}{IncludeAnnotations}%
5494     \HyField@UseFlag{Submit}{CanonicalFormat}%
5495     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5496     \HyField@UseFlag{Submit}{ExclFKey}%
5497     \HyField@UseFlag{Submit}{EmbedForm}%
5498   \or % HTML
5499     \HyField@SetFlag{Submit}{ExportFormat}%
5500     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5501     \HyField@UseFlag{Submit}{GetMethod}%
5502     \HyField@UseFlag{Submit}{SubmitCoordinates}%
```

```

5503 \HyField@UseFlag{Submit}{CanonicalFormat}%
5504 \or % XFDF
5505 \HyField@SetFlag{Submit}{XFDF}%
5506 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5507 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5508 \HyField@UseFlag{Submit}{CanonicalFormat}%
5509 \or % PDF
5510 \HyField@SetFlag{Submit}{SubmitPDF}%
5511 \HyField@UseFlag{Submit}{GetMethod}%
5512 \fi
5513 \HyField@PrintFlags{Submit}{submit button field}%
5514 \bitsetIsEmpty{HyField@Submit}{%
5515 \let\Fld@submitflags\ltx@empty
5516 }{%
5517 \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
5518 }%
5519 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5520 \def\HyField@FlagsAnnot#1{%
5521 \bitsetReset{HyField@F}%
5522 \HyField@UseFlag{F}{Invisible}%
5523 \HyField@UseFlag{F}{Hidden}%
5524 \HyField@UseFlag{F}{Print}%
5525 \HyField@UseFlag{F}{NoZoom}%
5526 \HyField@UseFlag{F}{NoRotate}%
5527 \HyField@UseFlag{F}{NoView}%
5528 \HyField@UseFlag{F}{Locked}%
5529 \HyField@UseFlag{F}{ToggleNoView}%
5530 \HyField@UseFlag{F}{LockedContents}%
5531 \HyField@PrintFlags{F}{#1}%
5532 \bitsetIsEmpty{HyField@F}{%
5533 \let\Fld@annotflags\ltx@empty
5534 }{%
5535 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
5536 }%
5537 }

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5538 \def\HyField@FlagsPushButton{%
5539 \HyField@FlagsAnnot{push button field}%
5540 \bitsetReset{HyField@Ff}%
5541 \HyField@UseFlag{Ff}{ReadOnly}%
5542 \HyField@UseFlag{Ff}{Required}%
5543 \HyField@UseFlag{Ff}{NoExport}%
5544 \HyField@SetFlag{Ff}{PushButton}%
5545 \HyField@PrintFlags{Ff}{push button field}%
5546 \bitsetIsEmpty{HyField@Ff}{%
5547 \let\Fld@flags\ltx@empty

```

```

5548 }{%
5549 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5550 }%
5551 }

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

5552 \def\HyField@FlagsCheckBox{%
5553 \HyField@FlagsAnnot{check box field}%
5554 \bitsetReset{HyField@Ff}%
5555 \HyField@UseFlag{Ff}{ReadOnly}%
5556 \HyField@UseFlag{Ff}{Required}%
5557 \HyField@UseFlag{Ff}{NoExport}%
5558 \HyField@PrintFlags{Ff}{check box field}%
5559 \bitsetIsEmpty{HyField@Ff}{%
5560 \let\Fld@flags\ltx@empty
5561 }{%
5562 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5563 }%
5564 }

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

5565 \def\HyField@FlagsRadioButton{%
5566 \HyField@FlagsAnnot{radio button field}%
5567 \bitsetReset{HyField@Ff}%
5568 \HyField@UseFlag{Ff}{ReadOnly}%
5569 \HyField@UseFlag{Ff}{Required}%
5570 \HyField@UseFlag{Ff}{NoExport}%
5571 \HyField@UseFlag{Ff}{NoToggleToOff}%
5572 \HyField@SetFlag{Ff}{Radio}%
5573 \HyField@UseFlag{Ff}{RadiosInUnison}%
5574 \HyField@PrintFlags{Ff}{radio button field}%
5575 \bitsetIsEmpty{HyField@Ff}{%
5576 \let\Fld@flags\ltx@empty
5577 }{%
5578 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5579 }%
5580 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

5581 \def\HyField@FlagsText{%
5582 \HyField@FlagsAnnot{text field}%
5583 \bitsetReset{HyField@Ff}%
5584 \HyField@UseFlag{Ff}{ReadOnly}%
5585 \HyField@UseFlag{Ff}{Required}%
5586 \HyField@UseFlag{Ff}{NoExport}%
5587 \HyField@UseFlag{Ff}{Multiline}%
5588 \HyField@UseFlag{Ff}{Password}%

```

```

5589 \HyField@UseFlag{Ff}{FileSelect}%
5590 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5591 \HyField@UseFlag{Ff}{DoNotScroll}%
5592 \ifFld@comb
5593 \ifcase0\ifFld@multiline
5594 \else\ifFld@password
5595 \else\ifFld@fileselect
5596 \else 1\fi\fi\fi\relax
5597 \Hy@Error{%
5598 Field option `comb' cannot used together with\MessageBreak
5599 `multiline', `password', or `fileselect'%
5600 } \@ehc
5601 \else
5602 \HyField@UseFlag{Ff}{Comb}%
5603 \fi
5604 \fi
5605 \HyField@UseFlag{Ff}{RichText}%
5606 \HyField@PrintFlags{Ff}{text field}%
5607 \bitsetIsEmpty{HyField@Ff}{%
5608 \let\Fld@flags\ltx@empty
5609 }{%
5610 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5611 }%
5612 }

```

#### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5613 \def\HyField@FlagsChoice{%
5614 \HyField@FlagsAnnot{choice field}%
5615 \bitsetReset{HyField@Ff}%
5616 \HyField@UseFlag{Ff}{ReadOnly}%
5617 \HyField@UseFlag{Ff}{Required}%
5618 \HyField@UseFlag{Ff}{NoExport}%
5619 \HyField@UseFlag{Ff}{Combo}%
5620 \ifFld@combo
5621 \HyField@UseFlag{Ff}{Edit}%
5622 \fi
5623 \HyField@UseFlag{Ff}{Sort}%
5624 \HyField@UseFlag{Ff}{MultiSelect}%
5625 \ifFld@combo
5626 \ifFld@edit
5627 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5628 \fi
5629 \fi
5630 \HyField@UseFlag{Ff}{CommitOnSelChange}%
5631 \HyField@PrintFlags{Ff}{choice field}%
5632 \bitsetIsEmpty{HyField@Ff}{%
5633 \let\Fld@flags\ltx@empty
5634 }{%
5635 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5636 }%
5637 }

```

## 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`.

```

5638 \def\HyField@PDFChoices#1{%
5639   \begingroup
5640   \global\let\Fld@choices\ltx@empty
5641   \let\HyTmp@optlist\ltx@empty
5642   \let\HyTmp@optitem\relax
5643   \count@=0 %
5644   \kv@parse{#1}{%
5645     \Hy@pdfstringdef\kv@key\kv@key
5646     \ifx\kv@value\relax
5647       \ifnum\Hy@pdf@majorminor@version<103 % implementation note 122, PDF spec 1.7
5648         \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
5649       \else
5650         \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5651       \fi
5652     \else
5653       \Hy@pdfstringdef\kv@value\kv@value
5654       \xdef\Fld@choices{\Fld@choices[(\kv@value)(\kv@key)]}%
5655     \fi
5656     \edef\HyTmp@optlist{%
5657       \HyTmp@optlist
5658       \HyTmp@optitem{\the\count@}{\kv@key}0%
5659     }%
5660     \advance\count@ by 1 %
5661     \@gobbletwo
5662   }%
5663   \xdef\Fld@choices{/Opt[\Fld@choices]}%
5664   \ifFld@multiselect
5665     \HyField@@PDFChoices{DV}\Fld@default
5666     \HyField@@PDFChoices{V}\Fld@value
5667   \else
5668     \ifx\Fld@default\relax
5669     \else
5670       \pdfstringdef\Hy@gtemp\Fld@default
5671       \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5672     \fi
5673     \ifx\Fld@value\relax
5674     \else
5675       \pdfstringdef\Hy@gtemp\Fld@value
5676       \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5677     \fi
5678   \fi
5679   \endgroup
5680 }
```

`\HyField@@PDFChoices`

```

5681 \def\HyField@@PDFChoices#1#2{%
5682   \ifx#2\relax
5683   \else
```

```

5684 \count@=0 %
5685 \def\HyTmp@optitem##1##2##3{%
5686 \def\HyTmp@key{##2}%
5687 \ifx\HyTmp@key\Hy@gtemp
5688 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5689 \HyTmp@optlist
5690 \HyTmp@optitem{##1}{##2}1%
5691 }%
5692 \let\HyTmp@found=Y%
5693 \else
5694 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5695 \HyTmp@optlist
5696 \HyTmp@optitem{##1}{##2}##3%
5697 }%
5698 \fi
5699 }%
5700 \expandafter\comma@parse\expandafter{#2}{%
5701 \pdfstringdef\Hy@gtemp\comma@entry
5702 \let\HyTmp@found=N %
5703 \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5704 \HyTmp@optlist
5705 \ifx\HyTmp@found Y%
5706 \advance\count@ by 1 %
5707 \else
5708 \@onelevel@sanitize\comma@entry
5709 \PackageWarning{hyperref}{%
5710 \string\ChoiceBox: Ignoring value `\'comma@entry',%
5711 \MessageBreak
5712 it cannot be found in the choices%
5713 }%
5714 \fi
5715 \@gobble
5716 }%
5717 \def\HyTmp@optitem##1##2##3{%
5718 \ifnum##3=1 %
5719 (##2)%
5720 \fi
5721 }%
5722 \ifcase\count@
5723 \or
5724 \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5725 \else
5726 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
5727 \ifx#1V%
5728 \def\HyTmp@optitem##1##2##3{%
5729 \ifnum##3=1 %
5730 \@firstofone{ ##1}%
5731 \fi
5732 }%
5733 \edef\HyTmp@optlist{\HyTmp@optlist}%
5734 \xdef\Fld@choices{%
5735 \Fld@choices
5736 /I[\expandafter\@firstofone\HyTmp@optlist]}%
5737 }%

```



```

5738     \fi
5739     \fi
5740 \fi
5741 }

```

## 19.3 Forms

\HyField@SetKeys

```

5742 \def\HyField@SetKeys{%
5743   \kvsetkeys{Field}%
5744 }

5745 \newif\ifFld@checked
5746 \newif\ifFld@disabled
5747 \Fld@checkedfalse
5748 \Fld@disabledfalse
5749 \newcount\Fld@menulength
5750 \newdimen\Fld@Width
5751 \newdimen\Fld@charsize
5752 \Fld@charsize=10\p@
5753 \def\Fld@maxlen{0}
5754 \def\Fld@align{0}
5755 \def\Fld@color{0 0 0 rg}
5756 \def\Fld@bcolor{1 1 1}
5757 \def\Fld@bordercolor{1 0 0}
5758 \def\Fld@bordersep{1\p@}
5759 \def\Fld@borderwidth{1}
5760 \def\Fld@borderstyle{S}
5761 \def\Fld@cbsymbol{4}
5762 \def\Fld@radiosymbol{H}
5763 \def\Fld@rotation{0}
5764 \def\Fld@Form{\ifnextchar[{\@Form}{\@Form[]}}
5765 \def\Fld@endForm{\@endForm}
5766 \newif\ifForm@html
5767 \Form@htmlfalse
5768 \def\Fld@boolkey#1#2{%
5769   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5770 }
5771 \define@key{Form}{action}{%
5772   \hyper@normalise\Hy@DefFormAction{#1}%
5773 }
5774 \def\Hy@DefFormAction{\def\Fld@action}
5775 \def\Fld@enc@html{html}
5776 \define@key{Form}{encoding}{%
5777   \def\Hy@tempa{#1}%
5778   \ifx\Hy@tempa\enc@html
5779     \Form@htmltrue
5780     \def\Fld@export{html}%
5781   \else
5782     \Hy@Warning{%
5783       Form `encoding' key with \MessageBreak
5784       unknown value `#1'%
5785     }%
5786     \Form@htmlfalse

```

```

5787 \fi
5788 }
5789 \define@key{Form}{method}{%
5790 \lowercase{\def\Hy@temp{#1}}}%
5791 \@ifundefined{Form@method@\Hy@temp}{%
5792 \onelevel@sanitize\Hy@temp
5793 \Hy@Error{%
5794   Unknown method ``\Hy@temp'.\MessageBreak
5795   Known values are `post' and `get'%
5796 }\@ehc
5797 }{%
5798 \let\Form@method\Hy@temp
5799 \ifcase\@nameuse{Form@method@\Hy@temp} %
5800 \Fld@getmethodfalse
5801 \else
5802 \Fld@getmethodtrue
5803 \fi
5804 }%
5805 }
5806 \def\Form@method{}
5807 \@namedef{Form@method@post}{0}
5808 \@namedef{Form@method@get}{1}

5809 \newif\ifHyField@NeedAppearances
5810 \def\HyField@NeedAppearancesfalse{%
5811 \global\let\ifHyField@NeedAppearances\iffalse
5812 }
5813 \def\HyField@NeedAppearancetrue{%
5814 \global\let\ifHyField@NeedAppearances\iftrue
5815 }
5816 \HyField@NeedAppearancetrue
5817 \define@key{Form}{NeedAppearances}[true]{%
5818 \edef\Hy@tempa{#1}}%
5819 \ifx\Hy@tempa\Hy@true
5820 \HyField@NeedAppearancetrue
5821 \else
5822 \ifx\Hy@tempa\Hy@false
5823 \HyField@NeedAppearancesfalse
5824 \else
5825 \Hy@Error{%
5826   Unexpected value ``\Hy@tempa'.\MessageBreak
5827   of option `NeedAppearances' instead of\MessageBreak
5828   `true' or `false'%
5829 }\@ehc
5830 \fi
5831 \fi
5832 }
5833 \def\Field@boolkey#1#2{%
5834 \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5835 }
5836 \ifHy@texht
5837 \newtoks\Field@toks
5838 \Field@toks={ }%
5839 \def\Field@addtoks#1#2{%
5840 \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}}%

```

```

5841 \@@processme
5842 }%
5843 \else
5844 \def\Hy@WarnHTMLFieldOption#1{%
5845 \Hy@Warning{%
5846 HTML field option `#1'\MessageBreak
5847 is ignored%
5848 }%
5849 }%
5850 \fi
5851 \def\Fld@checkequals#1=#2=#3\\{%
5852 \def\@currDisplay{#1}%
5853 \ifx\\#2\\%
5854 \def\@currValue{#1}%
5855 \else
5856 \def\@currValue{#2}%
5857 \fi
5858 \expandafter\Hy@pdfstringdef\expandafter\@currValue\expandafter{\@currValue}%
5859 }
5860 \define@key{Field}{loc}{%
5861 \def\Fld@loc{#1}%
5862 }
5863 \define@key{Field}{checked}[true]{%
5864 \lowercase{\Field@boolkey{#1}}{checked}%
5865 }
5866 \define@key{Field}{disabled}[true]{%
5867 \lowercase{\Field@boolkey{#1}}{disabled}%
5868 }
5869 \ifHy@texht
5870 \define@key{Field}{accesskey}{%
5871 \Field@addtoks{accesskey}{#1}%
5872 }%
5873 \define@key{Field}{tabkey}{%
5874 \Field@addtoks{tabkey}{#1}%
5875 }%
5876 \else
5877 \define@key{Field}{accesskey}{%
5878 \Hy@WarnHTMLFieldOption{accesskey}%
5879 }%
5880 \define@key{Field}{tabkey}{%
5881 \Hy@WarnHTMLFieldOption{tabkey}%
5882 }%
5883 \fi
5884 \define@key{Field}{name}{%
5885 \def\Fld@name{#1}%
5886 }
5887 \let\Fld@altname\relax
5888 \define@key{Field}{altname}{%
5889 \def\Fld@altname{#1}%
5890 }
5891 \let\Fld@mappingname\relax
5892 \define@key{Field}{mappingname}{%
5893 \def\Fld@mappingname{#1}%
5894 }

```

```

5895 \define@key{Field}{width}{%
5896   \def\Fld@width{#1}%
5897   \Field@Width#1\setbox0=\hbox{m}%
5898 }
5899 \define@key{Field}{maxlen}{%
5900   \def\Fld@maxlen{#1}%
5901 }
5902 \define@key{Field}{menulength}{%
5903   \Fld@menulength=#1\relax
5904 }
5905 \define@key{Field}{height}{%
5906   \def\Fld@height{#1}%
5907 }
5908 \define@key{Field}{charsize}{%
5909   \setlength{\Fld@charsize}{#1}%
5910 }
5911 \define@key{Field}{borderwidth}{%
5912   \Hy@defaultbp\Fld@borderwidth{#1}%
5913 }
5914 \def\Hy@defaultbp#1#2{%
5915   \begingroup
5916   \afterassignment\Hy@defaultbpAux
5917   \dimen@=#2bp\relax{#1}{#2}%
5918 }
5919 \def\Hy@defaultbpAux#1\relax#2#3{%
5920   \ifx!#1!%
5921     \endgroup
5922     \def#2{#3}%
5923   \else
5924     \edef\x{\endgroup
5925       \def\noexpand#2{%
5926         \strip@pt\dimexpr\dimen@*800/803\relax
5927       }%
5928     }\x
5929   \fi
5930 }%
5931 \define@key{Field}{borderstyle}{%
5932   \let\Hy@temp\Fld@borderstyle
5933   \def\Fld@borderstyle{#1}%
5934   \Hy@Match\Fld@borderstyle{}{%
5935     ^[SDBIU]$%
5936   }{}{%
5937     \Hy@Warning{%
5938       Invalid value ` \@pdfborderstyle'\MessageBreak
5939       for option `pdfborderstyle'. Valid values:\MessageBreak
5940       \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
5941       \space\space I (Inset), U (Underline)\MessageBreak
5942       Option setting is ignored%
5943     }%
5944     \let\Fld@borderstyle\Hy@temp
5945   }%
5946 }
5947 \define@key{Field}{bordersep}{%
5948   \def\Fld@bordersep{#1}%

```

```

5949 }
5950 \define@key{Field}{default}{%
5951   \Hy@pdfstringdef\Fld@default{#1}%
5952 }
5953 \define@key{Field}{align}{%
5954   \def\Fld@align{#1}%
5955 }
5956 \define@key{Field}{value}{%
5957   \Hy@pdfstringdef\Fld@value{#1}%
5958 }
5959 \define@key{Field}{checkboxsymbol}{%
5960   \Fld@DingDef\Fld@cbsymbol{#1}%
5961 }
5962 \define@key{Field}{radiosymbol}{%
5963   \Fld@DingDef\Fld@radiosymbol{#1}%
5964 }
5965 \def\Fld@DingDef#1#2{%
5966   \let\Fld@temp\ltx@empty
5967   \Fld@@@DingDef#2\ding{ }\@nil
5968   \let#1\Fld@temp
5969 }
5970 \def\Fld@@@DingDef#1\ding#2#3\@nil{%
5971   \expandafter\def\expandafter\Fld@temp\expandafter{%
5972     \Fld@temp
5973     #1%
5974   }%
5975   \ifx\\#3\\%
5976     \expandafter\@gobble
5977   \else
5978     \begingroup
5979     \lccode`0=#2\relax
5980     \lowercase{\endgroup
5981       \expandafter\def\expandafter\Fld@temp\expandafter{%
5982         \Fld@temp
5983         0%
5984       }%
5985     }%
5986     \expandafter\@firstofone
5987   \fi
5988   {%
5989     \Fld@@@DingDef#3\@nil
5990   }%
5991 }

5992 \define@key{Field}{rotation}{%
5993   \def\Fld@rotation{#1}%
5994 }

5995 \define@key{Field}{backgroundcolor}{%
5996   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
5997 }
5998 \define@key{Field}{bordercolor}{%
5999   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
6000 }
6001 \define@key{Field}{color}{%

```

```

6002 \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
6003 }

6004 \let\Fld@onclick@code\ltx@empty
6005 \let\Fld@format@code\ltx@empty
6006 \let\Fld@validate@code\ltx@empty
6007 \let\Fld@calculate@code\ltx@empty
6008 \let\Fld@keystroke@code\ltx@empty
6009 \let\Fld@onfocus@code\ltx@empty
6010 \let\Fld@onblur@code\ltx@empty
6011 \let\Fld@onmousedown@code\ltx@empty
6012 \let\Fld@onmouseup@code\ltx@empty
6013 \let\Fld@onenter@code\ltx@empty
6014 \let\Fld@onexit@code\ltx@empty
6015 \def\Hy@temp#1{%
6016   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
6017 }
6018 \def\Hy@@temp#1#2{%
6019   \ifHy@pdfa
6020     \define@key{Field}{#2}{%
6021       \Hy@Error{%
6022         PDF/A: Additional action `#2' is prohibited%
6023       } \@ehc
6024     }%
6025   \else
6026     \define@key{Field}{#2}{%
6027       \def#1{##1}%
6028     }%
6029   \fi
6030 }
6031 \Hy@temp{keystroke}
6032 \Hy@temp{format}
6033 \Hy@temp{validate}
6034 \Hy@temp{calculate}
6035 \Hy@temp{onfocus}
6036 \Hy@temp{onblur}
6037 \Hy@temp{onenter}
6038 \Hy@temp{onexit}

6039 \let\Fld@calculate@sortkey\ltx@empty
6040 \define@key{Field}{calculatesortkey}[1]{%
6041   \def\Fld@calculate@sortkey{#1}%
6042 }

6043 \ifHy@texht
6044   \def\Hy@temp#1{%
6045     \define@key{Field}{#1}{%
6046       \Field@addtoks{#1}{##1}%
6047     }%
6048   }%
6049 \else
6050   \def\Hy@temp#1{%
6051     \define@key{Field}{#1}{%
6052       \Hy@WarnHTMLFieldOption{#1}%
6053     }%
6054   }%

```

```

6055 \fi
6056 \Hy@temp{ondblclick}
6057 \Hy@temp{onmousedown}
6058 \Hy@temp{onmouseup}
6059 \Hy@temp{onmouseover}
6060 \Hy@temp{onmousemove}
6061 \Hy@temp{onmouseout}
6062 \Hy@temp{onkeydown}
6063 \Hy@temp{onkeyup}
6064 \Hy@temp{onselect}
6065 \Hy@temp{onchange}
6066 \Hy@temp{onkeypress}
6067 \ifHy@texht
6068   \define@key{Field}{onclick}{%
6069     \Field@addtoks{onclick}{#1}%
6070   }%
6071 \else
6072   \ifHy@pdfa
6073     \define@key{Field}{onclick}{%
6074       \Hy@Error{%
6075         PDF/A: Action `onclick' is prohibited%
6076       } \@ehc
6077     }%
6078   \else
6079     \define@key{Field}{onclick}{%
6080       \def\Fld@onclick@code{#1}%
6081     }%
6082   \fi
6083 \fi

6084 \DeclareRobustCommand\TextField{%
6085   \@ifnextchar[{\@TextField}{\@TextField[]}%
6086 }
6087 \DeclareRobustCommand\ChoiceMenu{%
6088   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
6089 }
6090 \DeclareRobustCommand\CheckBox{%
6091   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
6092 }
6093 \DeclareRobustCommand\PushButton{%
6094   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
6095 }
6096 \DeclareRobustCommand\Gauge{%
6097   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
6098 }
6099 \DeclareRobustCommand\Submit{%
6100   \@ifnextchar[{\@Submit}{\@Submit[]}%
6101 }
6102 \DeclareRobustCommand\Reset{%
6103   \@ifnextchar[{\@Reset}{\@Reset[]}%
6104 }
6105 \def\LayoutTextField#1#2{% label, field
6106   \def\Hy@temp{#1}%
6107   \ifx\Hy@temp\@empty
6108     #2%

```

```

6109 \else
6110   #1 #2%
6111 \fi
6112 }
6113 \def\LayoutChoiceField#1#2{% label, field
6114   \def\Hy@temp{#1}%
6115   \ifx\Hy@temp\@empty
6116     #2%
6117   \else
6118     #1 #2%
6119   \fi
6120 }
6121 \def\LayoutCheckField#1#2{% label, field
6122   \def\Hy@temp{#1}%
6123   \ifx\Hy@temp\@empty
6124     #2%
6125   \else
6126     #1 #2%
6127   \fi
6128 }
6129 \def\LayoutPushButtonField#1{% button
6130   #1%
6131 }
6132 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6133 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6134 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6135 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6136 \def\MakeButtonField#1{%
6137   \sbox0{%
6138     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
6139   }%
6140   \@tempdima\ht0 %
6141   \advance\@tempdima by \Fld@borderwidth bp %
6142   \advance\@tempdima by \Fld@borderwidth bp %
6143   \ht0\@tempdima
6144   \@tempdima\dp0 %
6145   \advance\@tempdima by \Fld@borderwidth bp %
6146   \advance\@tempdima by \Fld@borderwidth bp %
6147   \dp0\@tempdima
6148   \box0\relax
6149 }
6150 \def\DefaultHeightofSubmit{14pt}
6151 \def\DefaultWidthofSubmit{2cm}
6152 \def\DefaultHeightofReset{14pt}
6153 \def\DefaultWidthofReset{2cm}
6154 \def\DefaultHeightofCheckBox{\normalbaselineskip}
6155 \def\DefaultWidthofCheckBox{\normalbaselineskip}
6156 \def\DefaultHeightofChoiceMenu{\normalbaselineskip}
6157 \def\DefaultWidthofChoiceMenu{\normalbaselineskip}
6158 \def\DefaultHeightofText{\normalbaselineskip}
6159 \def\DefaultHeightofTextMultiline{4\normalbaselineskip}
6160 \def\DefaultWidthofText{3cm}
6161 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
6162 \def\DefaultOptionsofReset{print,name=Reset,noexport}

```



```

6163 \def\DefaultOptionsofPushButton{print}
6164 \def\DefaultOptionsofCheckBox{print}
6165 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

6166 \def\DefaultOptionsofListBox{print}
6167 \def\DefaultOptionsofComboBox{print,edit,sort}
6168 \def\DefaultOptionsofPopdownBox{print}
6169 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

6170 \ifHy@hyperfigures
6171 \Hy@Info{Hyper figures ON}%
6172 \else
6173 \Hy@Info{Hyper figures OFF}%
6174 \fi
6175 \ifHy@nesting
6176 \Hy@Info{Link nesting ON}%
6177 \else
6178 \Hy@Info{Link nesting OFF}%
6179 \fi
6180 \ifHy@hyperindex
6181 \Hy@Info{Hyper index ON}%
6182 \else
6183 \Hy@Info{Hyper index OFF}%
6184 \fi
6185 \ifHy@backref
6186 \Hy@Info{backreferencing ON}%
6187 \else
6188 \Hy@Info{backreferencing OFF}%
6189 \fi
6190 \ifHy@colorlinks
6191 \Hy@Info{Link coloring ON}%
6192 \else
6193 \Hy@Info{Link coloring OFF}%
6194 \fi
6195 \ifHy@ocgcolorlinks
6196 \Hy@Info{Link coloring with OCG ON}%
6197 \else
6198 \Hy@Info{Link coloring with OCG OFF}%
6199 \fi
6200 \ifHy@pdfa
6201 \Hy@Info{PDF/A mode ON}%
6202 \else
6203 \Hy@Info{PDF/A mode OFF}%
6204 \fi

```

## 21 Low-level utility macros

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

```

6205 \edef\hyper@hash{\string#}

```

```

6206 \edef\hyper@tilde{\string~}
6207 \edef\hyper@quote{\string"}

```

Support \label before \begin{document}.

```

6208 \def\@currentHref{Doc-Start}
6209 \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.

```

6210 \Hy@AtBeginDocument{%
6211   \Hy@pdfstringtrue
6212   \PDF@SetupDoc
6213   \let\PDF@SetupDoc\@empty
6214   \Hy@DisableOption{pdfpagescrop}%
6215   \Hy@DisableOption{pdfpagemode}%
6216   \Hy@DisableOption{pdfnonfullscreenpagemode}%
6217   \Hy@DisableOption{pdfdirection}%
6218   \Hy@DisableOption{pdfviewarea}%
6219   \Hy@DisableOption{pdfviewclip}%
6220   \Hy@DisableOption{pdfprintarea}%
6221   \Hy@DisableOption{pdfprintclip}%
6222   \Hy@DisableOption{pdfprintscaling}%
6223   \Hy@DisableOption{pdfduplex}%
6224   \Hy@DisableOption{pdfpicktraybypdfsize}%
6225   \Hy@DisableOption{pdfprintpagerange}%
6226   \Hy@DisableOption{pdfnumcopies}%
6227   \Hy@DisableOption{pdfstartview}%
6228   \Hy@DisableOption{pdfstartpage}%
6229   \Hy@DisableOption{pdftoolbar}%
6230   \Hy@DisableOption{pdfmenubar}%
6231   \Hy@DisableOption{pdfwindowui}%
6232   \Hy@DisableOption{pdffitwindow}%
6233   \Hy@DisableOption{pdfcenterwindow}%
6234   \Hy@DisableOption{pdfdisplaydoctitle}%
6235   \Hy@DisableOption{pdfpagelayout}%
6236   \Hy@DisableOption{pdflang}%
6237   \Hy@DisableOption{baseurl}%
6238   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
6239   \Hy@pdfstringfalse
6240 }

```

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

```

6241 \@ifundefined{@kernel@ref}
6242 {\LetLtxMacro\NoHy@OrgRef\ref
6243  \DeclareRobustCommand*\ref{%
6244   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
6245  }
6246 \LetLtxMacro\NoHy@OrgPageRef\pageref
6247 \DeclareRobustCommand*\pageref{%
6248   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6249 }}{}

```

## 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.

```
6250 \def\NoHyper{%
6251   \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6252   \def\hyper@@anchor##1##2{##2\Hy@xspace@end}%
6253   \global\let\hyper@livelink\hyper@link
6254   \gdef\hyper@link##1##2##3{##3\Hy@xspace@end}%
6255   \let\hyper@anchor\ltx@gobble
6256   \let\hyper@anchorstart\ltx@gobble
6257   \def\hyper@anchorend{\Hy@xspace@end}%
6258   \let\hyper@linkstart\ltx@gobbletwo
6259   \def\hyper@linkend{\Hy@xspace@end}%
6260   \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6261   \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6262   \let\Hy@backout\@gobble
6263 }
6264 \def\stop@hyper{%
6265   \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6266   \let\Hy@backout\@gobble
6267   \let\hyper@@anchor\ltx@gobble
6268   \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
6269   \let\hyper@anchor\ltx@gobble
6270   \let\hyper@anchorstart\ltx@gobble
6271   \def\hyper@anchorend{\Hy@xspace@end}%
6272   \let\hyper@linkstart\ltx@gobbletwo
6273   \def\hyper@linkend{\Hy@xspace@end}%
6274   \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6275   \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6276 }
6277 \def\endNoHyper{%
6278   \global\let\hyper@link\hyper@livelink
6279 }
6280 \end{package}
```

## 23 Package nohyperref

This package is introduced by Sebastian Rahtz.

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

Some low-level commands:

```
6281 \*nohyperref
6282 \RequirePackage{letltxmacro}[2008/06/13]
6283 \let\hyper@@anchor\@gobble
6284 \def\hyper@link##1##2##3{##3}%
6285 \let\hyper@anchorstart\@gobble
6286 \let\hyper@anchorend\@empty
```

```

6287 \let\hyper@linkstart\@gobbletwo
6288 \let\hyper@linkend\@empty
6289 \def\hyper@linkurl#1#2{#1}%
6290 \def\hyper@linkfile#1#2#3{#1}%
6291 \def\hyper@link@[#1]#2#3{#1}%
6292 \let\PDF@SetupDoc\@empty
6293 \let\PDF@FinishDoc\@empty
6294 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

6295 \def\Acrobatmenu#1#2{\leavevmode#2}
6296 \let\pdfstringdefDisableCommands\@gobbletwo
6297 \let\texorpdfstring\@firstoftwo
6298 \let\pdfbookmark\@undefined
6299 \newcommand\pdfbookmark[3]{}{}
6300 \let\phantomsection\@empty
6301 \let\hypersetup\@gobble
6302 \let\hyperbaseurl\@gobble
6303 \newcommand*{\href}[3]{}{#3}
6304 \let\hyperdef\@gobbletwo
6305 \let\hyperlink\@gobble
6306 \let\hypertarget\@gobble
6307 \def\hyperref{%
6308   \@ifnextchar{\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
6309 }
6310 \long\def\@gobbleopt[#1]{}
6311 \let\hyperpage\@empty

```

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

```

6312 \@if@t@r\fmtversion{2022-06-01}
6313 {}%
6314 {%
6315   \LetLtxMacro\NoHy@OrgRef\ref
6316   \DeclareRobustCommand*{\ref}{%
6317     \@ifstar\NoHy@OrgRef\NoHy@OrgRef
6318   }
6319   \LetLtxMacro\NoHy@OrgPageRef\pageref
6320   \DeclareRobustCommand*{\pageref}{%
6321     \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6322   }%
6323 }
6324 \</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}`

```

6325 (*package)
6326 \Hy@AtBeginDocument{%

```

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

Write some stuff into the aux file so if the next run is done without hyperref, then `\newlabel` is defined to cope with the extra arguments. change 2022-03-28:

removed the code for `\contentsline`, it is no longer needed as `\contentsline` has now always four arguments.

```

6327 \if@filesw
6328 \immediate\write\@auxout{%
6329 \string\providecommand\string\HyperFirstAtBeginDocument{%
6330 \string\AtBeginDocument}^^J%
6331 \string\HyperFirstAtBeginDocument{%
6332 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6333 \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6334 \string\gdef\string\newlabel\string#1\string#2{%
6335 \string\newlabelxx{\string#1}\string#2}^^J%
6336 \string\gdef\string\newlabelxx%
6337 \string#1\string#2\string#3\string#4\string#5\string#6{%
6338 \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.

```

6339 \string\AtEndDocument{%
6340 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6341 \string\let\string\newlabel\string\oldnewlabel^^J%
6342 \string\fi%
6343 }^^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.

```

6344 \string\fi%
6345 }^^J%
6346 \string\global\string\let\string\hyper@last\relax^^J%
6347 \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6348 }%
6349 \fi
6350 \let\HyperFirstAtBeginDocument\ltx@firstofone

```

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

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

```

6351 \ifx\hyper@last\@undefined
6352 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
6353 \fi
6354 }

```

## 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`.

```

6355 \ifHy@pdfusetitle
6356 \let\HyOrg@title\title
6357 \let\HyOrg@author\author
6358 \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6359 \def\Hy@scanopttitle[#1]{%
6360 \gdef\Hy@title{#1}%
6361 \HyOrg@title{#1}%

```

```

6362 }%
6363 \def\Hy@scantitle#1{%
6364   \gdef\Hy@title{#1}%
6365   \HyOrg@title{#1}%
6366 }%
6367 \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6368 \def\Hy@scanoptauthor[#1]{%
6369   \gdef\Hy@author{#1}%
6370   \HyOrg@author{#1}%
6371 }%
6372 \def\Hy@scanauthor#1{%
6373   \gdef\Hy@author{#1}%
6374   \HyOrg@author{#1}%
6375 }%

```

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.

```

6376 \begingroup
6377   \def\process@me#1\@nil#2{%
6378     \expandafter\let\expandafter\x\csname @#2\endcsname
6379     \edef\y{\expandafter\strip@prefix\meaning\x}%
6380     \def\c##1##2\@nil{%
6381       \ifx\\##1\\%
6382         \else
6383           \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6384             \expandafter{\x}%
6385         \fi
6386       }%
6387       \expandafter\c\y\relax#1\@nil
6388     }%
6389     \expandafter\process@me\string\@latex@\@nil{title}%
6390     \expandafter\process@me\string\@latex@\@nil{author}%
6391   \endgroup
6392 \fi
6393 \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.

```

6394 \def\Hy@UseMaketitleString#1{%
6395   \ltx@ifundefined{Hy@#1}{}%
6396   \begingroup
6397     \let\Hy@saved@hook\pdfstringdefPreHook
6398     \pdfstringdefDisableCommands{%
6399       \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
6400       \let\newline\\%

```

```

6401     \def\and{; }%
6402     \let\thanks\@gobble%
6403 }%
6404 \expandafter\ifx\csname @pdf#1\endcsname\@empty
6405     \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6406         \csname Hy@#1\endcsname\@empty
6407     }%
6408 \fi
6409 \global\let\pdfstringdefPreHook\Hy@saved@hook
6410 \endgroup
6411 }%
6412 }
6413 \def\Hy@newline@title#1{ #1}
6414 \def\Hy@newline@author#1{, #1}
6415 \def\Hy@UseMaketitleInfos{%
6416     \Hy@UseMaketitleString{title}%
6417     \Hy@UseMaketitleString{author}%
6418 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

6419 \RequirePackage{atbegshi}[2007/09/09]
6420 \let\Hy@EveryPageHook\ltx@empty
6421 \let\Hy@EveryPageBoxHook\ltx@empty
6422 \let\Hy@FirstPageHook\ltx@empty
6423 \AtBeginShipout{%
6424     \Hy@EveryPageHook
6425     \ifx\Hy@EveryPageBoxHook\ltx@empty
6426     \else
6427         \setbox\AtBeginShipoutBox=\vbox{%
6428             \offinterlineskip
6429             \Hy@EveryPageBoxHook
6430             \box\AtBeginShipoutBox
6431         }%
6432     \fi
6433 }
6434 \ltx@iffileloaded{hpdftex.def}{%
6435     \AtBeginShipout{%
6436         \Hy@FirstPageHook
6437         \global\let\Hy@FirstPageHook\ltx@empty
6438     }%
6439 }{%
6440     \AtBeginShipoutFirst{%
6441         \Hy@FirstPageHook
6442     }%
6443 }
6444 \g@addto@macro\Hy@FirstPageHook{%
6445     \PDF@FinishDoc

```

```

6446 \global\let\PDF@FinishDoc\ltx@empty
6447 }

```

## 27.1 PDF /PageLabels

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

```

6448 \ifHy@pdfpagelabels
6449 \begingroup\expandafter\expandafter\expandafter\endgroup
6450 \expandafter\ifx\csname thepage\endcsname\relax
6451 \Hy@pdfpagelabelsfalse
6452 \Hy@WarningNoLine{%
6453   Option `pdfpagelabels' is turned off\MessageBreak
6454   because \string\thepage\space is undefined%
6455 }%
6456 \csname fi\endcsname
6457 \csname iffalse\expandafter\endcsname
6458 \fi

```

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

```

6459 \def\thispdfpagelabel#1{%
6460   \gdef\HyPL@thisLabel{#1}%
6461 }%
6462 \global\let\HyPL@thisLabel\relax

```

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

```

6463 \let\HyPL@Labels\ltx@empty

```

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

```

6464 \newcount\Hy@abspage
6465 \Hy@abspage=0 %

```

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

```

6466 \def\HyPL@LastType{init}%
6467 \def\HyPL@LastNumber{0}%
6468 \let\HyPL@LastPrefix\ltx@empty

```

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

```

6469 \def\HyPL@arabic{D}%
6470 \def\HyPL@Roman{R}%
6471 \def\HyPL@roman{r}%
6472 \def\HyPL@Alph{A}%
6473 \def\HyPL@alph{a}%
6474 \let\HyPL@SlidesSetPage\ltx@empty
6475 \ltx@ifclassloaded{slides}{%
6476   \def\HyPL@SlidesSetPage{%
6477     \advance\c@page\ltx@one
6478     \ifnum\value{page}>\ltx@one
6479       \protected@edef\HyPL@SlidesOptionalPage{%
6480         \Hy@SlidesFormatOptionalPage{\thepage}%
6481       }%
6482     \else

```



```

6483     \let\HyPL@SlidesOptionalPage\ltx@empty
6484     \fi
6485     \advance\c@page-\ltx@one
6486     \def\HyPL@page{%
6487       \csname the\Hy@SlidesPage\endcsname
6488       \HyPL@SlidesOptionalPage
6489     }%
6490   }%
6491 }{}%

```

\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.

```

6492 \def\HyPL@EveryPage{%
6493   \begingroup
6494     \ifx\HyPL@thisLabel\relax
6495       \let\HyPL@page\thepage
6496       \HyPL@SlidesSetPage
6497     \else
6498       \let\HyPL@page\HyPL@thisLabel
6499       \global\let\HyPL@thisLabel\relax
6500     \fi
6501     \let\HyPL@Type\relax
6502     \ifnum\c@page>0 %
6503       \ifx\HyPL@SlidesSetPage\ltx@empty
6504         \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6505       \fi
6506     \fi
6507     \let\Hy@temp Y%
6508     \ifx\HyPL@Type\HyPL@LastType
6509     \else
6510       \let\Hy@temp N%
6511     \fi
6512     \ifx\HyPL@Type\relax
6513       \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6514     \else
6515       \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6516     \fi
6517     \ifx\HyPL@Prefix\HyPL@LastPrefix
6518     \else
6519       \let\Hy@temp N%
6520     \fi
6521     \if Y\Hy@temp
6522       \advance\c@page by -1 %
6523       \ifnum\HyPL@LastNumber=\the\c@page\relax
6524       \else
6525         \let\Hy@temp N%
6526       \fi
6527       \Hy@StepCount\c@page
6528     \fi
6529     \if N\Hy@temp
6530       \ifx\HyPL@Type\relax
6531         \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6532       \else
6533         \HyPL@StorePageLabel{%

```

```

6534     \ifx\HyPL@Prefix\@empty
6535     \else
6536     /P(\HyPL@Prefix)%
6537     \fi
6538     /S/\csname HyPL\HyPL@Type\endcsname
6539     \ifnum\the\c@page=1 %
6540     \else
6541     \space/St \the\c@page
6542     \fi
6543     }%
6544     \fi
6545     \fi
6546     \xdef\HyPL@LastNumber{\the\c@page}%
6547     \global\let\HyPL@LastType\HyPL@Type
6548     \global\let\HyPL@LastPrefix\HyPL@Prefix
6549     \endgroup
6550     \Hy@GlobalStepCount\Hy@abspage
6551     }%

```

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

```

6552     \def\HyPL@CheckThePage#1\@nil{%
6553     \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6554     }%

```

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

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

```

6555     \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6556     \def\Hy@tempa{#4}%
6557     \def\Hy@tempb{\csname\endcsname\c@page}%
6558     \ifx\Hy@tempa\Hy@tempb
6559     \expandafter\ifx\csname HyPL#3\endcsname\relax
6560     \else
6561     \def\HyPL@Type{#3}%
6562     \def\HyPL@Prefix{#2}%
6563     \fi
6564     \else
6565     \begingroup
6566     \let\Hy@next\endgroup
6567     \let\HyPL@found\@undefined
6568     \def\arabic{\HyPL@Format{arabic}}%
6569     \def\Roman{\HyPL@Format{Roman}}%
6570     \def\roman{\HyPL@Format{roman}}%
6571     \def\Alph{\HyPL@Format{Alph}}%
6572     \def\alph{\HyPL@Format{alph}}%
6573     \protected@edef\Hy@temp{#1}%
6574     \ifx\HyPL@found\relax
6575     \toks@\expandafter{\Hy@temp}%
6576     \edef\Hy@next{\endgroup
6577     \noexpand\HyPL@@@CheckThePage\the\toks@
6578     \noexpand\HyPL@found\relax\noexpand\@nil
6579     }%

```

```

6580     \fi
6581     \Hy@next
6582   \fi
6583 }%

```

`\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`.

```

6584 \def\HyPL@Format#1#2{%
6585   \ifx\HyPL@found\@undefined
6586     \expandafter\ifx\csname c@#2\endcsname\c@page
6587       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6588     \else
6589       \expandafter\noexpand\csname#1\endcsname{#2}%
6590     \fi
6591   \else
6592     \expandafter\noexpand\csname#1\endcsname{#2}%
6593   \fi
6594 }%

```

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

```

6595 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6596   \def\Hy@tempa{#3}%
6597   \def\Hy@tempb{\HyPL@found\relax}%
6598   \ifx\Hy@tempa\Hy@tempb
6599     \def\HyPL@Type{#2}%
6600     \def\HyPL@Prefix{#1}%
6601   \fi
6602 }%

```

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

```

6603 \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`.

```

6604 \def\HyPL@Useless{0<</S/D>>}%
6605 \@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.

```

6606 \def\HyPL@SetPageLabels{%
6607   \@onelevel@sanitize\HyPL@Labels
6608   \ifx\HyPL@Labels\@empty
6609     \else
6610     \ifx\HyPL@Labels\HyPL@Useless
6611     \else
6612       \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6613     \fi
6614   \fi
6615 }%

```

```

6616 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6617 \fi

```

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

```

6618 \Hy@DisableOption{pdfpagelabels}
6619 \</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`

```

6620 \<pdfTeX>
6621 \pdf@ifdraftmode{%
6622   \let\Hy@PutCatalog\ltx@gobble
6623 }{%
6624   \let\Hy@PutCatalog\pdfcatalog
6625 }
6626 \</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.

```

6627 \<vtex>
6628 \providecommand*\XR@ext}{pdf}
6629 \edef\Hy@VTeXversion{%
6630   \ifx\VTeXversion\@undefined
6631     \z@
6632   \else
6633     \ifx\VTeXversion\relax
6634       \z@
6635     \else
6636       \VTeXversion
6637     \fi
6638   \fi
6639 }
6640 \begingroup
6641   \ifnum\Hy@VTeXversion<660 %
6642     \gdef\Hy@PutCatalog#1{%
6643       \Hy@WarningNoLine{%
6644         VTeX 6.59g or above required for pdfpagelabels%
6645       }%
6646     }%
6647   \else
6648     \gdef\Hy@PutCatalog#1{%
6649       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6650     }%
6651     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6652       \ifx\#2\%
6653         \else
6654           \immediate\special{!pdfpagelabels #2}%

```

```

6655 \fi
6656 }%
6657 \fi
6658 \endgroup
6659 </vtx>

6660 < *pdftex | vtx >

```

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

```

6661 \ifHy@pdfpagelabels
6662 \def\HyPL@StorePageLabel#1{%
6663 \toks@{\expandafter{\HyPL@Labels}}%
6664 \xdef\HyPL@Labels{%
6665 \the\toks@
6666 \the\Hy@abspage<<#1>>%
6667 }%
6668 }%

```

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.

```

6669 \RequirePackage{atveryend}[2009/12/07]%
6670 \AtVeryEndDocument{%
6671 \HyPL@SetPageLabels
6672 }%

6673 \fi
6674 </pdftex | vtx >

```

### 27.1.2 xetex

```

6675 < *xetex >
6676 \HyPsd@LoadUnicode
6677 \Hy@unicodetrue
6678 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6679 \else
6680 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6681 \fi
6682 \HyPsd@LoadStringEncoding
6683 \define@key{Hyp}{unicode}[true]{%
6684 \Hy@boolkey{unicode}{#1}%
6685 \ifHy@unicode
6686 \else
6687 \Hy@Warning{%
6688 XeTeX driver only supports `unicode=true'. Ignoring\MessageBreak
6689 option setting `unicode=false'%
6690 }%
6691 \Hy@unicodetrue
6692 \fi
6693 }
6694 \define@key{Hyp}{pdfencoding}{%
6695 \edef\HyPsd@temp{#1}%
6696 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6697 \let\HyPsd@pdfencoding\HyPsd@temp
6698 \else

```

```

6699 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6700 \let\HyPsd@pdfencoding\HyPsd@temp
6701 \else
6702 \Hy@Warning{%
6703 XeTeX driver only supports\MessageBreak
6704 `pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6705 setting `pdfencoding=\HyPsd@temp'%
6706 }%
6707 \fi
6708 \fi
6709 }
6710 \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:

```

6711 \def\setpdfinkmargin#1{%
6712 \begingroup
6713 \setlength{\dimen@}{#1}%
6714 \special{dvipdfmx:config g \strip@pt\dimen@}%
6715 \endgroup}
6716 \</xetex>

```

set the pdf version

```

6717 \<dvipdfm|xetex>
6718 \special{pdf:majorversion \Hy@pdf@majorversion}
6719 \special{pdf:minorversion \Hy@pdf@minorversion}
6720 \</dvipdfm|xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6721 \<*pdfmarkbase>
6722 \begingroup
6723 \@ifundefined{headerps@out}{-}{-}%
6724 \toks@{\expandafter{\Hy@FirstPageHook}}%
6725 \xdef\Hy@FirstPageHook{%
6726 \noexpand\headerps@out{%
6727 systemdict /pdfmark known%
6728 {%
6729 userdict /?pdfmark systemdict /exec get put%
6730 }{%
6731 userdict /?pdfmark systemdict /pop get put %
6732 userdict /pdfmark systemdict /cleartomark get put%
6733 }%
6734 ifelse%
6735 }%
6736 \the\toks@
6737 }%
6738 }%
6739 \endgroup
6740 \</pdfmarkbase>

```

\Hy@PutCatalog

```

6741 \<dvipdfm|xetex>\def\Hy@PutCatalog#1{\@pdfm@mark{docview <<#1>>}}
6742 \<*pdfmarkbase>
6743 \def\Hy@PutCatalog#1{%
6744 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} <<#1>>}}%

```

```

6745 }
6746 </pdfmarkbase>

6747 <*pdfmarkbase | dvipdfm | xetex>
6748 \ifHy@pdfpagelabels

```

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

```

6749 \def\HyPL@StorePageLabel#1{%
6750   \if@filesw
6751     \begingroup
6752     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6753     \immediate\write\@mainaux{%
6754       \string\HyPL@Entry{\Hy@tempa}%
6755     }%
6756   \endgroup
6757 \fi
6758 }%

```

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.

```

6759 \Hy@AtBeginDocument{%
6760   \if@filesw
6761     \immediate\write\@mainaux{%
6762       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6763     }%
6764   \fi
6765   \ifx\HyPL@Labels\@empty
6766     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6767   \else
6768     \HyPL@SetPageLabels
6769   \fi
6770   \let\HyPL@Entry\@gobble
6771 }%

```

`\HyPL@Entry`

```

6772 \def\HyPL@Entry#1{%
6773   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6774     \HyPL@Labels
6775     #1%
6776   }%
6777 }%

6778 \fi
6779 </pdfmarkbase | dvipdfm | xetex>

6780 <*packageEnd>

6781 \ifx\MaybeStopEarly\relax
6782 \else
6783   \Hy@stoppeearlytrue
6784   \expandafter\MaybeStopEarly
6785 \fi
6786 \Hy@stoppeearlyfalse

```

## 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

```

6787 \def\Hy@CounterExists#1{%
6788   \begingroup\expandafter\expandafter\expandafter\endgroup
6789   \expandafter\ifx\csname c@#1\endcsname\relax
6790     \expandafter\@gobble
6791   \else
6792     \begingroup\expandafter\expandafter\expandafter\endgroup
6793     \expandafter\ifx\csname the#1\endcsname\relax
6794       \expandafter\expandafter\expandafter\@gobble
6795     \else
6796       \expandafter\expandafter\expandafter\@firstofone
6797     \fi
6798   \fi
6799 }
6800 \Hy@CounterExists{section}{%
6801   \providecommand\theHequation{\theHsection.\arabic{equation}}}%
6802 }
6803 \providecommand\theHequation{\arabic{equation}}}%
6804 \Hy@CounterExists{part}{%
6805   \providecommand\theHpart{\arabic{part}}}%
6806 }
6807 \ltx@ifundefined{thechapter}{%
6808   \providecommand\theHsection   {\arabic{section}}}%
6809   \providecommand\theHfigure    {\arabic{figure}}}%
6810   \providecommand\theHtable     {\arabic{table}}}%
6811 }{%
6812   \providecommand\theHchapter   {\arabic{chapter}}}%
6813   \providecommand\theHfigure    {\theHchapter.\arabic{figure}}}%
6814   \providecommand\theHtable     {\theHchapter.\arabic{table}}}%
6815   \providecommand\theHsection   {\theHchapter.\arabic{section}}}%
6816 }
6817 \providecommand\theHsubsection {\theHsection.\arabic{subsection}}
6818 \providecommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}

```



```

6819 \providecommand\theHparagraph {\theHsubsubsection.\arabic{paragraph}}
6820 \providecommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
6821 \providecommand\theHtheorem {\theHsection.\arabic{theorem}}
6822 \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.

```

6823 \let\H@item\item
6824 \newcounter{Item}
6825 \def\theHItem{\arabic{Item}}
6826 \def\item{%
6827   \@hyper@itemfalse
6828   \if@nmbrrlist\@hyper@itemtrue\fi
6829   \H@item
6830 }

6831 \providecommand\theHenumi {\theHItem}
6832 \providecommand\theHenumii {\theHItem}
6833 \providecommand\theHenumiii {\theHItem}
6834 \providecommand\theHenumiv {\theHItem}
6835 \providecommand\theHHfootnote {\arabic{Hfootnote}}
6836 \providecommand\theHmpfootnote{\arabic{mpfootnote}}
6837 \@ifundefined{theHHmpfootnote}{%
6838   \let\theHHmpfootnote\theHHfootnote
6839 }{}

```

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.

```

6840 \let\H@refstepcounter\refstepcounter
6841 \edef\name@of@eq{equation}%

```

We do not want the handler for `\refstepcounter` to cut in during the processing of `\item` (we handle that separately), so we provide a bypass conditional. change 2022-04-22: removed test for the slide counter and for the equation name. change 2022-05-02: added the new boolean set by `\LinkTargetOn/\LinkTargetOff`

```

6842 \newif\if@hyper@item
6843 \newif\if@skiphyperref
6844 \@hyper@itemfalse
6845 \@skiphyperreffalse
6846 \ExplSyntaxOn
6847 \def\refstepcounter#1{%
6848   \legacy_if:nF {Hy@pdfstring}
6849   {
6850     \H@refstepcounter{#1}%
6851     \bool_lazy_and:nnT
6852       { \__hyp_target_create_bool }
6853       { ! \legacy_if_p:n{@skiphyperref} }
6854     {
6855       \legacy_if:nTF {@hyper@item}
6856       {
6857         \stepcounter{Item}%
6858         \hyper@refstepcounter{Item}%

```

```

6859     \@hyper@itemfalse
6860   }
6861   {
6862     \@hyper@refstepcounter{#1}%
6863   }
6864 }
6865 }
6866 }
6867 \ExplSyntaxOff
6868 \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.

```

6869 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

6870 \def\hyper@refstepcounter#1{%
6871   \edef\This@name{#1}%
6872   \ifx\This@name\name@of@eq
6873     \@ifundefined{theHequation}{%
6874       \make@stripped@name{\theequation}%
6875       \let\theHequation\newname
6876     }{}%
6877   \fi
6878   \HyCnt@ProvideTheHCounter{#1}%
6879   \hyper@makecurrent{#1}%
6880   \ifmeasuring@
6881   \else
6882     \Hy@raisedlink{%
6883       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6884     }%
6885   \fi
6886 }

```

`\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.

```

6887 \def\HyCnt@ProvideTheHCounter#1{%
6888   \@ifundefined{theH#1}{%
6889     \expandafter\def\csname theH#1\endcsname{}%
6890     \def\Hy@temp{\@elt{#1}}%
6891     \ltx@onelevel@sanitize\Hy@temp
6892     \let\HyOrg@elt\@elt
6893     \edef\@elt{%
6894       \noexpand\HyCnt@LookForParentCounter
6895       \expandafter\noexpand\csname theH#1\endcsname
6896     }%
6897     \cl@@ckpt

```

```

6898 \let\@elt\HyOrg@elt
6899 \expandafter
6900 \ltx@LocalAppendToMacro\csname theH#1\expandafter\endcsname
6901 \expandafter{%
6902   \expandafter\@arabic\csname c@#1\endcsname
6903 }%
6904 }{}%
6905 }

```

\Hy@LookForParentCounter

```

6906 \def\HyCnt@LookForParentCounter#1#2{%
6907   \expandafter\let\expandafter\Hy@temp@A\csname cl@#2\endcsname
6908   \ltx@ifundefined{cl@#2}{%
6909     }{%
6910     \ltx@onelevel@sanitize\Hy@temp@A
6911     \edef\Hy@temp@A{%
6912       \noexpand\in@{\Hy@temp}{\Hy@temp@A}%
6913     }\Hy@temp@A
6914     \ifin@
6915       \ltx@ifundefined{theH#2}{%
6916         \expandafter\ltx@LocalAppendToMacro\expandafter#1%
6917         \expandafter{%
6918           \expandafter\@arabic\csname c@#2\endcsname.%
6919         }%
6920       }{%
6921         \expandafter\ltx@LocalAppendToMacro\expandafter#1%
6922         \expandafter{%
6923           \csname theH#2\endcsname.%
6924         }%
6925       }%
6926     \fi
6927   }%
6928 }

```

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.

```

6929 \begingroup\expandafter\expandafter\expandafter\endgroup
6930 \expandafter\ifx\csname chapter\endcsname\relax
6931   \def\Hy@chapterstring{section}%
6932 \else
6933   \def\Hy@chapterstring{chapter}%
6934 \fi
6935 \def\Hy@appendixstring{appendix}
6936 \def\Hy@chapapp{\Hy@chapterstring}
6937 \ltx@ifundefined{appendix}{%
6938 }{%
6939   \let\HyOrg@appendix\appendix
6940   \def\Hy@AlphNoErr#1{%
6941     \ifnum\value{#1}>26 %
6942       Alph\number\value{#1}%

```

```

6943 \else
6944 \ifnum\value{#1}<1 %
6945   Alph\number\value{#1}%
6946 \else
6947   \Alph{#1}%
6948 \fi
6949 \fi
6950 }%
6951 \def\appendix{%
6952 \ltx@ifundefined{chapter}{%
6953   \gdef\theHsection{\Hy@AlphNoErr{section}}}%
6954 }{%
6955   \gdef\theHchapter{\Hy@AlphNoErr{chapter}}}%
6956 }%
6957 \xdef\Hy@chapapp{\Hy@appendixstring}%
6958 \HyOrg@appendix
6959 }%
6960 }

```

\Hy@Test@alph

```

6961 \def\Hy@Test@alph#1{%
6962 \ifcase#1\or
6963   a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6964   k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
6965   u\or v\or w\or x\or y\or z%
6966 \else
6967   \@ctrerr
6968 \fi
6969 }

```

\Hy@Test@Alph

```

6970 \def\Hy@Test@Alph#1{%
6971 \ifcase#1\or
6972   A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6973   K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6974   U\or V\or W\or X\or Y\or Z%
6975 \else
6976   \@ctrerr
6977 \fi
6978 }

```

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

```

6979 \NewHook{__hyp/target/setname }
6980 \define@key{Hyp}{next-anchor}{%
6981   \AddToHookNext{__hyp/target/setname}%
6982   {\Hy@MakeCurrentHref{#1}}}%
6983 }

```

\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.

```

6984 \def\hyper@makecurrent#1{%
6985 \begingroup

```

```

6986 \Hy@safe@activetrue
6987 \edef\Hy@param{#1}%
6988 \ifx\Hy@param\Hy@chapterstring
6989 \let\Hy@param\Hy@chapapp
6990 \fi
6991 \ifHy@hypertextnames
6992 \let\@number\@firstofone
6993 \def\@fnsymbol##1{fnsymbol\number##1}%
6994 \def\@arabic##1{\number##1}%
6995 \ifx\@alph\Hy@Test@alph
6996 \else
6997 \def\@alph{alph\number}%
6998 \fi
6999 \ifx\@Alph\Hy@Test@Alph
7000 \else
7001 \def\@Alph{Alph\number}%
7002 \fi
7003 \ifHy@naturalnames
7004 \let\textlatin\@firstofone
7005 \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
7006 \else
7007 \xdef\HyperGlobalCurrentHref{%
7008 \csname
7009 the%
7010 \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
7011 #1%
7012 \endcsname
7013 }%
7014 \fi
7015 \xdef\HyperGlobalCurrentHref{%
7016 \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
7017 }%
7018 \else
7019 \Hy@GlobalStepCount\Hy@linkcounter
7020 \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
7021 \fi
7022 \endgroup
7023 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7024 \ifHy@localanchorname
7025 \let\@currentHref\HyperLocalCurrentHref
7026 \else
7027 \global\let\@currentHref\HyperGlobalCurrentHref
7028 \fi
7029 \UseHook{__hyp/target/setname}%
7030 }

```

\Hy@MakeCurrentHref

```

7031 \def\Hy@MakeCurrentHref#1{%
7032 \edef\HyperLocalCurrentHref{#1}%
7033 \@onelevel@sanitize\HyperLocalCurrentHref
7034 \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
7035 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7036 \ifHy@localanchorname
7037 \let\@currentHref\HyperLocalCurrentHref

```

```

7038 \else
7039   \global\let\@currentHref\HyperGlobalCurrentHref
7040 \fi
7041 }

```

`\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.

```

7042 \def\Hy@MakeCurrentHrefAuto#1{%
7043   \Hy@GlobalStepCount\Hy@linkcounter
7044   \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
7045   \UseHook{__hyp/target/setname}}

```

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

```

7046 \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.

```

7047 \def\hypergetref#1{\getrefbykeydefault{#1}{}}{??}}
7048 \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:

```

7049 \@ifpackageloaded{titlesec}{%
7050   \def\ttl@Hy@steplink#1{%
7051     \Hy@MakeCurrentHrefAuto{#1*}%
7052     \edef\ttl@Hy@saveanchor{%
7053       \noexpand\Hy@raisedlink{%
7054         \noexpand\hyper@anchorstart{\@currentHref}%
7055         \noexpand\hyper@anchorend
7056         \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
7057         \noexpand\ttl@Hy@PatchSaveWrite
7058       }%
7059     }%
7060   }%
7061   \def\ttl@Hy@PatchSaveWrite{%
7062     \begingroup
7063     \toks@\expandafter{\ttl@savewrite}%
7064     \edef\x{\endgroup
7065       \def\noexpand\ttl@savewrite{%
7066         \let\noexpand\@currentHref
7067         \noexpand\ttl@Hy@SavedCurrentHref
7068         \the\toks@
7069       }%
7070     }%
7071   \x

```

```

7072 }%
7073 \def\ttl@Hy@refstepcounter#1{%
7074   \let\ttl@b\Hy@raisedlink
7075   \def\Hy@raisedlink##1{%
7076     \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
7077   }%
7078   \refstepcounter{#1}%
7079   \let\Hy@raisedlink\ttl@b
7080 }%
7081 }{}

```

## 31 Package varioref support

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

```

7082 \@if@t@r\fmtversion{2021-11-15}
7083 {}%
7084 {
7085   \AtBeginDocument{%
7086     \def\Hy@varioref@undefined{{??}{??}{}}{}{}
7087     \@ifpackageloaded{varioref}{%
7088       \def\vref@pagenum#1#2{%
7089         \@ifundefined{r@#2}{%
7090           \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
7091         }{}%
7092         \edef#1{\getpagerefnumber{#2}}%
7093       }%
7094     }{}
7095   }
7096 }

```

## 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

```

7097 \@ifpackageloaded{longtable}{%
7098   \begingroup
7099   \def\y{\LT@array}%
7100   \@ifundefined{scr@LT@array}{%
7101     \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
7102   }{\def\y{\scr@LT@array}}%
7103   \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
7104     \expandafter\endgroup
7105     \expandafter\def\y[##1]##2{%
7106       \H@refstepcounter{#1}%
7107       \hyper@makecurrent{table}%
7108       \let\Hy@LT@currentHref\@currentHref

```

```

7109      #2\@sharp####4%
7110    }%
7111  }%
7112  \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil
Patch of \LT@start: add anchor before first line after \vskip\LTpre
7113  \begingroup
7114  \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
7115    \endgroup
7116    \def\LT@start{%
7117      #1%
7118      \ifvoid\LT@foot#2\fi
7119      \let\@currentHref\Hy@LT@currentHref
7120      \Hy@raisedlink{%
7121        \hyper@anchorstart{\@currentHref}\hyper@anchorend
7122      }%
7123      #3%
7124    }%
7125  }%
7126  \expandafter\x\LT@start\@nil
7127 }{}

```

### 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.

```

7128 \let\new@refstepcounter\refstepcounter
7129 \let\H@equation\equation
7130 \let\H@endequation\endequation
7131 \@ifpackageloaded{amsmath}{%
7132   \long\def\Hy@temp{%
7133     \incr@eqnum
7134     \mathdisplay@push
7135     \st@rredfalse \global\@eqnswtrue
7136     \mathdisplay{equation}%
7137   }%
7138   \ifx\Hy@temp\equation
7139     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
7140       \csname iftrue\endcsname
7141   \else
7142     \long\def\equation{%
7143       \mathdisplay@push
7144       \st@rredfalse \global\@eqnswtrue
7145       \mathdisplay{equation}%
7146       \incr@eqnum
7147     }%
7148   \fi
7149 \fi
7150 }{}

```



```

7151 \def\equation{%
7152   \let\refstepcounter\H@refstepcounter
7153   \H@equation
7154   \@ifundefined{theHequation}{%
7155     \make@stripped@name{\theequation}%
7156     \let\theHequation\newname
7157   }{}%
7158   \hyper@makecurrent{equation}%

```

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

```

7159   \mathopen{%
7160     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}}%
7161   }%
7162   \let\refstepcounter\new@refstepcounter
7163 }%
7164 \def\endequation{%
7165   \ifx\Hy@raisedlink\ltx@empty
7166     \hyper@anchorend
7167   \else
7168     \mathclose{\Hy@raisedlink{\hyper@anchorend}}}%
7169   \fi
7170   \H@endequation
7171 }%
7172 }

```

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.

```

7173 \newif\if@eqnstar
7174 \@eqnstarfalse
7175 \let\H@eqnarray\eqnarray
7176 \let\H@endeqnarray\endeqnarray
7177 \def\eqnarray{%
7178   \let\Hy@reserved@a\relax
7179   \def\@currentHref{}%
7180   \H@eqnarray
7181   \if@eqnstar
7182   \else
7183     \ifx\\\@currentHref\\%
7184     \else
7185       \@ifundefined{theHequation}{%
7186         \make@stripped@name{\theequation}%
7187         \let\theHequation\newname
7188       }{}%
7189       \hyper@makecurrent{equation}%
7190       \mathopen{%
7191         \Hy@raisedlink{%
7192           \hyper@anchorstart{\@currentHref}\hyper@anchorend
7193         }%
7194       }%
7195       \fi
7196     \fi

```

```

7197 }
7198 \def\endeqnarray{%
7199   \H@endeqnarray
7200 }

```

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.

```

7201 \@namedef{eqnarray*}{%
7202   \def\@eqnocr{\nonumber\@seqnocr}\@eqnstartrue\eqnarray
7203 }
7204 \@namedef{endeqnarray*}{%
7205   \nonumber\endeqnarray\@eqnstarfalse
7206 }

```

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

```

7207 \ltx@ifundefined{subeqnarray}{-}{%
7208   \let\H@subeqnarray\subeqnarray
7209   \let\H@endsubeqnarray\endsubeqnarray
7210   \def\subeqnarray{%
7211     \let\Hy@reserved@a\relax
7212     \H@subeqnarray
7213     \@ifundefined{theHequation}{%
7214       \make@stripped@name{\theequation}%
7215       \let\theHequation\newname
7216     }{}%
7217     \hyper@makecurrent{equation}%
7218     \hyper@anchorstart{\@currentHref}{-}\hyper@anchorend
7219   }%
7220   \def\endsubeqnarray{%
7221     \H@endsubeqnarray
7222   }%
7223   \providecommand\theHsubequation{\theHequation\alph{subequation}}%
7224 }

```

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

```

7225 \def\make@stripped@name#1{%
7226   \begingroup
7227   \escapechar\m@ne
7228   \global\let\newname\@empty
7229   \protected@edef\Hy@tempa{#1}%
7230   \edef\@tempb{%
7231     \noexpand\@tfor\noexpand\Hy@tempa:=%
7232     \expandafter\strip@prefix\meaning\Hy@tempa
7233   }%
7234   \@tempb\do{%
7235     \if\Hy@tempa\else
7236       \if\Hy@tempa\else
7237         \xdef\newname{\newname\Hy@tempa}%
7238       \fi
7239     \fi
7240   }%
7241   \endgroup

```

7242 }

Support for amsmath's subequations:

```

7243 \begingroup\expandafter\expandafter\expandafter\endgroup
7244 \expandafter\ifx\csname subequations\endcsname\relax
7245 \else
7246 \let\HyOrg@subequations\subequations
7247 \def\subequations{%
7248 \stepcounter{equation}%
7249 \protected@edef\theHparentequation{%
7250 \@ifundefined{theHequation}\theequation\theHequation
7251 }%
7252 \addtocounter{equation}{-1}%
7253 \HyOrg@subequations
7254 \def\theHequation{\theHparentequation\alph{equation}}%
7255 \ignorespaces
7256 }%
7257 \fi

```

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

```

7258 \Hy@AtBeginDocument{%
7259 \@ifpackageloaded{cleveref}{%
7260 \let\Hy@savethm\@thm
7261 \def\@thm{\ifhmode\unskip\fi\Hy@savethm}%
7262 }{%
7263 \@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

```

```

7264 \def\Hy@temp#1#2#3{%
7265 \ifhmode\unskip\unskip\par\fi
7266 \normalfont
7267 \trivlist
7268 \let\thmheadnl\relax
7269 \let\thm@swap\@gobble
7270 \let\thm@indent\indent % indent
7271 \thm@headfont{\scshape}% heading font small caps
7272 \thm@notefont{\fontseries\mddefault\upshape}%
7273 \thm@headpunct{.}% add period after heading
7274 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7275 \thm@space@setup
7276 #1% style overrides
7277 \@topsep \thm@preskip % used by thm head
7278 \@topsepadd \thm@postskip % used by \@endparenv
7279 \def\@tempa{#2}\ifx\@empty\@tempa
7280 \def\@tempa{\@oparg{\@begintheorem{#3}{}}}%
7281 \else
7282 \refstepcounter{#2}%
7283 \def\@tempa{%
7284 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}}%
7285 }%
7286 \fi

```

```

7287 \@tempa
7288 }%
7289 \ifx\Hy@temp\@thm
7290 \def\@thm#1#2#3{%
7291 \ifhmode
7292 \unskip\unskip\par
7293 \fi
7294 \normalfont
7295 \trivlist
7296 \let\thmheadnl\relax
7297 \let\thm@swap\@gobble
7298 \let\thm@indent\indent % indent
7299 \thm@headfont{\scshape}% heading font small caps
7300 \thm@notefont{\fontseries\mddefault\upshape}%
7301 \thm@headpunct{.}% add period after heading
7302 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7303 \thm@space@setup
7304 #1% style overrides
7305 \@topsep \thm@preskip % used by thm head
7306 \@topsepadd \thm@postskip % used by \@endparenv
7307 \def\dth@counter{#2}%
7308 \ifx\@empty\dth@counter
7309 \def\@tempa{%
7310 \@oparg{\@begintheorem{#3}{}}{}%
7311 }%
7312 \else
7313 \H@refstepcounter{#2}%
7314 \hyper@makecurrent{#2}%
7315 \let\Hy@dth@currentHref\@currentHref
7316 \def\@tempa{%
7317 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
7318 }%
7319 \fi
7320 \@tempa
7321 }%
7322 \else
7323 \def\@thm#1#2#3{%
7324 \ifhmode
7325 \unskip\unskip\par
7326 \fi
7327 \normalfont
7328 \trivlist
7329 \let\thmheadnl\relax
7330 \let\thm@swap\@gobble
7331 \thm@notefont{\fontseries\mddefault\upshape}%
7332 \thm@headpunct{.}% add period after heading
7333 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7334 \thm@space@setup
7335 #1% style overrides
7336 \@topsep \thm@preskip % used by thm head
7337 \@topsepadd \thm@postskip % used by \@endparenv
7338 \def\dth@counter{#2}%
7339 \ifx\@empty\dth@counter
7340 \def\@tempa{%

```

```

7341     \@oparg{\@begintheorem{#3}{}}{}%
7342   }%
7343   \else
7344     \H@refstepcounter{#2}%
7345     \hyper@makecurrent{#2}%
7346     \let\Hy@dth@currentHref\@currentHref
7347     \def\@tempa{%
7348       \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
7349     }%
7350   \fi
7351   \@tempa
7352 }%
7353 \fi
7354 \dth@everypar={%
7355   \@minipagefalse
7356   \global\@newlistfalse
7357   \@noparitemfalse
7358   \if@inlabel
7359     \global\@inlabelfalse
7360   \begingroup
7361     \setbox\z@\lastbox
7362     \ifvoid\z@
7363       \kern-\itemindent
7364     \fi
7365   \endgroup
7366   \ifx\@empty\dth@counter
7367   \else
7368     \Hy@raisedlink{%
7369       \hyper@anchorstart{%
7370         \ltx@ifundefined{Hy@dth@currentHref}%
7371         \@currentHref\Hy@dth@currentHref
7372       }\hyper@anchorend
7373     }%
7374   \fi
7375   \unhbox\@labels
7376 \fi
7377 \if@nobreak
7378   \@nobreakfalse \clubpenalty\@M
7379 \else
7380   \clubpenalty\@clubpenalty \everypar{}%
7381 \fi
7382 }%
7383 }%

```

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

```

7384 {%
7385 \let\Hy@savethm\@thm
7386 \def\@thm{\ifhmode\unskip\fi\Hy@savethm}%
7387 }%
7388 }%
7389 }

```

## 34 Footnotes

The footnote mark is a hypertext link, and the text is a target. We separately number the footnotes sequentially through the text, separately from whatever labels the text assigns. Too hard to keep track of markers otherwise. If the raw forms `\footnotemark` and `\footnotetext` are used, force them to use un-hyper original. If `\hyper@nopath@footnote` is defined we don't patch but assume that addings links to footnotes is handled elsewhere.

```

7390 \ifundefined{hyper@nopath@footnote}{%
7391 \ifHy@hyperfootnotes
7392 \newcounter{Hfootnote}%
7393 \let\H@@footnotetext\@footnotetext
7394 \let\H@@footnotemark\@footnotemark
7395 \def\@xfootnotenext[#1]{%
7396 \begingroup
7397 \csname c@\@mpfn\endcsname #1\relax
7398 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7399 \endgroup
7400 \ifx\@footnotetext\@mpfootnotetext
7401 \expandafter\H@@mpfootnotetext
7402 \else
7403 \expandafter\H@@@footnotetext
7404 \fi
7405 }%
7406 \def\@xfootnotemark[#1]{%
7407 \begingroup
7408 \c@footnote #1\relax
7409 \unrestored@protected@xdef\@thefnmark{\thefnmark}%
7410 \endgroup
7411 \H@@@footnotemark
7412 }%
7413 \let\H@@mpfootnotetext\@mpfootnotetext
7414 \long\def\@mpfootnotetext#1{%
7415 \H@@mpfootnotetext{%
7416 \ifHy@nesting
7417 \expandafter\ltx@firstoftwo
7418 \else
7419 \expandafter\ltx@secondoftwo
7420 \fi
7421 }%
7422 \expandafter\hyper@@@anchor\expandafter{%
7423 \Hy@footnote@currentHref
7424 }{\ignorespaces #1}%
7425 }{%
7426 \Hy@raisedlink{%
7427 \expandafter\hyper@@@anchor\expandafter{%
7428 \Hy@footnote@currentHref
7429 }{\relax}%
7430 }\ignorespaces #1%
7431 }%
7432 }%
7433 }%
7434 \long\def\@footnotetext#1{%

```

```

7435 \H@@footnotetext{%
7436 \ifHy@nesting
7437 \expandafter\ltx@firstoftwo
7438 \else
7439 \expandafter\ltx@secondoftwo
7440 \fi
7441 {%
7442 \expandafter\hyper@@anchor\expandafter{%
7443 \Hy@footnote@currentHref
7444 }\ignorespaces #1}%
7445 }{%
7446 \Hy@raisedlink{%
7447 \expandafter\hyper@@anchor\expandafter{%
7448 \Hy@footnote@currentHref
7449 }\relax}%
7450 }%
7451 \let\@currentHref\Hy@footnote@currentHref
7452 \let\@currentlabelname\@empty
7453 \ignorespaces #1%
7454 }%
7455 }%
7456 }%

```

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.

```

7457 \def\@footnotemark{%
7458 \leavevmode
7459 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7460 \stepcounter{Hfootnote}%
7461 \global\let\Hy@saved@currentHref\@currentHref
7462 \hyper@makecurrent{Hfootnote}%
7463 \global\let\Hy@footnote@currentHref\@currentHref
7464 \global\let\@currentHref\Hy@saved@currentHref
7465 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7466 \@makefnmark
7467 \hyper@linkend
7468 \ifhmode\spacefactor\@x@sf\fi
7469 \relax
7470 }%

```

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

```

7471 \@ifpackageloaded{tabularx}{%
7472 \let\HyOrg@TX@endtabularx\TX@endtabularx
7473 \def\Hy@tabularx@hook{%
7474 \let\@footnotetext\H@@footnotetext
7475 \let\@footnotemark\H@@footnotemark
7476 \let\@mpfootnotetext\H@@mpfootnotetext
7477 }%
7478 \begingroup
7479 \toks@\expandafter{\TX@endtabularx}%
7480 \xdef\Hy@gtemp{%

```

```

7481 \noexpand\Hy@tabularx@hook
7482 \the\toks@
7483 }%
7484 \endgroup
7485 \let\TX@endtabularx\Hy@gtemp
7486 }{}%

```

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

```

7487 \@ifpackageloaded{longtable}{%
7488 \CheckCommand{\LT@p@ftntext}[1]{%
7489 \edef\@tempa{%
7490 \the\LT@p@ftn
7491 \noexpand\footnotetext[\the\c@footnote]%
7492 }%
7493 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7494 }%
7495 \long\def\LT@p@ftntext#1{%
7496 \edef\@tempa{%
7497 \the\LT@p@ftn
7498 \begingroup
7499 \noexpand\c@footnote=\the\c@footnote\relax
7500 \noexpand\protected@xdef\noexpand\@thefnmark{%
7501 \noexpand\thempfn
7502 }%
7503 \noexpand\Hy@LT@footnotetext{%
7504 \Hy@footnote@currentHref
7505 }%
7506 }%
7507 \global\LT@p@ftn\expandafter{%
7508 \@tempa{#1}%
7509 \endgroup
7510 }%
7511 }%
7512 \long\def\Hy@LT@footnotetext#1#2{%
7513 \H@@footnotetext{%
7514 \ifHy@nesting
7515 \hyper@@anchor{#1}{#2}%
7516 \else
7517 \Hy@raisedlink{%
7518 \hyper@@anchor{#1}{\relax}%
7519 }%
7520 \def\@currentHref{#1}%
7521 \let\@currentlabelname\@empty
7522 #2%
7523 \fi
7524 }%
7525 }%
7526 }{}%

```

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

```

7527 \@ifpackageloaded{fancyvrb}{%
7528 \def\V@@footnotetext{%

```



```

7529 \insert\footins\bgroup
7530 \csname reset@font\endcsname
7531 \footnotesize
7532 \interlinepenalty\interfootnotelinepenalty
7533 \splittopskip\footnotesep
7534 \splitmaxdepth\dp\strutbox
7535 \floatingpenalty \@MM
7536 \hsize\columnwidth
7537 \@parboxrestore
7538 \def\@currentcounter{footnote}%
7539 \protected@edef\@currentlabel{\csname p@footnote\endcsname\@thefn-
mark}%
7540 \@makefnmark{}%
7541 \rule{\z@}{\footnotesep}%
7542 \bgroup
7543 \aftergroup\V@@@footnotetext
7544 \Hy@raisedlink{%
7545 \expandafter\hyper@@anchor\expandafter{%
7546 \Hy@footnote@currentHref
7547 }\relax}%
7548 }%
7549 \let\@currentHref\Hy@footnote@currentHref
7550 \let\@currentlabelname\@empty
7551 \ignorespaces
7552 }%
7553 }{}%

```

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

```

7554 \def\Hy@temp#1{%
7555 \begingroup
7556 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7557 \endgroup
7558 \@footnotemark
7559 }%
7560 \ifx\Hy@temp\footref
7561 \def\footref#1{%
7562 \begingroup
7563 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7564 \endgroup
7565 \H@@@footnotemark
7566 }%
7567 \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.

```

7568 \let\HyOrg@maketitle\maketitle
7569 \def\maketitle{%
7570 \let\Hy@saved@footnotemark\@footnotemark
7571 \let\Hy@saved@footnotetext\@footnotetext
7572 \let\@footnotemark\H@@@footnotemark
7573 \let\@footnotetext\H@@@footnotetext
7574 \@ifnextchar[\Hy@maketitle@optarg{% ]
7575 \HyOrg@maketitle

```

```

7576 \Hy@maketitle@end
7577 }%
7578 }%
7579 \def\Hy@maketitle@optarg[#1]{%
7580 \HyOrg@maketitle[{#1}]%
7581 \Hy@maketitle@end
7582 }%
7583 \def\Hy@maketitle@end{%
7584 \ifx\@footnotemark\H@@footnotemark
7585 \let\@footnotemark\Hy@saved@footnotemark
7586 \fi
7587 \ifx\@footnotetext\H@@footnotetext
7588 \let\@footnotetext\Hy@saved@footnotetext
7589 \fi
7590 }%

```

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

```

7591 \def\realfootnote{%
7592 \@ifnextchar[\@xfootnote%]
7593 {\stepcounter{\@mpfn}%
7594 \protected@xdef\@thefnmark{\thempfn}%
7595 \H@@@footnotemark\H@@@footnotetext
7596 }%
7597 }%

7598 \fi
7599 }{}
7600 \Hy@DisableOption{hyperfootnotes}

7601 \</packageEnd>
7602 \< *check>
7603 \checklatex
7604 \checkcommand\def\@xfootnotenext[#1]{%
7605 \begingroup
7606 \csname c@\@mpfn\endcsname #1\relax
7607 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7608 \endgroup
7609 \@footnotetext
7610 }
7611 \checkcommand\def\@xfootnotemark[#1]{%
7612 \begingroup
7613 \c@footnote #1\relax
7614 \unrestored@protected@xdef\@thefnmark{\thefnmark}%
7615 \endgroup
7616 \@footnotemark
7617 }
7618 \checkcommand\def\@footnotemark{%
7619 \leavevmode
7620 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7621 \@makefnmark
7622 \ifhmode\spacefactor\@x@sf\fi
7623 \relax
7624 }
7625 \</check>
7626 \< *packageEnd>

```

## 35 Float captions

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

```

7627 \def\caption{%
7628   \ifx\@captype\@undefined
7629     \@latex@error{\noexpand\caption outside float}\@ehd
7630     \expandafter\@gobble
7631   \else
7632     \H@refstepcounter\@captype
7633     \let\Hy@tempa\@caption
7634     \@ifundefined{float@caption}{%
7635       }{%
7636         \expandafter\ifx\csname @float@cc@\@captype\endcsname
7637           \float@caption
7638         \let\Hy@tempa\Hy@float@caption
7639       \fi
7640     }%
7641     \expandafter\@firstofone
7642   \fi
7643   {\@dblarg{\Hy@tempa\@captype}}}%
7644 }
7645 \long\def\@caption#1[#2]#3{%
7646   \expandafter\ifx\csname if@capstart\expandafter\endcsname
7647     \csname iftrue\endcsname
7648     \global\let\@currentHref\hc@currentHref
7649   \else
7650     \hyper@makecurrent{\@captype}%
7651   \fi
7652   \@ifundefined{NR@getttitle}{%
7653     \def\@currentlabelname{#2}%
7654   }{%
7655     \NR@getttitle{#2}%
7656   }%
7657   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7658     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7659   }%
7660   \begingroup
7661     \@parboxrestore
7662     \if@minipage
7663       \@setminipage
7664     \fi
7665     \normalsize
7666     \expandafter\ifx\csname if@capstart\expandafter\endcsname
7667       \csname iftrue\endcsname
7668       \global\@capstartfalse
7669     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7670   \else
7671     \@makecaption{\csname fnum@#1\endcsname}{%
7672       \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7673   \ifHy@nesting
7674     \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%

```

```

7675     \else
7676     \Hy@raisedlink{%
7677         \expandafter\hyper@@anchor\expandafter{%
7678             \@currentHref
7679             }{\relax}%
7680     }%
7681     #3%
7682     \fi
7683 }%
7684 \fi
7685 \par
7686 \endgroup
7687 }

```

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’.

```

7688 \let\Hy@float@caption\@caption
7689 \newcommand{\HyNew@float@makebox}[1]{%
7690     \HyOrg@float@makebox{%
7691         #1\relax
7692         \ifx\Hy@float@currentHref\@undefined
7693         \else
7694             \expandafter\hyper@@anchor\expandafter{%
7695                 \Hy@float@currentHref
7696                 }{\relax}%
7697         \global\let\Hy@float@currentHref\@undefined
7698     \fi
7699 }%
7700 }%
7701 \@ifpackageloaded{float}{%
7702     \def\Hy@float@caption{%
7703         \ifx\Hy@float@currentHref\@undefined
7704             \hyper@makecurrent{\@cuptype}%
7705         \global\let\Hy@float@currentHref\@currentHref
7706         \else
7707             \let\@currentHref\Hy@float@currentHref
7708         \fi
7709         \float@caption
7710     }%
7711     \let\HyOrg@float@makebox\float@makebox
7712     \let\float@makebox\HyNew@float@makebox
7713 }{}
7714 \</packageEnd>
7715 \< *check>
7716 \checklatex[1999/06/01 - 2000/06/01]
7717 \checkcommand\def\caption{%
7718     \ifx\@cuptype\@undefined
7719         \@latex@error{\noexpand\caption outside float}\@ehd
7720     \expandafter\@gobble
7721     \else
7722         \refstepcounter\@cuptype

```

```

7723 \expandafter\@firstofone
7724 \fi
7725 {\@dblarg{\@caption\@capytype}}%
7726 }
7727 \checkcommand\long\def\@caption#1[#2]#3{%
7728 \par
7729 \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7730 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7731 }%
7732 \begingroup
7733 \@parboxrestore
7734 \ifminipage
7735 \@setminipage
7736 \fi
7737 \normalsize
7738 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7739 \endgroup
7740 }
7741 \</check>
7742 \<*\packageEnd>

```

## 36 Bibliographic references

This is not very robust, since many styles redefine these things. The package used to redefine `\@citex` and the like; then we tried adding the `hyperref` call explicitly into the `.aux` file. Now we redefine `\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, let's make an attempt to get *natbib* right, because that's a powerful, important package. Patrick Daly ([daly@linmpi.mpg.de](mailto:daly@linmpi.mpg.de)) has provided hooks for us, so all we need to do is activate them.

```

7743 \def\hyper@natlinkstart#1{%
7744 \Hy@backout{#1}%
7745 \hyper@linkstart{cite}{cite.#1}%
7746 \def\hyper@nat@current{#1}%
7747 }
7748 \def\hyper@natlinkend{%
7749 \hyper@linkend
7750 }
7751 \def\hyper@natlinkbreak#1#2{%
7752 \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7753 }
7754 \def\hyper@natanchorstart#1{%
7755 \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7756 }
7757 \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.

```

7758 \ltx@ifundefined{NAT@parse}{%

```

```

7759 \providecommand*\@extra@binfo{}%
7760 \providecommand*\@extra@b@citeb{}%
7761 \def\bibcite#1#2{%
7762   \@newl@bel{b}{#1\@extra@binfo}{%
7763     \hyper@@link[cite]{}{cite.#1\@extra@b@citeb}{#2}%
7764   }%
7765 }%
7766 \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.”.

```

7767 \let\Hy@bibcite\bibcite
7768 \begingroup
7769   \@ifundefined{bbl@cite@choice}{}{%
7770     \g@addto@macro\bbl@cite@choice{%
7771       \let\bibcite\Hy@bibcite
7772     }%
7773   }%
7774 \endgroup

```

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

```

7775 \providecommand*\@BIBLABEL{}\@biblabel}%
7776 \def\@bibitem[#1]#2{%
7777   \@skiphyperrreftrue
7778   \H@item[%
7779     \ifx\Hy@raisedlink\@empty
7780       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7781       \@BIBLABEL{#1}%
7782       \hyper@anchorend
7783     \else
7784       \Hy@raisedlink{%
7785         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7786       }%
7787       \@BIBLABEL{#1}%
7788     \fi
7789     \hfill
7790   ]%
7791   \@skiphyperrreffalse
7792   \if@filesw
7793     \begingroup
7794       \let\protect\noexpand
7795       \immediate\write\@auxout{%
7796         \string\bibcite{#2}{#1}%
7797       }%
7798     \endgroup
7799   \fi
7800   \ignorespaces
7801 }%

```

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

```

7802 \def\@bibitem#1{%
7803   \@skiphyperrreftrue\H@item\@skiphyperrreffalse
7804   \Hy@raisedlink{%
7805     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend

```

```

7806 }%
7807 \if@filesw
7808 \begingroup
7809 \let\protect\noexpand
7810 \immediate\write\@auxout{%
7811 \string\bibcite{#1}{\the\value{\@listctr}}}%
7812 }%
7813 \endgroup
7814 \fi
7815 \ignorespaces
7816 }%
7817 }{}

7818 \</packageEnd>
7819 \<check>
7820 \checklatex
7821 \checkcommand\def\@bibitem[#1]#2{%
7822 \item[\@biblabel{#1}\hfill]%
7823 \if@filesw
7824 {%
7825 \let\protect\noexpand
7826 \immediate\write\@auxout{%
7827 \string\bibcite{#2}{#1}%
7828 }%
7829 }%
7830 \fi
7831 \ignorespaces
7832 }
7833 \checkcommand\def\@bibitem#1{%
7834 \item
7835 \if@filesw
7836 \immediate\write\@auxout{%
7837 \string\bibcite{#1}{\the\value{\@listctr}}}%
7838 }%
7839 \fi
7840 \ignorespaces
7841 }
7842 \</check>
7843 \<packageEnd>

```

### 36.1 Package harvard

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

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

```

7844 \@ifpackageloaded{harvard}{%
7845 \Hy@AtBeginDocument{%
7846 \Hy@Info{*** compatibility with harvard **** }%
7847 \Hy@raiselinksfalse
7848 \def\harvardcite#1#2#3#4{%

```

```

7849 \global\@namedef{HAR@fn@#1}{\hyper@@link[cite]{}{cite.#1}{#2}}%
7850 \global\@namedef{HAR@an@#1}{\hyper@@link[cite]{}{cite.#1}{#3}}%
7851 \global\@namedef{HAR@yr@#1}{\hyper@@link[cite]{}{cite.#1}{#4}}%
7852 \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7853 }%
7854 \def\HAR@citetoaux#1{%
7855 \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7856 \ifHy@backref
7857 \ifx\@empty\@currentlabel
7858 \else
7859 \@bsphack
7860 \if@filesw
7861 \protected@write\@auxout{}{%
7862 \string\@writefile{brf}{%
7863 \string\backcite{#1}{%
7864 {\thepage}{\@currentlabel}{\@currentHref}%
7865 }%
7866 }%
7867 }%
7868 \fi
7869 \@esphack
7870 \fi
7871 \fi
7872 }%
7873 \def\harvarditem{%
7874 \ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7875 }%
7876 \def\@harvarditem[#1]#2#3#4#5\par{%
7877 \item[]%
7878 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7879 \if@filesw
7880 \begingroup
7881 \def\protect##1{\string ##1\space}%
7882 \ifthenelse{\equal{#1}{\null}}{%
7883 {\def\next{{#4}{#2}{#2}{#3}}}%
7884 {\def\next{{#4}{#2}{#1}{#3}}}%
7885 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7886 \endgroup
7887 \fi
7888 \protect\hspace*{-\labelwidth}%
7889 \protect\hspace*{-\labelsep}%
7890 \ignorespaces
7891 #5%
7892 \ifHy@backref
7893 \newblock
7894 \backref{\csname br@#4\endcsname}%
7895 \fi
7896 \par
7897 }%

```

\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:

```

7898 \long\def\HAR@checkcitations#1#2#3#4{%

```



```

7899 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
7900 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7901 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
7902 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7903 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
7904 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7905 \else
7906 \@tempswatrue
7907 \fi
7908 \else
7909 \@tempswatrue
7910 \fi
7911 \else
7912 \@tempswatrue
7913 \fi
7914 }%
7915 }%

7916 {}

```

## 36.2 Package chicago

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

```

7917 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

7918 \def\citeN{%
7919 \def\@citesep{-1000}%
7920 \def\@cite##1##2{##1}%
7921 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7922 \@citedata@opt
7923 }%

```

`\shortciteN`

```

7924 \def\shortciteN{%
7925 \def\@citesep{-1000}%
7926 \def\@cite##1##2{##1}%
7927 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7928 \@citedata@opt
7929 }%

```

`\@citedata@opt`

```

7930 \def\@citedata@opt{%
7931 \let\@cite@opt\@empty
7932 \@ifnextchar [{%
7933 \@tempswatrue
7934 \@citedatax@opt
7935 }{%
7936 \@tempswafalse
7937 \@citedatax[]%
7938 }%
7939 }%

```

\@citedatax@opt

```

7940 \def\@citedatax@opt[#1]{%
7941   \def\@cite@opt{, #1}%
7942   \@citedatax[{#1}]%
7943 }%

7944 }{}

```

## 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.

```

7945 \ltx@ifclassloaded{slides}{%
7946   \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7947   \def\Hy@PageAnchorSlidesPlain{%
7948     \advance\c@page\ltx@one
7949     \edef\Hy@TempPageAnchor{%
7950       \noexpand\hyper@@anchor{%
7951         page.\the\c@slide.\the\c@overlay.\the\c@note%
7952         \ifnum\c@page=\ltx@one
7953           \else
7954             .\the\c@page
7955           \fi
7956         }%
7957       }%
7958       \advance\c@page-\ltx@one
7959     }%
7960     \def\Hy@PageAnchorSlide{%
7961       \advance\c@page\ltx@one
7962       \ifnum\c@page>\ltx@one
7963         \ltx@ifundefined{theHpage}{%
7964           \protected@edef\Hy@TheSlideOptionalPage{%
7965             \Hy@SlidesFormatOptionalPage{\theHpage}%
7966           }%
7967         }{%
7968           \protected@edef\Hy@TheSlideOptionalPage{%
7969             \Hy@SlidesFormatOptionalPage{\theHpage}%
7970           }%
7971         }%
7972       \else
7973         \def\Hy@TheSlideOptionalPage{}%
7974       \fi
7975       \advance\c@page-\ltx@one
7976       \pdfstringdef\@the@H@page{%
7977         \csname
7978           the%
7979           \ltx@ifundefined{theH\Hy@SlidesPage}{H}%
7980           \Hy@SlidesPage

```

```

7981 \endcsname
7982 \Hy@TheSlideOptionalPage
7983 }%
7984 \ltx@gobblethree
7985 }%
7986 \def\Hy@SlidesPage{slide}%
7987 \g@addto@macro\slide{%
7988 \def\Hy@SlidesPage{slide}%
7989 }%
7990 \g@addto@macro\overlay{%
7991 \def\Hy@SlidesPage{overlay}%
7992 }%
7993 \g@addto@macro\note{%
7994 \def\Hy@SlidesPage{note}%
7995 }%
7996 }{%
7997 \def\Hy@PageAnchorSlidesPlain{}%
7998 \def\Hy@PageAnchorSlide{}%
7999 }
8000 \def\Hy@EveryPageAnchor{%
8001 \Hy@DistillerDestFix
8002 \ifHy@pageanchor
8003 \ifHy@hypertextnames
8004 \ifHy@plainpages
8005 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
8006 \Hy@PageAnchorSlidesPlain
8007 \else
8008 \begingroup
8009 \let\@number\@firstofone
8010 \Hy@unicodedefalse
8011 \Hy@PageAnchorSlide
8012 \pdfstringdef\@the@H@page{\thepage}%
8013 \endgroup
8014 \EdefUnescapeString\@the@H@page{\@the@H@page}%
8015 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
8016 \fi
8017 \else
8018 \Hy@GlobalStepCount\Hy@pagecounter
8019 \def\Hy@TempPageAnchor{%
8020 \hyper@@anchor{page.\the\Hy@pagecounter}%
8021 }%
8022 \fi
8023 \vbox to 0pt{%
8024 \kern\voffset
8025 \kern\topmargin
8026 \kern-1bp\relax
8027 \hbox to 0pt{%
8028 \kern\hoffset
8029 \kern\ifodd\value{page}%
8030 \oddsidemargin
8031 \else
8032 \evensidemargin
8033 \fi
8034 \kern-1bp\relax

```

```

8035     \Hy@TempPageAnchor\relax
8036     \hss
8037   }%
8038   \vss
8039 }%
8040 \fi
8041 }
8042 \g@addto@macro\Hy@EveryPageBoxHook{%
8043   \Hy@EveryPageAnchor
8044 }

```

## 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 tocf file.

```

8045 \providecommand\protected@file@percent{}

8046 \def\addcontentsline#1#2#3{% toc extension, type, tag
8047   \begingroup
8048     \let\label\@gobble
8049     \ifx\@currentHref\@empty
8050       \Hy@Warning{%
8051         No destination for bookmark of \string\addcontentsline,%
8052         \MessageBreak destination is added%
8053       }%
8054     \phantomsection
8055   \fi
8056   \expandafter\ifx\csname toplevel@#2\endcsname\relax
8057     \begingroup
8058       \def\Hy@tempa{#1}%
8059       \ifx\Hy@tempa\Hy@bookmarkstype
8060         \Hy@WarningNoLine{%
8061           bookmark level for unknown #2 defaults to 0%
8062         }%
8063       \else
8064         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
8065       \fi
8066     \endgroup
8067     \expandafter\gdef\csname toplevel@#2\endcsname{0}%
8068   \fi
8069   \edef\Hy@toclevel{\csname toplevel@#2\endcsname}%
8070   \Hy@writebookmark{\csname the#2\endcsname}%
8071     {#3}%
8072     {\@currentHref}%
8073     {\Hy@toclevel}%
8074     {#1}%
8075   \ifHy@verbose
8076     \begingroup
8077       \def\Hy@tempa{#3}%
8078       \@onelevel@sanitize\Hy@tempa

```

```

8079 \let\temp@online\on@line
8080 \let\on@line\@empty
8081 \Hy@Info{%
8082   bookmark\temp@online:\MessageBreak
8083   thecounter {\csname the#2\endcsname}\MessageBreak
8084   text {\Hy@tempa}\MessageBreak
8085   reference {\@currentHref}\MessageBreak
8086   toplevel {\Hy@toclevel}\MessageBreak
8087   type {#1}%
8088 }%
8089 \endgroup
8090 \fi
8091 \addtocontents{#1}{%
8092 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}\protected@file@per-
cent
8093 }%
8094 \endgroup
8095 }

```

`\contentsline` The page number might be empty. In this case the link for the page number is suppressed to avoid little link boxes.

```

8096 \def\contentsline#1#2#3#4{%
8097 \begingroup
8098 \Hy@safe@activestru
8099 \edef\x{\endgroup
8100 \def\noexpand\Hy@tocdestname{#4}%
8101 }\x
8102 \ifx\Hy@tocdestname\ltx@empty
8103 \csname l@#1\endcsname{#2}{#3}%
8104 \else
8105 \ifcase\Hy@linktoc % none
8106 \csname l@#1\endcsname{#2}{#3}%
8107 \or % section
8108 \csname l@#1\endcsname{%
8109 \hyper@linkstart{link}{\Hy@tocdestname}{#2}\hyper@linkend
8110 }{#3}%
8111 \or % page
8112 \def\Hy@temp{#3}%
8113 \ifx\Hy@temp\ltx@empty
8114 \csname l@#1\endcsname{#2}{#3}%
8115 \else
8116 \csname l@#1\endcsname{{#2}}{%
8117 \hyper@linkstart{link}{\Hy@tocdestname}{#3}\hyper@linkend
8118 }%
8119 \fi
8120 \else % all
8121 \def\Hy@temp{#3}%
8122 \ifx\Hy@temp\ltx@empty
8123 \csname l@#1\endcsname{%
8124 \hyper@linkstart{link}{\Hy@tocdestname}{#2}\hyper@linkend
8125 }{}%
8126 \else
8127 \csname l@#1\endcsname{%
8128 \hyper@linkstart{link}{\Hy@tocdestname}{#2}\hyper@linkend

```

```

8129     }{%
8130         \hyper@linkstart{link}{\Hy@tocdestname}{#3}\hyper@linkend
8131     }%
8132     \fi
8133     \fi
8134     \fi
8135 }

8136 \</packageEnd>
8137 \<*check>
8138 \checklatex
8139 \checkcommand\def\addcontentsline#1#2#3{%
8140     \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}}%
8141 }
8142 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
8143 \</check>
8144 \<*packageEnd>

```

## 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.

```

8145 \let\H@definecounter\@definecounter
8146 \def\@definecounter#1{%
8147     \H@definecounter{#1}%
8148     \expandafter\gdef\csname theH#1\endcsname{\arabic{#1}}%
8149 }

```

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.

```

8150 \let\H@newctr\@newctr
8151 \def\@newctr#1[#2]{%
8152     \H@newctr#1[{#2}]%
8153     \expandafter\gdef\csname theH#1\endcsname{%
8154         \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
8155     }%
8156 }

```

## 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.

```

8157 \@ifpackageloaded{amsmath}{%
8158     \def\Hy@make@anchor{%
8159         \Hy@MakeCurrentHrefAuto{AMS}%
8160         \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
8161     }%
8162     \def\Hy@make@df@tag@@#1{%

```

```

8163 \gdef\df@tag{%
8164 \maketag@@@{\Hy@make@anchor#1}%
8165 \def\@currentlabel{#1}%
8166 }%
8167 }%
8168 \def\Hy@make@df@tag@@@#1{%
8169 \gdef\df@tag{%
8170 \tagform@{\Hy@make@anchor#1}%
8171 \toks@{\exp{\p@equation{#1}}}%
8172 \edef\@currentlabel{\the\toks@}%
8173 }%
8174 }%
8175 \let\HyOrg@make@df@tag@@\make@df@tag@@
8176 \let\HyOrg@make@df@tag@@@\make@df@tag@@@
8177 \let\make@df@tag@@\Hy@make@df@tag@@
8178 \let\make@df@tag@@@\Hy@make@df@tag@@@
8179 }{}

```

Only play with `\seteqlebal` if we are using pdftex. Other drivers cause problems; requested by Michael Downes (AMS).

```

8180 \ifpackagewith{hyperref}{pdfTeX}{%
8181 \let\H@seteqlabel\@seteqlabel
8182 \def\@seteqlabel#1{%
8183 \H@seteqlabel{#1}%
8184 \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
8185 \Hy@raisedlink{%
8186 \hyper@anchorstart{\@currentHref}\hyper@anchorend
8187 }%
8188 }%
8189 }{}

```

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.

```

8190 \let\HyOrg@addtoreset\@addtoreset
8191 \def\@addtoreset#1#2{%
8192 \HyOrg@addtoreset{#1}{#2}%
8193 \expandafter\xdef\csname theH#1\endcsname{%
8194 \expandafter\noexpand
8195 \csname the\@ifundefined{theH#2}{}H#2\endcsname
8196 .\noexpand\the\noexpand\value{#1}%
8197 }%

```

8198 }

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

```

8199 \</packageEnd>
8200 \*check>
8201 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8202 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
8203   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8204     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8205       \@addtoreset{#2}{#3}%
8206       \@xp\xdef\csname the#2\endcsname{%
8207         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8208       }%
8209     }%
8210   }%
8211 }%
8212 \</check>
8213 \*packageEnd>
8214 \@ifpackageloaded{amsmath}{%
8215   \renewcommand*\numberwithin[3][\arabic]{%
8216     \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8217       \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8218         \HyOrg@addtoreset{#2}{#3}%
8219         \@xp\xdef\csname the#2\endcsname{%
8220           \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8221         }%
8222         \@xp\xdef\csname theH#2\endcsname{%
8223           \@xp\@nx
8224           \csname the\@ifundefined{theH#3}{}H#3\endcsname
8225           .\@nx#1{#2}%
8226         }%
8227       }%
8228     }%
8229   }%
8230 }{}

```

## 41 Included figures

Simply intercept the low level graphics package macro.

```

8231 \ifHy@hyperfigures
8232   \let\Hy@Gin@setfile\Gin@setfile
8233   \def\Gin@setfile#1#2#3{%
8234     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8235   }%
8236 \fi
8237 \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 emboldening 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.

```

8238 \ifHy@hyperindex
8239 \def\HyInd@ParenLeft{({}%
8240 \def\HyInd@ParenRight{)}}%
8241 \def\hyperindexformat#1#2{%
8242 \let\HyOrg@hyperpage\hyperpage
8243 \let\hyperpage\@firstofone
8244 #1{\HyOrg@hyperpage{#2}}%
8245 \let\hyperpage\HyOrg@hyperpage
8246 }%
8247 \Hy@nextfalse
8248 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8249 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8250 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8251 \begingroup
8252 \lccode`\|=\expandafter`\HyInd@EncapChar\relax
8253 \lccode`\/=``\relax
8254 \lowercase{\endgroup
8255 \ifHy@next
8256 \let\HyInd@org@wrindex\@wrindex
8257 \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
8258 \def\HyInd@@wrindex#1#2|#3|#4\{\%
8259 \ifx\|#3\%
8260 \HyInd@org@wrindex{#1}{#2|hyperpage}%
8261 \else
8262 \HyInd@@@wrindex{#1}{#2}#3\%
8263 \fi
8264 }%
8265 \def\HyInd@@@wrindex#1#2#3#4\{\%
8266 \def\Hy@temp@A{#3}%
8267 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8268 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8269 \relax
8270 \HyInd@org@wrindex{#1}{%
8271 #2|hyperindexformat{/#3#4}%
8272 }%
8273 \else
8274 \ifx\|#4\%
8275 \ifx\Hy@temp@A\HyInd@ParenRight
8276 \HyInd@org@wrindex{#1}{#2|#3}%
8277 \else
8278 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8279 \fi
8280 \else
8281 \HyInd@org@wrindex{#1}{%
8282 #2|#3hyperindexformat{/#4}%

```

```

8283     }%
8284     \fi
8285     \fi
8286 }%
8287 \else
8288 \def\@wrindex#1{\@wrindex#1||\}%
8289 \def\@wrindex#1|#2|#3\{\%
8290 \if@filesw
8291 \ifx\|#2\%
8292 \protected@write\@indexfile{\%
8293 \string\indexentry{#1|hyperpage}{\thepage}%
8294 }%
8295 \else
8296 \HyInd@@@wrindex{#1}#2\%
8297 \fi
8298 \fi
8299 \endgroup
8300 \@esphack
8301 }%
8302 \def\HyInd@@@wrindex#1#2#3\{\%
8303 \def\Hy@temp@A{#2}%
8304 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8305 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8306 \relax
8307 \protected@write\@indexfile{\%
8308 \string\indexentry{\%
8309 #1|hyperindexformat{/#2#3}%
8310 }\thepage}%
8311 }%
8312 \else
8313 \ifx\|#3\%
8314 \ifx\Hy@temp@A\HyInd@ParenRight
8315 \HyInd@DefKey{#1}%
8316 \ltx@ifundefined{HyInd@(\HyInd@key)}{\%
8317 \let\Hy@temp\ltx@empty
8318 }{\%
8319 \expandafter\let\expandafter\Hy@temp
8320 \csname HyInd@(\HyInd@key)\endcsname
8321 }%
8322 \protected@write\@indexfile{\%
8323 \string\indexentry{#1|#2\Hy@temp}{\thepage}%
8324 }%
8325 \else
8326 \protected@write\@indexfile{\%
8327 \string\indexentry{#1|#2hyperpage}{\thepage}%
8328 }%
8329 \HyInd@DefKey{#1}%
8330 \expandafter
8331 \gdef\csname HyInd@(\HyInd@key)\endcsname{\%
8332 hyperpage%
8333 }%
8334 \fi
8335 \else
8336 \protected@write\@indexfile{\%

```

```

8337         \string\indexentry{%
8338             #1|#2hyperindexformat{/#3}%
8339         }\thepage}%
8340     }%
8341     \ifx\Hy@temp@A\HyInd@ParenLeft
8342         \HyInd@DefKey{#1}%
8343         \expandafter
8344         \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8345             hyperindexformat{/#3}%
8346         }%
8347     \fi
8348 \fi
8349 \fi
8350 }%
8351 \def\HyInd@DefKey#1{%
8352     \begingroup
8353     \let\protect\@unexpandable@protect
8354     \edef\Hy@temp{#1}%
8355     \ltx@onelevel@sanitize\Hy@temp
8356     \global\let\HyInd@key\Hy@temp
8357 \endgroup
8358 }%
8359 \fi
8360 }%
8361 \fi
8362 \Hy@DisableOption{hyperindex}
8363 \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.

```
8364 \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.

```

8365 \def\hyperpage#1{%
8366     \HyInd@hyperpage#1\nohyperpage{}\@nil
8367 }
8368 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8369     \HyInd@@hyperpage{#1}%
8370     #2%
8371     \def\Hy@temp{#3}%
8372     \ifx\Hy@temp\@empty
8373     \else
8374         \ltx@ReturnAfterFi{%
8375             \HyInd@hyperpage#3\@nil
8376         }%
8377     \fi
8378 }
8379 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8380 \def\@hyperpage#1--#2--#3\{%
8381     \ifx\#2\%
8382         \@commahyperpage{#1}%
8383     \else
8384         \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%

```

```

8385 \fi
8386 }
8387 \def\@commahyperpage#1{\@commahyperpage#1, \}
8388 \def\@commahyperpage#1, #2, #3\{\%
8389 \ifx\#2\%
8390 \HyInd@pagelink{#1}%
8391 \else
8392 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8393 \fi
8394 }

```

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

```

8395 \def\HyInd@pagelink#1{%
8396 \begingroup
8397 \toks@={}%
8398 \HyInd@removespaces#1 \@nil
8399 \endgroup
8400 }
8401 \def\HyInd@removespaces#1 #2\@nil{%
8402 \toks@=\expandafter{\the\toks@#1}%
8403 \ifx\#2\%
8404 \edef\x{\the\toks@}%
8405 \ifx\x\@empty
8406 \else
8407 \hyperlink{page.\the\toks@}{\the\toks@}%
8408 \fi
8409 \else
8410 \ltx@ReturnAfterFi{%
8411 \HyInd@removespaces#2\@nil
8412 }%
8413 \fi
8414 }

```

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.)

```

8415 \ifHy@texht
8416 \expandafter\endinput
8417 \fi
8418 \let\real@setref\@setref
8419 \def\@setref#1#2#3{% curname, extract group, refname
8420 \ifx#1\relax
8421 \protect\G@refundefinedtrue
8422 \nfss@text{\reset@font\bfseries ??}%
8423 \@latex@warning{%
8424 Reference `#3' on page \thepage \space undefined%
8425 }%
8426 \else
8427 \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
8428 \fi
8429 }

```

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

```

8430 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8431   \begingroup
8432   \toks0={\hyper@link{#5}{#4}}%
8433   \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8434   \edef\x{\endgroup
8435     \the\toks0 {\the\toks1 }%
8436   }%
8437   \x
8438 }
8439 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8440   \ifx#1\relax
8441     \protect\G@refundefinedtrue
8442     \nfss@text{\reset@font\bfseries ??}%
8443     \@latex@warning{%
8444       Reference `#3' on page \thepage \space undefined%
8445     }%
8446   \else
8447     \protect\hyper@@link
8448     {\expandafter\@fifthoffive#1}%
8449     {page.\expandafter\@secondoffive#1}%
8450     {\expandafter\@secondoffive#1}%
8451   \fi
8452 }
8453 \</packageEnd>
8454 \< *check>
8455 \checklatex
8456 \checkcommand\def\@setref#1#2#3{%
8457   \ifx#1\relax
8458     \protect\G@refundefinedtrue
8459     \nfss@text{\reset@font\bfseries ??}%
8460     \@latex@warning{%
8461       Reference `#3' on page \thepage\space undefined%
8462     }%
8463   \else
8464     \expandafter#2#1\relax
8465   \fi
8466 }
8467 \</check>
8468 \< *packageEnd>

```

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

```

8469 \def\HyRef@StarSetRef#1{%
8470   \begingroup
8471   \Hy@safe@activetrue
8472   \let\protect\@unexpandable@protect
8473   \edef\x{#1}%
8474   \@onelevel@sanitize\x
8475   \edef\x{\endgroup
8476     \noexpand\HyRef@@StarSetRef
8477     \expandafter\noexpand\csname r@\x\endcsname{\x}%
8478   }%
8479   \x
8480 }

```

```

8481 \def\HyRef@@StarSetRef#1#2#3{%
8482   \ifx#1\@undefined
8483     \let#1\relax
8484   \fi
8485   \real@setref#1#3{#2}%
8486 }
8487 \def\@refstar#1{%
8488   \HyRef@StarSetRef{#1}\@firstoffive
8489 }
8490 \def\@pagerefstar#1{%
8491   \HyRef@StarSetRef{#1}\@secondoffive
8492 }
8493 \def\@namerefstar#1{%
8494   \HyRef@StarSetRef{#1}\@thirdoffive
8495 }
8496 \def\@Refstar#1{%
8497   \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8498 }%
8499 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8500   \MakeUppercase#1%
8501 }%
8502 \def\HyRef@Ref#1{%
8503   \hyperref[{#1}]{\Ref*{#1}}%
8504 }%
8505 \Hy@AtBeginDocument{%
8506   \@ifpackageloaded{varioref}{%

```

This are the patches for a varioref newer after 2019-09 Older versions are no longer supported. If `\hyper@nopatch@varioref` is defined we don't patch but assume that varioref handles the hyperlinks.

```

8507   \@ifundefined{hyper@nopatch@varioref}
8508   {
8509     \renewcommand\Vref@star[2][]{%
8510       \begingroup
8511         \let\T@pageref\@pagerefstar
8512         \Ref*{#2}
8513         \vpageref[#1]{#2}%
8514       \endgroup
8515     }%
8516     \renewcommand\Vr@f[2][]{%
8517       \begingroup
8518         \let\T@pageref\@pagerefstar
8519         \hyperref[{#2}]{%
8520           \Ref*{#2}
8521           \vpageref[#1]{#2}%
8522         }%
8523       \endgroup
8524     }%
8525     \renewcommand\vr@f[2][]{%
8526       \begingroup
8527         \let\T@pageref\@pagerefstar
8528         \hyperref[{#2}]{%
8529           \ref*{#2}
8530           \vpageref[#1]{#2}%

```

```

8531     }%
8532     \endgroup
8533 }%
8534 \renewcommand\vref@star[2][]{%
8535     \begingroup
8536     \let\T@pageref\@pagerefstar
8537     \ref*{#2}
8538     \vpageref[#1]{#2}%
8539     \endgroup
8540 }%
8541 }{}%
8542 }{}%
8543 }

8544 \DeclareRobustCommand*\autopageref{%
8545     \@ifstar{%
8546         \HyRef@autopagerefname\pageref*%
8547     }\HyRef@autopageref
8548 }
8549 \def\HyRef@autopageref#1{%
8550     \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8551 }
8552 \def\HyRef@autopagerefname{%
8553     \ltx@ifundefined{pageautorefname}{%
8554         \ltx@ifundefined{pagename}{%
8555             \Hy@Warning{No autoref name for `page'}%
8556         }{%
8557             \pagename\nobreakspace
8558         }%
8559     }{}%
8560     \pageautorefname\nobreakspace
8561 }%
8562 }

```

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

```

8563 \NewDocumentCommand\autoref{s}
8564 {
8565     \leavevmode
8566     \IfBooleanTF{#1}{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}}
8567 \def\HyRef@autoref#1#2{%
8568     \begingroup
8569     \Hy@safe@activestrue
8570     \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8571     \endgroup
8572 }
8573 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8574     \HyRef@ShowKeysRef{#2}%
8575     \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8576     \edef\HyRef@thisref{%
8577         \expandafter\@fourthoffive#1\@empty\@empty\@empty
8578     }%
8579     \expandafter\HyRef@testreftype\HyRef@thisref.\.\%
8580     \Hy@safe@activesfalse
8581     #3{%
8582         \expandafter\@fifthoffive#1\@empty\@empty\@empty

```

```

8582 }{%
8583   \expandafter\@fourthoffive#1\@empty\@empty\@empty
8584 }{%
8585   \HyRef@currentHtag
8586   \expandafter\@firstoffive#1\@empty\@empty\@empty
8587   \null
8588 }%
8589 \else
8590   \protect\G@refundefinedtrue
8591   \nfss@text{\reset@font\bfseries ??}%
8592   \@latex@warning{%
8593     Reference `#2' on page \thepage\space undefined%
8594   }%
8595 \fi
8596 }
8597 \def\HyRef@testreftype#1.#2\{\%
8598 \ltx@ifundefined{#1autorefname}{%
8599 \ltx@ifundefined{#1name}{%
8600 \HyRef@StripStar#1\*\*\@nil{#1}%
8601 \ltx@ifundefined{\HyRef@name autorefname}{%
8602 \ltx@ifundefined{\HyRef@name name}{%
8603 \def\HyRef@currentHtag{%
8604 \Hy@Warning{No autoref name for `#1'}%
8605 }{%
8606 \edef\HyRef@currentHtag{%
8607 \expandafter\noexpand\csname\HyRef@name name\endcsname
8608 \noexpand~%
8609 }%
8610 }%
8611 }{%
8612 \edef\HyRef@currentHtag{%
8613 \expandafter\noexpand
8614 \csname\HyRef@name autorefname\endcsname
8615 \noexpand~%
8616 }%
8617 }%
8618 }{%
8619 \edef\HyRef@currentHtag{%
8620 \expandafter\noexpand\csname#1name\endcsname
8621 \noexpand~%
8622 }%
8623 }%
8624 }{%
8625 \edef\HyRef@currentHtag{%
8626 \expandafter\noexpand\csname#1autorefname\endcsname
8627 \noexpand~%
8628 }%
8629 }%
8630 }
8631 \def\HyRef@StripStar#1*\#2\@nil#3{%
8632 \def\HyRef@name{#2}%
8633 \ifx\HyRef@name\HyRef@CaseStar
8634 \def\HyRef@name{#1}%
8635 \else

```



```

8636 \def\HyRef@name{#3}%
8637 \fi
8638 }
8639 \def\HyRef@CaseStar{*\\}
8640 \def\HyRef@currentHtag{}

```

Support for package `showkeys`.

`\HyRef@ShowKeysRef`

```

8641 \let\HyRef@ShowKeysRef\@gobble
8642 \def\HyRef@ShowKeysInit{%
8643 \ifcsname SK@@label\endcsname
8644 \ifx\SK@ref\@empty
8645 \else
8646 \def\HyRef@ShowKeysRef{%
8647 \SK@\SK@\@ref
8648 }%
8649 \fi
8650 \fi
8651 }
8652 \@ifpackageloaded{showkeys}{%
8653 \HyRef@ShowKeysInit
8654 }{%
8655 \Hy@AtBeginDocument{%
8656 \@ifpackageloaded{showkeys}{%
8657 \HyRef@ShowKeysInit
8658 }{}%
8659 }%
8660 }

```

Defaults for the names that `\autoref` uses.

```

8661 \providecommand*\AMSautorefname{\equationautorefname}
8662 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8663 \providecommand*\Itemautorefname{\itemautorefname}
8664 \providecommand*\itemautorefname{item}
8665 \providecommand*\equationautorefname{Equation}
8666 \providecommand*\footnoteautorefname{footnote}
8667 \providecommand*\itemautorefname{item}
8668 \providecommand*\figureautorefname{Figure}
8669 \providecommand*\tableautorefname{Table}
8670 \providecommand*\partautorefname{Part}
8671 \providecommand*\appendixautorefname{Appendix}
8672 \providecommand*\chapterautorefname{chapter}
8673 \providecommand*\sectionautorefname{section}
8674 \providecommand*\subsectionautorefname{subsection}
8675 \providecommand*\subsubsectionautorefname{subsubsection}
8676 \providecommand*\paragraphautorefname{paragraph}
8677 \providecommand*\subparagraphautorefname{subparagraph}
8678 \providecommand*\FancyVerbLineautorefname{line}
8679 \providecommand*\theoremautorefname{Theorem}
8680 \providecommand*\pageautorefname{page}
8681 \endpackage

```

## 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`.

```
8682 (*pdfTEX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)
8683 \begingroup\expandafter\expandafter\expandafter\endgroup
8684 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8685 \begingroup
8686 \catcode`\|=0 %
8687 \@makeother\|%
8688 |@firstofone{|endgroup
8689 |def|Hy@pstringdef#1#2{%
8690 |begingroup
8691 |edef~{|string~}%
8692 |xdef|Hy@gtemp{#2}%
8693 |endgroup
8694 |let#1|Hy@gtemp
8695 |@onelevel@sanitize#1%
8696 |edef#1{|expandafter|Hy@ExchangeBackslash#1|@nil}%
8697 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8698 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8699 }%
8700 |def|Hy@ExchangeBackslash#1/#2|@nil{%
8701 #1%
8702 |ifx|\#2|\%
8703 |else
8704 \\\%
8705 |ltx@ReturnAfterFi{%
8706 |Hy@ExchangeBackslash#2|@nil
8707 }%
8708 |fi
8709 }%
8710 }%
8711 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8712 #1%
8713 \ifx\#2\%
8714 \else
8715 \@backslashchar(%
8716 \ltx@ReturnAfterFi{%
8717 \Hy@ExchangeLeftParenthesis#2\@nil
8718 }%
8719 \fi
8720 }%
8721 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8722 #1%
8723 \ifx\#2\%
8724 \else
```

```

8725 \@@backslashchar)%
8726 \ltx@ReturnAfterFi{%
8727 \Hy@ExchangeRightParenthesis#2\@nil
8728 }%
8729 \fi
8730 }%
8731 \else
8732 \def\Hy@pstringdef#1#2{%
8733 \begingroup
8734 \edef~{\string~}%
8735 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8736 \endgroup
8737 \let#1\Hy@gtemp
8738 }%
8739 \fi
8740 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 43.2 pdfTeX

```

8741 (*pdfTeX)
8742 \providecommand*\XR@ext}{pdf}
8743 \Hy@setbreaklinks{true}
8744 \def\HyPat@ObjRef{%
8745 [0-9]*[1-9][0-9]* 0 R%
8746 }

```

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

```

8747 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8748 \def\Hy@pdfminorversion{\pdfminorversion}%
8749 \ifHy@ocgcolorlinks
8750 \ifnum\Hy@pdfmajorminor@version<105 %
8751 \kvsetkeys{Hyp}{pdfversion=1.5}%
8752 \fi
8753 \fi
8754 \ifHy@setpdfversion
8755 \ifnum\Hy@pdf@majorminor@version<105 %
8756 \ltx@ifUndefined{pdfobjcompresslevel}{%
8757 }{%
8758 \ifHy@verbose
8759 \Hy@InfoNoLine{%
8760 PDF object streams are disabled, because they are%
8761 \MessageBreak
8762 not supported in requested PDF version %
8763 \Hy@pdf@majorversion.\Hy@pdf@minorversion
8764 }%
8765 \fi
8766 \pdfobjcompresslevel=\ltx@zero
8767 }%

```

```

8768 \fi
8769 \ifnum\Hy@pdfmajorminor@version=\Hy@pdf@majorminor@version\relax
8770 \else
8771   \let\Hy@temp\ltx@empty
8772   \def\Hy@temp@A#1#2{%
8773     \ifnum#1>\ltx@zero
8774       \edef\Hy@temp{%
8775         \Hy@temp
8776         \space\space
8777         \the#1\space #2%
8778         \ifnum#1=\ltx@one\else s\fi
8779         \MessageBreak
8780       }%
8781     \fi
8782   }%
8783   \Hy@temp@A\pdflastobj{PDF object}%
8784   \Hy@temp@A\pdflastxform{form XObject}%
8785   \Hy@temp@A\pdflastximage{image XObject}%
8786   \Hy@temp@A\pdflastannot{annotation}%
8787   \ltx@ifundefined{pdflastlink}{%
8788     }{%
8789     \Hy@temp@A\pdflastlink{link}%
8790   }%
8791 \ifx\Hy@temp\ltx@empty
8792   \Hy@pdfmajorversion=\Hy@pdf@majorversion\relax
8793   \Hy@pdfminorversion=\Hy@pdf@minorversion\relax
8794 \else
8795   \let\Hy@temp@A\ltx@empty
8796   \ifnum\Hy@pdf@majorminor@version=104 %
8797     \IfFileExists{pdf14.sty}{%
8798       \def\Hy@temp@A{%
8799         \MessageBreak
8800         Or \string\RequirePackage{pdf14} can be used%
8801         \MessageBreak
8802         before \string\documentclass\space as shortcut%
8803       }%
8804     }{}%
8805   \fi
8806   \Hy@WarningNoLine{%
8807     The PDF version number could not be set,\MessageBreak
8808     because some PDF objects are already written:%
8809     \MessageBreak
8810     \Hy@temp
8811     The version should be set as early as possible:%
8812     \MessageBreak
8813     \space\space
8814     \expandafter\string\Hy@pdfmajorversion=\Hy@pdf@majorversion, %
8815     \expandafter\string\Hy@pdfminorversion=\Hy@pdf@minorversion
8816     \string\relax
8817     \ifnum\Hy@pdf@majorminor@version<105 %
8818       \ltx@ifundefined{pdfobjcompresslevel}{%
8819         }{%
8820         \MessageBreak
8821         \space\space

```

```

8822         \string\pdfobjcompresslevel=0\string\relax
8823     }%
8824     \fi
8825     \Hy@temp@A
8826 }%
8827 \fi
8828 \fi
8829 \PackageInfo{hyperref}{%
8830   \expandafter\string\Hy@pdfmajorversion.%
8831   \expandafter\string\Hy@pdfminorversion
8832   :=\number\Hy@pdf@majorversion.\number\Hy@pdf@minorversion\space
8833 }%
8834 \fi
8835 \edef\Hy@pdf@majorversion{\number\Hy@pdfmajorversion}%
8836 \edef\Hy@pdf@minorversion{\number\Hy@pdfminorversion}%
8837 \Hy@DisableOption{pdfversion}%
8838 \ifHy@ocgcolorlinks
8839   \pdf@ifdraftmode{}{%
8840     \immediate\pdfobj{%
8841       <<%
8842         /Type/OCG%
8843         /Name(View)%
8844         /Usage<<%
8845         /Print<<%
8846         /PrintState/OFF%
8847       >>%
8848         /View<<%
8849         /ViewState/ON%
8850       >>%
8851       >>%
8852     >>%
8853   }%
8854   \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
8855   \immediate\pdfobj{%
8856     <<%
8857       /Type/OCG%
8858       /Name(Print)%
8859       /Usage<<%
8860       /Print<<%
8861       /PrintState/ON%
8862     >>%
8863       /View<<%
8864       /ViewState/OFF%
8865     >>%
8866     >>%
8867   >>%
8868 }%
8869 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
8870 \immediate\pdfobj{%
8871   [%
8872     \OBJ@OCG@view\space\OBJ@OCG@print
8873   ]%
8874 }%
8875 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%

```

```

8876 \pdfcatalog{%
8877   /OCProperties<<%
8878     /OCGs \OBJ@OCGs
8879     /D<<%
8880     /OFF[\OBJ@OCG@print]%
8881     /AS[%
8882       <<%
8883         /Event/View%
8884         /OCGs \OBJ@OCGs
8885         /Category[/View]%
8886       >>%
8887       <<%
8888         /Event/Print%
8889         /OCGs \OBJ@OCGs
8890         /Category[/Print]%
8891       >>%
8892       <<%
8893         /Event/Export%
8894         /OCGs \OBJ@OCGs
8895         /Category[/Print]%
8896       >>%
8897     ]%
8898   >>%
8899 >>%
8900 }%
8901 \begingroup
8902 \edef\x{\endgroup
8903   \pdfpageresources{%
8904     \the\pdfpageresources
8905     /Properties<<%
8906     /OCView \OBJ@OCG@view
8907     /OCPrint \OBJ@OCG@print
8908   >>%
8909   }%
8910 }%
8911 \x
8912 }%
8913 \Hy@AtBeginDocument{%
8914   \def\Hy@colorlink#1{%
8915     \begingroup
8916     \ifHy@ocgcolorlinks
8917       \def\Hy@ocgcolor{#1}%
8918       \setbox0=\hbox\bgroup\color@begingroup
8919     \else
8920       \HyColor@UseColor#1%
8921     \fi
8922   }%
8923   \def\Hy@endcolorlink{%
8924     \ifHy@ocgcolorlinks
8925       \color@endgroup\egroup
8926     \mbox{%
8927       \pdfliteral page{/OC/OCPrint BDC}%
8928       \rlap{\copy0}%
8929       \pdfliteral page{EMC/OC/OCView BDC}%

```

```

8930      \begingroup
8931      \expandafter\HyColor@UseColor\Hy@ocgcolor
8932      \box0 %
8933      \endgroup
8934      \pdfliteral page{EMC}%
8935      }%
8936      \fi
8937      \endgroup
8938      }%
8939      }%
8940      \else
8941      \Hy@DisableOption{ocgcolorlinks}%
8942      \fi

```

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

```

8943 \def\setpdfinkmargin#1{%
8944   \begingroup
8945   \setlength{\dimen@}{#1}%
8946   \expandafter\endgroup
8947   \expandafter\pdfinkmargin\the\dimen@\relax
8948 }
8949 \pdfinkmargin1pt %

```

First set up the default linking

```

8950 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

8951 \Hy@WrapperDef\new@pdfink#1{%
8952   \ifhmode
8953     \@savsf\spacefactor
8954   \fi
8955   \Hy@SaveLastskip
8956   \Hy@VerboseAnchor{#1}%
8957   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8958   \Hy@DestName\Hy@pstringDest\@pdfview
8959   \Hy@RestoreLastskip
8960   \ifhmode
8961     \spacefactor\@savsf
8962   \fi
8963 }
8964 \let\pdf@endanchor\@empty

```

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

```

8965 \def\Hy@DestName#1#2{%
8966   \pdfdest name{#1}#2\relax
8967 }

```

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.

```

8968 \providecommand*\@pdfborder{0 0 1}
8969 \providecommand*\@pdfborderstyle{}
8970 \def\Hy@undefinedname{UNDEFINED}

```

```

8971 \def\find@pdfink#1#2{%
8972   \leavevmode
8973   \protected@edef\Hy@testname{#2}%
8974   \ifx\Hy@testname\@empty
8975     \Hy@Warning{%
8976       Empty destination name,\MessageBreak
8977       using ` \Hy@undefinedname'%
8978     }%
8979     \let\Hy@testname\Hy@undefinedname
8980   \else
8981     \Hy@pstringdef\Hy@testname{%
8982       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8983     }%
8984   \fi
8985   \Hy@StartlinkName{%
8986     \ifHy@pdfa /F 4\fi
8987     \Hy@setpdfborder
8988     \Hy@setpdfhighlight
8989     \ifx\CurrentBorderColor\relax
8990       \else
8991         /C[\CurrentBorderColor]%
8992       \fi
8993   }\Hy@testname
8994   \expandafter\Hy@colorlink\csname @#1color\endcsname
8995 }
8996 \def\Hy@StartlinkName#1#2{%
8997   \pdfstartlink attr{#1}goto name{#2}\relax
8998 }
8999 \def\close@pdfink{%
9000   \Hy@endcolorlink
9001   \Hy@VerboseLinkStop
9002   \pdfendlink
9003 }
9004 \def\hyper@anchor#1{%
9005   \new@pdfink{#1}\anchor@spot\pdf@endanchor
9006 }
9007 \def\hyper@anchorstart#1{%
9008   \new@pdfink{#1}%
9009   \Hy@activeanchortrue
9010 }
9011 \def\hyper@anchorend{%
9012   \pdf@endanchor
9013   \Hy@activeanchorfalse
9014 }
9015 \def\hyper@linkstart#1#2{%
9016   \Hy@VerboseLinkStart{#1}{#2}%
9017   \ltx@ifundefined{@#1bordercolor}{%
9018     \let\CurrentBorderColor\relax
9019   }{%
9020     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9021   }%
9022   \find@pdfink{#1}{#2}%
9023 }
9024 \def\hyper@linkend{\close@pdfink}

```



```

9025 \def\hyper@link#1#2#3{%
9026   \Hy@VerboseLinkStart{#1}{#2}%
9027   \ltx@ifundefined{#@#1bordercolor}{%
9028     \let\CurrentBorderColor\relax
9029   }{%
9030     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9031   }%
9032   \find@pdfink{#1}{#2}#3\Hy@xspace@end
9033   \close@pdfink
9034 }
9035 \let\CurrentBorderColor\@linkbordercolor
9036 \def\hyper@linkurl#1#2{%
9037   \begingroup
9038     \Hy@pstringdef\Hy@pstringURI{#2}%
9039     \hyper@chars
9040     \leavevmode
9041     \pdfstartlink
9042     attr{%
9043       \Hy@setpdfborder
9044       \Hy@setpdfhighlight
9045       \ifx\@urlbordercolor\relax
9046       \else
9047         /C[\@urlbordercolor]%
9048       \fi
9049     }%
9050     user{%
9051       /Subtype/Link%
9052       \ifHy@pdfa /F 4\fi
9053       /A<<%
9054       /Type/Action%
9055       /S/URI%
9056       /URI(\Hy@pstringURI)%
9057       \ifHy@href@cismap
9058         /IsMap true%
9059       \fi
9060       \Hy@href@nextactionraw
9061     >>%
9062   }%
9063   \relax
9064   \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9065   \close@pdfink
9066 \endgroup
9067 }
9068 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
9069   \begingroup
9070     \def\Hy@pstringF{#2}%
9071     \Hy@CleanupFile\Hy@pstringF
9072     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9073     \Hy@pstringdef\Hy@pstringD{#3}%
9074     \Hy@MakeRemoteAction
9075     \leavevmode
9076     \pdfstartlink
9077     attr{%
9078       \Hy@setpdfborder

```

```

9079 \Hy@setpdfhighlight
9080 \ifx\@filebordercolor\relax
9081 \else
9082 /C[\@filebordercolor]%
9083 \fi
9084 }%
9085 user {%
9086 /Subtype/Link%
9087 \ifHy@pdfa /F 4\fi
9088 /A<<%
9089 /F(\Hy@pstringF)%
9090 /S/GoToR%
9091 \Hy@SetNewWindow

```

If #3 is empty, page 0; if its a number, Page number, otherwise a named destination.

```
\afterassignment\xxx\count@=0\foo!%
```

```

\def\xxx#1!{%
\ifx\xxx#1\xxx
foo was an integer
\else
it wasnt
\fi}

```

```

9092 \ifx\#3\%
9093 /D[\Hy@href@page\@pdfremotestartview]%
9094 \else
9095 /D(\Hy@pstringD)%
9096 \fi
9097 \Hy@href@nextactionraw
9098 >>%
9099 }%
9100 \relax
9101 \Hy@colorlink\@filecolor#1\Hy@xspace@end
9102 \close@pdflink
9103 \endgroup
9104 }
9105 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
9106 \begingroup
9107 \Hy@pstringdef\Hy@pstringF{#1}%
9108 \Hy@pstringdef\Hy@pstringP{#3}%
9109 \leavevmode
9110 \pdfstartlink
9111 attr{%
9112 \Hy@setpdfborder
9113 \Hy@setpdfhighlight
9114 \ifx\@runbordercolor\relax
9115 \else
9116 /C[\@runbordercolor]%
9117 \fi
9118 }%
9119 user {%
9120 /Subtype/Link%

```

```

9121 \ifHy@pdfa /F 4\fi
9122 /A<<%
9123 /F(\Hy@pstringF)%
9124 /S/Launch%
9125 \Hy@SetNewWindow
9126 \ifx\#3\%
9127 \else
9128 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9129 \fi
9130 \Hy@href@nextactionraw
9131 >>%
9132 }%
9133 \relax
9134 \Hy@colorlink\@runcolor#2\Hy@xspace@end
9135 \close@pdflink
9136 \endgroup
9137 }

```

\PDF@SetupDox

```

9138 \def\PDF@SetupDoc{%
9139 \ifx\@pdfpagescrop\@empty
9140 \else
9141 \edef\process@me{%
9142 \pdfpagesattr={%
9143 /CropBox[\@pdfpagescrop]%
9144 \expandafter\ifx\expandafter\the\pdfpagesattr\%
9145 \else
9146 ^^J\the\pdfpagesattr
9147 \fi
9148 }%
9149 }%
9150 \process@me
9151 \fi
9152 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9153 \pdfcatalog{%
9154 /PageMode/\@pdfpagemode
9155 \ifx\@baseurl\@empty
9156 \else
9157 /URI<</Base(\Hy@pstringB)>>%
9158 \fi
9159 }%
9160 \ifx\@pdfstartpage\@empty
9161 \else
9162 \ifx\@pdfstartview\@empty
9163 \else
9164 openaction goto page\@pdfstartpage{\@pdfstartview}%
9165 \fi
9166 \fi
9167 \edef\Hy@temp{%
9168 \ifHy@pdftoolbar\else /HideToolbar true\fi
9169 \ifHy@pdfmenubar\else /HideMenubar true\fi
9170 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9171 \ifHy@pdfwindow /FitWindow true\fi
9172 \ifHy@pdfcenterwindow /CenterWindow true\fi

```

```

9173 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9174 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9175 \Hy@UseNameKey{Direction}\@pdfdirection
9176 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9177 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9178 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9179 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9180 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9181 \Hy@UseNameKey{Duplex}\@pdfduplex
9182 \ifx\@pdfpicktraybypdfsize\@empty
9183 \else
9184 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9185 \fi
9186 \ifx\@pdfprintpagerange\@empty
9187 \else
9188 /PrintPageRange[\@pdfprintpagerange]%
9189 \fi
9190 \ifx\@pdfnumcopies\@empty
9191 \else
9192 /NumCopies \@pdfnumcopies
9193 \fi
9194 }%
9195 \pdfcatalog{%
9196 \ifx\Hy@temp\@empty
9197 \else
9198 /ViewerPreferences<<\Hy@temp>>%
9199 \fi
9200 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9201 \ifx\@pdflang\relax
9202 \else
9203 /Lang(\@pdflang)%
9204 \fi
9205 }%
9206 }

```

\PDF@FinishDoc

```

9207 \def\PDF@FinishDoc{%
9208 \pdf@ifdraftmode{}{%
9209 \Hy@UseMaketitleInfos
9210 \HyInfo@GenerateAddons
9211 \pdfinfo{%
9212 /Author(\@pdfauthor)%
9213 /Title(\@pdftitle)%
9214 /Subject(\@pdfsubject)%
9215 /Creator(\@pdfcreator)%
9216 \ifx\@pdfcreationdate\@empty
9217 \else
9218 /CreationDate(\@pdfcreationdate)%
9219 \fi
9220 \ifx\@pdfmoddate\@empty
9221 \else
9222 /ModDate(\@pdfmoddate)%
9223 \fi
9224 \ifx\@pdfproducer\relax

```

```

9225 \else
9226 /Producer(\@pdfproducer)%
9227 \fi
9228 /Keywords(\@pdfkeywords)%
9229 \ifx\@pdftrapped\@empty
9230 \else
9231 /Trapped/\@pdftrapped
9232 \fi
9233 \HyInfo@Addons
9234 }%
9235 }%
9236 \Hy@DisableOption{pdfauthor}%
9237 \Hy@DisableOption{pdftitle}%
9238 \Hy@DisableOption{pdfsubject}%
9239 \Hy@DisableOption{pdfcreator}%
9240 \Hy@DisableOption{addtopdfcreator}%
9241 \Hy@DisableOption{pdfcreationdate}%
9242 \Hy@DisableOption{pdfmoddate}%
9243 \Hy@DisableOption{pdfproducer}%
9244 \Hy@DisableOption{pdfkeywords}%
9245 \Hy@DisableOption{pdftrapped}%
9246 \Hy@DisableOption{pdfinfo}%
9247 }

```

`\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`.

```

9248 \def\hyper@pagetransition{%
9249 \ifx\@pdfpagetransition\relax
9250 \else
9251 \expandafter\Hy@RemoveTransPageAttr
9252 \the\pdfpageattr^^J/Trans{}}>>\END
9253 \ifx\@pdfpagetransition\@empty
9254 \else
9255 \edef\@processme{%
9256 \global\pdfpageattr{%
9257 \the\pdfpageattr
9258 ^^J/Trans << /S /\@pdfpagetransition\space >>%
9259 }%
9260 }%
9261 \@processme
9262 \fi
9263 \fi
9264 }

```

`\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.

```

9265 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9266 \ifx\#2\%
9267 \global\pdfpageattr{#1}%

```

```

9268 \else
9269 \Hy@RemoveTransPageAttr#1#4\END
9270 \fi
9271 }

```

`\hyper@pageduration` `\@pdfpageduration` is initialized with `\relax`. So it indicates, if option `pdfpage-` `duration` is used. First previous `/Dur` entries are removed. If a new `/Dur` key exists, it is appended to `\pdfpageattr`.

```

9272 \def\hyper@pageduration{%
9273 \ifx\@pdfpageduration\relax
9274 \else
9275 \expandafter
9276 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9277 \ifx\@pdfpageduration\@empty
9278 \else
9279 \edef\@processme{%
9280 \global\pdfpageattr{%
9281 \the\pdfpageattr
9282 ^^J/Dur \@pdfpageduration\space
9283 }%
9284 }%
9285 \@processme
9286 \fi
9287 \fi
9288 }

```

`\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.

```

9289 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9290 \ifx\#2\%
9291 \global\pdfpageattr{#1}%
9292 \else
9293 \Hy@RemoveDurPageAttr#1#4\END
9294 \fi
9295 }

9296 \pdf@ifdraftmode{}{%
9297 \g@addto@macro\Hy@EveryPageHook{%
9298 \hyper@pagetransition
9299 \hyper@pageduration
9300 }%
9301 }

```

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

```

9302 </pdfTeX>
9303 <{*pdfTeX|xetex}>
9304 \Hy@AtBeginDocument{%
9305 \ifHy@setpagesize
9306 \expandafter\@firstofone
9307 \else
9308 \expandafter\@gobble

```

```

9309 \fi
9310 {%
9311 \@ifclassloaded{seminar}{%
9312 (*pdfTeX)
9313 \setlength{\pdfhorigin}{1truein}%
9314 \setlength{\pdfvorigin}{1truein}%
9315 (/pdfTeX)
9316 \ifportrait
9317 \ifdim\paperwidth=\z@
9318 \else
9319 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9320 \fi
9321 \ifdim\paperheight=\z@
9322 \else
9323 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9324 \fi
9325 \else
9326 \ifdim\paperheight=\z@
9327 \else
9328 \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9329 \fi
9330 \ifdim\paperwidth=\z@
9331 \else
9332 \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9333 \fi
9334 \fi
9335 }{%
9336 \ltx@ifundefined{stockwidth}{%
9337 \ifdim\paperwidth>\z@
9338 \setlength{\pdfpagewidth}{\paperwidth}%
9339 \fi
9340 \ifdim\paperheight>\z@
9341 \setlength{\pdfpageheight}{\paperheight}%
9342 \fi
9343 }{%
9344 \ifdim\stockwidth>\z@
9345 \setlength{\pdfpagewidth}{\stockwidth}%
9346 \fi
9347 \ifdim\stockheight>\z@
9348 \setlength{\pdfpageheight}{\stockheight}%
9349 \fi
9350 }%
9351 }%
9352 }%
9353 \Hy@DisableOption{setpagesize}%
9354 }
9355 (/pdfTeX | xetex)
9356 (*pdfTeX)
9357 \def\Acrobatmenu#1#2{%
9358 \Hy@Acrobatmenu{#1}{#2}{%
9359 \leavevmode
9360 \EdefEscapeName\Hy@temp@menu{#1}%
9361 \pdfstartlink
9362 attr{%

```

```

9363 \Hy@setpdfborder
9364 \Hy@setpdfhighlight
9365 \ifx\@menubordercolor\relax
9366 \else
9367 /C[\@menubordercolor]%
9368 \fi
9369 }%
9370 user{%
9371 /Subtype/Link%
9372 \ifHy@pdfa /F 4\fi
9373 /A<<%
9374 /S/Named%
9375 /N/\Hy@temp@menu
9376 \Hy@href@nextactionraw
9377 >>%
9378 }%
9379 \relax
9380 \Hy@colorlink\@menucolor#2%
9381 \close@pdfink
9382 }%
9383 }

```

#### 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.

```

9384 </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 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.

```

9385 \*hypertext
9386 \providecommand*\XR@ext{}\dvi
9387 \let\PDF@FinishDoc\ltx@empty
9388 \def\PDF@SetupDoc{%
9389   \ifx\@baseurl\@empty
9390   \else
9391     \special{html:<base href="\@baseurl">}%
9392   \fi
9393 }
9394 \Hy@WrapperDef\hyper@anchor#1{%
9395   \Hy@SaveLastskip
9396   \Hy@VerboseAnchor{#1}%
9397   \begingroup
9398     \let\protect=\string
9399     \hyper@chars
9400     \special{html:<a name=%
9401       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9402   \endgroup
9403   \Hy@activeanchortrue
9404   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9405   \special{html:</a>}%
9406   \Hy@activeanchorfalse
9407   \Hy@RestoreLastskip
9408 }
9409 \Hy@WrapperDef\hyper@anchorstart#1{%
9410   \Hy@SaveLastskip
9411   \Hy@VerboseAnchor{#1}%
9412   \begingroup
9413     \hyper@chars
9414     \special{html:<a name=%
9415       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9416   \endgroup
9417   \Hy@activeanchortrue
9418 }

```

```

9419 \def\hyper@anchorend{%
9420 \special{html:</a>}}%
9421 \Hy@activeanchorfalse
9422 \Hy@RestoreLastskip
9423 }
9424 \def\@urltype{url}
9425 \def\hyper@linkstart#1#2{%
9426 \Hy@VerboseLinkStart{#1}{#2}%
9427 \expandafter\Hy@colorlink\csname @#1color\endcsname
9428 \def\Hy@tempa{#1}%
9429 \ifx\Hy@tempa\@urltype
9430 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9431 \else
9432 \begingroup
9433 \hyper@chars
9434 \special{html:<a href=%
9435 \hyper@quote\#\Hy@DestNameFilter{#2}\hyper@quote>}}%
9436 \endgroup
9437 \fi
9438 }
9439 \def\hyper@linkend{%
9440 \special{html:</a>}}%
9441 \Hy@endcolorlink
9442 }
9443 \def\hyper@linkfile#1#2#3{%
9444 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9445 }
9446 \def\hyper@linkurl#1#2{%

```

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

```

9447 \leavevmode
9448 \ifHy@raiselinks
9449 \Hy@SaveSpaceFactor
9450 \Hy@SaveSavedSpaceFactor
9451 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9452 \Hy@RestoreSavedSpaceFactor
9453 \@linkdim\dp\@tempboxa
9454 \lower\@linkdim\hbox{%
9455 \hyper@chars
9456 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9457 }%
9458 \Hy@colorlink\@urlcolor
9459 \Hy@RestoreSpaceFactor
9460 #1%
9461 \Hy@SaveSpaceFactor
9462 \@linkdim\ht\@tempboxa

```

Because of the interaction with the `dvilips` processor, we have to subtract a little from the height. This is not clean, or checked. Check with Mark Doyle about what gives here. It may not be needed with the new `dvips` (Jan 1997).

```

9463 \advance\@linkdim by -6.5\p@
9464 \raise\@linkdim\hbox{\special{html:</a>}}%

```

```

9465 \Hy@endcolorlink
9466 \Hy@RestoreSpaceFactor
9467 \else
9468 \begingroup
9469 \hyper@chars
9470 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9471 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9472 \special{html:</a>}%
9473 \Hy@endcolorlink
9474 \endgroup
9475 \fi
9476 }

```

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

```

9477 \def\hyper@link#1#2#3{%
9478 \Hy@VerboseLinkStart{#1}{#2}%
9479 \hyper@linkurl{#3}{\# \Hy@DestNameFilter{#2}}%
9480 }

9481 \def\hyper@image#1#2{%
9482 \begingroup
9483 \hyper@chars
9484 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9485 \endgroup
9486 }
9487 </hypertex>
9488 < *dviwindo>

```

## 43.4 dviwindo

[This was developed by David Carlisle]. Within a file dviwindo hyperlinking is used, for external URL's a call to \wwwbrowser is made. (You can define this command before or after loading the hyperref package if the default c:/netscape/netscape is not suitable) Dviwindo could in fact handle external links to dvi files on the same machine without calling a web browser, but that would mean parsing the URL to recognise such, and this is currently not done.

This was more or less blindly copied from the hypertex cfg. For dviwindo, L<sup>A</sup>T<sub>E</sub>X must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by \baselineskip high is used.

```

9489 \providecommand*\XR@ext{dvi}
9490 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9491 \Hy@WrapperDef\hyper@anchor#1{%
9492 \Hy@SaveLastskip
9493 \Hy@VerboseAnchor{#1}%
9494 \begingroup
9495 \let\protect=\string
9496 \special{mark: #1}%
9497 \endgroup
9498 \Hy@activeanchortrue
9499 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9500 \Hy@activeanchorfalse
9501 \Hy@RestoreLastskip

```

```

9502 }
9503 \Hy@WrapperDef\hyper@anchorstart#1{%
9504 \Hy@SaveLastskip
9505 \Hy@VerboseAnchor{#1}%
9506 \special{mark: #1}%
9507 \Hy@activeanchortrue
9508 }
9509 \def\hyper@anchorend{%
9510 \Hy@activeanchorfalse
9511 \Hy@RestoreLastskip
9512 }
9513 \def\hyper@linkstart#1#2{%
9514 \Hy@VerboseLinkStart{#1}{#2}%
9515 \expandafter\Hy@colorlink\csname @#1color\endcsname
9516 \special{button: %
9517 10000000 %
9518 \number\baselineskip\space
9519 #2%
9520 }%
9521 }
9522 \def\hyper@linkend{%
9523 \Hy@endcolorlink
9524 }
9525 \def\hyper@link#1#2#3{%
9526 \Hy@VerboseLinkStart{#1}{#2}%
9527 \leavevmode
9528 \ifHy@raiselinks
9529 \Hy@SaveSpaceFactor
9530 \Hy@SaveSavedSpaceFactor
9531 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9532 \Hy@RestoreSavedSpaceFactor
9533 \@linkdim\dp\@tempboxa
9534 \lower\@linkdim\hbox{%
9535 \special{button: %
9536 \number\wd\@tempboxa\space
9537 \number\ht\@tempboxa\space
9538 #2%
9539 }%
9540 \expandafter\Hy@colorlink\csname @#1color\endcsname
9541 \Hy@RestoreSpaceFactor
9542 #3\Hy@xspace@end
9543 \Hy@SaveSpaceFactor
9544 \Hy@endcolorlink
9545 }%
9546 \@linkdim\ht\@tempboxa
9547 \advance\@linkdim by -6.5\p@
9548 \raise\@linkdim\hbox{}}%
9549 \Hy@RestoreSpaceFactor
9550 \else
9551 \special{button: %
9552 \number\wd\@tempboxa\space
9553 \number\ht\@tempboxa\space
9554 #2%
9555 }%

```

```

9556 \expandafter\Hy@colorlink\csmame @#1color\endcsname
9557 #3\Hy@xspace@end
9558 \Hy@endcolorlink
9559 \fi
9560 }
9561 \def\hyper@linkurl#1#2{%
9562 \begingroup
9563 \hyper@chars
9564 \leavevmode
9565 \ifHy@raiselinks
9566 \Hy@SaveSpaceFactor
9567 \Hy@SaveSavedSpaceFactor
9568 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9569 \Hy@RestoreSavedSpaceFactor
9570 \@linkdim\dp\@tempboxa
9571 \lower\@linkdim\hbox{%
9572 \special{button: %
9573 \number\wd\@tempboxa\space
9574 \number\ht\@tempboxa\space
9575 launch: \wwwbrowser\space
9576 #2%
9577 }%
9578 \Hy@colorlink\@urlcolor
9579 \Hy@RestoreSpaceFactor
9580 #1\Hy@xspace@end
9581 \Hy@SaveSpaceFactor
9582 \Hy@endcolorlink
9583 }%
9584 \@linkdim\ht\@tempboxa
9585 \advance\@linkdim by -6.5\p@
9586 \raise\@linkdim\hbox{}}%
9587 \Hy@RestoreSpaceFactor
9588 \else
9589 \special{button: %
9590 \number\wd\@tempboxa\space
9591 \number\ht\@tempboxa\space
9592 launch: \wwwbrowser\space
9593 #2%
9594 }%
9595 \Hy@colorlink\@urlcolor
9596 #1\Hy@xspace@end
9597 \Hy@endcolorlink
9598 \fi
9599 \endgroup
9600 }
9601 \def\hyper@linkfile#1#2#3{%
9602 \begingroup
9603 \hyper@chars
9604 \leavevmode
9605 \ifHy@raiselinks
9606 \Hy@SaveSpaceFactor
9607 \Hy@SaveSavedSpaceFactor
9608 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9609 \Hy@RestoreSavedSpaceFactor

```

```

9610 \@linkdim\dp\@tempboxa
9611 \lower\@linkdim\hbox{%
9612 \special{button: %
9613 \number\wd\@tempboxa\space
9614 \number\ht\@tempboxa\space
9615 #3,%
9616 file: #2%
9617 }%
9618 \Hy@colorlink\@filecolor
9619 \Hy@RestoreSpaceFactor
9620 #1\Hy@xspace@end
9621 \Hy@SaveSpaceFactor
9622 \Hy@endcolorlink
9623 }%
9624 \@linkdim\ht\@tempboxa
9625 \advance\@linkdim by -6.5\p@
9626 \raise\@linkdim\hbox{}%
9627 \Hy@RestoreSpaceFactor
9628 \else
9629 \special{button: %
9630 \number\wd\@tempboxa\space
9631 \number\ht\@tempboxa\space
9632 #3,%
9633 file: #2%
9634 }%
9635 \Hy@colorlink\@filecolor
9636 #1\Hy@xspace@end
9637 \Hy@endcolorlink
9638 \fi
9639 \endgroup
9640 }
9641 \HyInfo@AddonUnsupportedtrue
9642 \def\PDF@FinishDoc{%
9643 \Hy@UseMaketitleInfos
9644 \HyInfo@TrappedUnsupported
9645 \special{PDF: Keywords \@pdfkeywords}%
9646 \special{PDF: Title \@pdftitle}%
9647 \special{PDF: Creator \@pdfcreator}%
9648 \ifx\@pdfcreationdate\@empty
9649 \else
9650 \special{PDF: CreationDate \@pdfcreationdate}%
9651 \fi
9652 \ifx\@pdfmoddate\@empty
9653 \else
9654 \special{PDF: ModDate \@pdfmoddate}%
9655 \fi
9656 \special{PDF: Author \@pdfauthor}%
9657 \ifx\@pdfproducer\relax
9658 \else
9659 \special{PDF: Producer \@pdfproducer}%
9660 \fi
9661 \special{PDF: Subject \@pdfsubject}%
9662 \Hy@DisableOption{pdfauthor}%
9663 \Hy@DisableOption{pdftitle}%

```

```

9664 \Hy@DisableOption{pdfsubject}%
9665 \Hy@DisableOption{pdfcreator}%
9666 \Hy@DisableOption{addtopdfcreator}%
9667 \Hy@DisableOption{pdfcreationdate}%
9668 \Hy@DisableOption{pdfcreationdate}%
9669 \Hy@DisableOption{pdfmoddate}%
9670 \Hy@DisableOption{pdfproducer}%
9671 \Hy@DisableOption{pdfkeywords}%
9672 \Hy@DisableOption{pdftrapped}%
9673 \Hy@DisableOption{pdfinfo}%
9674 }
9675 \def\PDF@SetupDoc{%
9676 \ifx\@baseurl\@empty
9677 \else
9678 \special{PDF: Base \@baseurl}%
9679 \fi
9680 \ifx\@pdfpagescrop\@empty\else
9681 \special{PDF: BBox \@pdfpagescrop}%
9682 \fi
9683 \def\Hy@temp{}%
9684 \ifx\@pdfstartpage\@empty
9685 \else
9686 \ifx\@pdfstartview\@empty
9687 \else
9688 \edef\Hy@temp{%
9689 ,Page=\@pdfstartpage
9690 ,View=\@pdfstartview
9691 }%
9692 \fi
9693 \fi
9694 \edef\Hy@temp{%
9695 \noexpand\pdfmark{%
9696 pdfmark=/DOCVIEW,%
9697 PageMode=/\@pdfpagemode
9698 \Hy@temp
9699 }%
9700 }%
9701 \Hy@temp
9702 \ifx\@pdfpagescrop\@empty
9703 \else
9704 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9705 \fi
9706 \edef\Hy@temp{%
9707 \ifHy@pdftoolbar\else /HideToolbar true\fi
9708 \ifHy@pdfmenubar\else /HideMenubar true\fi
9709 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9710 \ifHy@pdffitwindow /FitWindow true\fi
9711 \ifHy@pdfcenterwindow /CenterWindow true\fi
9712 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9713 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9714 \Hy@UseNameKey{Direction}\@pdfdirection
9715 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9716 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9717 \Hy@UseNameKey{PrintArea}\@pdfprintarea

```

```

9718 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9719 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9720 \Hy@UseNameKey{Duplex}\@pdfduplex
9721 \ifx\@pdfpicktraybypdfsize\@empty
9722 \else
9723 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9724 \fi
9725 \ifx\@pdfprintpagerange\@empty
9726 \else
9727 /PrintPageRange\@pdfprintpagerange\%
9728 \fi
9729 \ifx\@pdfnumcopies\@empty
9730 \else
9731 /NumCopies \@pdfnumcopies
9732 \fi
9733 }%
9734 \pdfmark{pdfmark=/PUT,%
9735 Raw={%
9736 \string{Catalog\string}<<%
9737 \ifx\Hy@temp\@empty
9738 \else
9739 /ViewerPreferences<<\Hy@temp>>%
9740 \fi
9741 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9742 \ifx\@pdflang\relax
9743 \else
9744 /Lang(\@pdflang)%
9745 \fi
9746 >>%
9747 }%
9748 }%
9749 }
9750 </dviwindo>
9751 <*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.

```

9752 \special{dvipdfmx:config C 0x0010}
9753 \providecommand*\XR@ext\{pdf}
9754 \Hy@setbreaklinks{true}
9755 \def\HyPat@ObjRef{%
9756 @[\ ]+}%
9757 }
9758 \newsavebox\pdfm@box}
9759 \def\@pdfm@mark#1{\special{pdf:#1}}
9760 \Hy@WrapperDef\@pdfm@dest#1{%
9761 \Hy@SaveLastskip
9762 \Hy@VerboseAnchor{#1}%
9763 \begingroup

```



```

9764 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9765 \def\x{XYZ}%
9766 \ifx\x\@pdfview
9767 \def\x{XYZ @xpos @ypos null}%
9768 \else
9769 \def\x{FitH}%
9770 \ifx\x\@pdfview
9771 \def\x{FitH @ypos}%
9772 \else
9773 \def\x{FitBH}%
9774 \ifx\x\@pdfview
9775 \def\x{FitBH @ypos}%
9776 \else
9777 \def\x{FitV}%
9778 \ifx\x\@pdfview
9779 \def\x{FitV @xpos}%
9780 \else
9781 \def\x{FitBV}%
9782 \ifx\x\@pdfview
9783 \def\x{FitBV @xpos}%
9784 \else
9785 \def\x{Fit}%
9786 \ifx\x\@pdfview
9787 \let\x\@pdfview
9788 \else
9789 \def\x{FitB}%
9790 \ifx\x\@pdfview
9791 \let\x\@pdfview
9792 \else
9793 \def\x{FitR}%
9794 \ifx\x\@pdfview
9795 \Hy@Warning{'pdfview=FitR' is not supported}%
9796 \def\x{XYZ @xpos @ypos null}%
9797 \else
9798 \@onelevel@sanitize\@pdfview
9799 \Hy@Warning{%
9800 Unknown value '\@pdfview' for pdfview%
9801 }%
9802 \def\x{XYZ @xpos @ypos null}%
9803 \fi
9804 \fi
9805 \fi
9806 \fi
9807 \fi
9808 \fi
9809 \fi
9810 \fi
9811 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9812 \endgroup
9813 \Hy@RestoreLastskip
9814 }
9815 \providecommand*\@pdfview{XYZ}
9816 \providecommand*\@pdfborder{0 0 1}
9817 \providecommand*\@pdfborderstyle{}

```

```

9818 \def\hyper@anchor#1{%
9819 \@pdfm@dest{#1}%
9820 }
9821 \def\hyper@anchorstart#1{%
9822 \Hy@activeanchortrue
9823 \@pdfm@dest{#1}%
9824 }
9825 \def\hyper@anchorend{%
9826 \Hy@activeanchorfalse
9827 }

9828 \newcounter{Hy@AnnotLevel}

9829 \ifHy@ocgcolorlinks
9830 \def\OBJ@OCG@view{@OCG@view}%
9831 \@pdfm@mark{%
9832   obj \OBJ@OCG@view <<%
9833     /Type/OCG%
9834     /Name(View)%
9835     /Usage<<%
9836     /Print<<%
9837     /PrintState/OFF%
9838     >>%
9839     /View<<%
9840     /ViewState/ON%
9841     >>%
9842     >>%
9843     >>%
9844   }%
9845 \@pdfm@mark{close \OBJ@OCG@view}%
9846 \def\OBJ@OCG@print{@OCG@print}%
9847 \@pdfm@mark{%
9848   obj \OBJ@OCG@print <<%
9849     /Type/OCG%
9850     /Name(Print)%
9851     /Usage<<%
9852     /Print<<%
9853     /PrintState/ON%
9854     >>%
9855     /View<<%
9856     /ViewState/OFF%
9857     >>%
9858     >>%
9859     >>%
9860   }%
9861 \@pdfm@mark{close \OBJ@OCG@print}%
9862 \def\OBJ@OCGs{@OCGs}%
9863 \@pdfm@mark{%
9864   obj \OBJ@OCGs [%
9865     \OBJ@OCG@view\space\OBJ@OCG@print
9866   ]%
9867 }%
9868 \@pdfm@mark{close \OBJ@OCGs}%
9869 \@pdfm@mark{%
9870   put @catalog <<%

```

```

9871 /OCProperties<<%
9872 /OCGs \OBJ@OCGs
9873 /D<<%
9874 /OFF[\OBJ@OCG@print]%
9875 /AS[%
9876 <<%
9877 /Event/View%
9878 /OCGs \OBJ@OCGs
9879 /Category[/View]%
9880 >>%
9881 <<%
9882 /Event/Print%
9883 /OCGs \OBJ@OCGs
9884 /Category[/Print]%
9885 >>%
9886 <<%
9887 /Event/Export%
9888 /OCGs \OBJ@OCGs
9889 /Category[/Print]%
9890 >>%
9891 ]%
9892 >>%
9893 >>%
9894 >>%
9895 }%
9896 \AtBeginShipout{%
9897 \setbox\AtBeginShipoutBox=\hbox{%
9898 \copy\AtBeginShipoutBox
9899 \@pdfm@mark{%
9900 put @resources <<%
9901 /Properties<<%
9902 /OCView \OBJ@OCG@view
9903 /OCPrint \OBJ@OCG@print
9904 >>%
9905 >>%
9906 }%
9907 }%
9908 }%
9909 \Hy@AtBeginDocument{%
9910 \def\Hy@colorlink#1{%
9911 \begingroup
9912 \ifHy@ocgcolorlinks
9913 \def\Hy@ocgcolor{#1}%
9914 \setbox0=\hbox\bgroup\color@begingroup
9915 \else
9916 \HyColor@UseColor#1%
9917 \fi
9918 }%
9919 \def\Hy@endcolorlink{%
9920 \ifHy@ocgcolorlinks
9921 \color@endgroup\egroup
9922 \mbox{%
9923 \@pdfm@mark{content /OC/OCPrint BDC}%
9924 \rlap{\copy0}%

```

```

9925      \@pdfm@mark{content EMC/OC/OCView BDC}%
9926      \begingroup
9927      \expandafter\HyColor@UseColor\Hy@ocgcolor
9928      \box0 %
9929      \endgroup
9930      \@pdfm@mark{content EMC}%
9931    }%
9932  \fi
9933 \endgroup
9934 }%
9935 }%
9936 \else
9937   \Hy@DisableOption{ocgcolorlinks}%
9938 \fi

```

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

```

9939 \def\Hy@BeginAnnot#1{%
9940   \global\advance\c@Hy@AnnotLevel\@ne
9941   \ifnum\c@Hy@AnnotLevel=\@ne
9942     #1%
9943   \fi
9944 }
9945 \def\Hy@endAnnot{%
9946   \ifnum\value{Hy@AnnotLevel}=\@ne
9947     \Hy@endcolorlink
9948     \@pdfm@mark{eann}%
9949   \fi
9950   \global\advance\c@Hy@AnnotLevel\m@ne
9951 }

9952 \def\Hy@undefinedname{UNDEFINED}
9953 \def\hyper@linkstart#1#2{%
9954   \Hy@VerboseLinkStart{#1}{#2}%
9955   \leavevmode
9956   \Hy@BeginAnnot{%
9957     \protected@edef\Hy@testname{#2}%
9958     \ifx\Hy@testname\@empty
9959       \Hy@Warning{%
9960         Empty destination name,\MessageBreak
9961         using ``\Hy@undefinedname'%
9962       }%
9963       \let\Hy@testname\Hy@undefinedname
9964     \else
9965       \Hy@pstringdef\Hy@testname{%
9966         \expandafter\HyperDestNameFilter\expandafter{%
9967           \Hy@testname
9968         }%
9969       }%
9970     \fi
9971     \@pdfm@mark{%
9972       bann<<%
9973       /Type/Annot%
9974       /Subtype/Link%
9975       \ifHy@pdfa /F 4\fi

```

```

9976 \Hy@setpdfborder
9977 \Hy@setpdfhighlight
9978 \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9979 \else
9980 /C[\csname @#1bordercolor\endcsname]%
9981 \fi
9982 /A<<%
9983 /S/GoTo%
9984 /D(\Hy@testname)%
9985 \Hy@href@nextactionraw
9986 >>%
9987 >>%
9988 }%
9989 \expandafter\Hy@colorlink\csname @#1color\endcsname
9990 }%
9991 }
9992 \def\hyper@linkend{\Hy@EndAnnot}%
9993 \def\hyper@link#1#2#3{%
9994 \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
9995 }
9996 \def\hyper@linkfile#1#2#3{%
9997 \leavevmode
9998 \Hy@BeginAnnot{%
9999 \def\Hy@pstringF{#2}%
10000 \Hy@CleanupFile\Hy@pstringF
10001 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
10002 \Hy@pstringdef\Hy@pstringD{#3}%
10003 \Hy@MakeRemoteAction
10004 \@pdfm@mark{%
10005 bann<<%
10006 /Type/Annot%
10007 /Subtype/Link%
10008 \ifHy@pdfa /F 4\fi
10009 \Hy@setpdfborder
10010 \Hy@setpdfhighlight
10011 \ifx\@filebordercolor\relax
10012 \else
10013 /C[\@filebordercolor]%
10014 \fi
10015 /A<<%
10016 /S/GoToR%
10017 /F(\Hy@pstringF)%
10018 /D%
10019 \ifx\#3\%
10020 [\Hy@href@page\@pdfremotestartview]%
10021 \else
10022 (\Hy@pstringD)%
10023 \fi
10024 \Hy@SetNewWindow
10025 \Hy@href@nextactionraw
10026 >>%
10027 >>%
10028 }%
10029 \Hy@colorlink\@filecolor

```

```

10030 }%
10031 #1\Hy@xspace@end
10032 \Hy@EndAnnot
10033 }
10034 \def\@hyper@launch run:#1\|#2#3{% filename, anchor text linkname
10035 \leavevmode
10036 \Hy@BeginAnnot{%
10037 \Hy@pstringdef\Hy@pstringF{#1}%
10038 \Hy@pstringdef\Hy@pstringP{#3}%
10039 \@pdfm@mark{%
10040 bann<<%
10041 /Type/Annot%
10042 /Subtype/Link%
10043 \ifHy@pdfa /F 4\fi
10044 \Hy@setpdfborder
10045 \Hy@setpdfhighlight
10046 \ifx\@runbordercolor\relax
10047 \else
10048 /C[\@runbordercolor]%
10049 \fi
10050 /A<<%
10051 /F(\Hy@pstringF)%
10052 /S/Launch%
10053 \Hy@SetNewWindow
10054 \ifx\|#3\|
10055 \else
10056 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
10057 \fi
10058 \Hy@href@nextactionraw
10059 >>%
10060 >>%
10061 }%
10062 \Hy@colorlink\@runcolor
10063 }%
10064 #2\Hy@xspace@end
10065 \Hy@EndAnnot
10066 }
10067 \def\hyper@linkurl#1#2{%
10068 \leavevmode
10069 \Hy@BeginAnnot{%
10070 \Hy@pstringdef\Hy@pstringURI{#2}%
10071 \@pdfm@mark{%
10072 bann<<%
10073 /Type/Annot%
10074 /Subtype/Link%
10075 \ifHy@pdfa /F 4\fi
10076 \Hy@setpdfborder
10077 \Hy@setpdfhighlight
10078 \ifx\@urlbordercolor\relax
10079 \else
10080 /C[\@urlbordercolor]%
10081 \fi
10082 /A<<%
10083 /S/URI%

```

```

10084      /URI(\Hy@pstringURI)%
10085      \ifHy@href@ismap
10086      /IsMap true%
10087      \fi
10088      \Hy@href@nextactionraw
10089      >>%
10090      >>%
10091      }%
10092      \Hy@colorlink\@urlcolor
10093      }%
10094      #1\Hy@xspace@end
10095      \Hy@endAnnot
10096      }
10097      \def\Acrobatmenu#1#2{%
10098      \Hy@Acrobatmenu{#1}{#2}{%
10099      \Hy@BeginAnnot{%
10100      \EdefEscapeName\Hy@temp@menu{#1}%
10101      \@pdfm@mark{%
10102      bann<<%
10103      /Type/Annot%
10104      /Subtype/Link%
10105      \ifHy@pdfa /F 4\fi
10106      \Hy@setpdfborder
10107      \Hy@setpdfhighlight
10108      \ifx\@menubordercolor\relax
10109      \else
10110      /C[\@menubordercolor]%
10111      \fi
10112      /A<<%
10113      /S/Named%
10114      /N/\Hy@temp@menu
10115      \Hy@href@nextactionraw
10116      >>%
10117      >>%
10118      }%
10119      \Hy@colorlink\@menucolor
10120      }%
10121      #2\Hy@xspace@end
10122      \Hy@endAnnot
10123      }%
10124      }
10125
10126      \def\PDF@FinishDoc{%
10127      \Hy@UseMaketitleInfos
10128      \Hy@Info@GenerateAddons
10129      \@pdfm@mark{%
10130      docinfo<<%
10131      /Title(\@pdfm@title)%
10132      /Subject(\@pdfm@subject)%
10133      /Creator(\@pdfm@creator)%
10134      \ifx\@pdfm@creationdate\@empty
10135      \else
10136      /CreationDate(\@pdfm@creationdate)%
10137      \fi

```

```

10138 \ifx\@pdfmoddate\@empty
10139 \else
10140 /ModDate(\@pdfmoddate)%
10141 \fi
10142 /Author(\@pdfauthor)%
10143 \ifx\@pdfproducer\relax
10144 \else
10145 /Producer(\@pdfproducer)%
10146 \fi
10147 /Keywords(\@pdfkeywords)%
10148 \ifx\@pdftrapped\@empty
10149 \else
10150 /Trapped/\@pdftrapped
10151 \fi
10152 \HyInfo@Addons
10153 >>%
10154 }%
10155 \Hy@DisableOption{pdfauthor}%
10156 \Hy@DisableOption{pdftitle}%
10157 \Hy@DisableOption{pdfsubject}%
10158 \Hy@DisableOption{pdfcreator}%
10159 \Hy@DisableOption{addtopdfcreator}%
10160 \Hy@DisableOption{pdfcreationdate}%
10161 \Hy@DisableOption{pdfcreationdate}%
10162 \Hy@DisableOption{pdfmoddate}%
10163 \Hy@DisableOption{pdfproducer}%
10164 \Hy@DisableOption{pdfkeywords}%
10165 \Hy@DisableOption{pdftrapped}%
10166 \Hy@DisableOption{pdfinfo}%
10167 }

10168 \def\PDF@SetupDoc{%
10169 \edef\Hy@temp{%
10170 \ifHy@pdftoolbar\else /HideToolbar true\fi
10171 \ifHy@pdfmenubar\else /HideMenubar true\fi
10172 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10173 \ifHy@pdfwindow /FitWindow true\fi
10174 \ifHy@pdfcenterwindow /CenterWindow true\fi
10175 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10176 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10177 \Hy@UseNameKey{Direction}\@pdfdirection
10178 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10179 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10180 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10181 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10182 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10183 \Hy@UseNameKey{Duplex}\@pdfduplex
10184 \ifx\@pdfpicktraybypdfsize\@empty
10185 \else
10186 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10187 \fi
10188 \ifx\@pdfprintpagerange\@empty
10189 \else
10190 /PrintPageRange[\@pdfprintpagerange]%
10191 \fi

```



```

10192 \ifx\@pdfnumcopies\@empty
10193 \else
10194 /NumCopies \@pdfnumcopies
10195 \fi
10196 }%
10197 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10198 \@pdfm@mark{%
10199 docview<<%
10200 \ifx\@pdfstartpage\@empty
10201 \else
10202 \ifx\@pdfstartview\@empty
10203 \else
10204 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10205 \fi
10206 \fi
10207 \ifx\@baseurl\@empty
10208 \else
10209 /URI<</Base(\Hy@pstringB)>>%
10210 \fi
10211 /PageMode/\@pdfpagemode
10212 \ifx\Hy@temp\@empty
10213 \else
10214 /ViewerPreferences<<\Hy@temp>>%
10215 \fi
10216 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10217 \ifx\@pdflang\relax
10218 \else
10219 /Lang(\@pdflang)%
10220 \fi
10221 >>%
10222 }%
10223 \ifx\@pdfpagescrop\@empty
10224 \else
10225 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
10226 \fi
10227 }
10228 </dvipdfm | xetex>
10229 <*dvipdfm | xetex>

```

\hyper@pagetransition

```

10230 \def\hyper@pagetransition{%
10231 \ifx\@pdfpagetransition\relax
10232 \else
10233 \ifx\@pdfpagetransition\@empty
10234 \else
10235 \special{pdf:put @thispage %
10236 <</Trans<</S/\@pdfpagetransition>>>>%
10237 }%
10238 \fi
10239 \fi
10240 }

```

\hyper@pageduration

```

10241 \def\hyper@pageduration{%
10242   \ifx\@pdfpageduration\relax
10243   \else
10244     \ifx\@pdfpageduration\@empty
10245     \else
10246       \special{pdf:put @thispage %
10247         <</Dur \@pdfpageduration>>%
10248       }%
10249     \fi
10250   \fi
10251 }

10252 \g@addto@macro\Hy@EveryPageBoxHook{%
10253   \hyper@pagetransition
10254   \hyper@pageduration
10255 }

10256 </dvipdfm | xetex>

```

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

```

10257 <*dvipdfm>
10258 \AtBeginShipoutFirst{%
10259   \ifHy@setpagesize
10260   \begingroup
10261     \@ifundefined{stockwidth}{%
10262       \ifdim\paperwidth>\z@
10263       \ifdim\paperheight>\z@
10264         \special{papersize=\the\paperwidth,\the\paperheight}%
10265       \fi
10266     \fi
10267   }{%
10268     \ifdim\stockwidth>\z@
10269     \ifdim\stockheight>\z@
10270       \special{papersize=\the\stockwidth,\the\stockheight}%
10271     \fi
10272   \fi
10273 }%
10274 \endgroup
10275 \fi
10276 \Hy@DisableOption{setpagesize}%
10277 }

10278 </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.

```

10279 <*vtexhtml>
10280 \providecommand*\XR@ext}{htm}
10281 \RequirePackage{vtexhtml}
10282 \newif\if@Localurl
10283 \let\PDF@FinishDoc\ltx@empty
10284 \def\PDF@SetupDoc{%
10285   \ifx\@baseurl\@empty

```

```

10286 \else
10287 \special{!direct <base href="@baseurl">}%
10288 \fi
10289 }
10290 \def\@urltype{url}
10291 \def\hyper@link#1#2#3{%
10292 \Hy@VerboseLinkStart{#1}{#2}%
10293 \leavevmode
10294 \special{!direct <a href=
10295 \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10296 #3\Hy@xspace@end
10297 \special{!direct </a>}%
10298 }
10299 \def\hyper@linkurl#1#2{%
10300 \begingroup
10301 \hyper@chars
10302 \leavevmode
10303 \MathBSuppress=1\relax
10304 \special{!direct <a href=
10305 \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10306 #1\Hy@xspace@end
10307 \MathBSuppress=0\relax
10308 \special{!direct </a>}%
10309 \endgroup
10310 }
10311 \def\hyper@linkfile#1#2#3{%
10312 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
10313 }
10314 \def\hyper@linkstart#1#2{%
10315 \Hy@VerboseLinkStart{#1}{#2}%
10316 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
10317 \@Localurltrue
10318 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10319 \else
10320 \@Localurlfalse
10321 \begingroup
10322 \hyper@chars
10323 \special{!aref \HyperDestNameFilter{#2}}%
10324 \endgroup
10325 \fi
10326 }
10327 \def\hyper@linkend{%
10328 \if@Localurl
10329 \special{!endaref}%
10330 \else
10331 \special{!direct </a>}%
10332 \fi
10333 }
10334 \Hy@WrapperDef\hyper@anchorstart#1{%
10335 \Hy@SaveLastskip
10336 \Hy@VerboseAnchor{#1}%
10337 \begingroup
10338 \hyper@chars
10339 \special{!aname #1}%

```

```

10340 \special{!direct <a name=%
10341 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10342 \endgroup
10343 \Hy@activeanchortrue
10344 }
10345 \def\hyper@anchorend{%
10346 \special{!direct </a>}%
10347 \Hy@activeanchorfalse
10348 \Hy@RestoreLastskip
10349 }
10350 \Hy@WrapperDef\hyper@anchor#1{%
10351 \Hy@SaveLastskip
10352 \Hy@VerboseAnchor{#1}%
10353 \begingroup
10354 \let\protect=\string
10355 \hyper@chars
10356 \leavevmode
10357 \special{!aname #1}%
10358 \special{!direct <a name=%
10359 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10360 \endgroup
10361 \Hy@activeanchortrue
10362 \bgroup\anchor@spot\egroup
10363 \special{!direct </a>}%
10364 \Hy@activeanchorfalse
10365 \Hy@RestoreLastskip
10366 }
10367 \def\@Form[#1]{%
10368 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10369 }
10370 \let\@endForm\ltx@empty
10371 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10372 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10373 }
10374 \def\@TextField[#1]#2{% parameters, label
10375 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10376 }
10377 \def\@CheckBox[#1]#2{% parameters, label
10378 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10379 }
10380 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10381 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10382 }
10383 \def\@PushButton[#1]#2{% parameters, label
10384 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10385 }
10386 \def\@Reset[#1]#2{%
10387 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10388 }
10389 \def\@Submit[#1]#2{%
10390 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10391 }
10392 \</vtexhtml>
10393 \<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.

```

10394 \ifx\mediaheight\@undefined
10395 \else
10396 \ifx\mediaheight\relax
10397 \else
10398 \ifHy@setpagesize
10399 \providecommand*\VTexInitMediaSize{%
10400 \ltx@ifundefined{stockwidth}{%
10401 \ifdim\paperheight>0pt %
10402 \setlength\mediaheight\paperheight
10403 \fi
10404 \ifdim\paperheight>0pt %
10405 \setlength\mediawidth\paperwidth
10406 \fi
10407 }{%
10408 \ifdim\stockheight>0pt %
10409 \setlength\mediaheight\stockheight
10410 \fi
10411 \ifdim\stockwidth>0pt %
10412 \setlength\mediawidth\stockwidth
10413 \fi
10414 }%
10415 }%
10416 \Hy@AtBeginDocument{\VTexInitMediaSize}%
10417 \fi
10418 \Hy@DisableOption{setpagesize}%
10419 \fi
10420 \fi

```

Older versions of VTeX require xyz in lower case.

```

10421 \providecommand*\@pdfview{xyz}
10422 \providecommand*\@pdfborder{0 0 1}
10423 \providecommand*\@pdfborderstyle{}
10424 \let\CurrentBorderColor\@linkbordercolor
10425 \Hy@WrapperDef\hyper@anchor#1{%
10426 \Hy@SaveLastskip
10427 \Hy@VerboseAnchor{#1}%
10428 \begingroup
10429 \let\protect=\string
10430 \hyper@chars
10431 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10432 \endgroup
10433 \Hy@activeanchortrue
10434 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10435 \Hy@activeanchorfalse
10436 \Hy@RestoreLastskip
10437 }
10438 \Hy@WrapperDef\hyper@anchorstart#1{%
10439 \Hy@SaveLastskip
10440 \Hy@VerboseAnchor{#1}%
10441 \begingroup
10442 \hyper@chars

```

```

10443 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10444 \endgroup
10445 \Hy@activeanchortrue
10446 }
10447 \def\hyper@anchorend{%
10448 \Hy@activeanchorfalse
10449 \Hy@RestoreLastskip
10450 }
10451 \def\@urltype{url}
10452 \def\Hy@undefinedname{UNDEFINED}
10453 \def\hyper@linkstart#1#2{%
10454 \Hy@VerboseLinkStart{#1}{#2}%
10455 \Hy@pstringdef\Hy@pstringURI{#2}%
10456 \expandafter\Hy@colorlink\csname @#1color\endcsname
10457 \ltx@ifUndefined{@#1bordercolor}{%
10458 \let\CurrentBorderColor\relax
10459 }{%
10460 \edef\CurrentBorderColor{%
10461 \csname @#1bordercolor\endcsname
10462 }%
10463 }%
10464 \def\Hy@tempa{#1}%
10465 \ifx\Hy@tempa\@urltype
10466 \special{!%
10467 aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10468 \ifHy@href@ismap
10469 /IsMap true%
10470 \fi
10471 \Hy@href@nextactionraw
10472 >,%
10473 a=<%
10474 \ifHy@pdfa /F 4\fi
10475 \Hy@setpdfborder
10476 \ifx\CurrentBorderColor\relax
10477 \else
10478 /C [\CurrentBorderColor]%
10479 \fi
10480 >%
10481 }%
10482 \else
10483 \protected@edef\Hy@testname{#2}%
10484 \ifx\Hy@testname\@empty
10485 \Hy@Warning{%
10486 Empty destination name,\MessageBreak
10487 using ``\Hy@undefinedname'%
10488 }%
10489 \let\Hy@testname\Hy@undefinedname
10490 \fi
10491 \special{!%
10492 aref \expandafter\HyperDestNameFilter
10493 \expandafter{\Hy@testname};%
10494 a=<%
10495 \ifHy@pdfa /F 4\fi
10496 \Hy@setpdfborder

```

```

10497     \ifx\CurrentBorderColor\relax
10498     \else
10499     /C [\CurrentBorderColor]%
10500     \fi
10501     >%
10502     }%
10503     \fi
10504 }
10505 \def\hyper@linkend{%
10506 \special{!endaref}%
10507 \Hy@endcolorlink
10508 }
10509 \def\hyper@linkfile#1#2#3{%
10510 \leavevmode
10511 \def\Hy@pstringF{#2}%
10512 \Hy@CleanupFile\Hy@pstringF
10513 \special{!%
10514   aref <%
10515   \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi\fi
10516   f=\Hy@pstringF>#3;%
10517   a=<%
10518   \ifHy@pdfa /F 4\fi
10519   \Hy@setpdfborder
10520   \ifx\@filebordercolor\relax
10521   \else
10522   /C [\@filebordercolor]%
10523   \fi
10524   >%
10525   }%
10526   \Hy@colorlink\@filecolor
10527   #1\Hy@xspace@end
10528   \Hy@endcolorlink
10529   \special{!endaref}%
10530 }
10531 \def\hyper@linkurl#1#2{%
10532 \begingroup
10533 \Hy@pstringdef\Hy@pstringURI{#2}%
10534 \hyper@chars
10535 \leavevmode
10536 \special{!%
10537   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10538   \ifHy@href@ismap
10539   /IsMap true%
10540   \fi
10541   \Hy@href@nextactionraw
10542   >;%
10543   a=<%
10544   \ifHy@pdfa /F 4\fi
10545   \Hy@setpdfborder
10546   \ifx\@urlbordercolor\relax
10547   \else
10548   /C [\@urlbordercolor]%
10549   \fi
10550   >%

```

```

10551 }%
10552 \Hy@colorlink\@urlcolor
10553 #1\Hy@xspace@end
10554 \Hy@endcolorlink
10555 \special{!endaref}%
10556 \endgroup
10557 }
10558 \def\hyper@link#1#2#3{%
10559 \Hy@VerboseLinkStart{#1}{#2}%
10560 \ltx@ifundefined{#1bordercolor}{%
10561 \let\CurrentBorderColor\relax
10562 }{%
10563 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10564 }%
10565 \leavevmode
10566 \protected@edef\Hy@testname{#2}%
10567 \ifx\Hy@testname\@empty
10568 \Hy@Warning{%
10569 Empty destination name,\MessageBreak
10570 using \Hy@undefinedname'%
10571 }%
10572 \let\Hy@testname\Hy@undefinedname
10573 \fi
10574 \special{!%
10575 aref \expandafter\HyperDestNameFilter
10576 \expandafter{\Hy@testname};%
10577 a=<%
10578 \ifHy@pdfa /F 4\fi
10579 \Hy@setpdfborder
10580 \ifx\CurrentBorderColor\relax
10581 \else
10582 /C [\CurrentBorderColor]%
10583 \fi
10584 >%
10585 }%
10586 \expandafter
10587 \Hy@colorlink\csname @#1color\endcsname
10588 #3\Hy@xspace@end
10589 \Hy@endcolorlink
10590 \special{!endaref}%
10591 }
10592 \def\hyper@image#1#2{%
10593 \hyper@linkurl{#2}{#1}%
10594 }
10595 \def\@hyper@launch run:#1\#2#3{%
10596 \Hy@pstringdef\Hy@pstringF{#1}%
10597 \Hy@pstringdef\Hy@pstringP{#3}%
10598 \leavevmode
10599 \special{!aref %
10600 <u=%
10601 /Type/Action%
10602 /S/Launch%
10603 /F(\Hy@pstringF)%
10604 \Hy@SetNewWindow

```



```

10605 \ifx\#3\%
10606 \else
10607 /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10608 \fi
10609 \Hy@href@nextactionraw
10610 >,%
10611 a=<%
10612 \ifHy@pdfa /F 4\fi
10613 \Hy@setpdfborder
10614 \ifx\@runbordercolor\relax
10615 \else
10616 /C[\@runbordercolor]%
10617 \fi
10618 >%
10619 }%
10620 \Hy@colorlink\@runcolor
10621 #2\Hy@xspace@end
10622 \Hy@endcolorlink
10623 \special{!endaref}%
10624 }
10625 \def\Acrobatmenu#1#2{%
10626 \EdefEscapeName\Hy@temp@menu{#1}%
10627 \Hy@Acrobatmenu{#1}{#2}{%
10628 \special{!%
10629 aref <u=/S /Named /N /\Hy@temp@menu>;%
10630 a=<%
10631 \ifHy@pdfa /F 4\fi
10632 \Hy@setpdfborder
10633 \ifx\@menubordercolor\relax
10634 \else
10635 /C[\@menubordercolor]%
10636 \fi
10637 >%
10638 }%
10639 \Hy@colorlink\@menucolor
10640 #2\Hy@xspace@end
10641 \Hy@endcolorlink
10642 \special{!endaref}%
10643 }%
10644 }

```

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*.

```

10645 \ifnum\Hy@VTeXversion<702 %
10646 \else
10647 \def\hyper@pagetransition{%
10648 \ifx\@pdfpagetransition\relax
10649 \else
10650 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

10651 \else
10652 \hvtex@parse@trans\@pdfpagetransition

```

```

10653 \fi
10654 \fi
10655 }%

```

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

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

```

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

```

Transition codes:

```

10656 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10657 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10658 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10659 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10660 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10661 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10662 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10663 \def\hvtex@par@dimension{/Dm}%
10664 \def\hvtex@par@direction{/Di}%
10665 \def\hvtex@par@duration{/D}%
10666 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

10667 \def\hvtex@gettoken{%
10668 \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10669 }%

```

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

```

10670 \def\hvtex@gettoken@#1 #2\@nil{%
10671 \edef\hvtex@token{#1}%
10672 \edef\hvtex@buffer{#2}%
10673 }%
10674 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

10675 \let\hvtex@trans@code\@empty
10676 \let\hvtex@param@dimension\@empty
10677 \let\hvtex@param@direction\@empty
10678 \let\hvtex@param@duration\@empty

```

```

10679 \let\hvtex@param@motion\@empty
10680 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10681 \hvtex@gettoken
10682 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10683 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

10684 \else
10685 \hvtex@gettoken
10686 \fi
10687 \fi
10688 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

10689 \hvtex@trans@params
10690 }%

```

Reentrant macro to parse optional parameters.

```

10691 \def\hvtex@trans@params{%
10692 \ifx\hvtex@buffer\@empty
10693 \else
10694 \hvtex@gettoken
10695 \let\hvtex@trans@par\hvtex@token
10696 \ifx\hvtex@buffer\@empty
10697 \else
10698 \hvtex@gettoken
10699 \ifx\hvtex@trans@par\hvtex@par@duration

```

/D is the effect duration in seconds. V<sub>T</sub>E<sub>X</sub> special takes it in milliseconds.

```

10700 \let\hvtex@param@duration\hvtex@token
10701 \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

10702 \expandafter\edef\expandafter\hvtex@param@motion
10703 \expandafter{\expandafter\@gobble\hvtex@token}%
10704 \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

10705 \expandafter\edef\expandafter\hvtex@param@dimension
10706 \expandafter{\expandafter\@gobble\hvtex@token}%
10707 \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).

```

10708 \let\hvtex@param@direction\hvtex@token
10709 \fi\fi\fi\fi
10710 \fi
10711 \fi
10712 \ifx\hvtex@buffer\@empty
10713 \let\next\hvtex@produce@trans
10714 \else
10715 \let\next\hvtex@trans@params
10716 \fi
10717 \next

```

10718 }%

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

```

10719 \def\hvtex@produce@trans{%
10720 \let\vtex@trans@special\@empty
10721 \if S\hvtex@trans@code
10722 \edef\vtex@trans@special{\hvtex@trans@code
10723 \hvtex@param@dimension\hvtex@param@motion}%
10724 \else\if B\hvtex@trans@code
10725 \edef\vtex@trans@special{%
10726 \hvtex@trans@code\hvtex@param@dimension
10727 }%
10728 \else\if X\hvtex@trans@code
10729 \edef\vtex@trans@special{%
10730 \hvtex@trans@code\hvtex@param@motion
10731 }%
10732 \else\if W\hvtex@trans@code
10733 \edef\vtex@trans@special{%
10734 \hvtex@trans@code\hvtex@param@direction
10735 }%
10736 \else\if D\hvtex@trans@code
10737 \let\vtex@trans@special\hvtex@trans@code
10738 \else\if R\hvtex@trans@code
10739 \let\vtex@trans@special\hvtex@trans@code
10740 \else\if G\hvtex@trans@code
10741 \edef\vtex@trans@special{%
10742 \hvtex@trans@code\hvtex@param@direction
10743 }%
10744 \fi\fi\fi\fi\fi\fi
10745 \ifx\vtex@trans@special\@empty
10746 \else
10747 \ifx\hvtex@param@duration\@empty
10748 \else
10749 \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10750 \multiply\dimen@\@m
10751 \edef\vtex@trans@special{%
10752 \vtex@trans@special,\strip@pt\dimen@
10753 }%
10754 \fi

```

And all the mess is just for this.

```

10755 \special{!trans \vtex@trans@special}%
10756 \fi
10757 }%
10758 \def\hyper@pageduration{%
10759 \ifx\@pdfpageduration\relax
10760 \else
10761 \ifx\@pdfpageduration\@empty
10762 \special{!duration-}%
10763 \else
10764 \special{!duration \@pdfpageduration}%
10765 \fi

```

```

10766 \fi
10767 }%
10768 \g@addto@macro\Hy@EveryPageBoxHook{%
10769 \hyper@pagetransition
10770 \hyper@pageduration
10771 }%
10772 \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

```

10773 \ifx\@pdfproducer\relax
10774 \def\@pdfproducer{VTeX}%
10775 \ifnum\Hy@VTeXversion>\z@
10776 \count@\VTeXversion
10777 \divide\count@ 100 %
10778 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10779 \multiply\count@ -100 %
10780 \advance\count@\VTeXversion
10781 \edef\@pdfproducer{%
10782 \@pdfproducer
10783 .\ifnum\count@<10 0\fi\the\count@
10784 \ifx\VTeXOS\@undefined\else
10785 \ifnum\VTeXOS>0 %
10786 \ifnum\VTeXOS<6 %
10787 \space(
10788 \ifcase\VTeXOS
10789 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10790 \fi
10791 )%
10792 \fi
10793 \fi
10794 \fi
10795 ,\space
10796 \ifnum\OpMode=\@one PDF\else PS\fi
10797 \space backend%
10798 \ifx\gexmode\@undefined\else
10799 \ifnum\gexmode>\z@\space with GeX\fi
10800 \fi
10801 }%
10802 \fi
10803 \fi

```

Current `!pdfinfo` key syntax:

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

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

```

10804 \def\PDF@SetupDoc{%
10805   \ifx\@pdfpagescrop\@empty
10806   \else
10807     \special{!pdfinfo b=<\@pdfpagescrop>}%
10808   \fi
10809   \ifx\@pdfstartpage\@empty
10810   \else
10811     \ifx\@pdfstartview\@empty
10812     \else
10813       \special{!onopen Page\@pdfstartpage}%
10814     \fi
10815   \fi
10816   \special{!pdfinfo p=<\/\@pdfpagemode>}%
10817   \ifx\@baseurl\@empty
10818   \else
10819     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10820   \fi
10821   \special{!pdfinfo v=<<<%
10822     \ifHy@pdftoolbar\else /HideToolbar true\fi
10823     \ifHy@pdfmenubar\else /HideMenubar true\fi
10824     \ifHy@pdfwindowui\else /HideWindowUI true\fi
10825     \ifHy@pdfwindow /FitWindow true\fi
10826     \ifHy@pdfcenterwindow /CenterWindow true\fi
10827     \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10828     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10829     \Hy@UseNameKey{Direction}\@pdfdirection
10830     \Hy@UseNameKey{ViewArea}\@pdfviewarea
10831     \Hy@UseNameKey{ViewClip}\@pdfviewclip
10832     \Hy@UseNameKey{PrintArea}\@pdfprintarea
10833     \Hy@UseNameKey{PrintClip}\@pdfprintclip
10834     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10835     \Hy@UseNameKey{Duplex}\@pdfduplex
10836     \ifx\@pdfpicktraybypdfsize\@empty
10837     \else
10838       /PickTrayByPDFSize \@pdfpicktraybypdfsize
10839     \fi
10840     \ifx\@pdfprintpagerange\@empty
10841     \else
10842       /PrintPageRange[\@pdfprintpagerange]%
10843     \fi

```

```

10844 \ifx\@pdfnumcopies\@empty
10845 \else
10846 /NumCopies \@pdfnumcopies
10847 \fi
10848 >>>}%
10849 \ifx\@pdfpagelayout\@empty
10850 \else
10851 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10852 \fi
10853 }%
10854 \HyInfo@AddonUnsupportedtrue
10855 \define@key{Hyp}{pdfcreationdate}{%
10856 \Hy@Warning{%
10857 VTeX does not support pdfcreationdate.\MessageBreak
10858 Therefore its setting is ignored%
10859 }%
10860 }
10861 \define@key{Hyp}{pdfmoddate}{%
10862 \Hy@Warning{%
10863 VTeX does not support pdfmoddate.\MessageBreak
10864 Therefore its setting is ignored%
10865 }%
10866 }
10867 \def\PDF@FinishDoc{%
10868 \Hy@UseMaketitleInfos
10869 \HyInfo@TrappedUnsupported
10870 \special{!pdfinfo a=<\@pdfauthor>}%
10871 \special{!pdfinfo t=<\@pdftitle>}%
10872 \special{!pdfinfo s=<\@pdfsubject>}%
10873 \special{!pdfinfo c=<\@pdfcreator>}%
10874 \ifx\@pdfproducer\relax
10875 \else
10876 \special{!pdfinfo r=<\@pdfproducer>}%
10877 \fi
10878 \special{!pdfinfo k=<\@pdfkeywords>}%
10879 \Hy@DisableOption{pdfauthor}%
10880 \Hy@DisableOption{pdftitle}%
10881 \Hy@DisableOption{pdfsubject}%
10882 \Hy@DisableOption{pdfcreator}%
10883 \Hy@DisableOption{addtopdfcreator}%
10884 \Hy@DisableOption{pdfcreationdate}%
10885 \Hy@DisableOption{pdfcreationdate}%
10886 \Hy@DisableOption{pdfmoddate}%
10887 \Hy@DisableOption{pdfproducer}%
10888 \Hy@DisableOption{pdfkeywords}%
10889 \Hy@DisableOption{pdftrapped}%
10890 \Hy@DisableOption{pdfinfo}%
10891 }
10892 </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.

```
10893 <dviwindo>\def\literalps@out#1{\special{ps:#1}}}%  
10894 <packageEnd>\providecommand*\Hy@DistillerDestFix{}%  
10895 <*pdfmark | dviwindo>  
10896 \def\Hy@DistillerDestFix{%  
10897   \begingroup  
10898     \let\x\literalps@out
```

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

```
10899   \ifnum \@ifundefined{OpMode}{0}{%  
10900     \@ifundefined{gexmode}{0}{%  
10901       \ifnum\gexmode>0 \OpMode\else 0\fi  
10902     }>1 %  
10903   \def\x##1{%  
10904     \immediate\special{!=##1}}%  
10905   }%  
10906 \fi  
10907 \x{%  
10908   /product where{%  
10909     pop %  
10910     product(Distiller)search{%  
10911       pop pop pop %  
10912       version(.)search{%  
10913         exch pop exch pop%  
10914         (3011)eq{%  
10915           gsave %  
10916           newpath 0 0 moveto closepath clip%  
10917           /Courier findfont 10 scalefont setfont %  
10918           72 72 moveto(.).show %  
10919           grestore%  
10920         }if%  
10921       }{pop}ifelse%  
10922     }{pop}ifelse%  
10923   }if%  
10924 }%  
10925 \endgroup  
10926 }  
10927 </pdfmark | dviwindo>
```

### 43.8 Direct pdfmark support

Drivers that load pdfmark.def have to provide the correct macro definitions of



<code>\@pdfproducer</code>	for document information
<code>\literalps@out</code>	PostScript output
<code>\headerps@out</code>	PostScript output that goes in the header area

and the correct definitions of the following PostScript procedures:

<code>H.S</code>	start of anchor, link or rect
<code>#1 H.A</code>	end of anchor, argument=baselineskip in pt
<code>#1 H.L</code>	end of link, argument=baselineskip in pt
<code>H.R</code>	end of rect
<code>H.B</code>	raw rect code

```

10928 (*pdfmark)
10929 \Hy@breaklinks@unsupported
10930 \def\HyPat@ObjRef{%
10931   \[~{}]+\}%
10932 }
10933 \Hy@WrapperDef\hyper@anchor#1{%
10934   \Hy@SaveLastskip
10935   \Hy@VerboseAnchor{#1}%
10936   \begingroup
10937     \pdfmark[\anchor@spot]{%
10938       pdfmark=/DEST,%
10939       linktype=anchor,%
10940       View=/\@pdfview \@pdfviewparams,%
10941       DestAnchor={#1}%
10942     }%
10943   \endgroup
10944   \Hy@RestoreLastskip
10945 }
10946 \ltx@ifundefined{hyper@anchorstart}{-}{\endinput}
10947 \Hy@WrapperDef\hyper@anchorstart#1{%
10948   \Hy@SaveLastskip
10949   \Hy@VerboseAnchor{#1}%
10950   \literalps@out{H.S}%
10951   \Hy@AllowHyphens
10952   \xdef\hyper@currentanchor{#1}%
10953   \Hy@activeanchortrue
10954 }
10955 \def\hyper@anchorend{%
10956   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10957   \pdfmark{%
10958     pdfmark=/DEST,%
10959     linktype=anchor,%
10960     View=/\@pdfview \@pdfviewparams,%
10961     DestAnchor=\hyper@currentanchor,%
10962   }%
10963   \Hy@activeanchorfalse
10964   \Hy@RestoreLastskip
10965 }
10966 \def\hyper@linkstart#1#2{%
10967   \Hy@VerboseLinkStart{#1}{#2}%
10968   \ifHy@breaklinks
10969     \else
10970     \leavevmode

```

```

10971 \ifmmode
10972 \def\Hy@LinkMath{$}%
10973 \else
10974 \let\Hy@LinkMath\ltx@empty
10975 \fi
10976 \Hy@SaveSpaceFactor
10977 \hbox\bgroup
10978 \Hy@RestoreSpaceFactor
10979 \Hy@LinkMath
10980 \fi
10981 \expandafter\Hy@colorlink\csname @#1color\endcsname
10982 \literalps@out{H.S}%
10983 \Hy@AllowHyphens
10984 \xdef\hyper@currentanchor{#2}%
10985 \gdef\hyper@currentlinktype{#1}%
10986 }
10987 \def\hyper@linkend{%
10988 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10989 \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
10990 \let\Hy@tempcolor\relax
10991 }{%
10992 \edef\Hy@tempcolor{%
10993 \csname @\hyper@currentlinktype bordercolor\endcsname
10994 }%
10995 }%
10996 \pdfmark{%
10997 pdfmark=/ANN,%
10998 linktype=link,%
10999 Subtype=/Link,%
11000 PDFAFlags=4,%
11001 Dest=\hyper@currentanchor,%
11002 AcroHighlight=\@pdfhighlight,%
11003 Border=\@pdfborder,%
11004 BorderStyle=\@pdfborderstyle,%
11005 Color=\Hy@tempcolor,%
11006 Raw=H.B%
11007 }%
11008 \Hy@endcolorlink
11009 \ifHy@breaklinks
11010 \else
11011 \Hy@LinkMath
11012 \Hy@SaveSpaceFactor
11013 \egroup
11014 \Hy@RestoreSpaceFactor
11015 \fi
11016 }

```

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.

```

11017 \begingroup
11018 \catcode`P=12 %
11019 \catcode`T=12 %
11020 \lowercase{\endgroup

```

```

11021 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
11022 }
11023 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

\hyper@pagetransition

```

11024 \def\hyper@pagetransition{%
11025 \ifx\@pdfpagetransition\relax
11026 \else
11027 \ifx\@pdfpagetransition\@empty
11028 % 1. Does an old entry have to be deleted?
11029 % 2. If 1=yes, how to delete?
11030 \else
11031 \pdfmark{%
11032 pdfmark=/PUT,%
11033 Raw={%
11034 \string{ThisPage\string}%
11035 <</Trans << /S /\@pdfpagetransition\space >> >>%
11036 }%
11037 }%
11038 \fi
11039 \fi
11040 }

```

\hyper@pageduration

```

11041 \def\hyper@pageduration{%
11042 \ifx\@pdfpageduration\relax
11043 \else
11044 \ifx\@pdfpageduration\@empty
11045 % 1. Does an old entry have to be deleted?
11046 % 2. If 1=yes, how to delete?
11047 \else
11048 \pdfmark{%
11049 pdfmark=/PUT,%
11050 Raw={%
11051 \string{ThisPage\string}%
11052 <</Dur \@pdfpageduration>>%
11053 }%
11054 }%
11055 \fi
11056 \fi
11057 }

11058 \g@addto@macro\Hy@EveryPageBoxHook{%
11059 \hyper@pagetransition
11060 \hyper@pageduration
11061 }

11062 \def\hyper@image#1#2{%
11063 \hyper@linkurl{#2}{#1}%
11064 }
11065 \def\Hy@undefinedname{UNDEFINED}
11066 \def\hyper@link#1#2#3{%
11067 \Hy@VerboseLinkStart{#1}{#2}%
11068 \ltx@ifundefined{#1bordercolor}{%
11069 \let\Hy@tempcolor\relax

```

```

11070 }{%
11071   \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
11072 }%
11073 \begingroup
11074   \protected@edef\Hy@testname{#2}%
11075   \ifx\Hy@testname\@empty
11076     \Hy@Warning{%
11077       Empty destination name,\MessageBreak
11078       using ``\Hy@undefinedname'%
11079     }%
11080     \let\Hy@testname\Hy@undefinedname
11081   \fi
11082   \pdfmark[{#3}]{%
11083     Color=\Hy@tempcolor,%
11084     linktype={#1},%
11085     AcroHighlight=\@pdfhighlight,%
11086     Border=\@pdfborder,%
11087     BorderStyle=\@pdfborderstyle,%
11088     pdfmark=/ANN,%
11089     Subtype=/Link,%
11090     PDFAMFlags=4,%
11091     Dest=\Hy@testname
11092   }%
11093 \endgroup
11094 }
11095 \newtoks\pdf@docset
11096 \def\PDF@FinishDoc{%
11097   \Hy@UseMaketitleInfos
11098   \Hy@Info@GenerateAddons
11099   \let\Hy@temp\@empty
11100   \ifx\@pdfcreationdate\@empty
11101   \else
11102     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11103   \fi
11104   \ifx\@pdfmoddate\@empty
11105   \else
11106     \expandafter\def\expandafter\Hy@temp\expandafter{%
11107       \Hy@temp
11108       ModDate=\@pdfmoddate,%
11109     }%
11110   \fi
11111   \ifx\@pdfproducer\relax
11112   \else
11113     \expandafter\def\expandafter\Hy@temp\expandafter{%
11114       \Hy@temp
11115       Producer=\@pdfproducer,%
11116     }%
11117   \fi
11118   \expandafter
11119   \pdfmark\expandafter{%
11120     \Hy@temp
11121     pdfmark=/DOCINFO,%
11122     Title=\@pdftitle,%
11123     Subject=\@pdfsubject,%

```

```

11124   Creator=\@pdfcreator,%
11125   Author=\@pdfauthor,%
11126   Keywords=\@pdfkeywords,%
11127   Trapped=\@pdftrapped
11128 }%
11129 \ifx\HyInfo@Addons\@empty
11130 \else
11131   \pdfmark{%
11132     pdfmark=/DOCINFO,%
11133     Raw={\HyInfo@Addons}%
11134   }%
11135 \fi
11136 \Hy@DisableOption{pdfauthor}%
11137 \Hy@DisableOption{pdftitle}%
11138 \Hy@DisableOption{pdfsubject}%
11139 \Hy@DisableOption{pdfcreator}%
11140 \Hy@DisableOption{addtopdfcreator}%
11141 \Hy@DisableOption{pdfcreationdate}%
11142 \Hy@DisableOption{pdfcreationdate}%
11143 \Hy@DisableOption{pdfmoddate}%
11144 \Hy@DisableOption{pdfproducer}%
11145 \Hy@DisableOption{pdfkeywords}%
11146 \Hy@DisableOption{pdftrapped}%
11147 \Hy@DisableOption{pdfinfo}%
11148 }
11149 \def\PDF@SetupDoc{%
11150   \def\Hy@temp{}%
11151   \ifx\@pdfstartpage\@empty
11152   \else
11153     \ifx\@pdfstartview\@empty
11154     \else
11155       \edef\Hy@temp{%
11156         ,Page=\@pdfstartpage
11157         ,View=\@pdfstartview
11158       }%
11159     \fi
11160   \fi
11161   \edef\Hy@temp{%
11162     \noexpand\pdfmark{%
11163       pdfmark=/DOCVIEW,%
11164       PageMode=/\@pdfpagemode
11165     }\Hy@temp
11166   }%
11167 }%
11168 \Hy@temp
11169 \ifx\@pdfpagescrop\@empty
11170 \else
11171   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11172 \fi
11173 \edef\Hy@temp{%
11174   \ifHy@pdftoolbar\else /HideToolbar true\fi
11175   \ifHy@pdfmenubar\else /HideMenubar true\fi
11176   \ifHy@pdfwindowui\else /HideWindowUI true\fi
11177   \ifHy@pdfwindow /FitWindow true\fi

```

```

11178 \ifHy@pdfcenterwindow /CenterWindow true\fi
11179 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11180 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11181 \Hy@UseNameKey{Direction}\@pdfdirection
11182 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11183 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11184 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11185 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11186 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11187 \Hy@UseNameKey{Duplex}\@pdfduplex
11188 \ifx\@pdfpicktraybypdfsize\@empty
11189 \else
11190 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11191 \fi
11192 \ifx\@pdfprintpagerange\@empty
11193 \else
11194 /PrintPageRange[\@pdfprintpagerange]%
11195 \fi
11196 \ifx\@pdfnumcopies\@empty
11197 \else
11198 /NumCopies \@pdfnumcopies
11199 \fi
11200 }%
11201 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11202 \pdfmark{%
11203 pdfmark=/PUT,%
11204 Raw={%
11205 \string{Catalog\string}<<%
11206 \ifx\Hy@temp\@empty
11207 \else
11208 /ViewerPreferences<<\Hy@temp>>%
11209 \fi
11210 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11211 \ifx\@pdflang\relax
11212 \else
11213 /Lang(\@pdflang)%
11214 \fi
11215 \ifx\@baseurl\@empty
11216 \else
11217 /URI<</Base(\Hy@pstringB)>>%
11218 \fi
11219 >>%
11220 }%
11221 }%
11222 }
11223 \pdfmark
11224 \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.

```

11225 \newif\ifHy@pdfmarkerror
11226 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
11227 \def\pdfmark@[#1]#2{%
11228   \Hy@pdfmarkerrorfalse
11229   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11230   \@processme
11231   \let\pdf@type\relax
11232   \let\pdf@objdef\ltx@empty
11233   \kvsetkeys{PDF}{#2}%
11234   \ifHy@pdfmarkerror
11235   \else
11236     \ifx\pdf@type\relax
11237       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11238       \ifx\#1\%
11239         \else
11240           \pdf@rect{#1}%
11241         \fi
11242       \else
11243         \ifx\#1\%
11244           \literalps@out{%
11245             [%
11246               \ifx\pdf@objdef\ltx@empty
11247               \else
11248                 /_objdef\string{\pdf@objdef\string}%
11249               \fi
11250               \the\pdf@toks\space\pdf@type\space pdfmark%
11251             ]%
11252             \else
11253               \ltx@ifundefined{@\pdf@linktype color}{%
11254                 \Hy@colorlink\@linkcolor
11255               }{%
11256                 \expandafter\Hy@colorlink
11257                 \csname @\pdf@linktype color\endcsname
11258               }%
11259               \pdf@rect{#1}%
11260               \literalps@out{%
11261                 [%
11262                   \ifx\pdf@objdef\ltx@empty
11263                   \else
11264                     /_objdef\string{\pdf@objdef\string}%
11265                   \fi
11266                   \the\pdf@toks\space\pdf@type\space pdfmark%
11267                 ]%
11268                 \Hy@endcolorlink
11269               \fi
11270             \fi
11271           \fi
11272 }

```

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

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

text twice.

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

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

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

```
11273 \newsavebox{\pdf@box}
11274 \providecommand*{\Hy@setouterhbox}{\sbox}
11275 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11276 \def\Hy@DEST{/DEST}
11277 \def\pdf@rect#1{%
11278   \begingroup
11279   \chardef\x=1 %
11280   \def\Hy@temp{#1}%
11281   \ifx\Hy@temp\ltx@empty
11282     \chardef\x=0 %
11283   \else
11284     \def\y{\anchor@spot}%
11285     \ifx\Hy@temp\y
11286       \def\y{\relax}%
11287       \ifx\anchor@spot\y
11288         \chardef\x=0 %
11289       \fi
11290     \fi
11291   \fi
11292   \expandafter\endgroup
11293   \ifcase\x
11294     \literalps@out{H.S}%
11295     \literalps@out{H.R}%
11296   \else
11297     \leavevmode
11298     \Hy@SaveSpaceFactor
11299     \ifmmode
11300       \def\Hy@LinkMath{$}%
11301     \else
11302       \let\Hy@LinkMath\ltx@empty
11303     \fi
11304     \ifHy@breaklinks
11305       \Hy@setouterhbox\pdf@box{%
11306         \Hy@RestoreSpaceFactor
11307         \Hy@LinkMath
11308         \Hy@AllowHyphens#1\Hy@xspace@end
11309         \Hy@LinkMath
11310         \Hy@SaveSpaceFactor
11311       }%
11312     \else
11313       \sbox\pdf@box{%
11314         \Hy@RestoreSpaceFactor
11315         \Hy@LinkMath
11316         #1\Hy@xspace@end
11317         \Hy@LinkMath
11318         \Hy@SaveSpaceFactor
```



```

11319 }%
11320 \fi
11321 \dimen@ht\pdf@box
11322 \ifdim\dp\pdf@box=\z@
11323 \literalps@out{H.S}%
11324 \else
11325 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11326 \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...).

```

11327 \ifHy@breaklinks
11328 \ifhmode
11329 \Hy@breaklinksunhbox\pdf@box
11330 \else
11331 \box\pdf@box
11332 \fi
11333 \else
11334 \expandafter\box\pdf@box
11335 \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

11336 \ifdim\dimen@=\z@
11337 \literalps@out{H.R}%
11338 \else
11339 \raise\dimen@\hbox{\literalps@out{H.R}}%
11340 \fi
11341 \Hy@RestoreSpaceFactor
11342 \fi
11343 \ifx\pdf@type\Hy@DEST
11344 \else
11345 \pdf@addtoksx{H.B}%
11346 \fi
11347 }

```

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.

```

11348 \newtoks\pdf@toks
11349 \newtoks\pdf@defaulttoks
11350 \pdf@defaulttoks={}%
11351 \def\pdf@addtoks#1#2{%
11352 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11353 \@processme
11354 }
11355 \def\pdf@addtoksx#1{%
11356 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11357 \@processme
11358 }
11359 \def\PDFdefaults#1{%

```

```

11360 \pdf@defaulttoks={#1}%
11361 }
This is the list of allowed keys. See the Acrobat manual for an explanation.
11362 % what is the type of pdfmark?
11363 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11364 % what is the link type?
11365 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11366 \def\pdf@linktype{link}
11367 % named object?
11368 \define@key{PDF}{objdef}{\edef\pdf@objdef{#1}}
11369 \let\pdf@objdef\ltx@empty
11370 % parameter is a stream of PDF
11371 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11372 % parameter is a name
11373 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11374 % parameter is a array
11375 \define@key{PDF}{Border}{%
11376   \edef\Hy@temp{#1}%
11377   \ifx\Hy@temp\@empty
11378     \else
11379       \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11380     \fi
11381   }
11382   \let\Hy@BorderArrayPatch\@empty
11383   % parameter is a dictionary
11384   \define@key{PDF}{BorderStyle}{%
11385     \edef\Hy@temp{#1}%
11386     \ifx\Hy@temp\@empty
11387       \else
11388         \pdf@addtoks{<<#1>>}{BS}%
11389       \fi
11390     }
11391     % parameter is a array
11392     \define@key{PDF}{Color}{%
11393       \ifx\relax#1\relax
11394       \else
11395         \pdf@addtoks{[#1]}{Color}% hash-ok
11396       \fi
11397     }
11398     % parameter is a string
11399     \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11400     % parameter is a integer
11401     \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11402     % parameter is a array
11403     \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11404     % parameter is a string
11405     \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11406     % parameter is a string or file
11407     \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11408     % parameter is a destination
11409     \define@key{PDF}{Dest}{%
11410       \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11411       \ifx\Hy@pstringDest\@empty
11412         \Hy@pdfmarkerrortrue

```

```

11413 \Hy@Warning{Destination with empty name ignored}%
11414 \else
11415 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11416 \fi
11417 }
11418 \define@key{PDF}{DestAnchor}{%
11419 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11420 \ifx\Hy@pstringDest\@empty
11421 \Hy@pdfmarkerrortrue
11422 \Hy@Warning{Destination with empty name ignored}%
11423 \else
11424 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11425 \fi
11426 }
11427 % parameter is a string
11428 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11429 % parameter is a string
11430 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11431 % parameter is a int
11432 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11433 \define@key{PDF}{PDFAFlags}{%
11434 \ifHy@pdfa
11435 \pdf@addtoks{#1}{F}%
11436 \fi
11437 }
11438 % parameter is a name
11439 \define@key{PDF}{AcroHighlight}{%
11440 \begingroup
11441 \edef\x{#1}%
11442 \expandafter\endgroup\ifx\x\@empty
11443 \else
11444 \pdf@addtoks{#1}{H}%
11445 \fi
11446 }
11447 % parameter is a string
11448 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11449 % parameter is a string
11450 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11451 % parameter is a string
11452 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11453 % parameter is a string
11454 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11455 % parameter is a Boolean
11456 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11457 % parameter is a integer or name
11458 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11459 % parameter is a name
11460 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11461 % parameter is a string
11462 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11463 % parameter is a array
11464 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11465 % parameter is a integer
11466 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}

```

```

11467 % parameter is a name
11468 \define@key{PDF}{Subtype}{\pdf@addtoks{(#1)}{Subtype}}
11469 % parameter is a string
11470 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11471 % parameter is a string
11472 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11473 % parameter is a string
11474 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11475 % parameter is an array
11476 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11477 % parameter is a string
11478 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11479 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11480 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11481 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11482 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11483 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11484 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11485 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11486 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11487 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11488 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
11489 \define@key{PDF}{Trapped}{%
11490   \edef\Hy@temp{#1}%
11491   \ifx\Hy@temp\@empty
11492     \else
11493       \pdf@addtoks{/#1}{Trapped}%
11494     \fi
11495 }
11496
11497 </pdfmarkbase>
11498 <*pdfmark>
11499 \def\Acrobatmenu#1#2{%
11500   \EdefEscapeName\Hy@temp@menu{#1}%
11501   \Hy@Acrobatmenu{#1}{#2}{%
11502     \pdfmark[{#2}]{%
11503       linktype=menu,%
11504       pdfmark=/ANN,%
11505       AcroHighlight=\@pdfhighlight,%
11506       Border=\@pdfborder,%
11507       BorderStyle=\@pdfborderstyle,%
11508       Color=\@menubordercolor,%
11509       Action={<</Subtype/Named/N/\Hy@temp@menu>>},%
11510       Subtype=/Link,%
11511       PDFAFlags=4%
11512     }%
11513   }%
11514 }

```

And now for some useful examples:

```

11515 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
11516 \def\PDFNextPage@[#1]#2{%
11517   \pdfmark[{#2}]{%

```

```

11518   #1,%
11519   Border=\@pdfborder,%
11520   BorderStyle=\@pdfborderstyle,%
11521   Color=.2 .1 .5,%
11522   pdfmark=/ANN,%
11523   Subtype=/Link,%
11524   PDFAFlags=4,%
11525   Page=/Next%
11526 }%
11527 }
11528 \def\PDFPreviousPage{%
11529   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11530 }
11531 \def\PDFPreviousPage@[#1]#2{%
11532   \pdfmark[#{#2}]{%
11533     #1,%
11534     Border=\@pdfborder,%
11535     BorderStyle=\@pdfborderstyle,%
11536     Color=.4 .4 .1,%
11537     pdfmark=/ANN,%
11538     Subtype=/Link,%
11539     PDFAFlags=4,%
11540     Page=/Prev%
11541   }%
11542 }
11543 \def\PDFOpen#1{%
11544   \pdfmark{#1,pdfmark=/DOCVIEW}%
11545 }

```

This will only work if you use Distiller 2.1 or higher.

```

11546 \def\hyper@linkurl#1#2{%
11547   \begingroup
11548     \Hy@pstringdef\Hy@pstringURI{#2}%
11549     \hyper@chars
11550     \leavevmode
11551     \pdfmark[#{#1}]{%
11552       pdfmark=/ANN,%
11553       linktype=url,%
11554       AcroHighlight=\@pdfhighlight,%
11555       Border=\@pdfborder,%
11556       BorderStyle=\@pdfborderstyle,%
11557       Color=\@urlbordercolor,%
11558       Action={<<%
11559         /Subtype/URI%
11560         /URI(\Hy@pstringURI)%
11561         \ifHy@href@ismap
11562           /IsMap true%
11563         \fi
11564       >>},%
11565       Subtype=/Link,%
11566       PDFAFlags=4%
11567     }%
11568   \endgroup
11569 }
11570 \def\hyper@linkfile#1#2#3{%

```

```

11571 \begingroup
11572 \def\Hy@pstringF{#2}%
11573 \Hy@CleanupFile\Hy@pstringF
11574 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11575 \Hy@pstringdef\Hy@pstringD{#3}%
11576 \Hy@MakeRemoteAction
11577 \leavevmode
11578 \pdfmark[{#1}]{%
11579 pdfmark=/ANN,%
11580 Subtype=/Link,%
11581 PDFAFlags=4,%
11582 AcroHighlight=\@pdfhighlight,%
11583 Border=\@pdfborder,%
11584 BorderStyle=\@pdfborderstyle,%
11585 linktype=file,%
11586 Color=\@filebordercolor,%
11587 Action={%
11588 <<%
11589 /S/GoToR%
11590 \Hy@SetNewWindow
11591 /F(\Hy@pstringF)%
11592 /D%
11593 \ifx\#3\%
11594 [\Hy@href@page\@pdfremotestartview]%
11595 \else
11596 (\Hy@pstringD)cvn%
11597 \fi
11598 \Hy@href@nextactionraw
11599 >>%
11600 }%
11601 }%
11602 \endgroup
11603 }
11604 \def\@hyper@launch run:#1\#2#3{%
11605 \begingroup
11606 \Hy@pstringdef\Hy@pstringF{#1}%
11607 \Hy@pstringdef\Hy@pstringP{#3}%
11608 \leavevmode
11609 \pdfmark[{#2}]{%
11610 pdfmark=/ANN,%
11611 Subtype=/Link,%
11612 PDFAFlags=4,%
11613 AcroHighlight=\@pdfhighlight,%
11614 Border=\@pdfborder,%
11615 BorderStyle=\@pdfborderstyle,%
11616 linktype=run,%
11617 Color=\@runbordercolor,%
11618 Action={%
11619 <<%
11620 /S/Launch%
11621 \Hy@SetNewWindow
11622 /F(\Hy@pstringF)%
11623 \ifx\#3\%
11624 \else

```

```

11625      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11626      \fi
11627      \Hy@href@nextactionraw
11628      >>%
11629      }%
11630      }%
11631      \endgroup
11632      }
11633      \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.

```

11634 (*dvips)
11635 \providecommand*\XR@ext\pdf
11636 \let\Hy@raisedlink\ltx@empty
11637 \def\literals@out#1{\special{ps:SDict begin #1 end}}%
11638 \def\headerps@out#1{\special{! #1}}%
11639 \input{pdfmark.def}%
11640 \ifx\@pdfproducer\relax
11641   \def\@pdfproducer{dvips + Distiller}%
11642 \fi
11643 \providecommand*\@pdfborder{0 0 1}
11644 \providecommand*\@pdfborderstyle{}
11645 \providecommand*\@pdfview{XYZ}
11646 \providecommand*\@pdfviewparams{ H.V}
11647 \def\Hy@BorderArrayPatch{BorderArrayPatch}

11648 \g@addto@macro\Hy@FirstPageHook{%
11649   \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.

```

11650 /DvipsToPDF{72.27 mul Resolution div} def%
11651 /PDFToDvips{72.27 div Resolution mul} def%
11652 /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.

```

11653   product (Ghostscript) search {pop pop pop revision 927 gt}%
11654   {pop false} ifelse%
11655   {%
11656     /BorderArrayPatch{} def%
11657   }%
11658   {%
11659     /BorderArrayPatch{%
11660       [exch{%
11661         dup dup type/integertype eq exch type/realtype eq or%
11662         {BPToDvips}if%
11663       }forall]%
11664     }def%
11665   } 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.

```

11666   /HyperBorder {1 PDFToDvips} def%
11667   /H.V {pdf@hoff pdf@voff null} def%
11668   /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

```

11669   /H.S {%
11670     currentpoint %
11671     HyperBorder add /pdf@lly exch def %
11672     dup DvipsToPDF 72 add /pdf@hoff exch def %
11673     HyperBorder sub /pdf@llx exch def%
11674   } 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

```

11675   /H.L {%
11676     2 sub dup%
11677     /HyperBasePt exch def %
11678     PDFToDvips /HyperBaseDvips exch def %
11679     currentpoint %
11680     HyperBaseDvips sub /pdf@ury exch def%
11681     /pdf@urx exch def%
11682   } def%
11683   /H.A {%
11684     H.L %
11685     % |pdf@voff| = the distance from the top of the page to a point

```



```

11686 % |\baselineskip| above the current point in PDF coordinates
11687     currentpoint exch pop %
11688     vsize 72 sub exch DvipsToPDF %
11689     HyperBasePt sub % baseline skip
11690     sub /pdf@voff exch def%
11691 } def%
11692 /H.R {%
11693     currentpoint %
11694     HyperBorder sub /pdf@ury exch def %
11695     HyperBorder add /pdf@urx exch def %
11696 % |/pdf@voff| = the distance from the top of the page to the current point, in
11697 % PDF coordinates
11698     currentpoint exch pop vsize 72 sub %
11699     exch DvipsToPDF sub /pdf@voff exch def%
11700 } def%
11701 }%
11702 }
11703 \AtBeginShipoutFirst{%
11704     \ifHy@setpagesize
11705         \begingroup
11706             \@ifundefined{stockwidth}{%
11707                 \ifdim\paperwidth>\z@
11708                     \ifdim\paperheight>\z@
11709                         \special{papersize=\the\paperwidth,\the\paperheight}%
11710                     \fi
11711                 \fi
11712             }{%
11713                 \ifdim\stockwidth>\z@
11714                     \ifdim\stockheight>\z@
11715                         \special{papersize=\the\stockwidth,\the\stockheight}%
11716                     \fi
11717                 \fi
11718             }%
11719         \endgroup
11720     \fi
11721     \Hy@DisableOption{setpagesize}%
11722 }
11723 \def\setpdfinkmargin#1{%
11724     \begingroup
11725         \setlength{\dimen@}{#1}%
11726         \literalps@out{%
11727             /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11728         }%
11729     \endgroup
11730 }
11731 </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.

```

11732 (*vtxpdfmark)
11733 \providecommand*\XR@ext}{pdf}
11734 \let\Hy@raisedlink\ltx@empty
11735 \def\literalps@out#1{\special{pS:#1}}%
11736 \def\headerps@out#1{\immediate\special{pS:#1}}%
11737 \input{pdfmark.def}%
11738 \ifx\@pdfproducer\relax
11739 \ifnum\OpMode=\@ne
11740 \def\@pdfproducer{VTeX}%
11741 \else
11742 \def\@pdfproducer{VTeX + Distiller}%
11743 \fi
11744 \fi
11745 \providecommand*\@pdfborder{0 0 1}
11746 \providecommand*\@pdfborderstyle{}
11747 \providecommand*\@pdfview{XYZ}
11748 \providecommand*\@pdfviewparams{ H.V}

11749 \g@addto@macro\Hy@FirstPageHook{%
11750 \headerps@out{%
11751 /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.

```

11752 /HyperBorder {1} def%
11753 /H.V {pdf@hoff pdf@voff null} def%
11754 /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11755 /H.S {%
11756 currentpoint %
11757 HyperBorder sub%
11758 /pdf@lly exch def %
11759 dup 72 add /pdf@hoff exch def %
11760 HyperBorder sub%
11761 /pdf@llx exch def%
11762 } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`:  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11763 /H.L {%
11764 2 sub%
11765 /HyperBasePt exch def %
11766 currentpoint %
11767 HyperBasePt add HyperBorder add%
11768 /pdf@ury exch def %
11769 HyperBorder add%
11770 /pdf@urx exch def%
11771 } def%
11772 /H.A {%
11773 H.L %
11774 currentpoint exch pop %
11775 vsize 72 sub exch %

```

```

11776    HyperBasePt add add%
11777    /pdf@voff exch def%
11778    } def%

pdf@ury =  $Y_c$  + HyperBorder, pdf@urx =  $X_c$  + HyperBorder
11779    /H.R {%
11780        currentpoint %
11781        HyperBorder add%
11782        /pdf@ury exch def %
11783        HyperBorder add%
11784        /pdf@urx exch def %
11785        currentpoint exch pop vsize 72 sub add%
11786        /pdf@voff exch def%
11787    } def%
11788 }%
11789 }

11790 \def\setpdfinkmargin#1{%
11791     \begingroup
11792     \setlength{\dimen@}{#1}%
11793     \literalps@out{%
11794         /HyperBorder{\strip@pt\dimen@}def%
11795     }%
11796     \endgroup
11797 }

11798 </vtxpdfmark>

```

### 43.11 Textures

```

11799 <*textures>
11800 \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.

```

11801 \begingroup
11802 \obeylines %
11803 \gdef\Hy@ps@CR{\noexpand
11804 }%
11805 \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.

```
11806 \def\literalps@out#1{%
11807   \special{postscript 0 0 transform}%
11808   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11809 }%
11810 %
```

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.

```
11811 \def\headerps@out#1{%
11812   \special{%
11813     prepostscript TeXdict begin\Hy@ps@CR
11814     #1\Hy@ps@CR
11815     end%
11816   }%
11817 }%
11818 %
```

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.

```
11819 \g@addto@macro\Hy@FirstPageHook{%
11820   \headerps@out{%
11821     /betterpdfmark {%
11822       systemdict begin %
11823       dup /BP eq%
11824       {cleartomark gsave nulldevice []}%
11825       {dup /EP eq%
11826        {cleartomark cleartomark grestore}%
11827        {cleartomark}%
11828        ifelse%
11829       }ifelse %
11830     end%
11831   }def\Hy@ps@CR
11832   ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11833 }% end of \headerps@out
11834 }% end of \AtBeginShipoutFirst
11835 %
11836 \input{pdfmark.def}%
11837 %
11838 \ifx\@pdfproducer\relax
11839   \def\@pdfproducer{Textures + Distiller}%
11840 \fi
11841 \providecommand*\@pdfborder{0 0 1}
11842 \providecommand*\@pdfborderstyle{}
11843 \providecommand*\@pdfview{XYZ}
11844 \providecommand*\@pdfviewparams{ H.V}
11845 %
```

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 T<sub>E</sub>X.

```
11846 \Hy@AtBeginDocument{%
```

```
11847 \headerps@out{%
```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```
11848 /vsize {\Hy@pageheight} def%
11849 /DvipsToPDF {} def%
11850 /PDFToDvips {} def%
11851 /BPToDvips {} def%
11852 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11853 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11854 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11855 /H.S {%
11856   currentpoint %
11857   HyperBorder add /pdf@lly exch def %
11858   dup DvipsToPDF 72 add /pdf@hoff exch def %
11859   HyperBorder sub /pdf@llx exch def%
11860 } def\Hy@ps@CR
11861 /H.L {%
11862   2 sub %
11863   PDFToDvips /HyperBase exch def %
11864   currentpoint %
11865   HyperBase sub /pdf@ury exch def%
11866   /pdf@urx exch def%
11867 } def\Hy@ps@CR
11868 /H.A {%
11869   H.L %
11870   currentpoint exch pop %
11871   vsize 72 sub exch DvipsToPDF %
11872   HyperBase sub % baseline skip
11873   sub /pdf@voff exch def%
11874 } def\Hy@ps@CR
11875 /H.R {%
11876   currentpoint %
11877   HyperBorder sub /pdf@ury exch def %
11878   HyperBorder add /pdf@urx exch def %
11879   currentpoint exch pop vsize 72 sub %
11880   exch DvipsToPDF sub /pdf@voff exch def%
11881 } def\Hy@ps@CR
11882 }%
11883 }

11884 \def\setpdfinkmargin#1{%
11885   \begingroup
11886   \setlength{\dimen@}{#1}%
11887   \literalps@out{%
11888     /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11889   }%
11890   \endgroup
11891 }

11892 \Hy@AtBeginDocument{%
11893   \ifHy@colorlinks
```

```

11894 \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11895 \fi
11896 }

```

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.

```

11897 \expandafter\let\expandafter\keepPDF@SetupDoc
11898 \csname PDF@SetupDoc\endcsname
11899 \def\PDF@SetupDoc{%
11900 \ifx\@baseurl\@empty
11901 \else
11902 \special{html:<base href="\@baseurl">}%
11903 \fi
11904 \keepPDF@SetupDoc
11905 }
11906 \Hy@WrapperDef\hyper@anchor#1{%
11907 \Hy@SaveLastskip
11908 \Hy@VerboseAnchor{#1}%
11909 \begingroup
11910 \let\protect=\string
11911 \special{html:<a name=%
11912 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11913 \endgroup
11914 \Hy@activeanchortrue
11915 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11916 \special{html:</a>}%
11917 \Hy@activeanchorfalse
11918 \Hy@RestoreLastskip
11919 }
11920 \Hy@WrapperDef\hyper@anchorstart#1{%
11921 \Hy@SaveLastskip
11922 \Hy@VerboseAnchor{#1}%
11923 \begingroup
11924 \hyper@chars
11925 \special{html:<a name=%
11926 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11927 \endgroup
11928 \Hy@activeanchortrue
11929 }
11930 \def\hyper@anchorend{%
11931 \special{html:</a>}%
11932 \Hy@activeanchorfalse
11933 \Hy@RestoreLastskip
11934 }
11935 \def\@urltype{url}
11936 \def\hyper@linkstart#1#2{%
11937 \Hy@VerboseLinkStart{#1}{#2}%
11938 \expandafter\Hy@colorlink\csname @#1color\endcsname
11939 \def\Hy@tempa{#1}%
11940 \ifx\Hy@tempa\@urltype
11941 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11942 \else
11943 \begingroup

```

```

11944 \hyper@chars
11945 \special{%
11946     html:<a href=%
11947         \hyper@quote\##\HyperDestNameFilter{#2}\hyper@quote>%
11948     }%
11949 \endgroup
11950 \fi
11951 }
11952 \def\hyper@linkend{%
11953 \special{html:</a>}}%
11954 \Hy@endcolorlink
11955 }
11956 \def\hyper@linkfile#1#2#3{%
11957 \hyper@linkurl{#1}{%
11958     \Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi
11959 }%
11960 }
11961 \def\hyper@linkurl#1#2{%
11962 \leavevmode
11963 \ifHy@raiselinks
11964 \Hy@SaveSpaceFactor
11965 \Hy@SaveSavedSpaceFactor
11966 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11967 \Hy@RestoreSavedSpaceFactor
11968 \@linkdim\dp\@tempboxa
11969 \lower\@linkdim\hbox{%
11970     \hyper@chars
11971     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
11972 }%
11973 \Hy@colorlink\@urlcolor
11974 \Hy@RestoreSpaceFactor
11975 #1\Hy@xspace@end
11976 \Hy@SaveSpaceFactor
11977 \@linkdim\ht\@tempboxa
11978 \advance\@linkdim by -6.5\p@
11979 \raise\@linkdim\hbox{\special{html:</a>}}}%
11980 \Hy@endcolorlink
11981 \Hy@RestoreSpaceFactor
11982 \else
11983 \begingroup
11984 \hyper@chars
11985 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
11986 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
11987 \special{html:</a>}}%
11988 \Hy@endcolorlink
11989 \endgroup
11990 \fi
11991 }

```

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

```

11992 \def\hyper@link#1#2#3{%
11993 \Hy@VerboseLinkStart{#1}{#2}%
11994 \hyper@linkurl{#3}{\##\HyperDestNameFilter{#2}}}%
11995 }
11996 \def\hyper@image#1#2{%

```

```

11997 \begingroup
11998   \hyper@chars
11999   \special{html:<img src=\hyper@quote#1\hyper@quote>}%
12000 \endgroup
12001 }
12002 </textures>

```

### 43.12 dvipsone

```

12003 % \subsection{dvipsone driver}
12004 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
12005 % |\special| commands.
12006 <*dvipsone>
12007 \providecommand*\XR@ext>{pdf}
12008 \let\Hy@raisedlink\ltx@empty
12009 \providecommand*\@pdfborder{0 0 1}
12010 \providecommand*\@pdfborderstyle{}
12011 \def\literalps@out#1{\special{ps:#1}}%
12012 \def\headerps@out#1{\special{headertext=#1}}%
12013 \input{pdfmark.def}%
12014 \HyInfo@AddonUnsupportedtrue
12015 \def\PDF@FinishDoc{%
12016   \Hy@UseMaketitleInfos
12017   \HyInfo@TrappedUnsupported
12018   \special{PDF: Keywords \@pdfkeywords}%
12019   \special{PDF: Title \@pdftitle}%
12020   \special{PDF: Creator \@pdfcreator}%
12021   \ifx\@pdfcreationdate\@empty
12022   \else
12023     \special{PDF: CreationDate \@pdfcreationdate}%
12024   \fi
12025   \ifx\@pdfmoddate\@empty
12026   \else
12027     \special{PDF: ModDate \@pdfmoddate}%
12028   \fi
12029   \special{PDF: Author \@pdfauthor}%
12030   \ifx\@pdfproducer\relax
12031   \else
12032     \special{PDF: Producer \@pdfproducer}%
12033   \fi
12034   \special{PDF: Subject \@pdfsubject}%
12035   \Hy@DisableOption{pdfauthor}%
12036   \Hy@DisableOption{pdftitle}%
12037   \Hy@DisableOption{pdfsubject}%
12038   \Hy@DisableOption{pdfcreator}%
12039   \Hy@DisableOption{addtopdfcreator}%
12040   \Hy@DisableOption{pdfcreationdate}%
12041   \Hy@DisableOption{pdfcreationdate}%
12042   \Hy@DisableOption{pdfmoddate}%
12043   \Hy@DisableOption{pdfproducer}%
12044   \Hy@DisableOption{pdfkeywords}%
12045   \Hy@DisableOption{pdftrapped}%
12046   \Hy@DisableOption{pdfinfo}%
12047 }

```



```

12048 \def\PDF@SetupDoc{%
12049   \def\Hy@temp{}%
12050   \ifx\@pdfstartpage\@empty
12051   \else
12052     \ifx\@pdfstartview\@empty
12053     \else
12054       \edef\Hy@temp{%
12055         ,Page=\@pdfstartpage
12056         ,View=\@pdfstartview
12057       }%
12058     \fi
12059   \fi
12060   \edef\Hy@temp{%
12061     \noexpand\pdfmark{%
12062       pdfmark=/DOCVIEW,%
12063       PageMode=/\@pdfpagemode
12064     }\Hy@temp
12065   }%
12066 }%
12067 \Hy@temp
12068 \ifx\@pdfpagescrop\@empty
12069 \else
12070   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12071 \fi
12072 \edef\Hy@temp{%
12073   \ifHy@pdftoolbar\else /HideToolbar true\fi
12074   \ifHy@pdfmenubar\else /HideMenubar true\fi
12075   \ifHy@pdfwindowui\else /HideWindowUI true\fi
12076   \ifHy@pdfwindow /FitWindow true\fi
12077   \ifHy@pdfcenterwindow /CenterWindow true\fi
12078   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12079   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12080   \Hy@UseNameKey{Direction}\@pdfdirection
12081   \Hy@UseNameKey{ViewArea}\@pdfviewarea
12082   \Hy@UseNameKey{ViewClip}\@pdfviewclip
12083   \Hy@UseNameKey{PrintArea}\@pdfprintarea
12084   \Hy@UseNameKey{PrintClip}\@pdfprintclip
12085   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12086   \Hy@UseNameKey{Duplex}\@pdfduplex
12087   \ifx\@pdfpicktraybypdfsize\@empty
12088   \else
12089     /PickTrayByPDFSize \@pdfpicktraybypdfsize
12090   \fi
12091   \ifx\@pdfprintpagerange\@empty
12092   \else
12093     /PrintPageRange[\@pdfprintpagerange]%
12094   \fi
12095   \ifx\@pdfnumcopies\@empty
12096   \else
12097     /NumCopies \@pdfnumcopies
12098   \fi
12099 }%
12100 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12101 \pdfmark{%

```

```

12102 pdfmark=/PUT,%
12103 Raw={%
12104   \string{Catalog\string}<<%
12105   \ifx\Hy@temp\@empty
12106   \else
12107     /ViewerPreferences<<\Hy@temp>>%
12108   \fi
12109   \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12110   \ifx\@pdflang\relax
12111   \else
12112     /Lang(\@pdflang)%
12113   \fi
12114   \ifx\@baseurl\@empty
12115   \else
12116     /URI<</Base(\Hy@pstringB)>>%
12117   \fi
12118   >>%
12119 }%
12120 }%
12121 }
12122 \providecommand*\@pdfview{XYZ}
12123 \providecommand*\@pdfviewparams{ %
12124   gsave revscl currentpoint grestore %
12125   72 add exch pop null exch null%
12126 }
12127 \def\Hy@BorderArrayPatch{BorderArrayPatch}

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called `pdf@llx pdf@lly pdf@urx pdf@ury`, which are the coordinates of the bounding rectangle of the link, and `pdf@hoff pdf@voff` which are the PDF page offsets. These latter are currently not used in the dvipsone setup. The `Rect` pair are called at the LL and UR corners of a box known to  $\TeX$ .

```

12128 \g@addto@macro\Hy@FirstPageHook{%
12129   \headerps@out{%

```

`dvipsone` lives in scaled points; does this mean 65536 or 65781?

```

12130   /DvipsToPDF { 65781 div } def%
12131   /PDFToDvips { 65781 mul } def%
12132   /BPToDvips{65781 mul}def%
12133   /HyperBorder { 1 PDFToDvips } def%
12134   /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.

```

12135   /BorderArrayPatch{%
12136     [exch{%
12137       dup dup type/integertype eq exch type/realtype eq or%
12138       {BPToDvips}if%
12139     }forall]%
12140   }def%
12141   /H.S {%
12142     currentpoint %
12143     HyperBorder add /pdf@lly exch def %
12144     dup DvipsToPDF 72 add /pdf@hoff exch def %

```

```

12145   HyperBorder sub /pdf@llx exch def%
12146 } def%
12147 /H.L {%
12148   2 sub %
12149   PDFToDvips /HyperBase exch def %
12150   currentpoint %
12151   HyperBase sub /pdf@ury exch def%
12152   /pdf@urx exch def%
12153 } def%
12154 /H.A {%
12155   H.L %
12156   currentpoint exch pop %
12157   HyperBase sub % baseline skip
12158   DvipsToPDF /pdf@voff exch def%
12159 } def%
12160 /H.R {%
12161   currentpoint %
12162   HyperBorder sub /pdf@ury exch def %
12163   HyperBorder add /pdf@urx exch def %
12164   currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12165 } def%
12166 }%
12167 }

12168 \def\setpdfinkmargin#1{%
12169   \begingroup
12170     \setlength{\dimen@}{#1}%
12171     \literalps@out{%
12172       /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
12173     }%
12174   \endgroup
12175 }

12176 </dvipsone>

```

### 43.13 TeX4ht

```

12177 <*tex4ht>
12178 \providecommand*\XR@ext>{html}
12179 \let\Hy@raisedlink\ltx@empty
12180 \@ifpackageloaded{tex4ht}{%
12181   \Hy@InfoNoLine{tex4ht is already loaded}%
12182 }{%
12183   \RequirePackage[hTeX4ht]{tex4ht}%
12184 }
12185 \hyperlinkfileprefix{}
12186 \let\PDF@FinishDoc\ltx@empty
12187 \def\PDF@SetupDoc{%
12188   \ifx\@baseurl\@empty
12189   \else
12190     \special{t4ht=<base href="\@baseurl">}%
12191   \fi
12192 }
12193 \Hy@WrapperDef\hyper@anchor#1{%
12194   \Hy@SaveLastskip
12195   \Hy@VerboseAnchor{#1}%

```

```

12196 \begingroup
12197 \let\protect=\string
12198 \special{t4ht=<a name=%
12199 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12200 \endgroup
12201 \Hy@activeanchortrue
12202 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12203 \special{t4ht=</a>}%
12204 \Hy@activeanchorfalse
12205 \Hy@RestoreLastskip
12206 }
12207 \Hy@WrapperDef\hyper@anchorstart#1{%
12208 \Hy@SaveLastskip
12209 \Hy@VerboseAnchor{#1}%
12210 \begingroup
12211 \hyper@chars\special{t4ht=<a name=%
12212 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12213 \endgroup
12214 \Hy@activeanchortrue
12215 }
12216 \def\hyper@anchorend{%
12217 \special{t4ht=</a>}%
12218 \Hy@activeanchorfalse
12219 \Hy@RestoreLastskip
12220 }
12221 \def\@urltype{url}
12222 \def\hyper@linkstart#1#2{%
12223 \Hy@VerboseLinkStart{#1}{#2}%
12224 \expandafter\Hy@colorlink\csname @#1color\endcsname
12225 \def\Hy@tempa{#1}%
12226 \ifx\Hy@tempa\@urltype
12227 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12228 \else
12229 \begingroup
12230 \hyper@chars
12231 \special{t4ht=<a href=%
12232 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
12233 \endgroup
12234 \fi
12235 }
12236 \def\hyper@linkend{%
12237 \special{t4ht=</a>}%
12238 \Hy@endcolorlink
12239 }
12240 \def\hyper@linkfile#1#2#3{%
12241 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
12242 }
12243 \def\hyper@linkurl#1#2{%
12244 \leavevmode
12245 \ifHy@raiselinks
12246 \Hy@SaveSpaceFactor
12247 \Hy@SaveSavedSpaceFactor
12248 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12249 \Hy@RestoreSavedSpaceFactor

```

```

12250 \@linkdim\dp\@tempboxa
12251 \lower\@linkdim\hbox{%
12252 \begingroup
12253 \hyper@chars
12254 \special{%
12255 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12256 }%
12257 \endgroup
12258 }%
12259 \Hy@colorlink\@urlcolor
12260 \Hy@RestoreSpaceFactor
12261 #1\Hy@xspace@end
12262 \Hy@SaveSpaceFactor
12263 \Hy@endcolorlink
12264 \@linkdim\ht\@tempboxa
12265 \advance\@linkdim by -6.5\p@
12266 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12267 \Hy@RestoreSpaceFactor
12268 \else
12269 \begingroup
12270 \hyper@chars
12271 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12272 \Hy@colorlink\@urlcolor
12273 #1\Hy@xspace@end
12274 \Hy@endcolorlink
12275 \special{t4ht=</a>}}%
12276 \endgroup
12277 \fi
12278 }

```

Poor implementation of \hyper@link without considering #1.

```

12279 \def\hyper@link#1#2#3{%
12280 \Hy@VerboseLinkStart{#1}{#2}%
12281 \hyper@linkurl{#3}{\#\Hy@DestNameFilter{#2}}%
12282 }
12283 \def\hyper@image#1#2{%
12284 \begingroup
12285 \hyper@chars
12286 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12287 \endgroup
12288 }
12289 \let\autoref\ref
12290 \ifx \rEfLiNK \UnDef
12291 \def\rEfLiNK #1#2{#2}%
12292 \fi
12293 \let\backref\ltx@gobble

```

Fix for tex4ht.

```

12294 \AtBeginDocument{%
12295 \expandafter
12296 \let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12297 \expandafter\def\csname Make:Label\endcsname#1#2{%
12298 \ifhmode
12299 \Hy@SaveSpaceFactor
12300 \else

```

```

12301 \global\Hy@SavedSpaceFactor=1000 %
12302 \fi
12303 \Hy@OrgMakeLabel{#1}{%
12304 \Hy@RestoreSpaceFactor
12305 #2\Hy@xspace@end%
12306 \Hy@SaveSpaceFactor
12307 }%
12308 \Hy@RestoreSpaceFactor
12309 }%
12310 }
12311 </tex4ht>
12312 <*tex4htcfg>
12313 \IfFileExists{\jobname.cfg}{\endinput}{}
12314 \Preamble{html}
12315 \begin{document}%
12316 \EndPreamble
12317 \def\TeX{TeX}
12318 \def\OMEGA{Omega}
12319 \def\LaTeX{LaTeX}
12320 \def\LaTeXe{\LaTeX2e}
12321 \def\eTeX{e-TeX}
12322 \def\MF{Metafont}
12323 \def\MP{MetaPost}
12324 </tex4htcfg>

```

## 44 Driver-specific form support

### 44.1 pdfmarks

change 2020-06-20: added /Euro to encoding

```

12325 <*pdfmark>
12326 \long\def\@Form[#1]{%
12327 \g@addto@macro\Hy@FirstPageHook{%
12328 \headerps@out{%
12329 [%
12330 /_objdef{pdfDocEncoding}%
12331 /type/dict%
12332 /OBJ pdfmark%
12333 [%
12334 {pdfDocEncoding}%
12335 <<%
12336 /Type/Encoding%
12337 /Differences[%
12338 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12339 /tilde %
12340 39/quotesingle %
12341 96/grave %
12342 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12343 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12344 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12345 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
12346 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12347 160/Euro %
12348 164/currency %

```

12349 166/brokenbar %  
12350 168/dieresis/copyright/ordfeminine %  
12351 172/logicalnot/.notdef/registered/macron/degree/plusminus%  
12352 /twosuperior/threesuperior/acute/mu %  
12353 183/periodcentered/cedilla/onesuperior/ordmasculine %  
12354 188/onequarter/onehalf/threequarters %  
12355 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%  
12356 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%  
12357 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%  
12358 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%  
12359 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%  
12360 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%  
12361 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%  
12362 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%  
12363 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%  
12364 /ucircumflex/udieresis/yacute/thorn/ydieresis%  
12365 ]%  
12366 >>%  
12367 /PUT pdfmark%  
12368 [%  
12369 /\_objdef{ZaDb}%  
12370 /type/dict%  
12371 /OBJ pdfmark%  
12372 [%  
12373 {ZaDb}%  
12374 <<%  
12375 /Type/Font%  
12376 /Subtype/Type1%  
12377 /Name/ZaDb%  
12378 /BaseFont/ZapfDingbats%  
12379 >>%  
12380 /PUT pdfmark%  
12381 [%  
12382 /\_objdef{Helv}%  
12383 /type/dict%  
12384 /OBJ pdfmark%  
12385 [%  
12386 {Helv}%  
12387 <<%  
12388 /Type/Font%  
12389 /Subtype/Type1%  
12390 /Name/Helv%  
12391 /BaseFont/Helvetica%  
12392 /Encoding{pdfDocEncoding}%  
12393 >>%  
12394 /PUT pdfmark%  
12395 [%  
12396 /\_objdef{aform}%  
12397 /type/dict%  
12398 /OBJ pdfmark%  
12399 [%  
12400 /\_objdef{afields}%  
12401 /type/array%  
12402 /OBJ pdfmark%

```

12403 [%
12404   /_objdef{corder}%
12405   /type/array%
12406 /OBJ pdfmark%
12407 {%
12408   [%
12409     /BBox[0 0 100 100]%
12410     /_objdef{Check}%
12411     /BP pdfmark %
12412     1 0 0 setrgbcolor%
12413     /ZapfDingbats 80 selectfont %
12414     20 20 moveto%
12415     (4)show%
12416     [/EP pdfmark%
12417     [%
12418       /BBox[0 0 100 100]%
12419       /_objdef{Cross}%
12420       /BP pdfmark %
12421       1 0 0 setrgbcolor%
12422       /ZapfDingbats 80 selectfont %
12423       20 20 moveto%
12424       (8)show%
12425       [/EP pdfmark%
12426       [%
12427         /BBox[0 0 250 100]%
12428         /_objdef{Submit}%
12429         /BP pdfmark %
12430         0.6 setgray %
12431         0 0 250 100 rectfill %
12432         1 setgray %
12433         2 2 moveto %
12434         2 98 lineto %
12435         248 98 lineto %
12436         246 96 lineto %
12437         4 96 lineto %
12438         4 4 lineto %
12439         fill %
12440         0.34 setgray %
12441         248 98 moveto %
12442         248 2 lineto %
12443         2 2 lineto %
12444         4 4 lineto %
12445         246 4 lineto %
12446         246 96 lineto %
12447         fill%
12448         /Helvetica 76 selectfont %
12449         0 setgray %
12450         8 22.5 moveto%
12451         (Submit)show%
12452         [/EP pdfmark%
12453         [%
12454           /BBox[0 0 250 100]%
12455           /_objdef{SubmitP}%
12456           /BP pdfmark %

```



```

12457 0.6 setgray %
12458 0 0 250 100 rectfill %
12459 0.34 setgray %
12460 2 2 moveto %
12461 2 98 lineto %
12462 248 98 lineto %
12463 246 96 lineto %
12464 4 96 lineto %
12465 4 4 lineto %
12466 fill %
12467 1 setgray %
12468 248 98 moveto %
12469 248 2 lineto %
12470 2 2 lineto %
12471 4 4 lineto %
12472 246 4 lineto %
12473 246 96 lineto %
12474 fill%
12475 /Helvetica 76 selectfont %
12476 0 setgray %
12477 10 20.5 moveto%
12478 (Submit)show%
12479 [/EP pdfmark%
12480 } ?pdfmark%
12481 [%
12482 {aform}%
12483 <<%
12484 /Fields{afields}%
12485 /DR<<%
12486 /Font<<%
12487 /ZaDb{ZaDb}%
12488 /Helv{Helv}%
12489 >>%
12490 >>%
12491 /DA(/Helv 10 Tf 0 g)%
12492 /CO{corder}%
12493 \ifHy@pdfa
12494 \else
12495 \ifHyField@NeedAppearances
12496 /NeedAppearances true%
12497 \fi
12498 \fi
12499 >>%
12500 /PUT pdfmark%
12501 [%
12502 {Catalog}%
12503 <<%
12504 /AcroForm{aform}%
12505 >>%
12506 /PUT pdfmark%
12507 }}%
12508 \kvsetkeys{Form}{#1}%
12509 }
12510 \let\@endForm\ltx@empty

```

```

12511 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12512 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12513 }

12514 \newcount\HyField@AnnotCount
12515 \HyField@AnnotCount=\z@
12516 \def\HyField@AdvanceAnnotCount{%
12517 \global\advance\HyField@AnnotCount\@ne
12518 }
12519 \def\HyField@TheAnnotCount{%
12520 \the\HyField@AnnotCount
12521 }

12522 \edef\Fld@pageobjref{/P\string{ThisPage\string}}

12523 \def\HyField@AddToFields#1{%
12524 \pdfmark{%
12525 pdfmark=/APPEND,%
12526 Raw={%
12527 \string{afields\string}%
12528 \string{#1\HyField@TheAnnotCount\string}%
12529 }%
12530 }%
12531 \ifx\Fld@calculate@code\ltx@empty
12532 \else
12533 \pdfmark{%
12534 pdfmark=/APPEND,%
12535 Raw={%
12536 \string{corder\string}%
12537 \string{#1\HyField@TheAnnotCount\string}%
12538 }%
12539 }%
12540 \fi
12541 }

12542 \def\@TextField[#1]#2{% parameters, label
12543 \def\Fld@name{#2}%
12544 \let\Fld@default\ltx@empty
12545 \let\Fld@value\@empty
12546 \def\Fld@width{\DefaultWidthofText}%
12547 \def\Fld@height{%
12548 \ifFld@multiline
12549 \DefaultHeightofTextMultiline
12550 \else
12551 \DefaultHeightofText
12552 \fi
12553 }%
12554 \begingroup
12555 \expandafter\HyField@SetKeys\expandafter{%
12556 \DefaultOptionsofText,#1%
12557 }%
12558 \HyField@FlagsText
12559 \ifFld@hidden\def\Fld@width{1sp}\fi
12560 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12561 \HyField@AdvanceAnnotCount
12562 \LayoutTextField{#2}{%
12563 \leavevmode

```

```

12564 \Hy@escapeform\PDFForm@Text
12565 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12566 pdfmark=/ANN,%
12567 objdef=text\HyField@TheAnnotCount,%
12568 Raw={\PDFForm@Text}%
12569 }%
12570 }%
12571 \HyField@AddToFields{text}%
12572 \endgroup
12573 }
12574 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12575 \def\Fld@name{#2}%
12576 \let\Fld@default\relax
12577 \let\Fld@value\relax
12578 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12579 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12580 \begingroup
12581 \Fld@menulength=0 %
12582 \@tempdima\z@
12583 \@for\@curropt:=#3\do{%
12584 \expandafter\Fld@checkequals\@curropt==\%
12585 \Hy@StepCount\Fld@menulength
12586 \settowidth{\@tempdimb}{\@currDisplay}%
12587 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12588 }%
12589 \advance\@tempdima by 15\p@
12590 \begingroup
12591 \HyField@SetKeys{#1}%
12592 \edef\x{\endgroup
12593 \noexpand\expandafter
12594 \noexpand\HyField@SetKeys
12595 \noexpand\expandafter{%
12596 \expandafter\noexpand\csname DefaultOptionsof%
12597 \ifFld@radio
12598 Radio%
12599 \else
12600 \ifFld@combo
12601 \ifFld@popdown
12602 PopdownBox%
12603 \else
12604 ComboBox%
12605 \fi
12606 \else
12607 ListBox%
12608 \fi
12609 \fi
12610 \endcsname
12611 }%
12612 }\x
12613 \HyField@SetKeys{#1}%
12614 \ifFld@hidden\def\Fld@width{1sp}\fi
12615 \ifx\Fld@value\relax
12616 \let\Fld@value\Fld@default
12617 \fi

```

```

12618 \LayoutChoiceField{#2}{%
12619 \ifFld@radio
12620 \HyField@FlagsRadioButton
12621 \@@Radio{#3}%
12622 \else
12623 \begingroup
12624 \HyField@FlagsChoice
12625 \ifdim\Fld@width<\@tempdima
12626 \ifdim\@tempdima<1cm\@tempdima1cm\fi
12627 \edef\Fld@width{\the\@tempdima}%
12628 \fi
12629 \ifFld@combo
12630 \else
12631 \@tempdima=\the\Fld@menulength\Fld@charsize
12632 \advance\@tempdima by \Fld@borderwidth bp %
12633 \advance\@tempdima by \Fld@borderwidth bp %
12634 \edef\Fld@height{\the\@tempdima}%
12635 \fi
12636 \@@ListBox{#3}%
12637 \endgroup
12638 \fi
12639 }%
12640 \endgroup
12641 }
12642 \def\@@Radio#1{%
12643 \Fld@listcount=0 %
12644 \EdefEscapeName\Fld@default{\Fld@default}%
12645 \@for\@curropt:=#1\do{%
12646 \expandafter\Fld@checkequals\@curropt==\%
12647 \EdefEscapeName\@currValue{\@currValue}%
12648 \Hy@StepCount\Fld@listcount
12649 \@currDisplay\space
12650 \Hy@escapeform\PDFForm@Radio
12651 \ifnum\Fld@listcount=1 %
12652 \HyField@AdvanceAnnotCount
12653 \fi
12654 \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12655 pdfmark=/ANN,%
12656 objdef=\ifnum\Fld@listcount=1 radio\HyField@TheAnnotCount\fi,%
12657 Raw={%
12658 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12659 }%
12660 } % deliberate space between radio buttons
12661 \ifnum\Fld@listcount=1 %
12662 \HyField@AddToFields{radio}%
12663 \fi
12664 }%
12665 }
12666 \newcount\Fld@listcount
12667 \def\@@ListBox#1{%
12668 \HyField@PDFChoices{#1}%
12669 \Hy@escapeform\PDFForm@List
12670 \HyField@AdvanceAnnotCount
12671 \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%

```

```

12672 pdfmark=/ANN,%
12673 objdef=list\HyField@TheAnnotCount,%
12674 Raw={\PDFForm@List}%
12675 }%
12676 \HyField@AddToFields{list}%
12677 }
12678 \def\@PushButton[#1]#2{% parameters, label
12679 \def\Fld@name{#2}%
12680 \begingroup
12681 \expandafter\HyField@SetKeys\expandafter{%
12682 \DefaultOptionsofPushButton,#1%
12683 }%
12684 \ifHy@pdfa
12685 \Hy@Error{%
12686 PDF/A: Push button with JavaScript is prohibited%
12687 } \@ehc
12688 \LayoutPushButtonField{%
12689 \leavevmode
12690 \MakeButtonField{#2}%
12691 }%
12692 \else
12693 \HyField@FlagsPushButton
12694 \ifFld@hidden\def\Fld@width{1sp}\fi
12695 \HyField@AdvanceAnnotCount
12696 \LayoutPushButtonField{%
12697 \leavevmode
12698 \Hy@escapeform\PDFForm@Push
12699 \pdfmark[\MakeButtonField{#2}]{%
12700 pdfmark=/ANN,%
12701 objdef=push\HyField@TheAnnotCount,%
12702 Raw={\PDFForm@Push}%
12703 }%
12704 }%
12705 \HyField@AddToFields{push}%
12706 \fi
12707 \endgroup
12708 }
12709 \def\@Submit[#1]#2{%
12710 \def\Fld@width{\DefaultWidthofSubmit}%
12711 \def\Fld@height{\DefaultHeightofSubmit}%
12712 \begingroup
12713 \expandafter\HyField@SetKeys\expandafter{%
12714 \DefaultOptionsofSubmit,#1%
12715 }%
12716 \HyField@FlagsPushButton
12717 \HyField@FlagsSubmit
12718 \ifFld@hidden\def\Fld@width{1sp}\fi
12719 \Hy@escapeform\PDFForm@Submit
12720 \HyField@AdvanceAnnotCount
12721 \pdfmark[\MakeButtonField{#2}]{%
12722 pdfmark=/ANN,%
12723 objdef=submit\HyField@TheAnnotCount,%
12724 Raw={\PDFForm@Submit /AP<</N{Submit}/D{SubmitP}>>}%
12725 }%

```

```

12726 \HyField@AddToFields{submit}%
12727 \endgroup
12728 }
12729 \def\@Reset[#1]#2{%
12730 \def\Fld@width{\DefaultWidthofReset}%
12731 \def\Fld@height{\DefaultHeightofReset}%
12732 \begingroup
12733 \expandafter\HyField@SetKeys\expandafter{%
12734 \DefaultOptionsofReset,#1%
12735 }%
12736 \leavevmode
12737 \ifHy@pdfa
12738 \Hy@Error{%
12739 PDF/A: Reset action is prohibited%
12740 }\@ehc
12741 \MakeButtonField{#2}%
12742 \else
12743 \HyField@FlagsPushButton
12744 \ifFld@hidden\def\Fld@width{1sp}\fi
12745 \Hy@escapeform\PDFForm@Reset
12746 \HyField@AdvanceAnnotCount
12747 \pdfmark[\MakeButtonField{#2}]{%
12748 pdfmark=/ANN,%
12749 objdef=reset\HyField@TheAnnotCount,%
12750 Raw={\PDFForm@Reset}%
12751 }%
12752 \HyField@AddToFields{reset}%
12753 \fi
12754 \endgroup
12755 }%
12756 \def\@CheckBox[#1]#2{% parameters, label
12757 \def\Fld@name{#2}%
12758 \def\Fld@default{0}%
12759 \begingroup
12760 \def\Fld@width{\DefaultWidthofCheckBox}%
12761 \def\Fld@height{\DefaultHeightofCheckBox}%
12762 \expandafter\HyField@SetKeys\expandafter{%
12763 \DefaultOptionsofCheckBox,#1%
12764 }%
12765 \HyField@FlagsCheckBox
12766 \ifFld@hidden\def\Fld@width{1sp}\fi
12767 \HyField@AdvanceAnnotCount
12768 \LayoutCheckField{#2}{%
12769 \leavevmode
12770 \Hy@escapeform\PDFForm@Check
12771 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12772 pdfmark=/ANN,%
12773 objdef=check\HyField@TheAnnotCount,%
12774 Raw={\PDFForm@Check}%
12775 }%
12776 }%
12777 \HyField@AddToFields{check}%
12778 \endgroup
12779 }

```

12780  $\langle$ /pdfmark $\rangle$

## 44.2 HyperTeX

```
12781  $\langle$ *hypertex $\rangle$ 
12782 \def\@Form[#1]{%
12783   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12784 }
12785 \let\@endForm\ltx@empty
12786 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12787   \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12788 }
12789 \def\@TextField[#1]#2{% parameters, label
12790   \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12791 }
12792 \def\@CheckBox[#1]#2{% parameters, label
12793   \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12794 }
12795 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12796   \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12797 }
12798 \def\@PushButton[#1]#2{% parameters, label
12799   \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12800 }
12801 \def\@Reset[#1]#2{%
12802   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12803 }
12804 \def\@Submit[#1]#2{%
12805   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12806 }
12807  $\langle$ /hypertex $\rangle$ 
```

## 44.3 TeX4ht

```
12808  $\langle$ *tex4ht $\rangle$ 
12809 \def\@Form[#1]{%
12810   \kvsetkeys{Form}{#1}%
12811   \HCode{<form action="\Form@action" method="\Form@method">}%
12812 }
12813 \def\@endForm{\HCode{</form>}}
12814 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12815   \Hy@Message{Sorry, TeX4ht does not support gauges}%
12816 }
12817 \def\@TextField[#1]#2{% parameters, label
12818   \let\Hy@reserved@a\@empty
12819   \def\Fld@name{#2}%
12820   \let\Fld@default\ltx@empty
12821   \bgroup
12822     \Field@toks={ }%
12823     \kvsetkeys{Field}{#1}%
12824     \HCode{<label for="\Fld@name">#2</label>}%
12825     \ifFld@password
12826       \@@PasswordField
12827     \else
12828       \@@TextField
```

```

12829 \fi
12830 \egroup
12831 }
12832 \def\@@PasswordField{%
12833 \HCode{%
12834 <input type="password" %
12835 id="\Fld@name" %
12836 name="\Fld@name" %
12837 \ifFld@hidden type="hidden" \fi
12838 value="\Fld@default" %
12839 \the\Field@toks
12840 >%
12841 }%
12842 }
12843 \def\@@TextField{%
12844 \ifFld@multiline
12845 \HCode{<textarea %
12846 \ifFld@readonly readonly \fi
12847 id="\Fld@name" %
12848 name="\Fld@name" %
12849 \ifFld@hidden type="hidden" \fi
12850 \the\Field@toks>%
12851 }%
12852 \Fld@default
12853 \HCode{</textarea>}%
12854 \else
12855 \HCode{<input type="text" %
12856 \ifFld@readonly readonly \fi
12857 id="\Fld@name" %
12858 name="\Fld@name" %
12859 \ifFld@hidden type="hidden" \fi
12860 value="\Fld@default" %
12861 \the\Field@toks>%
12862 }%
12863 \fi
12864 }
12865 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12866 \def\Fld@name{#2}%
12867 \let\Fld@default\ltx@empty
12868 \let\Hy@reserved@a\relax
12869 \begingroup
12870 \expandafter\Fld@findlength#3\\%
12871 \Field@toks={ }%
12872 \kvsetkeys{Field}{#1}%
12873 #2%
12874 \ifFld@radio
12875 \expandafter\@@Radio#3\\%
12876 \else
12877 \expandafter\@@Menu#3\\%
12878 \fi
12879 \endgroup
12880 }
12881 \def\Fld@findlength#1\\{%
12882 \Fld@menulength=0 %

```



```

12883 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12884 }
12885 \def\@@Menu#1\{\%
12886 \HCode{<select size="\the\Fld@menulength" %
12887   name="\Fld@name" %
12888   \the\Field@toks>%
12889 }%
12890 \@for\@curropt:=#1\do{%
12891   \expandafter\Fld@checkequals\@curropt==\\%
12892   \HCode{<option %
12893     \ifx\@curropt\Fld@default selected \fi
12894     value="\@currValue">\@currDisplay</option>%
12895   }%
12896 }%
12897 \HCode{</select>}%
12898 }
12899 \def\@@Radio#1\{\%
12900 \@for\@curropt:=#1\do{%
12901   \expandafter\Fld@checkequals\@curropt==\\%
12902   \HCode{<input type="radio" %
12903     \ifx\@curropt\Fld@default checked \fi
12904     name="\Fld@name" %
12905     value="\@currValue" %
12906     \the\Field@toks>%
12907   }%
12908   \@currDisplay
12909 }%
12910 }
12911 \def\@PushButton[#1]#2{% parameters, label
12912 \def\Fld@name{#2}%
12913 \bgroup
12914 \Field@toks={ }%
12915 \kvsetkeys{Field}{#1}%
12916 \HCode{<input type="button" %
12917   name="\Fld@name" %
12918   value="#2" %
12919   \the\Field@toks>%
12920 }%
12921 \HCode{</button>}%
12922 \egroup
12923 }
12924 \def\@Submit[#1]#2{%
12925 \HCode{<button type="submit">#2</button>}%
12926 }
12927 \def\@Reset[#1]#2{%
12928 \HCode{<button type="reset">#2</button>}%
12929 }
12930 \def\@CheckBox[#1]#2{% parameters, label
12931 \let\Hy@reserved@a\@empty
12932 \def\Fld@name{#2}%
12933 \def\Fld@default{0}%
12934 \bgroup
12935 \Field@toks={ }%
12936 \kvsetkeys{Field}{#1}%

```

```

12937 \HCode{<input type="checkbox" %
12938 \ifFld@checked checked \fi
12939 \ifFld@disabled disabled \fi
12940 \ifFld@readonly readonly \fi
12941 name="\Fld@name" %
12942 \ifFld@hidden type="hidden" \fi
12943 value="\Fld@default" %
12944 \the\Field@toks>%
12945 #2%
12946 }%
12947 \egroup
12948 }
12949 </tex4ht>

```

#### 44.4 pdfTeX

```

12950 (*pdfTeX)
12951 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12952 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12953 }
12954 \def\MakeFieldObject#1#2{\sbox0{#1}%
12955 \immediate\pdfxform0 %
12956 \expandafter\edef\csname #2Object\endcsname{%
12957 \the\pdflastxform\space 0 R%
12958 }%
12959 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}}%
12960 }%
12961 \let\HyField@afields\ltx@empty
12962 \let\HyField@cofields\ltx@empty
12963 \@ifundefined{pdflastlink}
12964 {%
12965 \let\HyField@AddToFields\relax
12966 \PackageInfo{hyperref}{%
12967 You need pdfTeX 1.40.0 for setting the /Fields entry.%
12968 \MessageBreak
12969 Adobe Reader/Acrobat accepts an empty /Field array,%
12970 \MessageBreak
12971 but other PDF viewers might complain%
12972 }}%
12973 {%
12974 \let\HyField@AuxAddToFields\ltx@gobble
12975 \let\HyField@AuxAddToCoFields\ltx@gobbletwo
12976 \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.

```

12977 \def\HyField@ABD@AuxAddToCoFields#1#2{%
12978 \begingroup
12979 \Hy@safe@activetrue
12980 \let\ltx@secondoftwo\relax
12981 \ifx\HyField@cofields\ltx@empty
12982 \xdef\HyField@cofields{%
12983 \ltx@secondoftwo{#1}{ #2 0 R}%
12984 }%
12985 \else

```

```

12986 \let\ltx@secondoftwo\relax
12987 \def\HyField@AddCoField##1##2##3{%
12988 \ifx##1\ltx@empty
12989 \ltx@secondoftwo{#1}{#2 0 R}%
12990 \expandafter\ltx@gobble
12991 \else
12992 \ifnum\pdfstrcmp{##2}{#1}>\ltx@zero
12993 \ltx@secondoftwo{#1}{#2 0 R}%
12994 \ltx@secondoftwo{##2}{##3}%
12995 \expandafter\expandafter\expandafter\ltx@gobble
12996 \else
12997 \ltx@secondoftwo{##2}{##3}%
12998 \fi
12999 \fi
13000 \HyField@AddCoField
13001 }%
13002 \xdef\HyField@cofields{%
13003 \expandafter\HyField@AddCoField
13004 \HyField@cofields\ltx@empty\ltx@empty\ltx@empty
13005 }%
13006 \fi
13007 \endgroup
13008 }%
13009 \Hy@AtBeginDocument{%
13010 \if@filesw
13011 \immediate\write\@mainaux{%
13012 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
13013 }%
13014 \immediate\write\@mainaux{%
13015 \string\providecommand\string\HyField@AuxAddToCoFields[2]{}%
13016 }%
13017 \fi
13018 \let\HyField@AfterAuxOpen\@firstofone
13019 \def\HyField@AuxAddToFields#1{%
13020 \xdef\HyField@afields{%
13021 \ifx\HyField@afields\@empty
13022 \else
13023 \HyField@afields
13024 \space
13025 \fi
13026 #1 0 R%
13027 }%
13028 }%
13029 \let\HyField@AuxAddToCoFields\HyField@ABD@AuxAddToCoFields
13030 }%
13031 \def\HyField@AddToFields{%
13032 \expandafter\HyField@@AddToFields\expandafter{%
13033 \the\pdfastlink
13034 }%
13035 \ifx\Fld@calculate@code\ltx@empty
13036 \else
13037 \begingroup
13038 \Hy@safe@activetrue
13039 \edef\Hy@temp{%

```

```

13040     \endgroup
13041     \if@filesw
13042         \write\@mainaux{%
13043             \string\HyField@AuxAddToCoFields{%
13044                 \Fld@calculate@sortkey
13045             }{%
13046                 \the\pdfastlink
13047             }%
13048         }%
13049     \fi
13050 }%
13051 \Hy@temp
13052 \fi
13053 }%
13054 \def\HyField@@AddToFields#1{%
13055     \HyField@AfterAuxOpen{%
13056         \if@filesw
13057             \write\@mainaux{%
13058                 \string\HyField@AuxAddToFields{#1}%
13059             }%
13060         \fi
13061     }%
13062 }%
13063 }
13064 \def\@Form[#1]{%
13065     \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13066     \kvsetkeys{Form}{#1}%
13067     \pdf@ifdraftmode{}{%
13068         \Hy@FormObjects
13069         \ifnum\pdfTeXversion>13 %
13070             \pdfrefobj\OBJ@pdfdocencoding
13071             \pdfrefobj\OBJ@ZaDb
13072             \pdfrefobj\OBJ@Helv
13073         \fi
13074         \AtVeryEndDocument{%
13075             \immediate\pdfobj{%
13076                 <<%
13077                 /Fields[\HyField@afields]%
13078                 \ifx\HyField@cofields\ltx@empty
13079                 \else
13080                     /CO[\romannumeral-`\Q\HyField@cofields]%
13081                 \fi
13082                 /DR<<%
13083                 /Font<<%
13084                 /ZaDb \OBJ@ZaDb\space 0 R%
13085                 /Helv \OBJ@Helv\space 0 R%
13086                 >>%
13087                 >>%
13088                 /DA(/Helv 10 Tf 0 g)%
13089                 \ifHy@pdfa
13090                 \else
13091                     \ifHyField@NeedAppearances
13092                     /NeedAppearances true%
13093                 \fi

```

```

13094      \fi
13095      >>%
13096    }%
13097    \edef\OBJ@acroform{\the\pdfflastobj}%
13098    \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
13099  }%
13100 }%
13101 \MakeFieldObject{%
Same as \ding{123} of package pifont.
13102 \begingroup
13103   \fontfamily{pzd}%
13104   \fontencoding{U}%
13105   \fontseries{m}%
13106   \fontshape{n}%
13107   \selectfont
13108   \char123 %
13109 \endgroup
13110 }{Ding}%
13111 \MakeFieldObject{%
13112   \fbox{\textcolor{yellow}{\textsf{Submit}}}%
13113 }{Submit}%
13114 \MakeFieldObject{%
13115   \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
13116 }{SubmitP}%
13117 }
13118 \let\@endForm\ltx@empty
13119 \let\HyAnn@AbsPageLabel\ltx@empty
13120 \let\Fld@pageobjref\ltx@empty
13121 \ltx@ifUndefined{pdfpageref}{%
13122 }{%
13123   \ltx@ifpackageloaded{zref-abspage}{%
13124     \newcount\HyAnn@Count
13125     \HyAnn@Count=\ltx@zero
13126     \def\HyAnn@AbsPageLabel{%
13127       \global\advance\HyAnn@Count by\ltx@one
13128       \zref@labelbyprops{HyAnn@\the\HyAnn@Count}{abspage}%
13129       \zref@refused{HyAnn@\the\HyAnn@Count}%
13130     }%
13131     \def\Fld@pageobjref{%
13132       \zref@ifrefundefined{HyAnn@\the\HyAnn@Count}{%
13133       }{%
13134         \zref@ifrefcontainsprop{HyAnn@\the\HyAnn@Count}{abspage}{%
13135           /P \pdfpageref
13136           \zref@extractdefault{HyAnn@\the\HyAnn@Count}{abspage}{1} %
13137           \space 0 R%
13138         }{%
13139         }%
13140       }%
13141     }%
13142   }{%
13143   }%
13144 }
13145 \def\@TextField[#1]#2{% parameters, label

```

```

13146 \def\Fld@name{#2}%
13147 \let\Fld@default\ltx@empty
13148 \let\Fld@value\@empty
13149 \def\Fld@width{\DefaultWidthofText}%
13150 \def\Fld@height{%
13151   \ifFld@multiline
13152     \DefaultHeightofTextMultiline
13153   \else
13154     \DefaultHeightofText
13155   \fi
13156 }%
13157 \begingroup
13158 \expandafter\HyField@SetKeys\expandafter{%
13159   \DefaultOptionsofText,#1%
13160 }%
13161 \PDFForm@Name
13162 \HyField@FlagsText
13163 \ifFld@hidden\def\Fld@width{1sp}\fi
13164 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13165 \LayoutTextField{#2}{%
13166   \leavevmode
13167   \HyAnn@AbsPageLabel
13168   \Hy@escapeform\PDFForm@Text
13169   \pdfstartlink user {\PDFForm@Text}\relax
13170   \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
13171   \HyField@AddToFields
13172 }%
13173 \endgroup
13174 }
13175 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13176   \def\Fld@name{#2}%
13177   \let\Fld@default\relax
13178   \let\Fld@value\relax
13179   \def\Fld@width{\DefaultWidthofChoiceMenu}%
13180   \def\Fld@height{\DefaultHeightofChoiceMenu}%
13181   \begingroup
13182     \Fld@menulength=0 %
13183     \@tempdima\z@
13184     \@for\@curropt:=#3\do{%
13185       \expandafter\Fld@checkequals\@curropt==\%
13186       \Hy@StepCount\Fld@menulength
13187       \settowidth{\@tempdimb}{\@currDisplay}%
13188       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13189     }%
13190     \advance\@tempdima by 15\p@
13191     \begingroup
13192       \HyField@SetKeys{#1}%
13193     \edef\x{\endgroup
13194       \noexpand\expandafter
13195       \noexpand\HyField@SetKeys
13196       \noexpand\expandafter{%
13197         \expandafter\noexpand\cname DefaultOptionsof%
13198         \ifFld@radio
13199           Radio%

```

```

13200         \else
13201         \ifFld@combo
13202         \ifFld@popdown
13203             PopdownBox%
13204         \else
13205             ComboBox%
13206         \fi
13207     \else
13208         ListBox%
13209     \fi
13210 \fi
13211 \endcsname
13212 }%
13213 }\x
13214 \HyField@SetKeys{#1}%
13215 \PDFForm@Name
13216 \ifFld@hidden\def\Fld@width{1sp}\fi
13217 \ifx\Fld@value\relax
13218     \let\Fld@value\Fld@default
13219 \fi
13220 \LayoutChoiceField{#2}{%
13221     \ifFld@radio
13222         \HyField@FlagsRadioButton
13223         \@@Radio{#3}%
13224     \else
13225         \begingroup
13226         \HyField@FlagsChoice
13227         \ifdim\Fld@width<\@tempdima
13228             \ifdim\@tempdima<1cm\@tempdima1cm\fi
13229             \edef\Fld@width{\the\@tempdima}%
13230         \fi
13231         \ifFld@combo
13232         \else
13233             \@tempdima=\the\Fld@menulength\Fld@charsize
13234             \advance\@tempdima by \Fld@borderwidth bp %
13235             \advance\@tempdima by \Fld@borderwidth bp %
13236             \edef\Fld@height{\the\@tempdima}%
13237         \fi
13238         \@@ListBox{#3}%
13239     \endgroup
13240 \fi
13241 }%
13242 \endgroup
13243 }
13244 \def\@@Radio#1{%
13245     \Fld@listcount=0 %
13246     \EdefEscapeName\Fld@default{\Fld@default}%
13247     \@for\@curropt:=#1\do{%
13248         \expandafter\Fld@checkequals\@curropt==\%
13249         \EdefEscapeName\@currValue{\@currValue}%
13250         \Hy@StepCount\Fld@listcount
13251         \@currDisplay\space
13252         \leavevmode
13253         \HyAnn@AbsPageLabel

```

```

13254 \Hy@escapeform\PDFForm@Radio
13255 \pdfstartlink user {%
13256 \PDFForm@Radio
13257 /AP<<%
13258 /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.

```

13259 /\@currValue\space \DingObject
13260 >>%
13261 >>%
13262 }%
13263 \relax
13264 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13265 \ifnum\Fld@listcount=1 %
13266 \HyField@AddToFields
13267 \fi
13268 \space % deliberate space between radio buttons
13269 }%
13270 }
13271 \newcount\Fld@listcount
13272 \def\@@Listbox#1{%
13273 \HyField@PDFChoices{#1}%
13274 \leavevmode
13275 \HyAnn@AbsPageLabel
13276 \Hy@escapeform\PDFForm@List
13277 \pdfstartlink user {\PDFForm@List}\relax
13278 \MakeChoiceField{\Fld@width}{\Fld@height}%
13279 \pdfendlink
13280 \HyField@AddToFields
13281 }
13282 \def\@PushButton[#1]#2{% parameters, label
13283 \def\Fld@name{#2}%
13284 \begingroup
13285 \expandafter\HyField@SetKeys\expandafter{%
13286 \DefaultOptionsofPushButton,#1%
13287 }%
13288 \PDFForm@Name
13289 \ifHy@pdfa
13290 \Hy@Error{%
13291 PDF/A: Push button with JavaScript is prohibited%
13292 }\@ehc
13293 \LayoutPushButtonField{%
13294 \leavevmode
13295 \MakeButtonField{#2}%
13296 }%
13297 \else
13298 \HyField@FlagsPushButton
13299 \ifFld@hidden\def\Fld@width{1sp}\fi
13300 \LayoutPushButtonField{%
13301 \leavevmode
13302 \HyAnn@AbsPageLabel
13303 \Hy@escapeform\PDFForm@Push

```



```

13304     \pdfstartlink user {\PDFForm@Push}\relax
13305     \MakeButtonField{#2}%
13306     \pdfendlink
13307     \HyField@AddToFields
13308 }%
13309 \fi
13310 \endgroup
13311 }
13312 \def\@Submit[#1]#2{%
13313   \def\Fld@width{\DefaultWidthofSubmit}%
13314   \def\Fld@height{\DefaultHeightofSubmit}%
13315   \begingroup
13316     \expandafter\HyField@SetKeys\expandafter{%
13317       \DefaultOptionsofSubmit,#1%
13318     }%
13319     \HyField@FlagsPushButton
13320     \HyField@FlagsSubmit
13321     \ifFld@hidden\def\Fld@width{1sp}\fi
13322     \leavevmode
13323     \HyAnn@AbsPageLabel
13324     \Hy@escapeform\PDFForm@Submit
13325     \pdfstartlink user {%
13326       \PDFForm@Submit
13327       /AP<</N \SubmitObject/D \SubmitPObject>>%
13328     }%
13329     \relax
13330     \MakeButtonField{#2}%
13331     \pdfendlink
13332     \HyField@AddToFields
13333   \endgroup
13334 }
13335 \def\@Reset[#1]#2{%
13336   \def\Fld@width{\DefaultWidthofReset}%
13337   \def\Fld@height{\DefaultHeightofReset}%
13338   \begingroup
13339     \expandafter\HyField@SetKeys\expandafter{%
13340       \DefaultOptionsofReset,#1%
13341     }%
13342     \leavevmode
13343     \ifHy@pdfa
13344       \Hy@Error{%
13345         PDF/A: Reset action is prohibited%
13346       }\@ehc
13347       \MakeButtonField{#2}%
13348     \else
13349       \HyField@FlagsPushButton
13350       \ifFld@hidden\def\Fld@width{1sp}\fi
13351       \HyAnn@AbsPageLabel
13352       \Hy@escapeform\PDFForm@Reset
13353       \pdfstartlink user {\PDFForm@Reset}\relax
13354       \MakeButtonField{#2}%
13355       \pdfendlink
13356       \HyField@AddToFields
13357     \fi

```

```

13358 \endgroup
13359 }
13360 \def\@CheckBox[#1]#2{% parameters, label
13361 \def\Fld@name{#2}%
13362 \def\Fld@default{0}%
13363 \begingroup
13364 \def\Fld@width{\DefaultWidthofCheckBox}%
13365 \def\Fld@height{\DefaultHeightofCheckBox}%
13366 \expandafter\HyField@SetKeys\expandafter{%
13367 \DefaultOptionsofCheckBox,#1%
13368 }%
13369 \PDFForm@Name
13370 \HyField@FlagsCheckBox
13371 \ifFld@hidden\def\Fld@width{1sp}\fi
13372 \LayoutCheckField{#2}{%
13373 \leavevmode
13374 \HyAnn@AbsPageLabel
13375 \Hy@escapeform\PDFForm@Check
13376 \pdfstartlink user {\PDFForm@Check}\relax
13377 \MakeCheckField{\Fld@width}{\Fld@height}%
13378 \pdfendlink
13379 \HyField@AddToFields
13380 }%
13381 \endgroup
13382 }
13383 \def\Hy@FormObjects{%
13384 \pdfobj {%
13385 <<%
13386 /Type/Encoding%
13387 /Differences[%
13388 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13389 /ring/tilde %
13390 39/quotesingle %
13391 96/grave %
13392 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13393 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13394 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13395 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13396 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13397 160/Euro %
13398 164/currency %
13399 166/brokenbar %
13400 168/dieresis/copyright/ordfeminine %
13401 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13402 /twosuperior/threesuperior/acute/mu %
13403 183/periodcentered/cedilla/onesuperior/ordmasculine %
13404 188/onequarter/onehalf/threequarters %
13405 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13406 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13407 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13408 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13409 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13410 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13411 /cedilla/egrave/eacute/ecircumflex/edieresis/igrave%

```

```

13412      /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13413      /ocircumflex/otilde/odieresis/divide/oshlash/ugrave%
13414      /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13415      ]%
13416      >>%
13417    }%
13418    \xdef\OBJ@pdfdocencoding{\the\pdfflastobj}%
13419    \pdfobj{%
13420      <<%
13421      /Type/Font%
13422      /Subtype/Type1%
13423      /Name/ZaDb%
13424      /BaseFont/ZapfDingbats%
13425      >>%
13426    }%
13427    \xdef\OBJ@ZaDb{\the\pdfflastobj}%
13428    \pdfobj{%
13429      <<%
13430      /Type/Font%
13431      /Subtype/Type1%
13432      /Name/Helv%
13433      /BaseFont/Helvetica%
13434      /Encoding \OBJ@pdfdocencoding\space 0 R%
13435      >>%
13436    }%
13437    \xdef\OBJ@Helv{\the\pdfflastobj}%
13438    \global\let\Hy@FormObjects\relax
13439  }
13440 </pdfTeX>

```

## 44.5 dvipdfm, xetex

D. P. Story adapted the pdf<sub>T</sub>E<sub>X</sub> forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```

13441 <*dvipdfm | xetex>

```

\@Gauge

```

13442 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13443   \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13444 }

```

\@Form

```

13445 \def\@Form[#1]{%
13446   \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13447   \kvsetkeys{Form}{#1}%
13448   \Hy@FormObjects
13449   \@pdfm@mark{obj @afields []}%
13450   \@pdfm@mark{obj @corder []}%
13451   \@pdfm@mark{%
13452     obj @aform <<%
13453     /Fields @afields%
13454     /DR<<%
13455     /Font<<%
13456     /ZaDb @OBJZaDb%

```

```

13457      /Helv @OBJHelv%
13458      >>%
13459      >>%
13460      /DA(/Helv 10 Tf 0 g)%
13461      /CO @corder%
13462      \ifHy@pdfa
13463      \else
13464      \ifHyField@NeedAppearances
13465      /NeedAppearances true%
13466      \fi
13467      \fi
13468      >>%
13469      }%
13470      \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13471      }

```

\@endForm

```

13472 \let\@endForm\ltx@empty

```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```

13473 \def\dvipdfm@setdim{%
13474   height \the\ht\pdfm@box\space
13475   width \the\wd\pdfm@box\space
13476   depth \the\dp\pdfm@box\space
13477 }

```

\HyField@AnnotCount

```

13478 \newcount\HyField@AnnotCount
13479 \HyField@AnnotCount=\z@

```

\HyField@AdvanceAnnotCount

```

13480 \def\HyField@AdvanceAnnotCount{%
13481   \global\advance\HyField@AnnotCount\@ne
13482 }

```

\HyField@TheAnnotCount

```

13483 \def\HyField@TheAnnotCount{%
13484   \the\HyField@AnnotCount
13485 }

```

\Fld@pageobjref

```

13486 \def\Fld@pageobjref{/P @thispage}%

```

\HyField@AddToFields

```

13487 \def\HyField@AddToFields#1{%
13488   \@pdfm@mark{put @afields @#1\HyField@TheAnnotCount}%
13489   \ifx\Fld@calculate@code\ltx@empty
13490   \else
13491   \@pdfm@mark{put @corder @#1\HyField@TheAnnotCount}%
13492   \fi
13493 }

```

\@TextField

```

13494 \def\@TextField[#1]#2{% parameters, label
13495   \def\Fld@name{#2}%
13496   \let\Fld@default\ltx@empty
13497   \let\Fld@value\@empty
13498   \def\Fld@width{\DefaultWidthofText}%
13499   \def\Fld@height{%
13500     \ifFld@multiline
13501       \DefaultHeightofTextMultiline
13502     \else
13503       \DefaultHeightofText
13504     \fi
13505   }%
13506   \begingroup
13507     \expandafter\HyField@SetKeys\expandafter{%
13508       \DefaultOptionsofText,#1%
13509     }%
13510     \PDFForm@Name
13511     \HyField@FlagsText
13512     \ifFld@hidden\def\Fld@width{1sp}\fi
13513     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13514     \setbox\pdfm@box=\hbox{%
13515       \MakeTextField{\Fld@width}{\Fld@height}%
13516     }%
13517     \HyField@AdvanceAnnotCount
13518     \LayoutTextField{#2}{%
13519       \leavevmode
13520       \Hy@escapeform\PDFForm@Text
13521       \@pdfm@mark{%
13522         ann @text\HyField@TheAnnotCount\space
13523         \dvi pdfm@setdim << \PDFForm@Text >>%
13524       }%
13525     }%
13526     \unhbox\pdfm@box
13527     \HyField@AddToFields{text}%
13528     % record in @afields array
13529   \endgroup
13530 }

```

\@ChoiceMenu

```

13531 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13532   \def\Fld@name{#2}%
13533   \let\Fld@default\relax
13534   \let\Fld@value\relax
13535   \def\Fld@width{\DefaultWidthofChoiceMenu}%
13536   \def\Fld@height{\DefaultHeightofChoiceMenu}%
13537   \begingroup
13538     \Fld@menulength=0 %
13539     \@tempdima\z@
13540     \@for\@curropt:=#3\do{%
13541       \expandafter\Fld@checkequals\@curropt==\%
13542       \Hy@StepCount\Fld@menulength
13543       \settowidth{\@tempdimb}{\@currDisplay}%
13544       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi

```

```

13545 }%
13546 \advance\@tempdima by 15\p@
13547 \begingroup
13548   \HyField@SetKeys{#1}%
13549 \edef\x{\endgroup
13550   \noexpand\expandafter
13551   \noexpand\HyField@SetKeys
13552   \noexpand\expandafter{%
13553     \expandafter\noexpand\cname DefaultOptionsof%
13554     \ifFld@radio
13555       Radio%
13556     \else
13557       \ifFld@combo
13558         \ifFld@popdown
13559           PopdownBox%
13560         \else
13561           ComboBox%
13562         \fi
13563       \else
13564         ListBox%
13565       \fi
13566     \fi
13567   \endcsname
13568 }%
13569 }\x
13570 \HyField@SetKeys{#1}%
13571 \PDFForm@Name
13572 \ifFld@hidden\def\Fld@width{1sp}\fi
13573 \ifx\Fld@value\relax
13574   \let\Fld@value\Fld@default
13575 \fi
13576 \LayoutChoiceField{#2}{%
13577   \ifFld@radio
13578     \HyField@FlagsRadioButton
13579     \@@Radio{#3}%
13580   \else
13581     \begingroup
13582     \HyField@FlagsChoice
13583     \ifdim\Fld@width<\@tempdima
13584       \ifdim\@tempdima<1cm\@tempdima1cm\fi
13585       \edef\Fld@width{\the\@tempdima}%
13586     \fi
13587     \ifFld@combo
13588     \else
13589       \@tempdima=\the\Fld@menulength\Fld@charsize
13590       \advance\@tempdima by \Fld@borderwidth bp %
13591       \advance\@tempdima by \Fld@borderwidth bp %
13592       \edef\Fld@height{\the\@tempdima}%
13593     \fi
13594     \@@ListBox{#3}%
13595   \endgroup
13596 \fi
13597 }%
13598 \endgroup

```

```

13599 }

\@@Radio
13600 \def\@@Radio#1{%
13601   \Fld@listcount=0 %
13602   \EdefEscapeName\Fld@default{\Fld@default}%
13603   \setbox\pdfm@box=\hbox{%
13604     \MakeRadioField{\Fld@width}{\Fld@height}%
13605   }%
13606   \@for\@curropt:=#1\do{%
13607     \expandafter\Fld@checkequals\@curropt==\%
13608     \EdefEscapeName\@currValue{\@currValue}%
13609     \Hy@StepCount\Fld@listcount
13610     \@currDisplay\space
13611     \leavevmode
13612     \Hy@escapeform\PDFForm@Radio
13613     \ifnum\Fld@listcount=1 %
13614       \HyField@AdvanceAnnotCount
13615     \fi
13616     \@pdfm@mark{%
13617       ann %
13618       \ifnum\Fld@listcount=1 %
13619         @radio\HyField@TheAnnotCount%
13620       \space
13621     \fi
13622     \dvipdfm@setdim
13623     <<%
13624     \PDFForm@Radio
13625     /AP<</N<</\@currValue /null>>>>%
13626     >>%
13627   }%
13628   \unhcopy\pdfm@box\space% deliberate space between radio buttons
13629   \ifnum\Fld@listcount=1 %
13630     \HyField@AddToFields{radio}%
13631   \fi
13632 }%
13633 }

\Fld@listcount
13634 \newcount\Fld@listcount

\@@Listbox
13635 \def\@@Listbox#1{%
13636   \HyField@PDFChoices{#1}%
13637   \setbox\pdfm@box=\hbox{%
13638     \MakeChoiceField{\Fld@width}{\Fld@height}%
13639   }%
13640   \leavevmode
13641   \Hy@escapeform\PDFForm@List
13642   \HyField@AdvanceAnnotCount
13643   \@pdfm@mark{%
13644     ann @list\HyField@TheAnnotCount\space
13645     \dvipdfm@setdim
13646     <<\PDFForm@List>>%

```

```

13647 }%
13648 \unhbox\pdfm@box
13649 \HyField@AddToFields{list}%
13650 }

```

\@PushButton

```

13651 \def\@PushButton[#1]#2{% parameters, label
13652 \def\Fld@name{#2}%
13653 \begingroup
13654 \expandafter\HyField@SetKeys\expandafter{%
13655 \DefaultOptionsofPushButton,#1%
13656 }%
13657 \PDFForm@Name
13658 \ifHy@pdfa
13659 \Hy@Error{%
13660 PDF/A: Push button with JavaScript is prohibited%
13661 }\@ehc
13662 \LayoutPushButtonField{%
13663 \leavevmode
13664 \MakeButtonField{#2}%
13665 }%
13666 \else
13667 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13668 \HyField@FlagsPushButton
13669 \ifFld@hidden\def\Fld@width{1sp}\fi
13670 \HyField@AdvanceAnnotCount
13671 \LayoutPushButtonField{%
13672 \leavevmode
13673 \Hy@escapeform\PDFForm@Push
13674 \@pdfm@mark{%
13675 ann @push\HyField@TheAnnotCount\space
13676 \dvi pdfm@setdim
13677 <<\PDFForm@Push>>%
13678 }%
13679 }%
13680 \unhbox\pdfm@box
13681 \HyField@AddToFields{push}%
13682 \fi
13683 \endgroup
13684 }

```

\@Submit

```

13685 \def\@Submit[#1]#2{%
13686 \def\Fld@width{\DefaultWidthofSubmit}%
13687 \def\Fld@height{\DefaultHeightofSubmit}%
13688 \begingroup
13689 \expandafter\HyField@SetKeys\expandafter{%
13690 \DefaultOptionsofSubmit,#1%
13691 }%
13692 \HyField@FlagsPushButton
13693 \HyField@FlagsSubmit
13694 \ifFld@hidden\def\Fld@width{1sp}\fi
13695 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13696 \leavevmode

```



```

13697 \Hy@escapeform\PDFForm@Submit
13698 \HyField@AdvanceAnnotCount
13699 \@pdfm@mark{%
13700     ann @submit\HyField@TheAnnotCount\space
13701     \dvipdfm@setdim
13702     <<\PDFForm@Submit>>%
13703 }%
13704 \unhbox\pdfm@box%
13705 \HyField@AddToFields{submit}%
13706 \endgroup
13707 }

```

#### \@Reset

```

13708 \def\@Reset[#1]#2{%
13709     \def\Fld@width{\DefaultWidthofReset}%
13710     \def\Fld@height{\DefaultHeightofReset}%
13711     \begingroup
13712     \expandafter\HyField@SetKeys\expandafter{%
13713         \DefaultOptionsofReset,#1%
13714     }%
13715     \leavevmode
13716     \ifHy@pdfa
13717         \Hy@Error{%
13718             PDF/A: Reset action is prohibited%
13719         }\@ehc
13720         \MakeButtonField{#2}%
13721     \else
13722         \HyField@FlagsPushButton
13723         \ifFld@hidden\def\Fld@width{1sp}\fi
13724         \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13725         \Hy@escapeform\PDFForm@Reset
13726         \HyField@AdvanceAnnotCount
13727         \@pdfm@mark{%
13728             ann @reset\HyField@TheAnnotCount\space
13729             \dvipdfm@setdim
13730             <<\PDFForm@Reset>>%
13731         }%
13732         \unhbox\pdfm@box
13733         \HyField@AddToFields{reset}%
13734     \fi
13735 \endgroup
13736 }

```

#### \@CheckBox

```

13737 \def\@CheckBox[#1]#2{% parameters, label
13738     \def\Fld@name{#2}%
13739     \def\Fld@default{0}%
13740     \begingroup
13741     \def\Fld@width{\DefaultWidthofCheckBox}%
13742     \def\Fld@height{\DefaultHeightofCheckBox}%
13743     \expandafter\HyField@SetKeys\expandafter{%
13744         \DefaultOptionsofCheckBox,#1%
13745     }%
13746     \PDFForm@Name

```

```

13747 \HyField@FlagsCheckBox
13748 \ifFld@hidden\def\Fld@width{1sp}\fi
13749 \setbox\pdfm@box=\hbox{%
13750 \MakeCheckField{\Fld@width}{\Fld@height}%
13751 }%
13752 \HyField@AdvanceAnnotCount
13753 \LayoutCheckField{#2}{%
13754 \leavevmode
13755 \Hy@escapeform\PDFForm@Check
13756 \@pdfm@mark{%
13757 ann @check\HyField@TheAnnotCount\space
13758 \dvipdfm@setdim
13759 <<\PDFForm@Check>>%
13760 }%
13761 \unhbox\pdfm@box
13762 \HyField@AddToFields{check}%
13763 }%
13764 \endgroup
13765 }

13766 \def\Hy@FormObjects{%
13767 \@pdfm@mark{obj @OBJpdfdocencoding%
13768 <<%
13769 /Type/Encoding%
13770 /Differences[%
13771 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13772 39/quotesingle %
13773 96/grave %
13774 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13775 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13776 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13777 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13778 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13779 160/Euro %
13780 164/currency %
13781 166/brokenbar %
13782 168/dieresis/copyright/ordfeminine %
13783 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13784 /twosuperior/threesuperior/acute/mu %
13785 183/periodcentered/cedilla/onesuperior/ordmasculine %
13786 188/onequarter/onehalf/threequarters %
13787 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13788 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13789 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13790 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13791 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13792 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13793 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13794 /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
13795 /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13796 /thorn/ydieresis%
13797 ]%
13798 >>%
13799 }%

```

```

13800 \@pdfm@mark{obj @OBJZaDb%
13801 <<%
13802 /Type/Font%
13803 /Subtype/Type1%
13804 /Name/ZaDb%
13805 /BaseFont/ZapfDingbats%
13806 >>%
13807 }%
13808 \@pdfm@mark{obj @OBJHelv%
13809 <<%
13810 /Type/Font%
13811 /Subtype/Type1%
13812 /Name/Helv%
13813 /BaseFont/Helvetica%
13814 /Encoding @OBJpdfdocencoding%
13815 >>%
13816 }%
13817 \global\let\Hy@FormObjects\relax
13818 }
13819 </dvipdfm | xetex>

```

## 44.6 Common forms part

```

13820 (*pdfform)

\Fld@pageobjref

13821 \providecommand*\Fld@pageobjref{}

\Hy@escapestring

13822 \@ifundefined{pdf@escapestring}
13823 {%
13824 \let\Hy@escapestring\@firstofone
13825 \def\Hy@escapeform#1{%
13826 \ifHy@pdfescapeform
13827 \def\Hy@escapestring##1{%
13828 \noexpand\Hy@escapestring{\noexpand##1}%
13829 }%
13830 \edef\Hy@temp{#1}%
13831 \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13832 \def\Hy@escapestring##1{%
13833 \@ifundefined{Hy@esc@\string##1}{%
13834 ##1%
13835 \ThisShouldNotHappen
13836 }{%
13837 \csname Hy@esc@\string##1\endcsname
13838 }%
13839 }%
13840 \else
13841 \let\Hy@escapestring\@firstofone
13842 \fi
13843 }%
13844 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
13845 \ifx\\#3\\%
13846 \else

```

```

13847 \expandafter
13848 \Hy@pstringdef\csmname Hy@esc@\string#2\endcsmname{#2}%
13849 \ltx@ReturnAfterFi{%
13850 \Hy@@escapeform#3\@nil
13851 }%
13852 \fi
13853 }%
13854 }{%
13855 \def\Hy@escapeform#1{%
13856 \ifHy@pdfescapeform
13857 \let\Hy@escapestring\pdfescapestring
13858 \else
13859 \let\Hy@escapestring\@firstofone
13860 \fi
13861 }%
13862 \Hy@escapeform{}%
13863 }

```

#### \PDFForm@Name

```

13864 \def\PDFForm@Name{%
13865 \PDFForm@@Name\Fld@name
13866 \ifx\Fld@altname\relax
13867 \else
13868 \PDFForm@@Name\Fld@altname
13869 \fi
13870 \ifx\Fld@mappingname\relax
13871 \else
13872 \PDFForm@@Name\Fld@mappingname
13873 \fi
13874 }

```

#### \PDFForm@@Name

```

13875 \def\PDFForm@@Name#1{%
13876 \begingroup
13877 \ifnum\Hy@pdf@major@minor@version<105 % implementation note 117, PDF spec 1.7
13878 \ifHy@unicode
13879 \Hy@unicodetrue
13880 \fi
13881 \fi
13882 \pdfstringdef\Hy@gtemp#1%
13883 \endgroup
13884 \let#1\Hy@gtemp
13885 }

```

#### \Fld@additionalactions

```

13886 \def\Fld@@additionalactions{%
K input (keystroke) format
13887 \ifx\Fld@keystroke@code\@empty
13888 \else
13889 /K<</S/JavaScript/JS\Hy@escapestring{\Fld@keystroke@code}>>%
13890 \fi
F display format

```

```

13891 \ifx\Fld@format@code\@empty
13892 \else
13893   /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13894 \fi

V validation
13895 \ifx\Fld@validate@code\@empty
13896 \else
13897   /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13898 \fi

C calculation
13899 \ifx\Fld@calculate@code\@empty
13900 \else
13901   /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13902 \fi

Fo receiving the input focus
13903 \ifx\Fld@onfocus@code\@empty
13904 \else
13905   /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13906 \fi

Bl loosing the input focus (blurred)
13907 \ifx\Fld@onblur@code\@empty
13908 \else
13909   /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13910 \fi

D pressing the mouse button (down)
13911 \ifx\Fld@onmousedown@code\@empty
13912 \else
13913   /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13914 \fi

U releasing the mouse button (up)
13915 \ifx\Fld@onmouseup@code\@empty
13916 \else
13917   /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13918 \fi

E cursor enters the annotation's active area.
13919 \ifx\Fld@onenter@code\@empty
13920 \else
13921   /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13922 \fi

X cursor exits the annotation's active area.
13923 \ifx\Fld@onexit@code\@empty
13924 \else
13925   /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13926 \fi
13927 }
13928 \def\Fld@additionalactions{%
13929 \if\Fld@@@additionalactions-%
13930 \else
13931 \ifHy@pdfa

```

```

13932 \else
13933 /AA<<\Fld@@additionalactions>>%
13934 \fi
13935 \fi
13936 }

```

\Fld@annotnames

```

13937 \def\Fld@annotnames{%
13938 /T(\Fld@name)%
13939 \ifx\Fld@altname\relax
13940 \else
13941 /TU(\Fld@altname)%
13942 \fi
13943 \ifx\Fld@mappingname\relax
13944 \else
13945 /TM(\Fld@mappingname)%
13946 \fi
13947 }

```

\PDFForm@Check

```

13948 \def\PDFForm@Check{%
13949 /Subtype/Widget%
13950 \Fld@annotflags
13951 \Fld@pageobjref
13952 \Fld@annotnames
13953 /FT/Btn%
13954 \Fld@flags
13955 /Q \Fld@align
13956 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13957 /AP<< /N <</Yes<<>>>> >> %new string /Yes is from below
13958 /MK<<%
13959 \ifnum\Fld@rotation=\z@
13960 \else
13961 /R \Fld@rotation
13962 \fi
13963 \ifx\Fld@bordercolor\relax
13964 \else
13965 /BC[\Fld@bordercolor]%
13966 \fi
13967 \ifx\Fld@bcolor\relax
13968 \else
13969 /BG[\Fld@bcolor]%
13970 \fi
13971 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13972 >>%
13973 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13974 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13975 /H/P%
13976 \ifFld@checked /V/Yes/AS/Yes\else /V/Off/AS/Off\fi
13977 \Fld@additionalactions
13978 }

```

\PDFForm@Push

```

13979 \ifHy@pdfa

```

```

13980 \else
13981 \def\PDFForm@Push{%
13982 /Subtype/Widget%
13983 \Fld@annotflags
13984 \Fld@pageobjref
13985 \Fld@annotnames
13986 /FT/Btn%
13987 \Fld@flags
13988 /H/P%
13989 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13990 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13991 \ifx\Fld@bordercolor\relax\else 1\fi
13992 \space
13993 \else
13994 /MK<<%
13995 \ifnum\Fld@rotation=\z@
13996 \else
13997 /R \Fld@rotation
13998 \fi
13999 \ifx\Fld@bordercolor\relax
14000 \else
14001 /BC[\Fld@bordercolor]%
14002 \fi
14003 >>%
14004 \fi
14005 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
14006 \Fld@additionalactions
14007 }%
14008 \fi

```

#### \PDFForm@List

```

14009 \def\PDFForm@List{%
14010 /Subtype/Widget%
14011 \Fld@annotflags
14012 \Fld@pageobjref
14013 \Fld@annotnames
14014 /FT/Ch%
14015 \Fld@flags
14016 /Q \Fld@align
14017 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14018 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14019 \ifx\Fld@bordercolor\relax\else 1\fi
14020 \ifx\Fld@bcolor\relax \else 1\fi
14021 \space
14022 \else
14023 /MK<<%
14024 \ifnum\Fld@rotation=\z@
14025 \else
14026 /R \Fld@rotation
14027 \fi
14028 \ifx\Fld@bordercolor\relax
14029 \else
14030 /BC[\Fld@bordercolor]%
14031 \fi

```

```

14032     \ifx\Fld@bcolor\relax
14033     \else
14034         /BG[\Fld@bcolor]%
14035     \fi
14036     >>%
14037 \fi
14038 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14039     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14040 \Fld@choices
14041 \Fld@additionalactions
14042 }

```

#### \PDFForm@Radio

```

14043 \def\PDFForm@Radio{%
14044     /Subtype/Widget%
14045     \Fld@annotflags
14046     \Fld@pageobjref
14047     \Fld@annotnames
14048     /FT/Btn%
14049     \Fld@flags
14050     /H/P%
14051     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14052     /MK<<%
14053     \ifnum\Fld@rotation=\z@
14054     \else
14055         /R \Fld@rotation
14056     \fi
14057     \ifx\Fld@bordercolor\relax
14058     \else
14059         /BC[\Fld@bordercolor]%
14060     \fi
14061     \ifx\Fld@bcolor\relax
14062     \else
14063         /BG[\Fld@bcolor]%
14064     \fi
14065     /CA(\Hy@escapestring{\Fld@radiosymbol})%
14066     >>%
14067     /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14068         \ifx\Fld@color\@empty\else\space\Fld@color\fi)%

```

New code, the default value is used for all buttons

```

14069     \ifx\Fld@default\@empty
14070         /V/Off%
14071         /DV/Off%
14072     \else
14073         /V/\Fld@default
14074         /DV/\Fld@default
14075     \fi
14076     \Fld@additionalactions
14077 }

```

#### \PDFForm@Text

```

14078 \def\PDFForm@Text{%
14079     /Subtype/Widget%

```



```

14080 \Fld@annotflags
14081 \Fld@pageobjref
14082 \Fld@annotnames
14083 /FT/Tx%
14084 \Fld@flags
14085 /Q \Fld@align
14086 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
14087 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14088     \ifx\Fld@bordercolor\relax\else 1\fi
14089     \ifx\Fld@bcolor\relax \else 1\fi
14090     \space
14091 \else
14092 /MK<<%
14093     \ifnum\Fld@rotation=\z@
14094     \else
14095     /R \Fld@rotation
14096     \fi
14097     \ifx\Fld@bordercolor\relax
14098     \else
14099     /BC[\Fld@bordercolor]%
14100     \fi
14101     \ifx\Fld@bcolor\relax
14102     \else
14103     /BG[\Fld@bcolor]%
14104     \fi
14105 >>%
14106 \fi
14107 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14108     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14109 /DV(\Hy@escapestring{\Fld@default})%
14110 /V(\Hy@escapestring{\Fld@value})%
14111 \Fld@additionalactions
14112 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
14113 }

```

\PDFForm@Submit

```

14114 \def\PDFForm@Submit{%
14115 /Subtype/Widget%
14116 \Fld@annotflags
14117 \Fld@pageobjref
14118 \Fld@annotnames
14119 /FT/Btn%
14120 \Fld@flags
14121 /H/P%
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     \space
14126 \else
14127 /MK<<%
14128     \ifnum\Fld@rotation=\z@
14129     \else
14130     /R \Fld@rotation
14131     \fi

```

```

14132     \ifx\Fld@bordercolor\relax
14133     \else
14134         /BC[\Fld@bordercolor]%
14135     \fi
14136     >>%
14137 \fi
14138 /A<<%
14139 /S/SubmitForm%
14140 /F<<%
14141     /FS/URL%
14142     /F(\Hy@escapestring{\Form@action})%
14143     >>%
14144     \Fld@submitflags
14145     >>%
14146     \Fld@additionalactions
14147 }

```

\PDFForm@Reset

```

14148 \ifHy@pdfa
14149 \else
14150     \def\PDFForm@Reset{%
14151         /Subtype/Widget%
14152         \Fld@annotflags
14153         \Fld@pageobjref
14154         \Fld@annotnames
14155         /FT/Btn%
14156         \Fld@flags
14157         /H/P%
14158         /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
14159         \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14160             \ifx\Fld@bordercolor\relax\else 1\fi
14161             \space
14162         \else
14163             /MK<<%
14164             \ifnum\Fld@rotation=\z@
14165             \else
14166                 /R \Fld@rotation
14167             \fi
14168             \ifx\Fld@bordercolor\relax
14169             \else
14170                 /BC[\Fld@bordercolor]%
14171             \fi
14172 %         /CA (Clear)
14173 %         /AC (Done)
14174         >>%
14175     \fi
14176     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14177     /A<</S/ResetForm>>%
14178     \Fld@additionalactions
14179 }%
14180 \fi

14181 </pdfform>
14182 <*packageEnd>

```

## 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`

```
14183 \def\phantomsection{%
14184   \Hy@MakeCurrentHrefAuto{section*}%
14185   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
14186 }
14187 \endpackage
```

### 45.1 Bookmarks

```
14188 (*outlines)
```

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

When using the right-to-left typesetting based on  $\varepsilon\text{-TeX}$ , the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of  $\varepsilon\text{-TeX}$ 's implementation (that it processes the shipped out lines left-to-right, instead of the order in which they appear in the document). The wrong order will appear when the file contains two bookmarks on the same line typeset right-to-left.

To work around this problem, the `bookmark@seq@number` counter is used to write the bookmark's sequential number into a comment in the `\@outlinefile`, which could be used to post-process it to achieve the proper ordering of `\BOOKMARK` commands in that file.

```
14189 \def\Hy@writebookmark#1#2#3#4#5{%
14190   % section number, text, label, level, file
14191   \ifx\WriteBookmarks\relax%
14192     \else
14193       \ifnum#4>\Hy@bookmarksdepth\relax
14194       \else
14195         \@@writetorep{#1}{#2}{#3}{#4}{#5}%
14196       \fi
14197     \fi
14198 }
14199 \def\Hy@currentbookmarklevel{0}
14200 \def\Hy@numberline#1{#1 }
14201 \def\@@writetorep#1#2#3#4#5{%
14202   \begingroup
14203     \edef\Hy@tempa{#5}%
14204     \ifx\Hy@tempa\Hy@bookmarkstype
```

```

14205 \edef\Hy@level{#4}%
14206 \ifx\Hy@levelcheck Y%
14207   \@tempcnta\Hy@level\relax
14208   \advance\@tempcnta by -1 %
14209   \ifnum\Hy@currentbookmarklevel<\@tempcnta
14210     \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
14211     \advance\@tempcnta by 1 %
14212     \Hy@Warning{%
14213       Difference (\the\@tempcnta) between bookmark levels is %
14214       greater \MessageBreak than one, level fixed%
14215     }%
14216     \@tempcnta\Hy@currentbookmarklevel
14217     \advance\@tempcnta by 1 %
14218     \edef\Hy@level{\the\@tempcnta}%
14219   \fi
14220 \else
14221   \global\let\Hy@levelcheck Y%
14222 \fi
14223 \global\let\Hy@currentbookmarklevel\Hy@level
14224 \@tempcnta\Hy@level\relax
14225 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14226 \advance\@tempcnta by -1 %
14227 \edef\Hy@tempa{#3}%
14228 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14229 \ifx\Hy@tempa\Hy@tempb
14230   \Hy@Warning{%
14231     The anchor of a bookmark and its parent's must not%
14232     \MessageBreak be the same. Added a new anchor%
14233   }%
14234   \phantomsection
14235 \fi
14236 \ifHy@bookmarksnumbered
14237   \let\numberline\Hy@numberline
14238   \let\booknumberline\Hy@numberline
14239   \let\partnumberline\Hy@numberline
14240   \let\chapternumberline\Hy@numberline
14241 \else
14242   \let\numberline\@gobble
14243   \let\booknumberline\@gobble
14244   \let\partnumberline\@gobble
14245   \let\chapternumberline\@gobble
14246 \fi
14247 \pdfstringdef\Hy@tempa{#2}%
14248 \HyPsd@SanitizeForOutFile\Hy@tempa
14249 \if@filesw
14250   \stepcounter{bookmark@seq@number}%
14251   \@ifundefined{@outlinefile}{%
14252     }{%
14253       \protected@write\@outlinefile{%
14254         \protect\BOOKMARK
14255         [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14256         {\Hy@tempa}{\Hy@tempb}%
14257         \@percentchar\space\thebookmark@seq@number
14258       }%

```

```

14259     }%
14260     \fi
14261     \fi
14262 \endgroup
14263 }
14264 \newcounter{bookmark@seq@number}

14265 \begingroup
14266 \lccode`=(`{ %
14267 \lccode`= `}%
14268 \lccode`1=\z@
14269 \lccode`2=\z@
14270 \lccode`3=\z@
14271 \lccode`5=\z@
14272 \lccode`7=\z@
14273 \lccode`#= \z@
14274 \lccode``= \z@
14275 \lccode`\{= \z@
14276 \lccode`\}= \z@
14277 \lowercase{%
14278 \endgroup
14279 \def\HyPsd@SanitizeForOutFile#1{%
14280   \@onelevel@sanitize\Hy@tempa
14281   \escapechar`\\ %
14282   \edef\Hy@tempa{%
14283     \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
14284   }%
14285   \edef\Hy@tempa{%
14286     \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
14287   }%
14288 }%
14289 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14290   #1%
14291   \ifx\\#2\\ %
14292     \expandafter\ltx@gobble
14293   \else
14294     \expandafter\ltx@firstofone
14295   \fi
14296   {%
14297     \string\173%
14298     \HyPsd@SanitizeOut@BraceLeft#2\@nil
14299   }%
14300 }%
14301 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14302   #1%
14303   \ifx\\#2\\ %
14304     \expandafter\ltx@gobble
14305   \else
14306     \expandafter\ltx@firstofone
14307   \fi
14308   {%
14309     \string\175%
14310     \HyPsd@SanitizeOut@BraceRight#2\@nil
14311   }%
14312 }%

```

14313 }

In the call of `\BOOKMARK` the braces around `#4` are omitted, because it is not likely, that the level number contains `]`.

```
14314 \newcommand{\currentpdfbookmark}{%
14315   \pdfbookmark[\Hy@currentbookmarklevel]%
14316 }
14317 \newcommand{\subpdfbookmark}{%
14318   \@tempcnta\Hy@currentbookmarklevel
14319   \Hy@StepCount\@tempcnta
14320   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14321 }
14322 \newcommand{\belowpdfbookmark}[2]{%
14323   \@tempcnta\Hy@currentbookmarklevel
14324   \Hy@StepCount\@tempcnta
14325   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14326   \advance\@tempcnta by -1 %
14327   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14328 }
```

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.

```
14329 \renewcommand\pdfbookmark[3][0]{%
14330   \Hy@writebookmark{}{#2}{#3.#1}{#1}{toc}%
14331   \hyper@anchorstart{#3.#1}\hyper@anchorend
14332 }
14333 \def\BOOKMARK{%
14334   \ifnextchar{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
14335 }
14336 \def\@BOOKMARK[#1]{%
14337   \ifnextchar{\@@BOOKMARK[#1]}{\@@BOOKMARK[#1][-]}%
14338 }
```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfopdf` macros.

#### 45.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```
14339 \RequirePackage{rerunfilecheck}[2009/12/10]
14340 \def\Hy@OutlineRerunCheck{%
14341   \RerunFileCheck{\jobname.out}{%
14342     \immediate\closeout\@outlinefile
14343   }{%
14344     Rerun to get outlines right\MessageBreak
14345     or use package `bookmark'%
14346   }%
14347 }
```

#### 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 by Taco Hoekwater ([taco.hoekwater@wkap](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.

14348 (\*vtx)

14349 \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.

```

14350 \begingroup
14351 \catcode\'=12 %
14352 \ifnum\Hy@VTeXversion<650 %
14353 \catcode\'=12 %
14354 \gdef\hv@pdf@char#1#2#3{%
14355 \char
14356 \ifcase'#1#2#3 %
14357 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
14358 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
14359 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
14360 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
14361 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
14362 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
14363 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
14364 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
14365 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
14366 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
14367 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
14368 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
14369 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
14370 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
14371 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
14372 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
14373 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
14374 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
14375 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
14376 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
14377 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
14378 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
14379 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
14380 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
14381 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
14382 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
14383 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
14384 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
14385 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
14386 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
14387 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
14388 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
14389 \fi
14390 }%
14391 \else
14392 \gdef\hv@pdf@char{\char'}%
14393 \fi
14394 \endgroup

```

\@@BOOKMARK

```
14395 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14396   \expandafter\edef\csname @count@#3\endcsname{%
14397     \the\@serial@counter
14398   }%
14399   \edef\@mycount{\the\@serial@counter}%
14400   \Hy@StepCount\@serial@counter
14401   \edef\@parcount{%
14402     \expandafter\ifx\csname @count@#5\endcsname\relax
14403       0%
14404     \else
14405       \csname @count@#5\endcsname
14406     \fi
14407   }%
14408   \immediate\special{%
14409     !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14410     s=\ifx#2-c\else o\fi,t=#4%
14411   }%
14412 }
```

\ReadBookmarks

```
14413 \def\ReadBookmarks{%
14414   \begingroup
14415   \def\0{\hv@pdf@char 0}%
14416   \def\1{\hv@pdf@char 1}%
14417   \def\2{\hv@pdf@char 2}%
14418   \def\3{\hv@pdf@char 3}%
14419   \def\({}%
14420   \def\)}%
14421   \def\do##1{%
14422     \ifnum\catcode`##1=\active
14423       \@makeother##1%
14424     \else
14425       \ifnum\catcode`##1=6 %
14426         \@makeother##1%
14427       \fi
14428     \fi
14429   }%
14430   \dospecials
14431   \Hy@safe@activestrue
14432   \InputIfFileExists{jobname.out}{\}{\}%
14433 \endgroup
14434 \ifx\WriteBookmarks\relax
14435 \else
14436   \if@filesw
14437     \newwrite\@outlinefile
14438     \Hy@OutlineRerunCheck
14439     \immediate\openout\@outlinefile=jobname.out\relax
14440     \fi
14441     \fi
14442 }
14443 </vtex>
14444 <!*vtex>
```



```

14445 \def\ReadBookmarks{%
14446   \pdf@ifdraftmode{ }{%
14447     \begingroup
14448     \def\do##1{%
14449       \ifnum\catcode`##1=\active
14450         \@makeother##1%
14451       \else
14452         \ifnum\catcode`##1=6 %
14453           \@makeother##1%
14454         \fi
14455       \fi
14456     }%
14457     \dospecials
14458     \Hy@safe@activetrue
14459     \escapechar=`\%
14460     \def\@@BOOKMARK[##1][##2]##3##4##5{%
14461       \calc@bm@number{##5}%
14462     }%
14463     \InputIfFileExists{ \jobname.out }{ }{ }%
14464     \ifx\WriteBookmarks\relax
14465       \global\let\WriteBookmarks\relax
14466     \fi
14467     \def\@@BOOKMARK[##1][##2]##3##4##5{%
14468       \def\Hy@temp{##4}%
14469     }%
14470     \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14471     \Hy@OutlineName{\Hy@pstringName{
14472       ##2\check@bm@number{##3}%
14473     }}%
14474     \expandafter\strip@prefix\meaning\Hy@temp
14475   }%
14476 }%
14477 \end{pdfmark}
14478 \pdfmark{%
14479   pdfmark=/OUT,%
14480   Count={##2\check@bm@number{##3}},%
14481   Dest={##3},%
14482   Title=\expandafter\strip@prefix\meaning\Hy@temp
14483 }%
14484 \end{pdfmark}
14485 \end{dvipdfm}
14486 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14487 \pdfmark{%
14488   outline \ifHy@DvipdfmxOutlineOpen
14489     [%
14490     \ifnum##21>\z@
14491     \else
14492     -%
14493     \fi
14494     ] %
14495     \fi
14496     ##1<<%
14497     /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14498     /A<<%

```

```

14499         /S/GoTo%
14500         /D(\Hy@pstringName)%
14501         >>%
14502         >>%
14503     }%
14504 </dvipdfm | xetex>
14505 }%
14506 \begingroup
14507 \def\WriteBookmarks{0}%
14508 \InputIfFileExists{jobname.out}{\relax}{\relax}%
14509 \endgroup
14510 %f\escapechar\m@ne\InputIfFileExists{jobname.out}{\relax}{\relax}%
14511 \endgroup
14512 }%
14513 \ifx\WriteBookmarks\relax
14514 \else
14515 \if@filesw
14516 \newwrite\@outlinefile
14517 \Hy@OutlineRerunCheck
14518 \immediate\openout\@outlinefile=jobname.out\relax
14519 \fi
14520 \fi
14521 }
14522 < *pdfTeX>
14523 \def\Hy@OutlineName#1#2#3#4{%
14524 \pdfoutline goto name{#2}count#3{#4}%
14525 }
14526 </pdfTeX>
14527 \def\check@bm@number#1{%
14528 \expandafter\ifx\csname B_#1\endcsname\relax
14529 0%
14530 \else
14531 \csname B_#1\endcsname
14532 \fi
14533 }
14534 \def\calc@bm@number#1{%
14535 \@tempcnta=\check@bm@number{#1}\relax
14536 \advance\@tempcnta by 1 %
14537 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14538 }
14539 </!vTeX>

14540 \ifHy@implicit
14541 \else
14542 \expandafter\endinput
14543 \fi

14544 </outlines>
14545 <*outlines | hypertex>

14546 \newlength\Hy@SectionHShift
14547 \def\Hy@SectionAnchorHRef#1{%
14548 \ifx\protect\@typeset@protect
14549 \Hy@@@SectionAnchor{#1}%
14550 \fi
14551 }

```

```

14552 \DeclareRobustCommand*{\Hy@@SectionAnchor}[1]{%
14553   \leavevmode
14554   \hbox to 0pt{%
14555     \kern-\Hy@SectionHShift
14556     \Hy@raisedlink{%
14557       \hyper@anchorstart{#1}\hyper@anchorend
14558     }%
14559     \hss
14560   }%
14561 }
14562 \@ifundefined{hyper@nopatch@sectioning}
14563 {
14564   \let\H@old@ssect\@ssect
14565   \def\@ssect#1#2#3#4#5{%
14566     \Hy@MakeCurrentHrefAuto{section*}%
14567     \setlength{\Hy@SectionHShift}{#1}%
14568     \begingroup
14569       \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14570       \toks\tw@\expandafter{%
14571         \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14572         #5%
14573       }%
14574     \edef\x{\endgroup
14575       \the\toks@\the\toks\tw@}%
14576   }\x
14577 }
14578 \let\H@old@schapter\@schapter
14579 \def\@schapter#1{%
14580   \begingroup
14581     \let\@mkboth\@gobbletwo
14582     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14583     \Hy@raisedlink{%
14584       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14585     }%
14586   \endgroup
14587   \H@old@schapter{#1}%
14588 }

```

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:

```

14589 \ltx@ifundefined{@chapter}{}{%
14590   \let\Hy@org@chapter\@chapter
14591   \def\@chapter{%
14592     \def\Hy@next{%
14593       \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14594       \Hy@raisedlink{%
14595         \hyper@anchorstart{\@currentHref}\hyper@anchorend
14596       }%
14597     }%
14598     \ifnum\c@secnumdepth>\m@ne
14599       \ltx@ifundefined{if@mainmatter}%
14600       \iftrue{\csname if@mainmatter\endcsname}%
14601       \let\Hy@next\relax

```

```

14602     \fi
14603     \fi
14604     \Hy@next
14605     \Hy@org@chapter
14606 }%
14607 }

14608 \let\H@old@part\@part
14609 \@ifundefined{chapter}
14610   {\let\Hy@secnum@part\z@}
14611   {\let\Hy@secnum@part\m@ne}
14612 \def\@part{%
14613   \ifnum\Hy@secnum@part>\c@secnumdepth
14614     \phantomsection
14615     \fi
14616   \H@old@part
14617 }

14618 \let\H@old@spart\@spart
14619 \def\@spart#1{%
14620   \Hy@MakeCurrentHrefAuto{part*}%
14621   \Hy@raisedlink{%
14622     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14623   }%
14624   \H@old@spart{#1}%
14625 }

14626 \let\H@old@sect\@sect
14627 \def\@sect#1#2#3#4#5#6[#7]#8{%
14628   \ifnum #2>\c@secnumdepth
14629     \expandafter\@firstoftwo
14630     \else
14631       \expandafter\@secondoftwo
14632     \fi
14633   {%
14634     \Hy@MakeCurrentHrefAuto{section*}%
14635     \setlength{\Hy@SectionHShift}{#3}%
14636     \begingroup
14637       \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14638       \toks\tw@\expandafter{%
14639         \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14640         #8%
14641       }%
14642       \edef\x{\endgroup
14643         \the\toks@\the\toks\tw@}%
14644       }\x
14645     }{%
14646       \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14647     }%
14648 }
14649 }{}

14650 </outlines | hypertex>
14651 <*outlines>

14652 \expandafter\def\csname Parent-4\endcsname{}
14653 \expandafter\def\csname Parent-3\endcsname{}
14654 \expandafter\def\csname Parent-2\endcsname{}

```

```

14655 \expandafter\def\csname Parent-1\endcsname{}
14656 \expandafter\def\csname Parent0\endcsname{}
14657 \expandafter\def\csname Parent1\endcsname{}
14658 \expandafter\def\csname Parent2\endcsname{}
14659 \expandafter\def\csname Parent3\endcsname{}
14660 \expandafter\def\csname Parent4\endcsname{}
14661 </outlines>

```

## 46 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 46.1 PD1 encoding

```

14662 <*pd1enc>
14663 \DeclareFontEncoding{PD1}{}{}

Accents
14664 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
14665 \DeclareTextAccent{\'}{PD1}{\textacute}
14666 \DeclareTextAccent{\~}{PD1}{\textasciicircum}
14667 \DeclareTextAccent{\~}{PD1}{\texttilde}
14668 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14669 \DeclareTextAccent{\r}{PD1}{\textring}
14670 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14671 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14672 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14673 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
14674 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14675 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14676 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
14677 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
14678 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\textasciicircum}
14679 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14680 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14681 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
14682 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14683 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14684 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14685 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
14686 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14687 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14688 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}
14689 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
14690 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\textasciicircum}
14691 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14692 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14693 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
14694 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14695 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14696 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}

```

```

14697 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
14698 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14699 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14700 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14701 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14702 \DeclareTextCommand{\newtie}{PD1}[1]{%
14703   \TextSymbolUnavailable{\newtie{#1}}#1%
14704 }

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

14705 % U+0009 (CHARACTER TABULATION)
14706 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14707 % U+000A (LINE FEED)
14708 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14709 % U+000D (CARRIAGE RETURN)
14710 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14711 % U+02D8 BREVE; breve
14712 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14713 % U+02C7 CARON; caron
14714 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14715 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14716 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
14717 % U+02D9 DOT ABOVE; dotaccent
14718 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
14719 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
14720 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
14721 % U+02DB OGONEK; ogonek
14722 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB
14723 % U+02DA RING ABOVE; ring
14724 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA
14725 % U+02DC SMALL TILDE; ilde, *tilde
14726 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC

```

\040: U+0020 SPACE; \*space, spacehackarabic

\041: U+0021 EXCLAMATION MARK; exclam

```

14727 % U+0022 QUOTATION MARK; quotedbl
14728 \DeclareTextCommand{\textquotedbl}{PD1}{"}% \042 U+0022
14729 % U+0023 NUMBER SIGN; numbersign
14730 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023
14731 % U+0024 DOLLAR SIGN; dollar
14732 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024
14733 % U+0025 PERCENT SIGN; percent
14734 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025
14735 % U+0026 AMPERSAND; ampersand
14736 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026

```

\047: U+0027 APOSTROPHE; quotesingle

```

14737 % U+0028 LEFT PARENTHESIS; parenleft
14738 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028
14739 % U+0029 RIGHT PARENTHESIS; parenright
14740 \DeclareTextCommand{\textparenright}{PD1}{\string\)% \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  
 14741 % U+002E FULL STOP; period  
 14742 \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  
 14743 % U+003C LESS-THAN SIGN; less  
 14744 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
 \075: U+003D EQUALS SIGN; equal  
 14745 % U+003E GREATER-THAN SIGN; greater  
 14746 \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  
 14747 % U+005C REVERSE SOLIDUS; backslash  
 14748 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
 14749 % "U+2216 SET MINUS" simulated by "U+005C REVERSE SOLIDUS"  
 14750 \DeclareTextCommand{\textsetminus}{PD1}{\textbackslash}  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 14751 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14752 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
 14753 % U+005F LOW LINE; underscore  
 14754 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
 14755 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 14756 % U+0060 GRAVE ACCENT; grave  
 14757 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
 \141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 14758 % U+0069 LATIN SMALL LETTER I; i  
 14759 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
 \152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 14760 % U+007B LEFT CURLY BRACKET; braceleft  
 14761 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 14762 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14763 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 14764 % U+007D RIGHT CURLY BRACKET; braceright  
 14765 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 14766 % U+007E TILDE; asciitilde

14767 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
Slot \177 (0x7F) is undefined in PDFDocEncoding.  
14768 % U+2022 BULLET; bullet  
14769 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
14770 % U+2020 DAGGER; dagger  
14771 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
14772 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
14773 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
14774 \DeclareTextCommand{\textddagger}{PD1}{\textdagger}  
14775 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
14776 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
14777 % U+2014 EM DASH; emdash  
14778 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
14779 % U+2013 EN DASH; endash  
14780 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
14781 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
14782 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
14783 % U+2044 FRACTION SLASH; fraction  
14784 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
14785 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
inglleft  
14786 \DeclareTextCommand{\guilsinglleft}{PD1}{\210}% U+2039  
14787 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
inglright  
14788 \DeclareTextCommand{\guilsinglright}{PD1}{\211}% U+203A  
14789 % U+2212 MINUS SIGN; minus  
14790 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
14791 % U+2030 PER MILLE SIGN; perthousand  
14792 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
14793 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
14794 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
14795 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
14796 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
14797 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
14798 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
14799 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
14800 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
14801 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
14802 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
14803 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
14804 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
14805 % U+2122 TRADE MARK SIGN; trademark  
14806 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
14807 % U+FB01 LATIN SMALL LIGATURE FI; fi  
14808 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
14809 % U+FB02 LATIN SMALL LIGATURE FL; fl  
14810 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
14811 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14812 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
14813 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
14814 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
14815 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
14816 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
14817 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis



14818 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178  
14819 \DeclareTextCommand{\IJ}{PD1}{IJ}% ligature U+0049 U+004A  
14820 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
14821 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
14822 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
14823 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
14824 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14825 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
14826 % U+0153 LATIN SMALL LIGATURE OE; oe  
14827 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
14828 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
14829 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
14830 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
14831 \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.  
14832 % U+20AC EURO SIGN; \*Euro, euro  
14833 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
14834 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
14835 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
14836 % U+00A2 CENT SIGN; cent  
14837 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
14838 % U+00A3 POUND SIGN; sterling  
14839 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
14840 % U+00A4 CURRENCY SIGN; currency  
14841 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
14842 % U+00A5 YEN SIGN; yen  
14843 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
14844 % U+00A6 BROKEN BAR; brokenbar  
14845 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
14846 % U+00A7 SECTION SIGN; section  
14847 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
14848 % U+00A8 DIAERESIS; dieresis  
14849 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
14850 % U+00A9 COPYRIGHT SIGN; copyright  
14851 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
14852 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14853 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
14854 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motleft  
14855 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
14856 % U+00AC NOT SIGN; logicalnot  
14857 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
14858 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
No glyph \255 in PDFDocEncoding.  
14859 % U+00AE REGISTERED SIGN; registered  
14860 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14861 % U+00AF MACRON; \*macron, overscore  
14862 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14863 % U+00B0 DEGREE SIGN; degree  
14864 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14865 % U+00B1 PLUS-MINUS SIGN; plusminus  
14866 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1

14867 % U+00B2 SUPERSCRIPT TWO; twosuperior  
14868 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}%\* U+00B2  
14869 % U+00B3 SUPERSCRIPT THREE; threesuperior  
14870 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}%\* U+00B3  
14871 % U+00B4 ACUTE ACCENT; acute  
14872 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14873 % U+00B5 MICRO SIGN; mu, mul  
14874 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14875 % U+00B6 PILCROW SIGN; paragraph  
14876 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14877 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14878 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14879 % U+00B8 CEDILLA; cedilla  
14880 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14881 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14882 \DeclareTextCommand{\textonesuperior}{PD1}{\271}%\* U+00B9  
14883 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14884 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14885 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
14886 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14887 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14888 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14889 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14890 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14891 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14892 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14893 % U+00BF INVERTED QUESTION MARK; questiondown  
14894 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14895 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14896 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14897 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14898 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14899 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14900 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14901 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14902 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14903 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14904 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14905 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14906 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14907 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14908 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14909 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14910 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14911 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14912 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14913 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14914 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14915 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14916 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14917 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14918 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14919 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave

14920 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14921 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14922 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14923 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14924 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14925 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14926 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14927 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14928 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14929 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14930 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14931 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14932 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14933 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14934 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14935 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14936 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14937 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14938 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14939 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14940 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14941 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14942 % U+00D7 MULTIPLICATION SIGN; multiply  
14943 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14944 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14945 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14946 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14947 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
14948 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14949 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14950 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14951 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14952 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14953 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14954 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14955 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14956 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
14957 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14958 \DeclareTextCommand{\textThorn}{PD1}{\336}%\* U+00DE  
14959 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14960 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14961 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14962 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
14963 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14964 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14965 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14966 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14967 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14968 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14969 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14970 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
14971 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14972 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
14973 % U+00E6 LATIN SMALL LETTER AE; ae

14974 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
14975 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14976 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
14977 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14978 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350}% U+00E8  
14979 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14980 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
14981 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14982 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
14983 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14984 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
14985 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14986 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
14987 \DeclareTextCompositeCommand{\^}{PD1}{i}{\354}% U+00EC  
14988 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14989 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14990 \DeclareTextCompositeCommand{\^}{PD1}{i}{\355}% U+00ED  
14991 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14992 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14993 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14994 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14995 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14996 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14997 % U+00F0 LATIN SMALL LETTER ETH; eth  
14998 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
14999 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15000 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
15001 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15002 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2  
15003 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15004 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3  
15005 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15006 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4  
15007 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15008 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
15009 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15010 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366}% U+00F6  
15011 % U+00F7 DIVISION SIGN; divide  
15012 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
15013 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15014 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
15015 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15016 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9  
15017 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15018 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA  
15019 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
15020 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB  
15021 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
15022 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC  
15023 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
15024 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD  
15025 % U+00FE LATIN SMALL LETTER THORN; thorn; \th, \thorn (wasysym)  
15026 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
15027 \DeclareTextCommand{\textthorn}{PD1}{\376}%\* U+00FE

```

15028 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
15029 \DeclareTextCompositeCommand{"}{PD1}{y}{\377}% U+00FF
15030 \DeclareTextCommand{\ij}{PD1}{ij}% ligature U+0069 U+006A

```

Glyphs that consist of several characters.

```

15031 \DeclareTextCommand{\SS}{PD1}{SS}%
15032 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}%

```

Aliases (german.sty)

```

15033 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}%
15034 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}%
15035 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}%
15036 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}%
15037 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}%
15038 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}%
15039 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}%
15040 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}%

```

Aliases (math names)

```

15041 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}%
15042 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}%
15043 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}%
15044 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}%
15045 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}%
15046 \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).

```

15047 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
15048 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
15049 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
15050 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
15051 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
15052 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
15053 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
15054 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
15055 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
15056 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
15057 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
15058 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
15059 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
15060 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot

```

```

15061 </pd1enc>

```

## 46.2 PU encoding

```

15062 <*puenc>
15063 \DeclareFontEncoding{PU}{}{}

```

### 46.2.1 NFSS2 accents

```

15064 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
15065 \DeclareTextCommand{"}{PU}[1]{\#1\83\000}% U+0300
15066 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
15067 \DeclareTextCommand{"}{PU}[1]{\#1\83\001}% U+0301
15068 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb

```

15069 \DeclareTextCommand{\~}{PU}[1]{#1\83\002}% U+0302  
15070 % U+0303 COMBINING TILDE; tildecmb, \*tildecmb  
15071 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303  
15072 % U+0304 COMBINING MACRON; macroncmb  
15073 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304  
15074 % U+0306 COMBINING BREVE; brevecmb  
15075 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306  
15076 \ifx\CYRDZE\@undefined \else  
15077 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306  
15078 \fi  
15079 % U+0307 COMBINING DOT ABOVE; dotaccentcmb  
15080 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307  
15081 % U+0308 COMBINING DIAERESIS; dieresiscmb  
15082 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308  
15083 % U+030A COMBINING RING ABOVE; ringcmb  
15084 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A  
15085 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb  
15086 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B  
15087 % U+030C COMBINING CARON; caroncmb  
15088 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C  
15089 \puenc)  
15090 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravescmb  
15091 \puextra)\DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F  
15092 \\*puenc)  
15093 \ifx\CYRDZE\@undefined \else  
15094 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F  
15095 \fi  
15096 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
15097 \DeclareTextCommand{\textinvbreve}{PU}[1]{#1\83\021}% U+0311  
15098 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311  
15099 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcmb  
15100 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323  
15101 % U+0324 COMBINING DIAERESIS BELOW; dieresisbelowcmb; \textsubum-  
laut (tipa)  
15102 \DeclareTextCommand{\textsubumlaut}{PU}[1]{#1\83\044}% U+0324  
15103 % U+0325 COMBINING RING BELOW; ringbelowcmb; \textsubring (tipa)  
15104 \DeclareTextCommand{\textsubring}{PU}[1]{#1\83\045}% U+0325  
15105 % U+0327 COMBINING CEDILLA; cedillacmb  
15106 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327  
15107 % U+0328 COMBINING OGONEK; ogonekcmb  
15108 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328  
15109 % U+032D COMBINING CIRCUMFLEX ACCENT BELOW;  
15110 % \textsubcircum (tipa)  
15111 \DeclareTextCommand{\textsubcircum}{PU}[1]{#1\83\055}% U+032D  
15112 % U+032E COMBINING BREVE BELOW; brevebelowcmb  
15113 \DeclareTextCommand{\textsubbreve}{PU}[1]{#1\83\056}% U+032E  
15114 % U+0330 COMBINING TILDE BELOW; tildebelowcmb; \textsubtilde (tipa)  
15115 \DeclareTextCommand{\textsubtilde}{PU}[1]{#1\83\060}% U+0330  
15116 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
15117 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331  
15118 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-  
blecmb  
15119 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361  
15120 % U+20DD COMBINING ENCLOSING CIRCLE

15121 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

Double accents.

15122 \DeclareTextCommand{\textacutemacron}{PU}[1]{#1\83\001\83\004}% U+0301 U+0304

15123 \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.

15124 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}%

15125 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}%

15126 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textasciicircum}%

15127 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}%

15128 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}%

15129 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}%

15130 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}%

15131 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}%

15132 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}%

15133 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}%

15134 \puenc

15135 \puextra\DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}%

15136 \\*puenc

15137 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}%

15138 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}%

15139 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}%

15140 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\@empty}{\83\021}}% U+0311

15141 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\@empty}{\83\044}}% U+0324

15142 \DeclareTextCompositeCommand{\textsubring}{PU}{\@empty}{\textringlow}%

15143 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\@empty}{\textcirc-  
low}%

15144 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\@empty}{\83\056}}% U+032E

15145 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\@empty}{\texttildelow}%

15146 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}%

15147 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}%

15148 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}%

15149 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}%

15150 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}%

15151 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\@empty}{\83\001\83\004}}% U+0301 U

15152 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\@empty}{\83\000\83\004}}% U+0300 U

15153 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}%

15154 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}%

15155 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}%

15156 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}%

15157 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}%

15158 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}%

15159 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}%

15160 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}%

15161 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}%

15162 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}%

15163 \puenc

15164 \puextra\DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}%

15165 \\*puenc

15166 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}%

15167 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}%

15168 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}%

15169 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\ }{\83\021}}% U+0311

```

15170 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\ }{{ \83\044}}% U+0324
15171 \DeclareTextCompositeCommand{\textsubring}{PU}{\ }{{ \textringlow}}%
15172 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\ }{{ \textcircumlow}}%
15173 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\ }{{ \83\056}}% U+032E
15174 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\ }{{ \texttildebelow}}%
15175 \DeclareTextCompositeCommand{\b}{PU}{\ }{{ \textmacronbelow}}%
15176 \DeclareTextCompositeCommand{\d}{PU}{\ }{{ \textdotbelow}}%
15177 \DeclareTextCompositeCommand{\t}{PU}{\ }{{ \texttie}}%
15178 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{{ \textnewtie}}%
15179 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{{ \textbigcircle}}%
15180 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\ }{{ \83\001\83\004}}% U+0301 U+0304
15181 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\ }{{ \83\000\83\004}}% U+0300 U+0304

```

Accents for capitals (see encoding TS1)

```

15182 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}%
15183 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}%
15184 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}%
15185 \DeclareTextCommand{\capitalacute}{PU}[1]{\^{#1}}%
15186 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}%
15187 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}%
15188 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}%
15189 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}%
15190 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}%
15191 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}%
15192 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}%
15193 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}%
15194 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.\{#1}}%
15195 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}%
15196 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}%

```

#### 46.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

```

15197 % U+0009 (CHARACTER TABULATION)
15198 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
15199 % U+000A (LINE FEED)
15200 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
15201 % U+000D (CARRIAGE RETURN)
15202 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

\80\040: U+0020 SPACE; space, spacehackarabic
\80\041: U+0021 EXCLAMATION MARK; exclam

15203 % U+0022 QUOTATION MARK; quotedbl
15204 \DeclareTextCommand{\textquotedbl}{PU}{"}% \80\042 U+0022
15205 % U+0023 NUMBER SIGN; numbersign
15206 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
15207 % U+0024 DOLLAR SIGN; dollar
15208 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
15209 %* \textdollar -> \mathdollar
15210 %* \textdollar -> \EyesDollar (marvosym)
15211 % U+0025 PERCENT SIGN; percent
15212 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
15213 % U+0026 AMPERSAND; ampersand
15214 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
15215 %* \textampersand -> \binampersand (stmaryrd)
15216 %* \textampersand -> \with (cmll)

```



15217 % U+0027 APOSTROPHE; quotesingle  
15218 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027  
15219 % U+0028 LEFT PARENTHESIS; parenleft  
15220 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
15221 % U+0029 RIGHT PARENTHESIS; parenright  
15222 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
15223 % U+002A ASTERISK; asterisk; (?)  
15224 \DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A  
15225 % U+002B PLUS SIGN; plus; \MVPlus (marvosym)  
15226 \DeclareTextCommand{\textMVPlus}{PU}{\80\053}%\* U+002B  
15227 % U+002C COMMA; comma; \MVComma (marvosym)  
15228 \DeclareTextCommand{\textMVComma}{PU}{\80\054}%\* U+002C  
15229 % U+002D HYPHEN-MINUS; hyphen; \MVMinus (marvosym)  
15230 \DeclareTextCommand{\textMVMinus}{PU}{\80\055}%\* U+002D  
15231 % U+002E FULL STOP; period; \MVPeriod (marvosym)  
15232 \DeclareTextCommand{\textMVPeriod}{PU}{\80\056}%\* U+002E  
15233 % U+002F SOLIDUS; slash; \MVDivision (marvosym)  
15234 \DeclareTextCommand{\textMVDivision}{PU}{\80\057}%\* U+002F  
15235 % U+0030 DIGIT ZERO; zero; \MVZero (marvosym)  
15236 \DeclareTextCommand{\textMVZero}{PU}{\80\060}%\* U+0030  
15237 % U+0031 DIGIT ONE; one; \MVOne (marvosym)  
15238 \DeclareTextCommand{\textMVOne}{PU}{\80\061}%\* U+0031  
15239 % U+0032 DIGIT TWO; two; \MVTwo (marvosym)  
15240 \DeclareTextCommand{\textMVTwo}{PU}{\80\062}%\* U+0032  
15241 % U+0033 DIGIT THREE; three; \MVThree (marvosym)  
15242 \DeclareTextCommand{\textMVThree}{PU}{\80\063}%\* U+0033  
15243 % U+0034 DIGIT FOUR; four; \MVFour (marvosym)  
15244 \DeclareTextCommand{\textMVFour}{PU}{\80\064}%\* U+0034  
15245 % U+0035 DIGIT FIVE; five; \MVFive (marvosym)  
15246 \DeclareTextCommand{\textMVFive}{PU}{\80\065}%\* U+0035  
15247 % U+0036 DIGIT SIX; six; \MVSix (marvosym)  
15248 \DeclareTextCommand{\textMVSix}{PU}{\80\066}%\* U+0036  
15249 % U+0037 DIGIT SEVEN; seven; \MVSeven (marvosym)  
15250 \DeclareTextCommand{\textMVSeven}{PU}{\80\067}%\* U+0037  
15251 % U+0038 DIGIT EIGHT; eight; \MVEight (marvosym)  
15252 \DeclareTextCommand{\textMVEight}{PU}{\80\070}%\* U+0038  
15253 % U+0039 DIGIT NINE; nine; \MVNine (marvosym)  
15254 \DeclareTextCommand{\textMVNine}{PU}{\80\071}%\* U+0039  
\80\072: U+003A COLON; colon  
\80\073: U+003B SEMICOLON; semicolon  
15255 % U+003C LESS-THAN SIGN; less  
15256 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
\80\075: U+003D EQUALS SIGN; equal  
15257 % U+003E GREATER-THAN SIGN; greater  
15258 \DeclareTextCommand{\textgreater}{PU}{>}% \80\076 U+003E  
\80\077: U+003F QUESTION MARK; question  
15259 % U+0040 COMMERCIAL AT; at; \MVAt (marvosym)  
15260 \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

```

15261 % U+005C REVERSE SOLIDUS; backslash
15262 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C
\80\135: U+005D RIGHT SQUARE BRACKET; bracketright
15263 % U+005E CIRCUMFLEX ACCENT; asciicircum
15264 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E
15265 % U+005F LOW LINE; underscore
15266 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F
15267 %* \textunderscore -> \mathunderscore (LaTeX)
15268 % U+0060 GRAVE ACCENT; grave
15269 \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
15270 % U+0069 LATIN SMALL LETTER I; i
15271 \DeclareTextCompositeCommand{\.}{PU}{i}{i}% \80\151 U+0069
15272 \DeclareTextCompositeCommand{\.}{PU}{i}{i}% \80\151 U+0069
\80\152: U+006A LATIN SMALL LETTER J; j
...
\80\172: U+007A LATIN SMALL LETTER Z; z
15273 % U+007B LEFT CURLY BRACKET; braceleft
15274 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B
15275 % U+007C VERTICAL LINE; *bar, verticalbar
15276 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C
15277 %* \textbar -> \textvertline (tipa)
15278 % U+007D RIGHT CURLY BRACKET; braceright
15279 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D
15280 % U+007E TILDE; asciitilde
15281 \DeclareTextCommand{\textasciitilde}{PU}{\80\176}% U+007E

```

#### 46.2.3 Latin-1 Supplement: U+0080 to U+00FF

```

\80\240: U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace
15282 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown
15283 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1
15284 % U+00A2 CENT SIGN; cent
15285 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2
15286 % U+00A3 POUND SIGN; sterling
15287 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3
15288 %* \textsterling -> \mathsterling (LaTeX)
15289 %* \textsterling -> \pounds (LaTeX)
15290 % U+00A4 CURRENCY SIGN; currency
15291 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4
15292 % U+00A5 YEN SIGN; yen
15293 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5
15294 % U+00A6 BROKEN BAR; brokenbar
15295 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6
15296 %* \textbrokenbar -> \brokenvert (wasysym)
15297 % U+00A7 SECTION SIGN; section
15298 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7
15299 %* \textsection -> \mathsection (LaTeX)
15300 %* \textsection -> \S (LaTeX)
15301 % U+00A8 DIAERESIS; dieresis

```

15302 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
15303 % U+00A9 COPYRIGHT SIGN; copyright  
15304 \DeclareTextCommand{\textcopyright}{PU}{\80\251}%\* U+00A9  
15305 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
15306 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
15307 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motleft  
15308 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
15309 % U+00AC NOT SIGN; logicalnot  
15310 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
15311 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
\80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
15312 % U+00AE REGISTERED SIGN; registered  
15313 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
15314 % U+00AF MACRON; \*macron, overscore  
15315 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
15316 % U+00B0 DEGREE SIGN; degree  
15317 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
15318 % U+00B1 PLUS-MINUS SIGN; plusminus  
15319 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
15320 % U+00B2 SUPERSCRIPT TWO; twosuperior  
15321 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}%\* U+00B2  
15322 % U+00B3 SUPERSCRIPT THREE; threesuperior  
15323 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}%\* U+00B3  
15324 % U+00B4 ACUTE ACCENT; acute  
15325 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
15326 \DeclareTextCommand{\textasciacute}{PU}{\80\264}% U+00B4  
15327 % U+00B5 MICRO SIGN; mu, mul  
15328 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
15329 % U+00B6 PILCROW SIGN; paragraph  
15330 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
15331 %\* \textparagraph -> \mathparagraph (LaTeX)  
15332 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
15333 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
15334 %\* \textperiodcentered -> \MultiplicationDot (marvosym)  
15335 %\* \textperiodcentered -> \Squaredot (marvosym)  
15336 % U+00B8 CEDILLA; cedilla  
15337 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
15338 % U+00B9 SUPERSCRIPT ONE; onesuperior  
15339 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}%\* U+00B9  
15340 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
15341 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
15342 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motright  
15343 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
15344 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
15345 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
15346 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
15347 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
15348 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15349 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
15350 % U+00BF INVERTED QUESTION MARK; questiondown  
15351 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
15352 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave

15353 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
15354 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15355 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
15356 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15357 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
15358 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15359 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
15360 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15361 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
15362 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15363 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
15364 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15365 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15366 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15367 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15368 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15369 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
15370 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15371 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
15372 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15373 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
15374 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15375 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
15376 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15377 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
15378 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15379 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
15380 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15381 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
15382 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15383 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
15384 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15385 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
15386 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15387 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
15388 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15389 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
15390 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15391 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
15392 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15393 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
15394 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15395 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
15396 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15397 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
15398 % U+00D7 MULTIPLICATION SIGN; multiply  
15399 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
15400 %\* \textmultiply -> \vartimes (stmaryrd)  
15401 %\* \textmultiply -> \MVMultiplication (marvosym)  
15402 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15403 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
15404 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15405 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
15406 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute

15407 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
15408 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15409 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
15410 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15411 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
15412 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15413 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
15414 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
15415 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
15416 \DeclareTextCommand{\textThorn}{PU}{\80\336}%\* U+00DE  
15417 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15418 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
15419 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15420 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
15421 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15422 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
15423 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15424 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
15425 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15426 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
15427 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15428 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
15429 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15430 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
15431 % U+00E6 LATIN SMALL LETTER AE; ae  
15432 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15433 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15434 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15435 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15436 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
15437 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15438 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
15439 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15440 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15441 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15442 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
15443 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15444 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15445 \DeclareTextCompositeCommand{\~}{PU}{i}{\80\354}% U+00EC  
15446 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15447 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15448 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\355}% U+00ED  
15449 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15450 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15451 \DeclareTextCompositeCommand{\~}{PU}{i}{\80\356}% U+00EE  
15452 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15453 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15454 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15455 % U+00F0 LATIN SMALL LETTER ETH; eth  
15456 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
15457 %\* \dh -> \eth (wsuipa, phonetic)  
15458 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15459 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
15460 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve

15461 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 15462 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 15463 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 15464 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 15465 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
 15466 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 15467 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 15468 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 15469 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
 15470 % U+00F7 DIVISION SIGN; divide  
 15471 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
 15472 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 15473 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
 15474 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 15475 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 15476 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 15477 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 15478 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 15479 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
 15480 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 15481 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 15482 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 15483 \DeclareTextCompositeCommand{\`}{PU}{y}{\80\375}% U+00FD  
 15484 % U+00FE LATIN SMALL LETTER THORN; thorn;  
 15485 % \th, \thorn (wasysym), \textthorn (tipa)  
 15486 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 15487 \DeclareTextCommand{\textthorn}{PU}{\80\376}%\* U+00FE  
 15488 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 15489 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

#### 46.2.4 Latin Extended-A: U+0080 to U+017F

15490 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 15491 \DeclareTextCompositeCommand{=} {PU}{A}{\81\000}% U+0100  
 15492 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 15493 \DeclareTextCompositeCommand{=} {PU}{a}{\81\001}% U+0101  
 15494 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 15495 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 15496 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 15497 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 15498 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 15499 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 15500 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 15501 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 15502 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
 15503 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
 15504 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
 15505 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
 15506 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 15507 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
 15508 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 15509 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
 15510 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotac-  
 cent

15511 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
15512 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
15513 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
15514 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
15515 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
15516 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
15517 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
15518 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
15519 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
15520 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
15521 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
15522 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
15523 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
15524 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron;  
15525 % \textcrd (tipa)  
15526 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
15527 \DeclareTextCommand{\textcrd}{PU}{\81\021}% U+0111  
15528 %\* \textcrd -> \crossd (wsuipa)  
15529 % An alternate glyph with the stroke through the bowl:  
15530 %\* \textcrd -> \textbard (tipa)  
15531 %\* \textcrd -> \bard (wsuipa)  
15532 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15533 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
15534 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15535 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
15536 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15537 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15538 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15539 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15540 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
15541 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15542 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15543 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15544 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15545 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15546 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15547 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
15548 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
15549 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
15550 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
15551 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
15552 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
15553 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
15554 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
15555 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
15556 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
15557 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
15558 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
15559 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15560 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotac-  
cent  
15561 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15562 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15563 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121

15564 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaaccent  
15565 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
15566 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
15567 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
15568 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
15569 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
15570 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
15571 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
15572 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
15573 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
15574 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar; \hbar (AmS)  
15575 \DeclareTextCommand{\texthbar}{PU}{\81\047}%\* U+0127  
15576 %\* \texthbar -> \textcrh (tipa)  
15577 %\* \texthbar -> \crossh (wsuipa)  
15578 %\* \texthbar -> \planck (phonetic)  
15579 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
15580 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
15581 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
15582 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15583 \DeclareTextCompositeCommand{\~}{PU}{\i}{\81\051}% U+0129  
15584 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
15585 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
15586 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
15587 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
15588 \DeclareTextCompositeCommand{\=}{PU}{\i}{\81\053}% U+012B  
15589 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
15590 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
15591 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
15592 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15593 \DeclareTextCompositeCommand{\u}{PU}{\i}{\81\055}% U+012D  
15594 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
15595 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
15596 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
15597 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15598 \DeclareTextCompositeCommand{\k}{PU}{\i}{\81\057}% U+012F  
15599 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
15600 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
15601 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
15602 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
15603 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
15604 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
15605 % U+0133 LATIN SMALL LIGATURE IJ; ij  
15606 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
15607 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
15608 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
15609 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
15610 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
15611 \DeclareTextCompositeCommand{\^}{PU}{\j}{\81\065}% U+0135  
15612 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaaccent  
15613 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
15614 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
15615 \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`.

```

15616 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic
15617 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138
15618 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute
15619 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139
15620 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute
15621 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A
15622 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-
cent
15623 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B
15624 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent
15625 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C
15626 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron
15627 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D
15628 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron
15629 \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.
15630 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotac-
cent
15631 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F
15632 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent
15633 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140
15634 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash
15635 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141
15636 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash
15637 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142
15638 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute
15639 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143
15640 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute
15641 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144
15642 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaac-
cent
15643 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145
15644 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent
15645 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146
15646 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron
15647 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147
15648 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron
15649 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148
15650 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napos-
trophe, quoterightn
15651 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149
15652 % U+014A LATIN CAPITAL LETTER ENG; Eng
15653 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A
15654 % U+014B LATIN SMALL LETTER ENG; eng
15655 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B
15656 %* \ng -> \eng (wsuipa)
15657 %* \ng -> \engma (phonetic)
15658 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron

```

15659 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
15660 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
15661 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
15662 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
15663 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
15664 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
15665 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
15666 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacute, Ohungarumlaut  
15667 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
15668 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacute, ohungarumlaut  
15669 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
15670 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
15671 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
15672 % U+0153 LATIN SMALL LIGATURE OE; oe  
15673 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
15674 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
15675 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
15676 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15677 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
15678 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
15679 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
15680 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
15681 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
15682 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
15683 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
15684 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
15685 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
15686 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
15687 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
15688 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
15689 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
15690 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
15691 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
15692 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
15693 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
15694 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
15695 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
15696 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
15697 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
15698 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
15699 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
15700 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
15701 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
15702 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaaccent  
15703 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
15704 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
15705 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
15706 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
15707 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
15708 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron

15709 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
15710 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
15711 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
15712 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
15713 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
15714 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
15715 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
15716 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
15717 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
15718 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
15719 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
15720 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
15721 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
15722 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
15723 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
15724 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
15725 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
15726 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
15727 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
15728 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
15729 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
15730 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Uddbl-  
acute, Uhungarumlaut  
15731 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
15732 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; uddbl-  
acute, uhungarumlaut  
15733 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
15734 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
15735 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
15736 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
15737 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
15738 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
15739 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
15740 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
15741 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
15742 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
15743 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
15744 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
15745 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
15746 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
15747 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
15748 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
15749 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
15750 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
15751 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
15752 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
15753 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
15754 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
15755 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
15756 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
15757 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
15758 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
15759 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
15760 % U+017F LATIN SMALL LETTER LONG S; longs, slong

15761 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

#### 46.2.5 Latin Extended-B: U+0180 to U+024F

15762 % U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)

15763 \DeclareTextCommand{\textcrb}{PU}{\81\200}% U+0180

15764 %\* \textcrb -> \crossb (wsuipa)

15765 % An alternate glyph with the stroke through the bowl:

15766 %\* \textcrb -> \textbarb (tipa)

15767 %\* \textcrb -> \barb (wsuipa)

15768 % U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausab (phonetic)

15769 \DeclareTextCommand{\texthausaB}{PU}{\81\201}%\* U+0181

15770 % U+0188 LATIN SMALL LETTER C WITH HOOK; chook; \texthtc (tipa)

15771 \DeclareTextCommand{\texthtc}{PU}{\81\210}% U+0188

15772 % U+018A LATIN CAPITAL LETTER D WITH HOOK; Dhook; \hausad (phonetic)

15773 \DeclareTextCommand{\texthausaD}{PU}{\81\212}%\* U+018A

15774 % U+018E LATIN CAPITAL LETTER REVERSED E; Eversed

15775 \DeclareTextCommand{\textEversed}{PU}{\81\216}% U+018E

15776 \DeclareTextCommand{\textrevE}{PU}{\81\216}% U+018E

15777 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin

15778 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192

15779 %\* \textflorin -> \Florin (marvosym)

15780 % U+0195 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)

15781 \DeclareTextCommand{\texthvlig}{PU}{\81\225}% U+0195

15782 %\* \texthvlig -> \hv (wsuipa)

15783 % U+0198 LATIN CAPITAL LETTER K WITH HOOK; Khook; \hausak (phonetic)

15784 \DeclareTextCommand{\texthausaK}{PU}{\81\230}%\* U+0198

15785 % U+0199 LATIN SMALL LETTER K WITH HOOK; khook; \texthtk (tipa)

15786 \DeclareTextCommand{\texthtk}{PU}{\81\231}% U+0199

15787 %\* \texthtk -> \hausak (phonetic)

15788 % U+019A LATIN SMALL LETTER L WITH BAR; lbar;

15789 % \textbarl (tipa), \barl (wsuipa)

15790 \DeclareTextCommand{\textbarl}{PU}{\81\232}%\* U+019A

15791 % U+019B LATIN SMALL LETTER LAMBDA WITH STROKE/

15792 % LATIN SMALL LETTER BARRED LAMBDA; lambdastroke;

15793 % \textcrlambda (tipa)

15794 \DeclareTextCommand{\textcrlambda}{PU}{\81\233}% U+019B

15795 %\* \textcrlambda -> \crossnilambda (wsuipa)

15796 %\* \textcrlambda -> \barlambd (phonetic)

15797 %\* \textcrlambda -> \lambdabar (txfonts/pxfonts)

15798 %\* \textcrlambda -> \lambdash (txfonts/pxfonts)

15799 % U+019E LATIN SMALL LETTER N WITH LONG RIGHT LEG; nlegright-long;

15800 % \textnrleg (tipx)

15801 \DeclareTextCommand{\textPUnrleg}{PU}{\81\236}% U+019E

15802 %\* \textPUnrleg -> \textnrleg (tipx)

15803 % U+01A5 LATIN SMALL LETTER P WITH HOOK; phook; \texthtp (tipa)

15804 \DeclareTextCommand{\texthtp}{PU}{\81\245}% U+01A5

15805 % U+01AB LATIN SMALL LETTER T WITH PALATAL HOOK; tpalatalhook;

15806 % \textlhookt (tipa)

15807 \DeclareTextCommand{\textlhookt}{PU}{\81\253}% U+01AB

15808 % U+01AD LATIN SMALL LETTER T WITH HOOK; thook; \texthtt (tipa)

15809 \DeclareTextCommand{\texthtt}{PU}{\81\255}% U+01AD  
15810 % U+01B9 LATIN SMALL LETTER EZH REVERSED/  
15811 % LATIN SMALL LETTER REVERSED YOGH; \textrevyogh (tipa)  
15812 \DeclareTextCommand{\textrevyogh}{PU}{\81\271}% U+01B9  
15813 % U+01BB LATIN LETTER TWO WITH STROKE; twostroke; \textcrtwo (tipa)  
15814 \DeclareTextCommand{\textcrtwo}{PU}{\81\273}% U+01BB  
15815 % U+01BE LATIN LETTER INVERTED GLOTTAL STOP WITH STROKE;  
15816 % glottalinvertedstroke; \textcrinvglotstop (tipa)  
15817 \DeclareTextCommand{\textcrinvglotstop}{PU}{\81\276}% U+01BE  
15818 % U+01BF LATIN LETTER WYNN; wynn; \textwynn (tipa)  
15819 \DeclareTextCommand{\textwynn}{PU}{\81\277}% U+01BF  
15820 % U+01C0 LATIN LETTER DENTAL CLICK/LATIN LETTER PIPE; clickden-  
tal;  
15821 % \textpipe (tipa)  
15822 \DeclareTextCommand{\textpipe}{PU}{\81\300}% U+01C0  
15823 %\* \textpipe -> \textpipevar (tipx)  
15824 % U+01C1 LATIN LETTER LATERAL CLICK/LATIN LETTER  
15825 % DOUBLE PIPE; clicklateral; \textdoublepipe (tipa)  
15826 \DeclareTextCommand{\textdoublepipe}{PU}{\81\301}% U+01C1  
15827 %\* \textdoublepipe -> \textdoublepipevar (tipx)  
15828 % U+01C2 LATIN LETTER ALVEOLAR CLICK/LATIN LETTER PIPE DOU-  
BLE BAR;  
15829 % clickalveolar; \textdoublebarpipe (tipa)  
15830 \DeclareTextCommand{\textdoublebarpipe}{PU}{\81\302}% U+01C2  
15831 %\* \textdoublebarpipe -> \textdoublebarpipevar (tipx)  
15832 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
15833 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
15834 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
15835 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
15836 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
15837 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
15838 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
15839 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15840 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15841 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
15842 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
15843 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
15844 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
15845 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
15846 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
15847 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
15848 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
15849 % U+01DD LATIN SMALL LETTER TURNED E; eturned; \inve (wasysym)  
15850 \DeclareTextCommand{\textinve}{PU}{\81\335}%\* U+01DD  
15851 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
15852 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
15853 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
15854 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
15855 %\* \textgslash -> \textcrg (tipa)  
15856 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
15857 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
15858 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
15859 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
15860 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron

15861 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
15862 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
15863 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
15864 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
15865 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
15866 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
15867 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
15868 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
15869 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15870 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15871 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
15872 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
15873 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
15874 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
15875 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
15876 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
15877 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
15878 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
15879 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
15880 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
15881 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
15882 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
15883 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE;  
15884 % \*Oslashacute, Ostrokeacute  
15885 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
15886 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE;  
15887 % \*oslashacute, ostrokeacute  
15888 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
15889 </puenc>  
15890 <\*puextra>  
15891 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
15892 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
15893 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
15894 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
15895 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
15896 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
15897 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
15898 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
15899 </puextra>  
15900 <\*puenc>  
15901 % U+0206 LATIN CAPITAL LETTER E WITH INVERTED BREVE; Einvert-  
15902 % edbreve  
15902 \DeclareTextCompositeCommand{\textinvbreve}{PU}{E}{\82\006}% U+0206  
15903 % U+0207 LATIN SMALL LETTER E WITH INVERTED BREVE; einverted-  
15904 % breve  
15904 \DeclareTextCompositeCommand{\textinvbreve}{PU}{e}{\82\007}% U+0207  
15905 </puenc>  
15906 <\*puextra>  
15907 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
15908 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
15909 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
15910 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15911 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15912 </puextra>

15913 <\*puenc>  
15914 % U+020A LATIN CAPITAL LETTER I WITH INVERTED BREVE; iinverted-  
breve  
15915 \DeclareTextCompositeCommand{\textinvbreve}{PU}{I}{\82\012}% U+020A  
15916 % U+020B LATIN SMALL LETTER I WITH INVERTED BREVE; iinverted-  
breve  
15917 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15918 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\i}{\82\013}% U+020B  
15919 </puenc>  
15920 <\*puextra>  
15921 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
15922 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
15923 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
15924 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
15925 </puextra>  
15926 <\*puenc>  
15927 % U+020E LATIN CAPITAL LETTER O WITH INVERTED BREVE; Oinvert-  
edbreve  
15928 \DeclareTextCompositeCommand{\textinvbreve}{PU}{O}{\82\016}% U+020E  
15929 % U+020F LATIN SMALL LETTER O WITH INVERTED BREVE; oinvert-  
breve  
15930 \DeclareTextCompositeCommand{\textinvbreve}{PU}{o}{\82\017}% U+020F  
15931 </puenc>  
15932 <\*puextra>  
15933 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
15934 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
15935 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
15936 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
15937 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
15938 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
15939 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
15940 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
15941 </puextra>  
15942 <\*puenc>  
15943 % U+0216 LATIN CAPITAL LETTER U WITH INVERTED BREVE; Uinvert-  
edbreve  
15944 \DeclareTextCompositeCommand{\textinvbreve}{PU}{U}{\82\026}% U+0216  
15945 % U+0217 LATIN SMALL LETTER U WITH INVERTED BREVE; uinvert-  
breve  
15946 \DeclareTextCompositeCommand{\textinvbreve}{PU}{u}{\82\027}% U+0217  
15947 % U+021E LATIN CAPITAL LETTER H WITH CARON  
15948 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
15949 % U+021F LATIN SMALL LETTER H WITH CARON  
15950 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
15951 % U+0221 LATIN SMALL LETTER D WITH CURL; \textctd (tipa)  
15952 \DeclareTextCommand{\textctd}{PU}{\82\041}% U+0221  
15953 % U+0225 LATIN SMALL LETTER Z WITH HOOK; \textcommatailz (tipa)  
15954 \DeclareTextCommand{\textcommatailz}{PU}{\82\045}% U+0225  
15955 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
15956 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
15957 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
15958 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
15959 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
15960 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228

15961 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15962 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15963 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15964 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15965 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 15966 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 15967 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 15968 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
 15969 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 15970 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
 15971 % U+0235 LATIN SMALL LETTER N WITH CURL; \textctn (tipa)  
 15972 \DeclareTextCommand{\textctn}{PU}{\82\065}% U+0235  
 15973 % U+0236 LATIN SMALL LETTER T WITH CURL; \textctt (tipa)  
 15974 \DeclareTextCommand{\textctt}{PU}{\82\066}% U+0236  
 15975 % U+0237 LATIN SMALL LETTER DOTLESS J  
 15976 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237  
 15977 % U+0238 LATIN SMALL LETTER DB DIGRAPH; \textdblig (tipx)  
 15978 \DeclareTextCommand{\textPUdblig}{PU}{\82\070}% U+0238  
 15979 %\* \textPUdblig -> \textdblig (tipx)  
 15980 % U+0239 LATIN SMALL LETTER QP DIGRAPH; \textqplig (tipx)  
 15981 \DeclareTextCommand{\textPUqplig}{PU}{\82\071}% U+0239  
 15982 %\* \textPUqplig -> \textqplig (tipx)  
 15983 % U+023C LATIN SMALL LETTER C WITH STROKE; \slashc (wsuipa)  
 15984 \DeclareTextCommand{\textslashc}{PU}{\82\074}%\* U+023C  
 15985 %\* \textslashc -> \textcentoldstyle (textcomp)  
 15986 % With bar instead of stroke:  
 15987 %\* \textslashc -> \textbarc (tipa)

#### 46.2.6 IPA Extensions: U+0250 to U+02AF

15988 % U+0250 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)  
 15989 \DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250  
 15990 %\* \textturna -> \inva (wasysym)  
 15991 % U+0251 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER  
 15992 % SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)  
 15993 \DeclareTextCommand{\textscripta}{PU}{\82\121}%\* U+0251  
 15994 %\* \textscripta -> \vara (phonetic)  
 15995 % U+0252 LATIN SMALL LETTER TURNED ALPHA; ascriptturned;  
 15996 % \textturnscripta (tipa)  
 15997 \DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252  
 15998 %\* \textturnscripta -> \invscripta (wsuipa)  
 15999 %\* \textturnscripta -> \rotvara (phonetic)  
 16000 % U+0253 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)  
 16001 \DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253  
 16002 %\* \texthtb -> \hookb (wsuipa)  
 16003 %\* \texthtb -> \hausab (phonetic)  
 16004 % U+0254 LATIN SMALL LETTER OPEN O; oopen;  
 16005 % \textopeno (tipa), \openo (wasysym)  
 16006 \DeclareTextCommand{\textopeno}{PU}{\82\124}%\* U+0254  
 16007 %\* \textopeno -> \varopeno (phonetic)  
 16008 % U+0255 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)  
 16009 \DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255  
 16010 %\* \textctc -> \curlyc (wsuipa)  
 16011 % U+0256 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaild (tipa)  
 16012 \DeclareTextCommand{\textrtaild}{PU}{\82\126}%\* U+0256



16013 %\* \textrtaild -> \taild (wsuipa)  
16014 % U+0257 LATIN SMALL LETTER D WITH HOOK; dhook; \texthtd (tipa)  
16015 \DeclareTextCommand{\texthtd}{PU}{\82\127}% U+0257  
16016 %\* \texthtd -> \hookd (wsuipa)  
16017 %\* \texthtd -> \hausad (phonetic)  
16018 % U+0258 LATIN SMALL LETTER REVERSED E; ereversed;  
16019 % \textreve (tipa), \reve (wsuipa)  
16020 \DeclareTextCommand{\textreve}{PU}{\82\130}% U+0258  
16021 % U+0259 LATIN SMALL LETTER SCHWA; schwa;  
16022 % \textschwa (tipa), \schwa (wsuipa, phonetic)  
16023 \DeclareTextCommand{\textschwa}{PU}{\82\131}% U+0259  
16024 % U+025A LATIN SMALL LETTER SCHWA WITH HOOK; schwahook;  
16025 % \textrhookschwa (tipa)  
16026 \DeclareTextCommand{\textrhookschwa}{PU}{\82\132}% U+025A  
16027 %\* \textrhookschwa -> \er (wsuipa)  
16028 % U+025B LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EP-  
SILON; eopen;  
16029 % \niepsilon (wsuipa)  
16030 \DeclareTextCommand{\textniepsilon}{PU}{\82\133}% U+025B  
16031 %\* \textniepsilon -> \epsi (phonetic)  
16032 % U+025C LATIN SMALL LETTER REVERSED OPEN E; eopenreversed;  
16033 % \textrevepsilon (tipa), \revepsilon (wsuipa)  
16034 \DeclareTextCommand{\textrevepsilon}{PU}{\82\134}% U+025C  
16035 % U+025D LATIN SMALL LETTER REVERSED OPEN E WITH HOOK; eopen-  
reversedhook;  
16036 % \textrhookrevepsilon (tipa)  
16037 \DeclareTextCommand{\textrhookrevepsilon}{PU}{\82\135}% U+025D  
16038 %\* \textrhookrevepsilon -> \hookrevepsilon (wsuipa)  
16039 % U+025E LATIN SMALL LETTER CLOSED REVERSED OPEN E; eopenre-  
versedclosed;  
16040 % \textcloserevepsilon (tipa)  
16041 \DeclareTextCommand{\textcloserevepsilon}{PU}{\82\136}% U+025E  
16042 %\* \textcloserevepsilon -> \closedrevepsilon (wsuipa)  
16043 % U+025F LATIN SMALL LETTER DOTLESS J WITH STROKE; jdot-  
lessstroke;  
16044 % \textbardotlessj (tipa)  
16045 \DeclareTextCommand{\textbardotlessj}{PU}{\82\137}% U+025F  
16046 %\* \textbardotlessj -> \barj (phonetic)  
16047 % U+0260 LATIN SMALL LETTER G WITH HOOK; ghook; \texthtg (tipa)  
16048 \DeclareTextCommand{\texthtg}{PU}{\82\140}% U+0260  
16049 %\* \texthtg -> \hookg (wsuipa)  
16050 % U+0261 LATIN SMALL LETTER SCRIPT G; gscript;  
16051 % \textscriptg (tipa), \scriptg (wsuipa)  
16052 \DeclareTextCommand{\textscriptg}{PU}{\82\141}% U+0261  
16053 %\* \textscriptg -> \varg (phonetic)  
16054 % U+0262 LATIN LETTER SMALL CAPITAL G; \textscg (tipa), \scg (wsuipa)  
16055 \DeclareTextCommand{\textscg}{PU}{\82\142}% U+0262  
16056 % U+0263 LATIN SMALL LETTER GAMMA; gammalatinssmall;  
16057 % \ipagamma (wsuipa), \vod (phonetic)  
16058 \DeclareTextCommand{\textipagamma}{PU}{\82\143}% U+0263  
16059 %\* \textipagamma -> \vod (pnonetic)  
16060 % U+0264 LATIN SMALL LETTER RAMS HORN; ramshorn;  
16061 % \babygamma (wsuipa)  
16062 \DeclareTextCommand{\textbabygamma}{PU}{\82\144}% U+0264

16063 % U+0265 LATIN SMALL LETTER TURNED H; hturned; \textturnh (tipa)  
16064 \DeclareTextCommand{\textturnh}{PU}{\82\145}% U+0265  
16065 %\* \textturnh -> \invh (wsuipa)  
16066 %\* \textturnh -> \udesc (phonetic)  
16067 % U+0266 LATIN SMALL LETTER H WITH HOOK; hhook; \texthth (tipa)  
16068 \DeclareTextCommand{\texthth}{PU}{\82\146}% U+0266  
16069 %\* \texthth -> \hookh (wsuipa)  
16070 %\* \texthth -> \voicedh (phonetic)  
16071 % U+0267 LATIN SMALL LETTER HENG WITH HOOK; henghook; \texththeng (tipa)  
16072 \DeclareTextCommand{\texththeng}{PU}{\82\147}% U+0267  
16073 %\* \texththeng -> \hookheng (wsuipa)  
16074 % U+0268 LATIN SMALL LETTER I WITH STROKE;  
16075 % \textbari (tipa), \bari (wsuipa)  
16076 \DeclareTextCommand{\textbari}{PU}{\82\150}% U+0268  
16077 %\* \textbari -> \ibar (phonetic)  
16078 % U+0269 LATIN SMALL LETTER IOTA; iotalatin; \niiota (wsuipa)  
16079 \DeclareTextCommand{\textniiota}{PU}{\82\151}% U+0269  
16080 %\* \textniiota -> \vari (phonetic)  
16081 % U+026A LATIN LETTER SMALL CAPITAL I; \textsci (tipa), \sci (wsuipa)  
16082 \DeclareTextCommand{\textsci}{PU}{\82\152}% U+026A  
16083 % U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE; lmiddletilde;  
16084 % \textltilde (tipa)  
16085 \DeclareTextCommand{\textltilde}{PU}{\82\153}% U+026B  
16086 %\* \textltilde -> \tildel (wsuipa)  
16087 % U+026C LATIN SMALL LETTER L WITH BELT; lbelt; \textbeltl (tipa)  
16088 \DeclareTextCommand{\textbeltl}{PU}{\82\154}% U+026C  
16089 %\* \textbeltl -> \latfric (wsuipa)  
16090 % U+026D LATIN SMALL LETTER L WITH RETROFLEX HOOK;  
16091 % lhookretroflex; \textrtaill (tipa)  
16092 \DeclareTextCommand{\textrtaill}{PU}{\82\155}% U+026D  
16093 %\* \textrtaill -> \taill (wsuipa)  
16094 % U+026E LATIN SMALL LETTER LEZH; lezh; \textlyoghlig (tipa)  
16095 \DeclareTextCommand{\textlyoghlig}{PU}{\82\156}% U+026E  
16096 %\* \textlyoghlig -> \lz (wsuipa)  
16097 % U+026F LATIN SMALL LETTER TURNED M; mturned; \textturnm (tipa)  
16098 \DeclareTextCommand{\textturnm}{PU}{\82\157}% U+026F  
16099 %\* \textturnm -> \invm (wsuipa)  
16100 %\* \textturnm -> \rotm (phonetic)  
16101 % U+0270 LATIN SMALL LETTER TURNED M WITH LONG LEG; mlongleg-  
turned;  
16102 % \textturnmrleg (tipa)  
16103 \DeclareTextCommand{\textturnmrleg}{PU}{\82\160}% U+0270  
16104 %\* \textturnmrleg -> \legm (wsuipa)  
16105 % U+0271 LATIN SMALL LETTER M WITH HOOK; mhook; \textltailm (tipa)  
16106 \DeclareTextCommand{\textltailm}{PU}{\82\161}% U+0271  
16107 %\* \textltailm -> \labdentálnas (wsuipa)  
16108 %\* \textltailm -> \emgma (phonetic)  
16109 % U+0272 LATIN SMALL LETTER N WITH LEFT HOOK; nhookleft; \textl-  
tailn (tipa)  
16110 \DeclareTextCommand{\textltailn}{PU}{\82\162}% U+0272  
16111 %\* \textltailn -> \nj (wsuipa)  
16112 %\* \textltailn -> \nya (phonetic)  
16113 % U+0273 LATIN SMALL LETTER N WITH RETROFLEX HOOK;

16114 % nhookretroflex; \textrtailn (tipa)  
16115 \DeclareTextCommand{\textrtailn}{PU}{\82\163}% U+0273  
16116 %\* \textrtailn -> \tailn (wsuipa)  
16117 % U+0274 LATIN LETTER SMALL CAPITAL N; \textscn (tipa), \scn (wsuipa)  
16118 \DeclareTextCommand{\textscn}{PU}{\82\164}%\* U+0274  
16119 % U+0275 LATIN CAPITAL LETTER O WITH MIDDLE TILDE/  
16120 % LATIN CAPITAL LETTER BARRED O; obarred;  
16121 % \textbaro (tipa), \baro (wsuipa)  
16122 % But \baro from stmaryrd is different!  
16123 \DeclareTextCommand{\textbaro}{PU}{\82\165}% U+0275  
16124 % U+0276 LATIN LETTER SMALL CAPITAL OE; \textscoelig (tipa)  
16125 \DeclareTextCommand{\textscoelig}{PU}{\82\166}% U+0276  
16126 % U+0277 LATIN SMALL LETTER CLOSED OMEGA; omegalatinclosed;  
16127 % \textcloseomega (tipa)  
16128 \DeclareTextCommand{\textcloseomega}{PU}{\82\167}% U+0277  
16129 %\* \textcloseomega -> \closedniomega (wsuipa)  
16130 %\* \textcloseomega -> \varomega (phonetic)  
16131 % U+0278 LATIN SMALL LETTER PHI; philatin; \nphi (wsuipa)  
16132 \DeclareTextCommand{\textnphi}{PU}{\82\170}%\* U+0278  
16133 % U+0279 LATIN SMALL LETTER TURNED R; rturned; \textturnr (tipa)  
16134 \DeclareTextCommand{\textturnr}{PU}{\82\171}% U+0279  
16135 %\* \textturnr -> \invr (wsuipa)  
16136 %\* \textturnr -> \rotr (phonetic)  
16137 % U+027A LATIN SMALL LETTER TURNED R WITH LONG LEG;  
16138 % rlonglegturned; \textturnlongleg (tipa)  
16139 \DeclareTextCommand{\textturnlongleg}{PU}{\82\172}% U+027A  
16140 %\* \textturnlongleg -> \invleg (wsuipa)  
16141 % U+027B LATIN SMALL LETTER TURNED R WITH HOOK; rhookturned;  
16142 % \textturnrrtail (tipa)  
16143 \DeclareTextCommand{\textturnrrtail}{PU}{\82\173}% U+027B  
16144 %\* \textturnrrtail -> \tailinvr (wsuipa)  
16145 % U+027C LATIN SMALL LETTER R WITH LONG LEG; rlongleg; \textlongleg (tipa)  
16146 \DeclareTextCommand{\textlongleg}{PU}{\82\174}%\* U+027C  
16147 %\* \textlongleg -> \leg (wsuipa)  
16148 % U+027D LATIN SMALL LETTER R WITH TAIL; rhook; \textrtailr (tipa)  
16149 \DeclareTextCommand{\textrtailr}{PU}{\82\175}% U+027D  
16150 %\* \textrtailr -> \tailr (wsuipa)  
16151 % U+027E LATIN SMALL LETTER R WITH FISHHOOK; rfishhook;  
16152 % \textfishhookr (tipa)  
16153 \DeclareTextCommand{\textfishhookr}{PU}{\82\176}% U+027E  
16154 %\* \textfishhookr -> \flapr (wsuipa)  
16155 %\* \textfishhookr -> \flap (phonetic)  
16156 % U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfishhookreversed;  
16157 % \textlhtlongi (tipa)  
16158 \DeclareTextCommand{\textlhtlongi}{PU}{\82\177}% U+027F  
16159 % U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)  
16160 \DeclareTextCommand{\textscr}{PU}{\82\200}%\* U+0280  
16161 % U+0281 LATIN LETTER SMALL CAPITAL INVERTED R; Rsmallinverted;  
16162 % \textinvscr (tipa), \invscr (wsuipa)  
16163 \DeclareTextCommand{\textinvscr}{PU}{\82\201}%\* U+0281  
16164 % U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \texttrails (tipa)  
16165 \DeclareTextCommand{\texttrails}{PU}{\82\202}% U+0282

16166 %\* \texttrtails -> \tails (wsuipa)  
16167 % U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)  
16168 \DeclareTextCommand{\textesh}{PU}{\82\203}%\* U+0283  
16169 % U+0284 LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK;  
16170 % dotlessjstrokehook; \texthtbardotlessj (tipa)  
16171 \DeclareTextCommand{\texthtbardotlessj}{PU}{\82\204}% U+0284  
16172 % U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquat-  
reversed;  
16173 % \textvibyi (tipa)  
16174 \DeclareTextCommand{\textvibyi}{PU}{\82\205}% U+0285  
16175 % U+0286 LATIN SMALL LETTER ESH WITH CURL; eshcurl; \textctesh (tipa)  
16176 \DeclareTextCommand{\textctesh}{PU}{\82\206}% U+0286  
16177 %\* \textctesh -> \curlyesh (wsuipa)  
16178 % U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)  
16179 \DeclareTextCommand{\textturnt}{PU}{\82\207}% U+0287  
16180 %\* \textturnt -> \clickt (wsuipa)  
16181 % U+0288 LATIN SMALL LETTER T WITH RETROFLEX HOOK; retroflex-  
hook;  
16182 % \texttrtailt (tipa)  
16183 \DeclareTextCommand{\texttrtailt}{PU}{\82\210}% U+0288  
16184 %\* \texttrtailt -> \tailt (wsuipa)  
16185 % U+0289 LATIN SMALL LETTER U BAR; ubar;  
16186 % \textbaru (tipa), \baru (wsuipa)  
16187 \DeclareTextCommand{\textbaru}{PU}{\82\211}%\* U+0289  
16188 %\* \textbaru -> \ubar (phonetic)  
16189 % U+028A LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)  
16190 \DeclareTextCommand{\textniupsilon}{PU}{\82\212}%\* U+028A  
16191 %\* \textniupsilon -> \rotOmega (phonetic)  
16192 % U+028B LATIN SMALL LETTER V WITH HOOK/LATIN SMALL LET-  
TER SCRIPT V;  
16193 % vhook; \textscriptv (tipa), \scriptv (wsuipa)  
16194 \DeclareTextCommand{\textscriptv}{PU}{\82\213}%\* U+028B  
16195 % U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)  
16196 \DeclareTextCommand{\textturnv}{PU}{\82\214}%\* U+028C  
16197 %\* \textturnv -> \invv (wsuipa)  
16198 %\* \textturnv -> \pwedge (phonetic)  
16199 % U+028D LATIN SMALL LETTER TURNED W; wturned; \textturnw (tipa)  
16200 \DeclareTextCommand{\textturnw}{PU}{\82\215}%\* U+028D  
16201 %\* \textturnw -> \invw (wsuipa)  
16202 %\* \textturnw -> \rotw (phonetic)  
16203 % U+028E LATIN SMALL LETTER TURNED Y; yturned; \textturny (tipa)  
16204 \DeclareTextCommand{\textturny}{PU}{\82\216}%\* U+028E  
16205 %\* \textturny -> \invy (wsuipa)  
16206 %\* \textturny -> \roty (phonetic)  
16207 % U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)  
16208 \DeclareTextCommand{\textscy}{PU}{\82\217}%\* U+028F  
16209 % U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflex-  
hook;  
16210 % \texttrtailz (tipa)  
16211 \DeclareTextCommand{\texttrtailz}{PU}{\82\220}% U+0290  
16212 %\* \texttrtailz -> \tailz (wsuipa)  
16213 % U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)  
16214 \DeclareTextCommand{\textctz}{PU}{\82\221}% U+0291  
16215 %\* \textctz -> \curlyz (wsuipa)

16216 % U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;  
 16217 % \textyogh (tipa), \yogh (wsuipa)  
 16218 \DeclareTextCommand{\textyogh}{PU}{\82\222}%\* U+0292  
 16219 % U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LETTER YOGH CURL;  
 16220 % ezhcurl; \textctyogh (tipa)  
 16221 \DeclareTextCommand{\textctyogh}{PU}{\82\223}% U+0293  
 16222 %\* \textctyogh -> \curlyyogh (wsuipa)  
 16223 % U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;  
 16224 % \textglotstop (tipa), \glotstop (wsuipa)  
 16225 \DeclareTextCommand{\textglotstop}{PU}{\82\224}%\* U+0294  
 16226 %\* \textglotstop -> \ejective (wsuipa)  
 16227 %\* \textglotstop -> \glottal (phonetic)  
 16228 % U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/  
 16229 % LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;  
 16230 % \textrevglotstop (tipa), \revglotstop (wsuipa)  
 16231 \DeclareTextCommand{\textrevglotstop}{PU}{\82\225}%\* U+0295  
 16232 %\* \textrevglotstop -> \reveject (wsuipa)  
 16233 % U+0296 LATIN LETTER INVERTED GLOTTAL STOP; glottalstopinverted;  
 16234 % \textinvglotstop (tipa), \invglotstop (wsuipa)  
 16235 \DeclareTextCommand{\textinvglotstop}{PU}{\82\226}%\* U+0296  
 16236 % U+0297 LATIN LETTER STRETCHED C; cstretched; \textstretchc (tipa)  
 16237 \DeclareTextCommand{\textstretchc}{PU}{\82\227}% U+0297  
 16238 %\* \textstretchc -> \clickc (wsuipa)  
 16239 %\* \textstretchc -> \textstretchcvar (tipx)  
 16240 % U+0298 LATIN LETTER BILABIAL CLICK; bilabialclick;  
 16241 % \textbullseye (tipa)  
 16242 \DeclareTextCommand{\textbullseye}{PU}{\82\230}% U+0298  
 16243 %\* \textbullseye -> \clickb (wsuipa)  
 16244 %\* \textbullseye -> \textObullseye (tipx)  
 16245 % U+0299 LATIN LETTER SMALL CAPITAL B; \textscb (tipa)  
 16246 \DeclareTextCommand{\textscb}{PU}{\82\231}% U+0299  
 16247 % U+029A LATIN SMALL LETTER CLOSED OPEN E; eopenclosed;  
 16248 % \textcloseepsilon (tipa)  
 16249 \DeclareTextCommand{\textcloseepsilon}{PU}{\82\232}% U+029A  
 16250 % U+029B LATIN LETTER SMALL CAPITAL G WITH HOOK; Gsmallhook;  
 16251 % \texthtscg (tipa)  
 16252 \DeclareTextCommand{\texthtscg}{PU}{\82\233}% U+029B  
 16253 % U+029C LATIN LETTER SMALL CAPITAL H; \textsch (tipa)  
 16254 \DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C  
 16255 % U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcrossed-tail; \textcdj (tipa)  
 16256 \DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D  
 16257 %\* \textctj -> \textctjvar (tipx)  
 16258 % U+029E LATIN SMALL LETTER TURNED K; kturned; \textturnk (tipa)  
 16259 \DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E  
 16260 %\* \textturnk -> \textturnsck (tipx)  
 16261 % U+029F LATIN LETTER SMALL CAPITAL L; \textscL (tipa)  
 16262 \DeclareTextCommand{\textscL}{PU}{\82\237}% U+029F  
 16263 % U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)  
 16264 \DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0  
 16265 % U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstop-stroke;  
 16266 % \textbarglotstop (tipa)

16267 \DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1  
 16268 % U+02A2 LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE/  
 16269 % LATIN LETTER REVERSED GLOTTAL STOP BAR; glottalstopstrokere-  
 versed;  
 16270 % \textbarrevglotstop (tipa)  
 16271 \DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2  
 16272 % U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)  
 16273 \DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3  
 16274 %\* \textdzlig -> \dz (wsupipa)  
 16275 % U+02A4 LATIN SMALL LETTER DEZH DIGRAPH; dezh; \textdyogh-  
 lig (tipa)  
 16276 \DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4  
 16277 % U+02A5 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;  
 16278 % \textdctzlig (tipa)  
 16279 \DeclareTextCommand{\textdctzlig}{PU}{\82\245}% U+02A5  
 16280 % U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \texttslig (tipa)  
 16281 \DeclareTextCommand{\texttslig}{PU}{\82\246}% U+02A6  
 16282 % U+02A7 LATIN SMALL LETTER TESH DIGRAPH; tesh; \texttshlig (tipa)  
 16283 \DeclareTextCommand{\texttshlig}{PU}{\82\247}% U+02A7  
 16284 %\* \texttshlig -> \tesh (wsuipa)  
 16285 % U+02A8 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;  
 16286 % \texttctclig (tipa)  
 16287 \DeclareTextCommand{\texttctclig}{PU}{\82\250}% U+02A8  
 16288 % U+02AE LATIN SMALL LETTER TURNED H WITH FISHHOOK;  
 16289 % \textlhtlongy (tipa)  
 16290 \DeclareTextCommand{\textlhtlongy}{PU}{\82\256}% U+02AE  
 16291 % U+02AF LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL;  
 16292 % \textvibyy (tipa)  
 16293 \DeclareTextCommand{\textvibyy}{PU}{\82\257}% U+02AF

#### 46.2.7 Spacing Modifier Letters: U+02B0 to U+02FF

16294 % U+02BD MODIFIER LETTER REVERSED COMMA;  
 16295 % commareversedmod, afi64937; \textrevapostrophe (tipa)  
 16296 \DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD  
 16297 % U+02C0 MODIFIER LETTER GLOTTAL STOP; glottalstopmod;  
 16298 % \textraiseglotstop (tipa)  
 16299 \DeclareTextCommand{\textraiseglotstop}{PU}{\82\300}% U+02C0  
 16300 % U+02C2 MODIFIER LETTER LEFT ARROWHEAD; arrowheadleftmod;  
 16301 % \textlptr (tipa)  
 16302 \DeclareTextCommand{\textlptr}{PU}{\82\302}% U+02C2  
 16303 % U+02C3 MODIFIER LETTER RIGHT ARROWHEAD; arrowheadrightmod;  
 16304 % \textrptr (tipa)  
 16305 \DeclareTextCommand{\textrptr}{PU}{\82\303}% U+02C3  
 16306 % U+02C7 CARON; caron  
 16307 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 16308 % U+02C8 MODIFIER LETTER VERTICAL LINE; verticallinemod;  
 16309 % \textprimstress (tipa)  
 16310 \DeclareTextCommand{\textprimstress}{PU}{\82\310}% U+02C8  
 16311 % U+02CC MODIFIER LETTER LOW VERTICAL LINE; verticallinelowmod;  
 16312 % \textsecstress (tipa)  
 16313 \DeclareTextCommand{\textsecstress}{PU}{\82\314}% U+02CC  
 16314 % U+02D0 MODIFIER LETTER TRIANGULAR COLON; colontriangularmod;  
 16315 % \textlengthmark (tipa)  
 16316 \DeclareTextCommand{\textlengthmark}{PU}{\82\320}% U+02D0

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16317 % U+02D1 MODIFIER LETTER HALF TRIANGULAR COLON; colontriangu-
      larhalfmod;
16318 % \texthalflength (tipa)
16319 \DeclareTextCommand{\texthalflength}{PU}{\82\321}% U+02D1
16320 % U+02D8 BREVE; breve
16321 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8
16322 % U+02D9 DOT ABOVE; dotaccent
16323 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9
16324 % U+02DA RING ABOVE; ring
16325 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA
16326 % U+02DB OGONEK; ogonek
16327 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB
16328 % U+02DC SMALL TILDE; ilde, *tilde
16329 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC
16330 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
16331 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD
16332 \DeclareTextCommand{\textacutedbl}{PU}{\82\335}% U+02DD
16333 % U+02F3 MODIFIER LETTER LOW RING
16334 \DeclareTextCommand{\textringlow}{PU}{\82\363}% U+02F3
16335 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT
16336 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5
16337 % U+02F7 MODIFIER LETTER LOW TILDE
16338 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7
16339 % U+02F9 MODIFIER LETTER BEGIN HIGH TONE; \textopencorner (tipa)
16340 \DeclareTextCommand{\textopencorner}{PU}{\82\371}% U+02F9
16341 % U+02FA MODIFIER LETTER END HIGH TONE; \textcorner (tipa)
16342 \DeclareTextCommand{\textcorner}{PU}{\82\372}% U+02FA

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#### 46.2.8 Combining Diacritical Marks: U+0300 to U+036F

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16343 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
16344 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F
16345 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
16346 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311
16347 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
16348 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323
16349 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
16350 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331
16351 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
      blecmb
16352 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

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#### 46.2.9 Greek and Coptic: U+0370 to U+03FF

Greek is only loaded if \textBeta is defined.

```

16353 \ifx\textBeta\@undefined \else
16354 \input{puenc-greekbasic.def}
16355 \fi
16356 \end{puenc}
16357 \end{pugreek}
16358 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek
16359 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374
16360 \DeclareTextCommand{\textdexiakeraia}{PU}{\83\164}% U+0374
16361 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek
16362 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375
16363 \DeclareTextCommand{\textaristerikeraia}{PU}{\83\165}% U+0375

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16364 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphanon  
 16365 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386  
 16366 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonon  
 16367 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388  
 16368 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonon  
 16369 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389  
 16370 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonon  
 16371 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A  
 16372 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omicronon  
 16373 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C  
 16374 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilononon  
 16375 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E  
 16376 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonon  
 16377 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F  
 16378 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS;  
 16379 % iotadieresisonon  
 16380 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}% U+0390  
 16381 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
 16382 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
 16383 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
 16384 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
 16385 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma; \Gamma (LaTeX)  
 16386 \DeclareTextCommand{\textGamma}{PU}{\83\223}%\* U+0393  
 16387 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta; \Delta (LaTeX)  
 16388 \DeclareTextCommand{\textDelta}{PU}{\83\224}%\* U+0394  
 16389 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
 16390 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
 16391 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
 16392 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
 16393 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
 16394 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
 16395 % U+0398 GREEK CAPITAL LETTER THETA; Theta; \Theta (LaTeX)  
 16396 \DeclareTextCommand{\textTheta}{PU}{\83\230}%\* U+0398  
 16397 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
 16398 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
 16399 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
 16400 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
 16401 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda; \Lambda (LaTeX)  
 16402 \DeclareTextCommand{\textLambda}{PU}{\83\233}%\* U+039B  
 16403 % U+039C GREEK CAPITAL LETTER MU; Mu  
 16404 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
 16405 % U+039D GREEK CAPITAL LETTER NU; Nu  
 16406 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
 16407 % U+039E GREEK CAPITAL LETTER XI; Xi; \Xi (LaTeX)  
 16408 \DeclareTextCommand{\textXi}{PU}{\83\236}%\* U+039E  
 16409 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
 16410 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
 16411 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
 16412 \DeclareTextCommand{\textPi}{PU}{\83\240}%\* U+03A0  
 16413 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
 16414 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
 16415 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma; \Sigma (LaTeX)



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16416 \DeclareTextCommand{\textSigma}{PU}{\83\243}%* U+03A3
16417 % U+03A4 GREEK CAPITAL LETTER TAU; Tau
16418 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4
16419 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon; \Upsilon (LaTeX)
16420 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}%* U+03A5
16421 % U+03A6 GREEK CAPITAL LETTER PHI; Phi; \Phi (LaTeX)
16422 \DeclareTextCommand{\textPhi}{PU}{\83\246}%* U+03A6
16423 % U+03A7 GREEK CAPITAL LETTER CHI; Chi
16424 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7
16425 % U+03A8 GREEK CAPITAL LETTER PSI; Psi; \Psi (LaTeX)
16426 \DeclareTextCommand{\textPsi}{PU}{\83\250}%* U+03A8
16427 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, *Omega;
16428 % \Omega (LaTeX)
16429 \DeclareTextCommand{\textOmega}{PU}{\83\251}%* U+03A9
16430 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis
16431 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA
16432 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA
16433 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Up-
    silondieresis
16434 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB
16435 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos
16436 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}%* U+03AC
16437 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilonos
16438 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD
16439 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanos
16440 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE
16441 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotonos
16442 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF
16443 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA
16444 % AND TONOS; upsilondieresis
16445 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\260}% U+03B0
16446 % U+03B1 GREEK SMALL LETTER ALPHA; alpha; \alpha (LaTeX)
16447 \DeclareTextCommand{\textalpha}{PU}{\83\261}%* U+03B1
16448 % U+03B2 GREEK SMALL LETTER BETA; beta; \beta (LaTeX)
16449 \DeclareTextCommand{\textbeta}{PU}{\83\262}%* U+03B2
16450 % U+03B3 GREEK SMALL LETTER GAMMA; gamma; \gamma (LaTeX)
16451 \DeclareTextCommand{\textgamma}{PU}{\83\263}%* U+03B3
16452 % U+03B4 GREEK SMALL LETTER DELTA; delta; \delta (LaTeX)
16453 \DeclareTextCommand{\textdelta}{PU}{\83\264}%* U+03B4
16454 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon; \epsilon (LaTeX)
16455 \DeclareTextCommand{\textepsilon}{PU}{\83\265}%* U+03B5
16456 % U+03B6 GREEK SMALL LETTER ZETA; zeta; \zeta (LaTeX)
16457 \DeclareTextCommand{\textzeta}{PU}{\83\266}%* U+03B6
16458 % U+03B7 GREEK SMALL LETTER ETA; eta; \eta (LaTeX)
16459 \DeclareTextCommand{\texteta}{PU}{\83\267}%* U+03B7
16460 % U+03B8 GREEK SMALL LETTER THETA; theta; \theta (LaTeX)
16461 \DeclareTextCommand{\texttheta}{PU}{\83\270}%* U+03B8
16462 % U+03B9 GREEK SMALL LETTER IOTA; iota; \iota (LaTeX)
16463 \DeclareTextCommand{\textiota}{PU}{\83\271}%* U+03B9
16464 % U+03BA GREEK SMALL LETTER KAPPA; kappa; \kappa (LaTeX)
16465 \DeclareTextCommand{\textkappa}{PU}{\83\272}%* U+03BA
16466 % U+03BB GREEK SMALL LETTER LAMDA; lambda; \lambda (LaTeX)
16467 \DeclareTextCommand{\textlambda}{PU}{\83\273}%* U+03BB
16468 % U+03BC GREEK SMALL LETTER MU; mugreek, *mu; \mu (LaTeX)

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16469 \DeclareTextCommand{\textmugreek}{PU}{\83\274}%* U+03BC
16470 % U+03BD GREEK SMALL LETTER NU; nu; \nu (LaTeX)
16471 \DeclareTextCommand{\textnu}{PU}{\83\275}%* U+03BD
16472 % U+03BE GREEK SMALL LETTER XI; xi; \xi (LaTeX)
16473 \DeclareTextCommand{\textxi}{PU}{\83\276}%* U+03BE
16474 % U+03BF GREEK SMALL LETTER OMICRON; omicron
16475 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF
16476 % U+03C0 GREEK SMALL LETTER PI; pi; \pi (LaTeX)
16477 \DeclareTextCommand{\textpi}{PU}{\83\300}%* U+03C0
16478 % U+03C1 GREEK SMALL LETTER RHO; rho; \rho (LaTeX)
16479 \DeclareTextCommand{\textrho}{PU}{\83\301}%* U+03C1
16480 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; *sigma1, sigmafinal
16481 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}%* U+03C2
16482 % U+03C3 GREEK SMALL LETTER SIGMA; sigma; \sigma (LaTeX)
16483 \DeclareTextCommand{\textsigma}{PU}{\83\303}%* U+03C3
16484 % U+03C4 GREEK SMALL LETTER TAU; tau; \tau (LaTeX)
16485 \DeclareTextCommand{\texttau}{PU}{\83\304}%* U+03C4
16486 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon; \upsilon (LaTeX)
16487 \DeclareTextCommand{\textupsilon}{PU}{\83\305}%* U+03C5
16488 % U+03C6 GREEK SMALL LETTER PHI; phi; \phi (LaTeX)
16489 \DeclareTextCommand{\textphi}{PU}{\83\306}%* U+03C6
16490 % U+03C7 GREEK SMALL LETTER CHI; chi; \chi (LaTeX)
16491 \DeclareTextCommand{\textchi}{PU}{\83\307}%* U+03C7
16492 % U+03C8 GREEK SMALL LETTER PSI; psi; \psi (LaTeX)
16493 \DeclareTextCommand{\textpsi}{PU}{\83\310}%* U+03C8
16494 % U+03C9 GREEK SMALL LETTER OMEGA; omega; \omega (LaTeX)
16495 \DeclareTextCommand{\textomega}{PU}{\83\311}%* U+03C9
16496 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iotadieresis
16497 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA
16498 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-
    silondieresis
16499 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB
16500 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos
16501 \DeclareTextCompositeCommand{"}{PU}{\textomicron}{\83\314}% U+03CC
16502 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos
16503 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD
16504 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\315}% U+03CD
16505 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos
16506 \DeclareTextCompositeCommand{"}{PU}{\textomega}{\83\316}% U+03CE
16507 % U+03D8 GREEK LETTER ARCHAIC KOPPA;
16508 \DeclareTextCommand{\textQoppa}{PU}{\83\330}% U+03D8
16509 % U+03D9 GREEK SMALL LETTER ARCHAIC KOPPA;
16510 \DeclareTextCommand{\textqoppa}{PU}{\83\331}% U+03D9
16511 % U+03DA GREEK LETTER STIGMA; Stigmatreek
16512 \DeclareTextCommand{\textStigmatreek}{PU}{\83\332}% U+03DA
16513 \DeclareTextCommand{\textStigma}{PU}{\83\332}% U+03DA
16514 % U+03DB GREEK SMALL LETTER STIGMA
16515 \DeclareTextCommand{\textstigmatreek}{PU}{\83\333}% U+03DB
16516 \DeclareTextCommand{\textstigma}{PU}{\83\333}% U+03DB
16517 % U+03DC GREEK LETTER DIGAMMA; Digammagreek
16518 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC
16519 \DeclareTextCommand{\textDigamma}{PU}{\83\334}% U+03DC
16520 % U+03DD GREEK SMALL LETTER DIGAMMA
16521 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD

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16522 \DeclareTextCommand{\textdigamma}{PU}{\83\335}% U+03DD
16523 %* \textdigammagreek -> \digamma (AmS)
16524 % U+03DE GREEK LETTER KOPPA; Koppagreek
16525 \DeclareTextCommand{\textKoppa}{PU}{\83\336}% U+03DE
16526 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE
16527 % U+03DF GREEK SMALL LETTER KOPPA
16528 \DeclareTextCommand{\textkoppa}{PU}{\83\337}% U+03DF
16529 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF
16530 % U+03E0 GREEK LETTER SAMPI; Sampigreek
16531 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0
16532 \DeclareTextCommand{\textSampi}{PU}{\83\340}% U+03E0
16533 % U+03E1 GREEK SMALL LETTER SAMPI
16534 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}% U+03E1
16535 \DeclareTextCommand{\textsampi}{PU}{\83\341}% U+03E1
16536 % U+03F6 GREEK REVERSED LUNATE EPSILON SYMBOL;
16537 % \backepsilon (AmS)
16538 \DeclareTextCommand{\textbackepsilon}{PU}{\83\366}% U+03F6
16539 \pugreek

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#### 46.2.10 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names. Cyrillic only loaded if \CYRDZE is defined.

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16540 (*puenc)
16541 \ifx\CYRDZE\@undefined \else
16542 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
16543 \DeclareTextCompositeCommand{\`}{PU}{\CYRE}{\84\000}% U+0400
16544 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrrilic, *afi10023
16545 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
16546 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% U+0401
16547 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afi10051
16548 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
16549 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afi10052
16550 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403
16551 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrrilic, *afi10053
16552 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
16553 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afi10054
16554 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405
16555 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I;
16556 % Icyrrilic, *afi10055
16557 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406
16558 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrrilic, *afi10056
16559 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407
16560 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407
16561 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, *afi10057
16562 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408
16563 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, *afi10058
16564 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409
16565 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, *afi10059
16566 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A
16567 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, *afi10060
16568 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B
16569 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, *afi10061
16570 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C

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16571 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
 16572 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D  
 16573 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
 16574 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
 16575 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
 16576 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
 16577 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
 16578 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
 16579 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
 16580 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
 16581 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
 16582 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
 16583 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
 16584 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
 16585 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
 16586 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
 16587 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
 16588 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
 16589 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
 16590 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
 16591 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
 16592 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
 16593 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
 16594 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
 16595 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
 16596 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
 16597 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
 16598 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
 16599 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
 16600 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
 16601 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
 16602 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
 16603 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
 16604 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
 16605 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
 16606 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
 16607 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
 16608 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
 16609 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
 16610 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
 16611 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
 16612 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
 16613 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
 16614 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
 16615 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
 16616 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
 16617 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
 16618 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
 16619 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
 16620 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
 16621 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
 16622 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
 16623 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
 16624 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426

16625 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
16626 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
16627 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
16628 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
16629 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
16630 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
16631 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN;  
16632 % Hardsigncyrillic, \*afii10044  
16633 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
16634 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
16635 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
16636 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN;  
16637 % Softsigncyrillic, \*afii10046  
16638 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
16639 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
16640 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
16641 % U+042E CYRILLIC CAPITAL LETTER YU; IUCyrillic, \*afii10048  
16642 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
16643 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
16644 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
16645 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
16646 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
16647 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
16648 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
16649 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
16650 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
16651 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
16652 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
16653 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
16654 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
16655 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
16656 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
16657 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhacyrillic  
16658 \DeclareTextCommand{\cyrz}{PU}{\84\066}% U+0436  
16659 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
16660 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
16661 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
16662 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
16663 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
16664 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
16665 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
16666 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
16667 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
16668 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
16669 \DeclareTextCommand{\cyrl}{PU}{\84\073}% U+043B  
16670 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
16671 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
16672 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
16673 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
16674 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
16675 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
16676 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
16677 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
16678 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic

16679 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
16680 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
16681 \DeclareTextCommand{\cyrS}{PU}{\84\101}% U+0441  
16682 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
16683 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
16684 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
16685 \DeclareTextCommand{\cyrU}{PU}{\84\103}% U+0443  
16686 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
16687 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
16688 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
16689 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
16690 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
16691 \DeclareTextCommand{\cyrC}{PU}{\84\106}% U+0446  
16692 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
16693 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
16694 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
16695 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
16696 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
16697 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
16698 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyril-  
lic  
16699 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
16700 %\* \cyrhrdsn -> \hardsign (tipa)  
16701 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
16702 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
16703 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
16704 \DeclareTextCommand{\cyrSftsn}{PU}{\84\114}% U+044C  
16705 %\* \cyrSftsn -> \softsign (tipa)  
16706 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
16707 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
16708 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
16709 \DeclareTextCommand{\cyrYU}{PU}{\84\116}% U+044E  
16710 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
16711 \DeclareTextCommand{\cyrYA}{PU}{\84\117}% U+044F  
16712 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
16713 \DeclareTextCompositeCommand{\`}{PU}{\cyre}{\84\120}% U+0450  
16714 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
16715 \DeclareTextCommand{\cyrYO}{PU}{\84\121}% U+0451  
16716 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
16717 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
16718 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
16719 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
16720 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
16721 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
16722 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
16723 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
16724 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
16725 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;  
16726 % \*afii10103, icyrillic  
16727 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
16728 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
16729 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
16730 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457  
16731 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic

16732 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
16733 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
16734 \DeclareTextCommand{\cyrkje}{PU}{\84\131}% U+0459  
16735 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
16736 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
16737 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
16738 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
16739 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
16740 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
16741 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
16742 \DeclareTextCompositeCommand{\`}{PU}{\cyri}{\84\135}% U+045D  
16743 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
16744 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
16745 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
16746 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
16747 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
16748 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
16749 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
16750 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
16751 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
16752 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
16753 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
16754 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
16755 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
16756 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
16757 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
16758 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
16759 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
16760 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
16761 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
16762 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
16763 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
16764 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslitlei-  
otifiedcyrillic  
16765 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
16766 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslitleioti-  
fiedcyrillic  
16767 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
16768 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
16769 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
16770 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
16771 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
16772 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
cyrillic  
16773 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
16774 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotified-  
cyrillic  
16775 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
16776 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
16777 \DeclareTextCommand{\CYRКСI}{PU}{\84\156}% U+046E  
16778 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
16779 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
16780 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
16781 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470

16782 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
 16783 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
 16784 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
 16785 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
 16786 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
 16787 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
 16788 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
 16789 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
 16790 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
 16791 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
 16792 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE  
 16793 % GRAVE ACCENT; Izhitsadblgravecyrillic  
 16794 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
 16795 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE  
 16796 % GRAVE ACCENT; izhitsadblgravecyrillic  
 16797 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
 16798 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
 16799 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
 16800 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
 16801 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
 16802 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic  
 16803 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 16804 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 16805 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 16806 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic  
 16807 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
 16808 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic  
 16809 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 16810 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 16811 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 16812 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 16813 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 16814 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 16815 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 16816 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 16817 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 16818 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 16819 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
 \84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrilliccmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyrilliccmb  
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumatacyrilliccmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyrilliccmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
 16820 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 16821 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A



16822 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 16823 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 16824 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 16825 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 16826 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 16827 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 16828 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 16829 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 16830 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 16831 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 16832 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-cyrillic, \*afii10050  
 16833 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 16834 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
 16835 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 16836 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-cyrillic  
 16837 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 16838 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 16839 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 16840 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK;  
 16841 % Ghemiddlehookcyrillic  
 16842 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 16843 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK;  
 16844 % ghemiddlehookcyrillic  
 16845 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 16846 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER;  
 16847 % Zhedescendercyrillic  
 16848 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 16849 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER;  
 16850 % zhedescendercyrillic  
 16851 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 16852 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescendercyrillic  
 16853 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 16854 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 16855 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescendercyrillic  
 16856 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
 16857 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 16858 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic  
 16859 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 16860 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescendercyrillic  
 16861 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 16862 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE;  
 16863 % Kavertikalstrokecyrillic  
 16864 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 16865 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE;  
 16866 % kavertikalstrokecyrillic  
 16867 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 16868 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic

16869 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
 16870 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 16871 \DeclareTextCommand{\cyrkhrs}{PU}{\84\237}% U+049F  
 16872 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 16873 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 16874 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 16875 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 16876 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescen-  
 dercyrillic  
 16877 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 16878 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescender-  
 cyrillic  
 16879 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 16880 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 16881 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 16882 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 16883 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 16884 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemid-  
 dlehookcyrillic  
 16885 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 16886 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddle-  
 hookcyrillic  
 16887 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 16888 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyril-  
 lic  
 16889 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
 16890 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
 16891 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
 16892 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescen-  
 dercyrillic  
 16893 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
 16894 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
 16895 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescender-  
 cyrillic  
 16896 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
 16897 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
 16898 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescen-  
 dercyrillic  
 16899 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
 16900 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescen-  
 dercyrillic  
 16901 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
 16902 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
 16903 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
 16904 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
 16905 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
 16906 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Us-  
 traightstrokecyrillic  
 16907 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
 16908 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; us-  
 traightstrokecyrillic  
 16909 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
 16910 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadescen-  
 dercyrillic

16911 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
16912 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
16913 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
16914 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
16915 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
16916 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
16917 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
16918 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER;  
16919 % Chedescendercyrillic  
16920 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
16921 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
16922 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
16923 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE;  
16924 % Cheverticalstrokecyrillic  
16925 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
16926 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE;  
16927 % cheverticalstrokecyrillic  
16928 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
16929 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
16930 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
16931 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
16932 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
16933 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasiancyrillic  
16934 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
16935 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic  
16936 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
16937 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic  
16938 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
16939 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
16940 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCENDER; chedescenderabkhasiancyrillic  
16941 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
16942 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
16943 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
16944 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
16945 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
16946 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
16947 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
16948 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
16949 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
16950 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
16951 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
16952 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
16953 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
16954 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
16955 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
16956 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
16957 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
16958 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7

16959 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
 16960 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
 16961 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakas-  
 siancyrillic  
 16962 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
 16963 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
 cyrillic  
 16964 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
 16965 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
 16966 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
 16967 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
 16968 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
 \84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
 16969 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevcyrillic  
 16970 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
 16971 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevcyrillic  
 16972 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
 16973 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyri-  
 lic  
 16974 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2  
 16975 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
 16976 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% U+04D3  
 16977 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
 16978 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
 16979 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
 16980 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
 16981 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevcyrillic  
 16982 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
 16983 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevcyrillic  
 16984 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
 16985 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
 16986 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
 16987 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
 16988 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
 16989 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS;  
 16990 % Schwadiescyrillic  
 16991 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
 16992 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS;  
 16993 % schwadiescyrillic  
 16994 \DeclareTextCompositeCommand{\U}{PU}{\cyrschwa}{\84\333}% U+04DB  
 16995 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
 siscyrillic  
 16996 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\334}% U+04DC  
 16997 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieres-  
 cyrillic  
 16998 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\335}% U+04DD  
 16999 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieres-  
 cyrillic  
 17000 \DeclareTextCompositeCommand{\U}{PU}{\CYRZ}{\84\336}% U+04DE  
 17001 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresicyril-  
 lic  
 17002 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\337}% U+04DF  
 17003 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
 cyrillic

17004 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
17005 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
17006 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
17007 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
17008 \DeclareTextCompositeCommand{=} {PU}{\CYRI}{\84\342}% U+04E2  
17009 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
17010 \DeclareTextCompositeCommand{=} {PU}{\cyri}{\84\343}% U+04E3  
17011 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
17012 \DeclareTextCompositeCommand{"} {PU}{\CYRI}{\84\344}% U+04E4  
17013 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
17014 \DeclareTextCompositeCommand{"} {PU}{\cyri}{\84\345}% U+04E5  
17015 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic  
17016 \DeclareTextCompositeCommand{"} {PU}{\CYRO}{\84\346}% U+04E6  
17017 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
17018 \DeclareTextCompositeCommand{"} {PU}{\cyro}{\84\347}% U+04E7  
17019 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
17020 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
17021 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
17022 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
17023 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS;  
17024 % Obarreddieresiscyrillic  
17025 \DeclareTextCompositeCommand{"} {PU}{\CYROTLD}{\84\352}% U+04EA  
17026 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS;  
17027 % obarreddieresiscyrillic  
17028 \DeclareTextCompositeCommand{"} {PU}{\cyrotld}{\84\353}% U+04EB  
17029 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
17030 \DeclareTextCompositeCommand{"} {PU}{\CYREREV}{\84\354}% U+04EC  
17031 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
17032 \DeclareTextCompositeCommand{"} {PU}{\cyreref}{\84\355}% U+04ED  
17033 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
17034 \DeclareTextCompositeCommand{=} {PU}{\CYRU}{\84\356}% U+04EE  
17035 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
17036 \DeclareTextCompositeCommand{=} {PU}{\cyru}{\84\357}% U+04EF  
17037 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
17038 \DeclareTextCompositeCommand{"} {PU}{\CYRU}{\84\360}% U+04F0  
17039 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
17040 \DeclareTextCompositeCommand{"} {PU}{\cyru}{\84\361}% U+04F1  
17041 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
17042 \DeclareTextCompositeCommand{\H} {PU}{\CYRU}{\84\362}% U+04F2  
17043 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
17044 \DeclareTextCompositeCommand{\H} {PU}{\cyru}{\84\363}% U+04F3  
17045 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
17046 \DeclareTextCompositeCommand{"} {PU}{\CYRCH}{\84\364}% U+04F4  
17047 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
17048 \DeclareTextCompositeCommand{"} {PU}{\cyrch}{\84\365}% U+04F5  
17049 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
17050 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6

17051 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 17052 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 17053 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudiere-  
       siscyrillic  
 17054 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
 17055 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudiere-  
       siscyrillic  
 17056 \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  
 17057 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 17058 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 17059 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 17060 \DeclareTextCommand{\cyrrhk}{PU}{\84\375}% U+04FD  
 17061 \fi  
 \84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE  
 \84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE

#### 46.2.11 Hebrew: U+0590 to U+05FF

Macro names are taken from `he8enc.def`. hebrew is only loaded if `\hebdalet` is defined

17062 \ifx\hebdalet\@undefined\else  
 17063 % U+05C3 HEBREW PUNCTUATION SOF PASUQ  
 17064 \DeclareTextCommand{\sofpasuq}{PU}{\85\303}% U+05C3  
 17065 % U+05D0 HEBREW LETTER ALEF  
 17066 \DeclareTextCommand{\hebalet}{PU}{\85\320}% U+05D0  
 17067 % U+05D1 HEBREW LETTER BET  
 17068 \DeclareTextCommand{\hebbet}{PU}{\85\321}% U+05D1  
 17069 % U+05D2 HEBREW LETTER GIMEL  
 17070 \DeclareTextCommand{\hebgimel}{PU}{\85\322}% U+05D2  
 17071 % U+05D3 HEBREW LETTER DALET  
 17072 \DeclareTextCommand{\hebdalet}{PU}{\85\323}% U+05D3  
 17073 % U+05D4 HEBREW LETTER HE  
 17074 \DeclareTextCommand{\hebhe}{PU}{\85\324}% U+05D4  
 17075 % U+05D5 HEBREW LETTER VAV  
 17076 \DeclareTextCommand{\hebvav}{PU}{\85\325}% U+05D5  
 17077 % U+05D6 HEBREW LETTER ZAYIN  
 17078 \DeclareTextCommand{\hebzayin}{PU}{\85\326}% U+05D6  
 17079 % U+05D7 HEBREW LETTER HET  
 17080 \DeclareTextCommand{\hebbet}{PU}{\85\327}% U+05D7  
 17081 % U+05D8 HEBREW LETTER TET  
 17082 \DeclareTextCommand{\hebtet}{PU}{\85\330}% U+05D8  
 17083 % U+05D9 HEBREW LETTER YOD  
 17084 \DeclareTextCommand{\hebyod}{PU}{\85\331}% U+05D9  
 17085 % U+05DA HEBREW LETTER FINAL KAF  
 17086 \DeclareTextCommand{\hebfinalkaf}{PU}{\85\332}% U+05DA  
 17087 % U+05DB HEBREW LETTER KAF  
 17088 \DeclareTextCommand{\hebkaf}{PU}{\85\333}% U+05DB  
 17089 % U+05DC HEBREW LETTER LAMED

17090 \DeclareTextCommand{\heblamed}{PU}{\85\334}% U+05DC  
 17091 % U+05DD HEBREW LETTER FINAL MEM  
 17092 \DeclareTextCommand{\hebfinalmem}{PU}{\85\335}% U+05DD  
 17093 % U+05DE HEBREW LETTER MEM  
 17094 \DeclareTextCommand{\hebmem}{PU}{\85\336}% U+05DE  
 17095 % U+05DF HEBREW LETTER FINAL NUN  
 17096 \DeclareTextCommand{\hebfinalnun}{PU}{\85\337}% U+05DF  
 17097 % U+05E0 HEBREW LETTER NUN  
 17098 \DeclareTextCommand{\hebnun}{PU}{\85\340}% U+05E0  
 17099 % U+05E1 HEBREW LETTER SAMEKH  
 17100 \DeclareTextCommand{\hebsamekh}{PU}{\85\341}% U+05E1  
 17101 % U+05E2 HEBREW LETTER AYIN  
 17102 \DeclareTextCommand{\hebayin}{PU}{\85\342}% U+05E2  
 17103 % U+05E3 HEBREW LETTER FINAL PE  
 17104 \DeclareTextCommand{\hebfinalpe}{PU}{\85\343}% U+05E3  
 17105 % U+05E4 HEBREW LETTER PE  
 17106 \DeclareTextCommand{\hebpe}{PU}{\85\344}% U+05E4  
 17107 % U+05E5 HEBREW LETTER FINAL TSADI  
 17108 \DeclareTextCommand{\hebfinaltsadi}{PU}{\85\345}% U+05E5  
 17109 % U+05E6 HEBREW LETTER TSADI  
 17110 \DeclareTextCommand{\hebtsadi}{PU}{\85\346}% U+05E6  
 17111 % U+05E7 HEBREW LETTER QOF  
 17112 \DeclareTextCommand{\hebqof}{PU}{\85\347}% U+05E7  
 17113 % U+05E8 HEBREW LETTER RESH  
 17114 \DeclareTextCommand{\hebresh}{PU}{\85\350}% U+05E8  
 17115 % U+05E9 HEBREW LETTER SHIN  
 17116 \DeclareTextCommand{\hebshin}{PU}{\85\351}% U+05E9  
 17117 %\* \hebshin -> \hebsin (he8)  
 17118 % U+05EA HEBREW LETTER TAV  
 17119 \DeclareTextCommand{\hebtav}{PU}{\85\352}% U+05EA  
 17120 % U+05F0 HEBREW LIGATURE YIDDISH DOUBLE VAV  
 17121 \DeclareTextCommand{\doublevav}{PU}{\85\360}% U+05F0  
 17122 % U+05F1 HEBREW LIGATURE YIDDISH VAV YOD  
 17123 \DeclareTextCommand{\vavyod}{PU}{\85\361}% U+05F1  
 17124 % U+05F2 HEBREW LIGATURE YIDDISH DOUBLE YOD  
 17125 \DeclareTextCommand{\doubleyod}{PU}{\85\362}% U+05F2  
 17126 \fi

#### 46.2.12 Thai: U+0E00 to U+0E7F

17127 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 17128 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

#### 46.2.13 Phonetic Extensions: U+1D00 to U+1D7F

17129 % U+1D00 LATIN LETTER SMALL CAPITAL A; \textscA (tipa)  
 17130 \DeclareTextCommand{\textscA}{PU}{\9035\000}% U+1D00  
 17131 % U+1D05 LATIN LETTER SMALL CAPITAL D; \scd (wsuipa)  
 17132 \DeclareTextCommand{\textscd}{PU}{\9035\005}%\* U+1D05  
 17133 % U+1D07 LATIN LETTER SMALL CAPITAL E; \textscE (tipa)  
 17134 \DeclareTextCommand{\textscE}{PU}{\9035\007}% U+1D07  
 17135 % U+1D0A LATIN LETTER SMALL CAPITAL J; \textscJ (tipa)  
 17136 \DeclareTextCommand{\textscJ}{PU}{\9035\012}% U+1D0A  
 17137 % U+1D0B LATIN LETTER SMALL CAPITAL K; \textscK (tipx)  
 17138 \DeclareTextCommand{\textPUscK}{PU}{\9035\013}% U+1D0B

```

17139 %* \textPUsck -> \textsck (tipx)
17140 % U+1D0D LATIN LETTER SMALL CAPITAL M; \textscm (tipx)
17141 \DeclareTextCommand{\textPUscm}{PU}{\9035\015}% U+1D0D
17142 %* \textPUscm -> \textscm (tipx)
17143 % U+1D18 LATIN LETTER SMALL CAPITAL P; \textscp (tipx)
17144 \DeclareTextCommand{\textPUscp}{PU}{\9035\030}% U+1D18
17145 %* \textPUscp -> \textscp (tipx)
17146 % U+1D19 LATIN LETTER SMALL CAPITAL REVERSED R; \textrevscr (tipx)
17147 \DeclareTextCommand{\textPUrevscr}{PU}{\9035\031}% U+1D19
17148 %* \textPUrevscr -> \textrevscr (tipx)
17149 % U+1D1C LATIN LETTER SMALL CAPITAL U; \textscu (tipa), \scu (wsuipa)
17150 \DeclareTextCommand{\textscu}{PU}{\9035\034}%* U+1D1C
17151 % U+1D62 LATIN SUBSCRIPT SMALL LETTER I
17152 \DeclareTextCommand{\textiinferior}{PU}{\9035\142}%* U+1D62
17153 % U+1D63 LATIN SUBSCRIPT SMALL LETTER R
17154 \DeclareTextCommand{\textrinferior}{PU}{\9035\143}%* U+1D63
17155 % U+1D64 LATIN SUBSCRIPT SMALL LETTER U
17156 \DeclareTextCommand{\textuinferior}{PU}{\9035\144}%* U+1D64
17157 % U+1D65 LATIN SUBSCRIPT SMALL LETTER V
17158 \DeclareTextCommand{\textvinferior}{PU}{\9035\145}%* U+1D65
17159 % U+1D66 GREEK SUBSCRIPT SMALL LETTER BETA
17160 \DeclareTextCommand{\textbetainferior}{PU}{\9035\146}%* U+1D66
17161 % U+1D67 GREEK SUBSCRIPT SMALL LETTER GAMMA
17162 \DeclareTextCommand{\textgammainferior}{PU}{\9035\147}%* U+1D67
17163 % U+1D68 GREEK SUBSCRIPT SMALL LETTER RHO
17164 \DeclareTextCommand{\textrhoinferior}{PU}{\9035\150}%* U+1D68
17165 % U+1D69 GREEK SUBSCRIPT SMALL LETTER PHI
17166 \DeclareTextCommand{\textphiinferior}{PU}{\9035\151}%* U+1D69
17167 % U+1D6A GREEK SUBSCRIPT SMALL LETTER CHI
17168 \DeclareTextCommand{\textchiinferior}{PU}{\9035\152}%* U+1D6A
17169 % U+1D7B LATIN SMALL CAPITAL LETTER I WITH STROKE;
17170 % \barsci (wsuipa)
17171 \DeclareTextCommand{\textbarsci}{PU}{\9035\173}%* U+1D7B
17172 % U+1D7D LATIN SMALL LETTER P WITH STROKE; \barp (wsuipa)
17173 \DeclareTextCommand{\textbarp}{PU}{\9035\175}%* U+1D7D
17174 % U+1D7E LATIN SMALL CAPITAL LETTER U WITH STROKE;
17175 % \barscu (wsuipa)
17176 \DeclareTextCommand{\textbarscu}{PU}{\9035\176}%* U+1D7E

```

#### 46.2.14 Phonetic Extensions Supplement: U+1D80 to U+1DBF

```

17177 % U+1D8F LATIN SMALL LETTER A WITH RETROFLEX HOOK; \tex-
      trhooka (tipx)
17178 \DeclareTextCommand{\textPUrhooka}{PU}{\9035\217}% U+1D8F
17179 %* \textPUrhooka -> \textrhooka (tipx)
17180 % U+1D91 LATIN SMALL LETTER D WITH HOOK AND TAIL; \texthtr-
      taild (tipa)
17181 \DeclareTextCommand{\texthtrtaild}{PU}{\9035\221}%* U+1D91
17182 % U+1D92 LATIN SMALL LETTER E WITH RETROFLEX HOOK; \tex-
      trhooke (tipx)
17183 \DeclareTextCommand{\textPUrhooke}{PU}{\9035\222}% U+1D92
17184 %* \textPUrhooke -> \textrhooke (tipx)
17185 % U+1D93 LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK;
17186 % \textrhookepsilon (tipx)
17187 \DeclareTextCommand{\textPUrhookepsilon}{PU}{\9035\223}% U+1D93

```



17188 %\* \textPURhookepsilon -> \textrhookepsilon (tipx)  
 17189 % U+1D97 LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK;  
 17190 % \textrhookopeno (tipx)  
 17191 \DeclareTextCommand{\textPURhookopeno}{PU}{\9035\227}% U+1D97  
 17192 %\* \textPURhookopeno -> \textrhookopeno (tipx)

#### 46.2.15 Latin Extended Additional: U+1E00 to U+1EFF

17193 % U+1E00 LATIN CAPITAL LETTER A WITH RING BELOW; Aringbelow  
 17194 \DeclareTextCompositeCommand{\textsubring}{PU}{A}{\9036\000}% U+1E00  
 17195 % U+1E01 LATIN SMALL LETTER A WITH RING BELOW; aringbelow  
 17196 \DeclareTextCompositeCommand{\textsubring}{PU}{a}{\9036\001}% U+1E01  
 17197 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 17198 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
 17199 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 17200 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
 17201 % U+1E04 LATIN CAPITAL LETTER B WITH DOT BELOW; Bdotbelow  
 17202 \DeclareTextCompositeCommand{\d}{PU}{B}{\9036\004}% U+1E04  
 17203 % U+1E05 LATIN SMALL LETTER B WITH DOT BELOW; bdotbelow  
 17204 \DeclareTextCompositeCommand{\d}{PU}{b}{\9036\005}% U+1E05  
 17205 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 17206 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 17207 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 17208 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 17209 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 17210 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
 17211 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 17212 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
 17213 % U+1E0C LATIN CAPITAL LETTER D WITH DOT BELOW; Ddotbelow  
 17214 \DeclareTextCompositeCommand{\d}{PU}{D}{\9036\014}% U+1E0C  
 17215 % U+1E0D LATIN SMALL LETTER D WITH DOT BELOW; ddotbelow  
 17216 \DeclareTextCompositeCommand{\d}{PU}{d}{\9036\015}% U+1E0D  
 17217 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
 17218 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
 17219 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
 17220 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
 17221 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
 17222 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
 17223 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
 17224 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
 17225 % U+1E12 LATIN CAPITAL LETTER D WITH CIRCUMFLEX BELOW; Dcir-  
 cumflexbelow  
 17226 \DeclareTextCompositeCommand{\textsubcircum}{PU}{D}{\9036\022}% U+1E12  
 17227 % U+1E13 LATIN SMALL LETTER D WITH CIRCUMFLEX BELOW; dcir-  
 cumflexbelow  
 17228 \DeclareTextCompositeCommand{\textsubcircum}{PU}{d}{\9036\023}% U+1E13  
 17229 % U+1E14 LATIN CAPITAL LETTER E WITH MACRON AND GRAVE;  
 17230 % Emacrongrave  
 17231 \DeclareTextCompositeCommand{\textgravemacron}{PU}{E}{\9036\024}% U+1E14  
 17232 % U+1E15 LATIN SMALL LETTER E WITH MACRON AND GRAVE;  
 17233 % emacrongrave  
 17234 \DeclareTextCompositeCommand{\textgravemacron}{PU}{e}{\9036\025}% U+1E15  
 17235 % U+1E16 LATIN CAPITAL LETTER E WITH MACRON AND ACUTE;  
 17236 % Emacronacute  
 17237 \DeclareTextCompositeCommand{\textacutemacron}{PU}{E}{\9036\026}% U+1E16

17238 % U+1E17 LATIN SMALL LETTER E WITH MACRON AND ACUTE;  
17239 %   emacronacute  
17240 \DeclareTextCompositeCommand{\textacutemacron}{PU}{e}{\9036\027}% U+1E17  
17241 % U+1E18 LATIN CAPITAL LETTER E WITH CIRCUMFLEX BELOW; Ecir-  
      cumflexbelow  
17242 \DeclareTextCompositeCommand{\textsubcircum}{PU}{E}{\9036\030}% U+1E18  
17243 % U+1E19 LATIN SMALL LETTER E WITH CIRCUMFLEX BELOW; ecir-  
      cumflexbelow  
17244 \DeclareTextCompositeCommand{\textsubcircum}{PU}{e}{\9036\031}% U+1E19  
17245 % U+1E1A LATIN CAPITAL LETTER E WITH TILDE BELOW; Etildebelow  
17246 \DeclareTextCompositeCommand{\textsubtilde}{PU}{E}{\9036\032}% U+1E1A  
17247 % U+1E1B LATIN SMALL LETTER E WITH TILDE BELOW; etildebelow  
17248 \DeclareTextCompositeCommand{\textsubtilde}{PU}{e}{\9036\033}% U+1E1B  
17249 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
17250 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
17251 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
17252 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
17253 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
17254 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
17255 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
17256 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
17257 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
17258 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
17259 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
17260 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
17261 % U+1E24 LATIN CAPITAL LETTER H WITH DOT BELOW; Hdotbelow  
17262 \DeclareTextCompositeCommand{\d}{PU}{H}{\9036\044}% U+1E24  
17263 % U+1E25 LATIN SMALL LETTER H WITH DOT BELOW; hdotbelow  
17264 \DeclareTextCompositeCommand{\d}{PU}{h}{\9036\045}% U+1E25  
17265 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
17266 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
17267 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
17268 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27  
17269 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
17270 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
17271 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
17272 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
17273 % U+1E2A LATIN CAPITAL LETTER H WITH BREVE BELOW; Hbrevebelow  
17274 \DeclareTextCompositeCommand{\textsubbreve}{PU}{H}{\9036\052}% U+1E2A  
17275 % U+1E2B LATIN SMALL LETTER H WITH BREVE BELOW; hbrevebelow  
17276 \DeclareTextCompositeCommand{\textsubbreve}{PU}{h}{\9036\053}% U+1E2B  
17277 % U+1E2C LATIN CAPITAL LETTER I WITH TILDE BELOW; Itildebelow  
17278 \DeclareTextCompositeCommand{\textsubtilde}{PU}{I}{\9036\054}% U+1E2C  
17279 % U+1E2D LATIN SMALL LETTER I WITH TILDE BELOW; itildebelow  
17280 \DeclareTextCompositeCommand{\textsubtilde}{PU}{i}{\9036\055}% U+1E2D  
17281 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
17282 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
17283 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
17284 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
17285 % U+1E32 LATIN CAPITAL LETTER K WITH DOT BELOW; Kdotbelow  
17286 \DeclareTextCompositeCommand{\d}{PU}{K}{\9036\062}% U+1E32  
17287 % U+1E33 LATIN SMALL LETTER K WITH DOT BELOW; kdotbelow  
17288 \DeclareTextCompositeCommand{\d}{PU}{k}{\9036\063}% U+1E33  
17289 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow

17290 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
17291 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
17292 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
17293 % U+1E36 LATIN CAPITAL LETTER L WITH DOT BELOW; Ldotbelow  
17294 \DeclareTextCompositeCommand{\d}{PU}{L}{\9036\066}% U+1E36  
17295 % U+1E37 LATIN SMALL LETTER L WITH DOT BELOW; ldotbelow  
17296 \DeclareTextCompositeCommand{\d}{PU}{l}{\9036\067}% U+1E37  
17297 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
17298 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
17299 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
17300 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
17301 % U+1E3C LATIN CAPITAL LETTER L WITH CIRCUMFLEX BELOW; Lcir-  
cumflexbelow  
17302 \DeclareTextCompositeCommand{\textsubcircum}{PU}{L}{\9036\074}% U+1E3C  
17303 % U+1E3D LATIN SMALL LETTER L WITH CIRCUMFLEX BELOW; lcir-  
cumflexbelow  
17304 \DeclareTextCompositeCommand{\textsubcircum}{PU}{l}{\9036\075}% U+1E3D  
17305 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
17306 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
17307 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
17308 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
17309 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
17310 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
17311 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
17312 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
17313 % U+1E42 LATIN CAPITAL LETTER M WITH DOT BELOW; Mdotbelow  
17314 \DeclareTextCompositeCommand{\d}{PU}{M}{\9036\102}% U+1E42  
17315 % U+1E43 LATIN SMALL LETTER M WITH DOT BELOW; mdotbelow  
17316 \DeclareTextCompositeCommand{\d}{PU}{m}{\9036\103}% U+1E43  
17317 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
17318 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
17319 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
17320 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
17321 % U+1E46 LATIN CAPITAL LETTER N WITH DOT BELOW; Ndotbelow  
17322 \DeclareTextCompositeCommand{\d}{PU}{N}{\9036\106}% U+1E46  
17323 % U+1E47 LATIN SMALL LETTER N WITH DOT BELOW; ndotbelow  
17324 \DeclareTextCompositeCommand{\d}{PU}{n}{\9036\107}% U+1E47  
17325 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
17326 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
17327 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
17328 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
17329 % U+1E4A LATIN CAPITAL LETTER N WITH CIRCUMFLEX BELOW; Ncir-  
cumflexbelow  
17330 \DeclareTextCompositeCommand{\textsubcircum}{PU}{N}{\9036\112}% U+1E4A  
17331 % U+1E4B LATIN SMALL LETTER N WITH CIRCUMFLEX BELOW; ncir-  
cumflexbelow  
17332 \DeclareTextCompositeCommand{\textsubcircum}{PU}{n}{\9036\113}% U+1E4B  
17333 % U+1E50 LATIN CAPITAL LETTER O WITH MACRON AND GRAVE;  
17334 % Omacrongrave  
17335 \DeclareTextCompositeCommand{\textgravemacron}{PU}{O}{\9036\120}% U+1E50  
17336 % U+1E51 LATIN SMALL LETTER O WITH MACRON AND GRAVE;  
17337 % omacrongrave  
17338 \DeclareTextCompositeCommand{\textgravemacron}{PU}{o}{\9036\121}% U+1E51  
17339 % U+1E52 LATIN CAPITAL LETTER O WITH MACRON AND ACUTE;

17340 % Omacronacute  
 17341 \DeclareTextCompositeCommand{\textacutemacron}{PU}{O}{\9036\122}% U+1E52  
 17342 % U+1E53 LATIN SMALL LETTER O WITH MACRON AND ACUTE;  
 17343 % omacronacute  
 17344 \DeclareTextCompositeCommand{\textacutemacron}{PU}{o}{\9036\123}% U+1E53  
 17345 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
 17346 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
 17347 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
 17348 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
 17349 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
 17350 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
 17351 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
 17352 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
 17353 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
 17354 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
 17355 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
 17356 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
 17357 % U+1E5A LATIN CAPITAL LETTER R WITH DOT BELOW; Rdotbelow  
 17358 \DeclareTextCompositeCommand{\d}{PU}{R}{\9036\132}% U+1E5A  
 17359 % U+1E5B LATIN SMALL LETTER R WITH DOT BELOW; rdotbelow  
 17360 \DeclareTextCompositeCommand{\d}{PU}{r}{\9036\133}% U+1E5B  
 17361 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
 17362 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
 17363 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
 17364 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
 17365 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
 17366 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
 17367 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
 17368 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
 17369 % U+1E62 LATIN CAPITAL LETTER S WITH DOT BELOW; Sdotbelow  
 17370 \DeclareTextCompositeCommand{\d}{PU}{S}{\9036\142}% U+1E62  
 17371 % U+1E63 LATIN SMALL LETTER S WITH DOT BELOW; sdotbelow  
 17372 \DeclareTextCompositeCommand{\d}{PU}{s}{\9036\143}% U+1E63  
 17373 % U+1E6A LATIN CAPITAL LETTER T WITH DOT ABOVE; Tdotaccent  
 17374 \DeclareTextCompositeCommand{\.}{PU}{T}{\9036\152}% U+1E6A  
 17375 % U+1E6B LATIN SMALL LETTER T WITH DOT ABOVE; tdotaccent  
 17376 \DeclareTextCompositeCommand{\.}{PU}{t}{\9036\153}% U+1E6B  
 17377 % U+1E6C LATIN CAPITAL LETTER T WITH DOT BELOW; Tdotbelow  
 17378 \DeclareTextCompositeCommand{\d}{PU}{T}{\9036\154}% U+1E6C  
 17379 % U+1E6D LATIN SMALL LETTER T WITH DOT BELOW; tdotbelow  
 17380 \DeclareTextCompositeCommand{\d}{PU}{t}{\9036\155}% U+1E6D  
 17381 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
 17382 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
 17383 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
 17384 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
 17385 % U+1E70 LATIN CAPITAL LETTER T WITH CIRCUMFLEX BELOW; Tcircumflexbelow  
 17386 \DeclareTextCompositeCommand{\textsubcircum}{PU}{T}{\9036\160}% U+1E70  
 17387 % U+1E71 LATIN SMALL LETTER T WITH CIRCUMFLEX BELOW; tcircumflexbelow  
 17388 \DeclareTextCompositeCommand{\textsubcircum}{PU}{t}{\9036\161}% U+1E71  
 17389 % U+1E72 LATIN CAPITAL LETTER U WITH DIAERESIS BELOW; Udiere-  
 sisbelow  
 17390 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{U}{\9036\162}% U+1E72

17391 % U+1E73 LATIN SMALL LETTER U WITH DIAERESIS BELOW; udieresis-  
below  
17392 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{u}{\9036\163}% U+1E73  
17393 % U+1E74 LATIN CAPITAL LETTER U WITH TILDE BELOW; Utildebelow  
17394 \DeclareTextCompositeCommand{\textsubtilde}{PU}{U}{\9036\164}% U+1E74  
17395 % U+1E75 LATIN SMALL LETTER U WITH TILDE BELOW; utildebelow  
17396 \DeclareTextCompositeCommand{\textsubtilde}{PU}{u}{\9036\165}% U+1E75  
17397 % U+1E76 LATIN CAPITAL LETTER U WITH CIRCUMFLEX BELOW; Ucir-  
cumflexbelow  
17398 \DeclareTextCompositeCommand{\textsubcircum}{PU}{U}{\9036\166}% U+1E76  
17399 % U+1E77 LATIN SMALL LETTER U WITH CIRCUMFLEX BELOW; ucir-  
cumflexbelow  
17400 \DeclareTextCompositeCommand{\textsubcircum}{PU}{u}{\9036\167}% U+1E77  
17401 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
17402 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
17403 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
17404 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
17405 % U+1E7E LATIN CAPITAL LETTER V WITH DOT BELOW; Vdotbelow  
17406 \DeclareTextCompositeCommand{\d}{PU}{V}{\9036\176}% U+1E7E  
17407 % U+1E7F LATIN SMALL LETTER V WITH DOT BELOW; vdotbelow  
17408 \DeclareTextCompositeCommand{\d}{PU}{v}{\9036\177}% U+1E7F  
17409 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
17410 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
17411 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
17412 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
17413 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
17414 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
17415 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
17416 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
17417 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
17418 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
17419 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
17420 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
17421 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
17422 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
17423 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
17424 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
17425 % U+1E88 LATIN CAPITAL LETTER W WITH DOT BELOW; wdotbelow  
17426 \DeclareTextCompositeCommand{\d}{PU}{W}{\9036\210}% U+1E88  
17427 % U+1E89 LATIN SMALL LETTER W WITH DOT BELOW; wdotbelow  
17428 \DeclareTextCompositeCommand{\d}{PU}{w}{\9036\211}% U+1E89  
17429 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
17430 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
17431 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
17432 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
17433 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
17434 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
17435 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
17436 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
17437 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
17438 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
17439 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
17440 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
17441 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex

17442 \DeclareTextCompositeCommand{\~}{PU}{Z}{\9036\220}% U+1E90  
17443 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
17444 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
17445 % U+1E92 LATIN CAPITAL LETTER Z WITH DOT BELOW; Zdotbelow  
17446 \DeclareTextCompositeCommand{\d}{PU}{Z}{\9036\222}% U+1E92  
17447 % U+1E93 LATIN SMALL LETTER Z WITH DOT BELOW; zdotbelow  
17448 \DeclareTextCompositeCommand{\d}{PU}{z}{\9036\223}% U+1E93  
17449 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
17450 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
17451 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
17452 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
17453 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
17454 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
17455 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
17456 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
17457 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
17458 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
17459 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
17460 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
17461 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdo-  
taccent  
17462 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
17463 % U+1EA0 LATIN CAPITAL LETTER A WITH DOT BELOW; Adotbelow  
17464 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
17465 % U+1EA1 LATIN SMALL LETTER A WITH DOT BELOW; adotbelow  
17466 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
17467 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow  
17468 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
17469 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow  
17470 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
17471 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
17472 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
17473 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
17474 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
17475 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow  
17476 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
17477 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow  
17478 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
17479 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow  
17480 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
17481 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow  
17482 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
17483 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow  
17484 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4  
17485 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow  
17486 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
17487 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
17488 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
17489 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
17490 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
17491 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow  
17492 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4  
17493 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow  
17494 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5

17495 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 17496 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
 17497 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 17498 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

#### 46.2.16 General Punctuation: U+2000 to U+206F

17499 % U+200C ZERO WIDTH NON-JOINER; \*afi61664, zerowidthnonjoiner  
 17500 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 17501 % U+2013 EN DASH; endash  
 17502 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 17503 % U+2014 EM DASH; emdash  
 17504 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 17505 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 17506 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 17507 %\* \textbardbl -> \textdoublevertline (tipa)  
 17508 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 17509 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 17510 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 17511 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 17512 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 17513 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 17514 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 17515 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 17516 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 17517 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 17518 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 17519 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 17520 % U+2020 DAGGER; dagger  
 17521 \DeclareTextCommand{\textdagger}{PU}{\9040\040}%\* U+2020  
 17522 %\* \textdagger -> \dag (LaTeX)  
 17523 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
 17524 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 17525 %\* \textdaggerdbl -> \ddagger (LaTeX)  
 17526 %\* \textdaggerdbl -> \ddag (LaTeX)  
 17527 % U+2022 BULLET; bullet  
 17528 \DeclareTextCommand{\textbullet}{PU}{\9040\042}%\* U+2022  
 17529 % U+2025 TWO DOT LEADER; \hdotfor (MnSymbol)  
 17530 \DeclareTextCommand{\texthdotfor}{PU}{\9040\045}%\* U+2025  
 17531 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 17532 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 17533 %\* \textellipsis -> \mathellipsis  
 17534 % U+2030 PER MILLE SIGN; perthousand  
 17535 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 17536 % U+2031 PER TEN THOUSAND SIGN  
 17537 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 17538 % U+2032 PRIME; minute; \prime (MnSymbol)  
 17539 \DeclareTextCommand{\textprime}{PU}{\9040\062}%\* U+2032  
 17540 % U+2033 DOUBLE PRIME; \second (mathabx)  
 17541 \DeclareTextCommand{\textsecond}{PU}{\9040\063}%\* U+2033  
 17542 % U+2034 TRIPLE PRIME; \third (mathabx)  
 17543 \DeclareTextCommand{\textthird}{PU}{\9040\064}%\* U+2034  
 17544 % U+2035 REVERSED PRIME; \backprime (AmS)  
 17545 \DeclareTextCommand{\textbackprime}{PU}{\9040\065}%\* U+2035  
 17546 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guils-

inglleft  
 17547 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039  
 17548 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guils-  
 inglright  
 17549 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A  
 17550 % U+203B REFERENCE MARK; referencemark  
 17551 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 17552 % U+203D INTERROBANG  
 17553 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 17554 % U+2044 FRACTION SLASH; fraction  
 17555 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 17556 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 17557 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 17558 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 17559 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 17560 % U+2052 COMMERCIAL MINUS SIGN  
 17561 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052  
 17562 % U+2056 THREE DOT PUNCTUATION; \lefttherefore (MnSymbol)  
 17563 \DeclareTextCommand{\textlefttherefore}{PU}{\9040\126}%\* U+2056  
 17564 % U+2057 QUADRUPLE PRIME; \fourth (mathabx)  
 17565 \DeclareTextCommand{\textfourth}{PU}{\9040\127}%\* U+2057  
 17566 % U+2058 FOUR DOT PUNCTUATION; \diamonddots (MnSymbol)  
 17567 \DeclareTextCommand{\textdiamonddots}{PU}{\9040\130}%\* U+2058

#### 46.2.17 Superscripts and Subscripts: U+2070 to U+209F

17568 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 17569 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}%\* U+2070  
 17570 % U+2071 SUPERSCRIPT LATIN SMALL LETTER I  
 17571 \DeclareTextCommand{\textisuperior}{PU}{\9040\161}%\* U+2071  
 17572 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 17573 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}%\* U+2074  
 17574 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 17575 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}%\* U+2075  
 17576 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 17577 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}%\* U+2076  
 17578 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 17579 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}%\* U+2077  
 17580 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 17581 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}%\* U+2078  
 17582 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 17583 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}%\* U+2079  
 17584 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 17585 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}%\* U+207A  
 17586 % U+207B SUPERSCRIPT MINUS  
 17587 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}%\* U+207B  
 17588 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 17589 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}%\* U+207C  
 17590 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 17591 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}%\* U+207D  
 17592 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 17593 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}%\* U+207E  
 17594 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 17595 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}%\* U+207F  
 17596 % U+2080 SUBSCRIPT ZERO; zeroinferior



17597 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}%\* U+2080  
17598 % U+2081 SUBSCRIPT ONE; oneinferior  
17599 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}%\* U+2081  
17600 % U+2082 SUBSCRIPT TWO; twoinferior  
17601 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}%\* U+2082  
17602 % U+2083 SUBSCRIPT THREE; threeinferior  
17603 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}%\* U+2083  
17604 % U+2084 SUBSCRIPT FOUR; fourinferior  
17605 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}%\* U+2084  
17606 % U+2085 SUBSCRIPT FIVE; fiveinferior  
17607 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}%\* U+2085  
17608 % U+2086 SUBSCRIPT SIX; sixinferior  
17609 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}%\* U+2086  
17610 % U+2087 SUBSCRIPT SEVEN; seveninferior  
17611 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}%\* U+2087  
17612 % U+2088 SUBSCRIPT EIGHT; eightinferior  
17613 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}%\* U+2088  
17614 % U+2089 SUBSCRIPT NINE; nineinferior  
17615 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}%\* U+2089  
17616 % U+208A SUBSCRIPT PLUS SIGN  
17617 \DeclareTextCommand{\textplusinferior}{PU}{\9040\212}%\* U+208A  
17618 % U+208B SUBSCRIPT MINUS  
17619 \DeclareTextCommand{\textminusinferior}{PU}{\9040\213}%\* U+208B  
17620 % U+208C SUBSCRIPT EQUALS SIGN  
17621 \DeclareTextCommand{\textequalsinferior}{PU}{\9040\214}%\* U+208C  
17622 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
17623 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}%\* U+208D  
17624 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
17625 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}%\* U+208E  
17626 % U+2090 LATIN SUBSCRIPT SMALL LETTER A  
17627 \DeclareTextCommand{\textainferior}{PU}{\9040\220}%\* U+2090  
17628 % U+2091 LATIN SUBSCRIPT SMALL LETTER E  
17629 \DeclareTextCommand{\texteinferior}{PU}{\9040\221}%\* U+2091  
17630 % U+2092 LATIN SUBSCRIPT SMALL LETTER O  
17631 \DeclareTextCommand{\textoinferior}{PU}{\9040\222}%\* U+2092  
17632 % U+2093 LATIN SUBSCRIPT SMALL LETTER X  
17633 \DeclareTextCommand{\textxinferior}{PU}{\9040\223}%\* U+2093  
17634 % U+2094 LATIN SUBSCRIPT SMALL LETTER SCHWA  
17635 \DeclareTextCommand{\textschwainferior}{PU}{\9040\224}%\* U+2094  
17636 % U+2095 LATIN SUBSCRIPT SMALL LETTER H  
17637 \DeclareTextCommand{\texthinferior}{PU}{\9040\225}%\* U+2095  
17638 % U+2096 LATIN SUBSCRIPT SMALL LETTER K  
17639 \DeclareTextCommand{\textkinferior}{PU}{\9040\226}%\* U+2096  
17640 % U+2097 LATIN SUBSCRIPT SMALL LETTER L  
17641 \DeclareTextCommand{\textlinferior}{PU}{\9040\227}%\* U+2097  
17642 % U+2098 LATIN SUBSCRIPT SMALL LETTER M  
17643 \DeclareTextCommand{\textminferior}{PU}{\9040\230}%\* U+2098  
17644 % U+2099 LATIN SUBSCRIPT SMALL LETTER N  
17645 \DeclareTextCommand{\textninferior}{PU}{\9040\231}%\* U+2099  
17646 % U+209A LATIN SUBSCRIPT SMALL LETTER P  
17647 \DeclareTextCommand{\textpinferior}{PU}{\9040\232}%\* U+209A  
17648 % U+209B LATIN SUBSCRIPT SMALL LETTER S  
17649 \DeclareTextCommand{\textsinferior}{PU}{\9040\233}%\* U+209B  
17650 % U+209C LATIN SUBSCRIPT SMALL LETTER T

17651 \DeclareTextCommand{\texttinferior}{PU}{\9040\234}%\* U+209C

#### 46.2.18 Currency Symbols: U+20A0 to U+20CF

17652 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 17653 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 17654 % U+20A4 LIRA SIGN; afii08941, \*lira  
 17655 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 17656 % U+20A6 NAIRA SIGN  
 17657 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 17658 % U+20A7 PESETA SIGN; peseta  
 17659 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 17660 % U+20A9 WON SIGN; won  
 17661 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 17662 % U+20AB DONG SIGN; dong  
 17663 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 17664 % U+20AC EURO SIGN; \*Euro, euro  
 17665 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 17666 %\* \texteuro -> \EurDig (marvosym)  
 17667 %\* \texteuro -> \EURdig (marvosym)  
 17668 %\* \texteuro -> \EurHv (marvosym)  
 17669 %\* \texteuro -> \EURhv (marvosym)  
 17670 %\* \texteuro -> \EurCr (marvosym)  
 17671 %\* \texteuro -> \EURcr (marvosym)  
 17672 %\* \texteuro -> \EurTm (marvosym)  
 17673 %\* \texteuro -> \EURtm (marvosym)  
 17674 %\* \texteuro -> \Eur (marvosym)  
 17675 % U+20B0 GERMAN PENNY SIGN; \Deleatur (marvosym)  
 17676 \DeclareTextCommand{\textDeleatur}{PU}{\9040\260}%\* U+20B0  
 17677 %\* \textDeleatur -> \Denarius (marvosym)  
 17678 % U+20B1 PESO SIGN  
 17679 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 17680 % U+20B2 GUARANI SIGN  
 17681 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

#### 46.2.19 Letterlike Symbols: U+2100 to U+214F

17682 % U+2103 DEGREE CELSIUS; centigrade  
 17683 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 17684 % U+210F PLANCK CONSTANT OVER TWO PI; \hslash (AmS)  
 17685 \DeclareTextCommand{\texthslash}{PU}{\9041\017}%\* U+210F  
 17686 % U+2111 BLACK-LETTER CAPITAL I (=imaginary part); Ifraktur; \Im (LaTeX)  
 17687 \DeclareTextCommand{\textIm}{PU}{\9041\021}%\* U+2111  
 17688 % U+2113 SCRIPT SMALL L (=ell, liter); afii61289, lsquare; \ell (LaTeX)  
 17689 \DeclareTextCommand{\textell}{PU}{\9041\023}%\* U+2113  
 17690 % U+2116 NUMERO SIGN; \*afii61352, numero  
 17691 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 17692 % U+2117 SOUND RECORDING COPYRIGHT  
 17693 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 17694 % U+2118 SCRIPT CAPITAL P (=Weierstrass elliptic function);  
 17695 % weierstrass; \wp (LaTeX)  
 17696 \DeclareTextCommand{\textwpp}{PU}{\9041\030}%\* U+2118  
 17697 % U+211C BLACK-LETTER CAPITAL R (=real part); Rfraktur; \Re (LaTeX)  
 17698 \DeclareTextCommand{\textRe}{PU}{\9041\034}%\* U+211C  
 17699 % U+211E PRESCRIPTION TAKE; prescription

17700 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 17701 % U+2120 SERVICE MARK  
 17702 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 17703 % U+2122 TRADE MARK SIGN; trademark  
 17704 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 17705 % U+2126 OHM SIGN; Ohm, Omega  
 17706 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 17707 % U+2127 INVERTED OHM SIGN  
 17708 \DeclareTextCommand{\textmho}{PU}{\9041\047}%\* U+2127  
 17709 %\* \textmho -> \agemO (wasysym)  
 17710 % U+2129 TURNED GREEK SMALL LETTER IOTA; \riota (phonetic)  
 17711 \DeclareTextCommand{\textriota}{PU}{\9041\051}%\* U+2129  
 17712 % U+212B ANGSTROM SIGN; angstrom  
 17713 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 17714 % U+212E ESTIMATED SYMBOL; estimated  
 17715 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 17716 %\* \textestimated -> \EstimatedSign (marvosym)  
 17717 %\* \textestimated -> \Ecommerce (marvosym)  
 17718 % U+2132 TURNED CAPITAL F; \Finv (AmS)  
 17719 \DeclareTextCommand{\textFinv}{PU}{\9041\062}%\* U+2132  
 17720 % U+2135 ALEF SYMBOL; aleph; \aleph (LaTeX)  
 17721 \DeclareTextCommand{\textaleph}{PU}{\9041\065}%\* U+2135  
 17722 % U+2136 BET SYMBOL; \beth (AmS, MnSymbol)  
 17723 \DeclareTextCommand{\textbeth}{PU}{\9041\066}%\* U+2136  
 17724 % U+2137 GIMEL SYMBOL; \gimel (AmS, MnSymbol)  
 17725 \DeclareTextCommand{\textgimel}{PU}{\9041\067}%\* U+2137  
 17726 % U+2138 DALET SYMBOL; \daleth (AmS, MnSymbol)  
 17727 \DeclareTextCommand{\textdaleth}{PU}{\9041\070}%\* U+2138  
 17728 % U+213B FACSIMILE SIGN; \fax (marvosym)  
 17729 \DeclareTextCommand{\textfax}{PU}{\9041\073}%\* U+213B  
 17730 % U+2141 TURNED SANS-SERIF CAPITAL G (=game); \Game  
 17731 \DeclareTextCommand{\textGame}{PU}{\9041\101}%\* U+2141  
 17732 % U+214B TURNED AMPERSAND; \invamp (txfonts/pxfonts)  
 17733 \DeclareTextCommand{\textinvamp}{PU}{\9041\113}% U+214B  
 17734 %\* \textinvamp -> \bindnasrepma (stmaryrd)  
 17735 %\* \textinvamp -> \parr (cml)

#### 46.2.20 Number Forms: U+2150 to U+218F

17736 % U+2150 VULGAR FRACTION ONE SEVENTH  
 17737 \DeclareTextCommand{\textoneseventh}{PU}{\9041\120}% U+2150  
 17738 % U+2151 VULGAR FRACTION ONE NINTH  
 17739 \DeclareTextCommand{\textoneninth}{PU}{\9041\121}% U+2151  
 17740 % U+2152 VULGAR FRACTION ONE TENTH  
 17741 \DeclareTextCommand{\textonetenth}{PU}{\9041\122}% U+2152  
 17742 % U+2153 VULGAR FRACTION ONE THIRD; onethird  
 17743 \DeclareTextCommand{\textonethird}{PU}{\9041\123}% U+2153  
 17744 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds  
 17745 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124}% U+2154  
 17746 % U+2155 VULGAR FRACTION ONE FIFTH  
 17747 \DeclareTextCommand{\textonefifth}{PU}{\9041\125}% U+2155  
 17748 % U+2156 VULGAR FRACTION TWO FIFTHS  
 17749 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126}% U+2156  
 17750 % U+2157 VULGAR FRACTION THREE FIFTHS  
 17751 \DeclareTextCommand{\textthreefifths}{PU}{\9041\127}% U+2157

17752 % U+2158 VULGAR FRACTION FOUR FIFTHS  
 17753 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130}% U+2158  
 17754 % U+2159 VULGAR FRACTION ONE SIXTH  
 17755 \DeclareTextCommand{\textonesixth}{PU}{\9041\131}% U+2159  
 17756 % U+215A VULGAR FRACTION FIVE SIXTHS  
 17757 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132}% U+215A  
 17758 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth  
 17759 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133}% U+215B  
 17760 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths  
 17761 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134}% U+215C  
 17762 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths  
 17763 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135}% U+215D  
 17764 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveneighths  
 17765 \DeclareTextCommand{\textseveneighths}{PU}{\9041\136}% U+215E  
 17766 % U+2184 LATIN SMALL LETTER REVERSED C  
 17767 \DeclareTextCommand{\textrevc}{PU}{\9041\204}% U+2184  
 17768 % U+2189 VULGAR FRACTION ZERO THIRDS  
 17769 \DeclareTextCommand{\textzerthirds}{PU}{\9041\211}% U+2189

#### 46.2.21 Arrows: U+2190 to U+21FF

17770 % U+2190 LEFTWARDS ARROW; arrowleft  
 17771 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}%\* U+2190  
 17772 % U+2191 UPWARDS ARROW; arrowup  
 17773 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}%\* U+2191  
 17774 % U+2192 RIGHTWARDS ARROW; arrowright  
 17775 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}%\* U+2192  
 17776 %\* \textrightarrow -> \MVRightArrow (marvosym)  
 17777 %\* \textrightarrow -> \MVRightarrow (marvosym)  
 17778 % U+2193 DOWNWARDS ARROW; arrowdown  
 17779 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}%\* U+2193  
 17780 %\* \textdownarrow -> \MVAArrowDown (marvosym)  
 17781 %\* \textdownarrow -> \Force (marvosym)  
 17782 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftrightarrow (LaTeX)  
 17783 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\224}%\* U+2194  
 17784 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)  
 17785 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225}%\* U+2195  
 17786 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)  
 17787 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226}%\* U+2196  
 17788 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)  
 17789 \DeclareTextCommand{\textnearrow}{PU}{\9041\227}%\* U+2197  
 17790 %\* \textnearrow -> \textglobrise (tipa)  
 17791 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)  
 17792 \DeclareTextCommand{\textsearrow}{PU}{\9041\230}%\* U+2198  
 17793 %\* \textsearrow -> \textglobfall (tipa)  
 17794 % U+2199 SOUTH WEST ARROW; arrowdownleft; \swarrow (LaTeX)  
 17795 \DeclareTextCommand{\textswarrow}{PU}{\9041\231}%\* U+2199  
 17796 % U+219A LEFTWARDS ARROW WITH STROKE; \nleftarrow (AmS)  
 17797 \DeclareTextCommand{\textnleftarrow}{PU}{\9041\232}%\* U+219A  
 17798 % U+219B RIGHTWARDS ARROW WITH STROKE; \nrightarrow (AmS)  
 17799 \DeclareTextCommand{\textnrightarrow}{PU}{\9041\233}%\* U+219B  
 17800 % U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)  
 17801 \DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}%\* U+219E  
 17802 % \ntwoheadleftarrow (txfonts/pxfonts)  
 17803 \DeclareTextCommand{\textntwoheadleftarrow}{PU}{\9041\236\83\070}%\* U+219E U+0338

17804 % U+219F UPWARDS TWO HEADED ARROW; \twoheaduparrow (MnSymbol)  
17805 \DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}%\* U+219F  
17806 % U+21A0 RIGHTWARDS TWO HEADED ARROW;  
17807 % \twoheadrightarrow (AmS)  
17808 \DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}%\* U+21A0  
17809 % \ntwoheadrightarrow (txfonts/pxfonts)  
17810 \DeclareTextCommand{\textntwoheadrightarrow}{PU}{\9041\240\83\070}%\* U+21A0 U+0338  
17811 % U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (Mn-  
Symbol)  
17812 \DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}%\* U+21A1  
17813 % U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)  
17814 \DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}%\* U+21A2  
17815 % U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)  
17816 \DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}%\* U+21A3  
17817 % U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)  
17818 \DeclareTextCommand{\textmapsto}{PU}{\9041\246}%\* U+21A6  
17819 % U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)  
17820 \DeclareTextCommand{\texthookleftarrow}{PU}{\9041\251}%\* U+21A9  
17821 % U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)  
17822 \DeclareTextCommand{\texthookrightarrow}{PU}{\9041\252}%\* U+21AA  
17823 % U+21AB LEFTWARDS ARROW WITH LOOP; \looparrowleft (AmS)  
17824 \DeclareTextCommand{\textlooparrowleft}{PU}{\9041\253}%\* U+21AB  
17825 % U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)  
17826 \DeclareTextCommand{\textlooparrowright}{PU}{\9041\254}%\* U+21AC  
17827 % U+21AE LEFT RIGHT ARROW WITH STROKE; \leftrightarrow (AmS)  
17828 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\256}%\* U+21AE  
17829 % U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)  
17830 \DeclareTextCommand{\textlightning}{PU}{\9041\257}%\* U+21AF  
17831 %\* \textlightning -> \Lightning (marvosym)  
17832 % U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;  
17833 % \dls (mathabx)  
17834 \DeclareTextCommand{\textdls}{PU}{\9041\265}%\* U+21B5  
17835 % U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;  
17836 % \curvearrowleft (AmS)  
17837 \DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\266}%\* U+21B6  
17838 % U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowright (AmS)  
17839 \DeclareTextCommand{\textcurvearrowright}{PU}{\9041\267}%\* U+21B7  
17840 % U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; harpoonleft-  
barbup;  
17841 % \leftharpoonup (LaTeX)  
17842 \DeclareTextCommand{\textleftharpoonup}{PU}{\9041\274}%\* U+21BC  
17843 % U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;  
17844 % \leftharpoondown (LaTeX)  
17845 \DeclareTextCommand{\textleftharpoondown}{PU}{\9041\275}%\* U+21BD  
17846 % U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;  
17847 % \upharpoonright (AmS)  
17848 \DeclareTextCommand{\textupharpoonright}{PU}{\9041\276}%\* U+21BE  
17849 % U+21BF UPWARDS HARPOON WITH BARB LEFTWARDS;  
17850 % \upharpoonleft (AmS)  
17851 \DeclareTextCommand{\textupharpoonleft}{PU}{\9041\277}%\* U+21BF  
17852 % U+21C0 RIGHTWARDS HARPOON WITH BARB UPWARDS; harpoonright-  
barbup  
17853 % \rightharpoonup (LaTeX)  
17854 \DeclareTextCommand{\textrightharpoonup}{PU}{\9041\300}%\* U+21C0

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17855 % U+21C1 RIGHTWARDS HARPOON WITH BARB DOWNWARDS;
17856 % \rightharpoondown (LaTeX)
17857 \DeclareTextCommand{\textrightharpoondown}{PU}{\9041\301}%* U+21C1
17858 % U+21C2 DOWNWARDS HARPOON WITH BARB RIGHTWARDS;
17859 % \downharpoonright (AmS)
17860 \DeclareTextCommand{\textdownharpoonright}{PU}{\9041\302}%* U+21C2
17861 % U+21C3 DOWNWARDS HARPOON WITH BARB LEFTWARDS;
17862 % \downharpoonleft (AmS)
17863 \DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\303}%* U+21C3
17864 % U+21C4 RIGHTWARDS ARROW OVER LEFTWARDS ARROW;
17865 % arrowrightoverleft; \rightleftarrows (MnSymbol)
17866 \DeclareTextCommand{\textrightleftarrows}{PU}{\9041\304}%* U+21C4
17867 % U+21C5 UPWARDS ARROW LEFTWARDS OF DOWNWARDS ARROW; ar-
rowupleftofdown;
17868 % \updownarrows (MnSymbol)
17869 \DeclareTextCommand{\textupdownarrows}{PU}{\9041\305}%* U+21C5
17870 % U+21C6 LEFTWARDS ARROW OVER RIGHTWARDS ARROW; arrowleft-
overright;
17871 % \leftrightarrows (AmS)
17872 \DeclareTextCommand{\textleftrightarrows}{PU}{\9041\306}%* U+21C6
17873 % U+21C7 LEFTWARDS PAIRED ARROWS; \leftleftarrows (AmS)
17874 \DeclareTextCommand{\textleftleftarrows}{PU}{\9041\307}%* U+21C7
17875 % U+21C8 UPWARDS PAIRED ARROWS; \upuparrows (AmS)
17876 \DeclareTextCommand{\textupuparrows}{PU}{\9041\310}%* U+21C8
17877 % U+21C9 RIGHTWARDS PAIRED ARROWS; \rightrightarrows (AmS)
17878 \DeclareTextCommand{\textrightarrows}{PU}{\9041\311}%* U+21C9
17879 % U+21CA DOWNWARDS PAIRED ARROWS; \downdownarrows (AmS)
17880 \DeclareTextCommand{\textdowndownarrows}{PU}{\9041\312}%* U+21CA
17881 % U+21CB LEFTWARDS HARPOON OVER RIGHTWARDS HARPOON;
17882 % \leftrightharpoons (AmS);
17883 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\313}%* U+21CB
17884 % U+21CC RIGHTWARDS HARPOON OVER LEFTWARDS HARPOON;
17885 % \rightleftharpoons (LaTeX, AmS)
17886 \DeclareTextCommand{\textrightleftharpoons}{PU}{\9041\314}%* U+21CC
17887 % U+21CD LEFTWARDS DOUBLE ARROW WITH STROKE; arrowleftd-
blstroke;
17888 % \nLeftarrow (AmS)
17889 \DeclareTextCommand{\textnLeftarrow}{PU}{\9041\315}%* U+21CD
17890 % U+21CE LEFT RIGHT DOUBLE ARROW WITH STROKE; \nLeftrightarrow
(AmS)
17891 \DeclareTextCommand{\textnLeftrightarrow}{PU}{\9041\316}%* U+21CE
17892 % U+21CF RIGHTWARDS DOUBLE ARROW WITH STROKE; arrowrightd-
blstroke;
17893 % \nRightarrow (AmS)
17894 \DeclareTextCommand{\textnRightarrow}{PU}{\9041\317}%* U+21CF
17895 % U+21D0 LEFTWARDS DOUBLE ARROW; arrowdblleft, arrowleftdbl;
17896 % \Leftarrow (LaTeX)
17897 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\320}%* U+21D0
17898 % U+21D1 UPWARDS DOUBLE ARROW; arrowdblup; \Uparrow (LaTeX)
17899 \DeclareTextCommand{\textUparrow}{PU}{\9041\321}%* U+21D1
17900 % U+21D2 RIGHTWARDS DOUBLE ARROW; arrowdblright, dblarrowright;
17901 % \Rightarrow (LaTeX)
17902 \DeclareTextCommand{\textRightarrow}{PU}{\9041\322}%* U+21D2
17903 %* \textRightarrow -> \Conclusion (marvosym)

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17904 % U+21D3 DOWNWARDS DOUBLE ARROW; arrowdblDOWN; \Downarrow (LaTeX)  
 17905 \DeclareTextCommand{\textDownarrow}{PU}{\9041\323}%\* U+21D3  
 17906 % U+21D4 LEFT RIGHT DOUBLE ARROW; arrowdblboth;  
 17907 % \Leftrightarrow (LaTeX)  
 17908 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\324}%\* U+21D4  
 17909 %\* textLeftrightarrow -> \Equivalence (marvosym)  
 17910 % U+21D5 UP DOWN DOUBLE ARROW; \Updownarrow (LaTeX)  
 17911 \DeclareTextCommand{\textUpdownarrow}{PU}{\9041\325}%\* U+21D5  
 17912 % U+21D6 NORTH WEST DOUBLE ARROW; \Nwarrow (MnSymbol)  
 17913 \DeclareTextCommand{\textNwarrow}{PU}{\9041\326}%\* U+21D6  
 17914 % U+21D7 NORTH EAST DOUBLE ARROW; \Nearrow (MnSymbol)  
 17915 \DeclareTextCommand{\textNearrow}{PU}{\9041\327}%\* U+21D7  
 17916 % U+21D8 SOUTH EAST DOUBLE ARROW; \Searrow (MnSymbol)  
 17917 \DeclareTextCommand{\textSearrow}{PU}{\9041\330}%\* U+21D8  
 17918 % U+21D9 SOUTH WEST DOUBLE ARROW; \Swarrow (MnSymbol)  
 17919 \DeclareTextCommand{\textSwarrow}{PU}{\9041\331}%\* U+21D9  
 17920 % U+21DA LEFTWARDS TRIPLE ARROW; \Lleftarrow (AmS)  
 17921 \DeclareTextCommand{\textLleftarrow}{PU}{\9041\332}%\* U+21DA  
 17922 % U+21DB RIGHTWARDS TRIPLE ARROW; \Rrightarrow (MnSymbol)  
 17923 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\333}%\* U+21DB  
 17924 % U+21DC LEFTWARDS SQUIGGLE ARROW; \leftsquigarrow (mathabx)  
 17925 \DeclareTextCommand{\textleftsquigarrow}{PU}{\9041\334}%\* U+21DC  
 17926 % U+21DD RIGHTWARDS SQUIGGLE ARROW; \rightsquigarrow (mathabx)  
 17927 \DeclareTextCommand{\textright squigarrow}{PU}{\9041\335}%\* U+21DD  
 17928 % U+21E0 LEFTWARDS DASHED ARROW; arrowdashleft;  
 17929 % \dashleftarrow (AmS)  
 17930 \DeclareTextCommand{\textdashleftarrow}{PU}{\9041\340}%\* U+21E0  
 17931 %\* \textdashleftarrow -> \dashedleftarrow (MnSymbol)  
 17932 % U+21E1 UPWARDS DASHED ARROW; arrowdashup; \dasheduparrow (MnSymbol)  
 17933 \DeclareTextCommand{\textdasheduparrow}{PU}{\9041\341}%\* U+21E1  
 17934 % U+21E2 RIGHTWARDS DASHED ARROW; arrowdashright; \dashrightarrow (AmS)  
 17935 \DeclareTextCommand{\textdashrightarrow}{PU}{\9041\342}%\* U+21E2  
 17936 %\* \textdashrightarrow -> \dashedrightarrow (MnSymbol)  
 17937 % U+21E3 DOWNWARDS DASHED ARROW; arrowdashdown; \dasheddownarrow (MnSymbol)  
 17938 \DeclareTextCommand{\textdasheddownarrow}{PU}{\9041\343}%\* U+21E3  
 17939 % U+21E8 RIGHTWARDS WHITE ARROW; \pointer (wasysym)  
 17940 \DeclareTextCommand{\textpointer}{PU}{\9041\350}%\* U+21E8  
 17941 % U+21F5 DOWNWARDS ARROW LEFTWARDS OF UPWARDS ARROW;  
 17942 % \downuparrows (MnSymbol)  
 17943 \DeclareTextCommand{\textdownuparrows}{PU}{\9041\365}%\* U+21F5  
 17944 % U+21FD LEFTWARDS OPEN-HEADED ARROW; \leftarrowtriangle (stmaryrd)  
 17945 \DeclareTextCommand{\textleftarrowtriangle}{PU}{\9041\375}%\* U+21FD  
 17946 % U+21FE RIGHTWARDS OPEN-HEADED ARROW; \rightarrowtriangle (stmaryrd)  
 17947 \DeclareTextCommand{\textrightarrowtriangle}{PU}{\9041\376}%\* U+21FE  
 17948 % U+21FF LEFT RIGHT OPEN-HEADED ARROW; \leftrightarrows (stmaryrd)  
 17949 \DeclareTextCommand{\textleftrightarrows}{PU}{\9041\377}%\* U+21FF

#### 46.2.22 Mathematical Operators: U+2200 to U+22FF

17950 % U+2200 FOR ALL; forall; \forall (LaTeX)

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17951 \DeclareTextCommand{\textforall}{PU}{\9042\000}%* U+2200
17952 % U+2201 COMPLEMENT; \complement (AmS)
17953 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%* U+2201
17954 % U+2202 PARTIAL DIFFERENTIAL; partialdiff; \partial (LaTeX)
17955 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%* U+2202
17956 % U+2203 THERE EXISTS; existential; \exists (LaTeX)
17957 \DeclareTextCommand{\textexists}{PU}{\9042\003}%* U+2203
17958 % U+2204 THERE DOES NOT EXIST; \nexists (AmS)
17959 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%* U+2204
17960 % U+2205 EMPTY SET; emptyset; \emptyset (LaTeX), \varnothing (AmS)
17961 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%* U+2205
17962 %* \textemptyset -> \varnothing (AmS)
17963 % U+2206 INCREMENT; increment, Delta; \triangle (LaTeX)
17964 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%* U+2206
17965 % U+2207 NABLA; nabla, gradient; \nabla (LaTeX)
17966 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%* U+2207
17967 % U+2208 ELEMENT OF; element; \in (LaTeX)
17968 \DeclareTextCommand{\textin}{PU}{\9042\010}%* U+2208
17969 % U+2209 NOT AN ELEMENT OF; notelement, notelementof; \notin (LaTeX)
17970 \DeclareTextCommand{\textnotin}{PU}{\9042\011}%* U+2209
17971 % U+220A SMALL ELEMENT OF; \smallin (mathdesign)
17972 \DeclareTextCommand{\textsmallin}{PU}{\9042\012}%* U+220A
17973 % U+220B CONTAINS AS MEMBER; suchthat; \ni (LaTeX)
17974 \DeclareTextCommand{\textni}{PU}{\9042\013}%* U+220B
17975 %* \textni -> \owns (mathabx)
17976 % U+220C DOES NOT CONTAIN AS MEMBER; \notowner (mathabx)
17977 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%* U+220C
17978 %* \textnotowner -> \notni (txfonts/pxfonts)
17979 % U+220D SMALL CONTAINS AS MEMBER; \smallowns (mathdesign)
17980 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%* U+220D
17981 % U+220F N-ARY PRODUCT; \prod (LaTeX)
17982 \DeclareTextCommand{\textprod}{PU}{\9042\017}%* U+220F
17983 % U+2210 N-ARY COPRODUCT; \amalg (LaTeX)
17984 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%* U+2210
17985 % U+2211 N-ARY SUMMATION; summation; \sum (LaTeX)
17986 \DeclareTextCommand{\textsum}{PU}{\9042\021}%* U+2211
17987 % U+2212 MINUS SIGN; minus
17988 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212
17989 % U+2213 MINUS-OR-PLUS SIGN; minusplus; \mp (LaTeX)
17990 \DeclareTextCommand{\textmp}{PU}{\9042\023}%* U+2213
17991 % U+2214 DOT PLUS; \dotplus (AmS)
17992 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%* U+2214
17993 % U+2215 DIVISION SLASH; divisionslash; \Divides (marvosym)
17994 \DeclareTextCommand{\textDivides}{PU}{\9042\025}%* U+2215
17995 % \DividesNot (marvosym)
17996 \DeclareTextCommand{\textDividesNot}{PU}{\9042\025\9040\322}%* U+2215 U+20D2
17997 % U+2216 SET MINUS; \setminus (LaTeX)
17998 \DeclareTextCommand{\textsetminus}{PU}{\9042\026}%* U+2216
17999 % U+2217 ASTERISK OPERATOR; asteriskmath; \ast (LaTeX)
18000 \DeclareTextCommand{\textast}{PU}{\9042\027}%* U+2217
18001 % U+2218 RING OPERATOR; \circ (LaTeX)
18002 \DeclareTextCommand{\textcirc}{PU}{\9042\030}%* U+2218
18003 % U+2219 BULLET OPERATOR; bulletoperator; \bullet (LaTeX)
18004 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\031}% U+2219

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18005 % U+221A SQUARE ROOT; radical
18006 \DeclareTextCommand{\textsurd}{PU}{\9042\032}%* U+221A
18007 % U+221D PROPORTIONAL TO; proportional; \propto (LaTeX)
18008 \DeclareTextCommand{\textpropto}{PU}{\9042\035}%* U+221D
18009 %* \textpropto -> \varprop (wasysym)
18010 % U+221E INFINITY; infinity; \infty (LaTeX)
18011 \DeclareTextCommand{\textinfty}{PU}{\9042\036}%* U+221E
18012 % U+2220 ANGLE; angle; \angle (LaTeX)
18013 \DeclareTextCommand{\textangle}{PU}{\9042\040}%* U+2220
18014 % U+2221 MEASURED ANGLE; \measuredangle (mathabx, MnSymbol)
18015 \DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}%* U+2221
18016 % U+2222 SPHERICAL ANGLE; \sphericalangle (AmS)
18017 \DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}%* U+2222
18018 %* \textsphericalangle -> \varangle (wasysym)
18019 %* \textsphericalangle -> \Anglesign (marvosym)
18020 %* \textsphericalangle -> \AngleSign (marvosym)
18021 % U+2223 DIVIDES; divides; \mid (LaTeX)
18022 \DeclareTextCommand{\textmid}{PU}{\9042\043}%* U+2223
18023 % U+2224 DOES NOT DIVIDE; \nmid (AmS)
18024 \DeclareTextCommand{\textnmid}{PU}{\9042\044}%* U+2224
18025 %* \textnmid -> \notdivides (mathabx)
18026 % U+2225 PARALLEL TO; parallel; \parallel (LaTeX)
18027 \DeclareTextCommand{\textparallel}{PU}{\9042\045}%* U+2225
18028 % U+2226 NOT PARALLEL TO; notparallel; \nparallel (AmS)
18029 \DeclareTextCommand{\textnparallel}{PU}{\9042\046}%* U+2226
18030 %* \textnparallel -> nUpdownline (MnSymbol)
18031 % U+2227 LOGICAL AND; logicaland; \wedge (LaTeX)
18032 \DeclareTextCommand{\textwedge}{PU}{\9042\047}%* U+2227
18033 % \owedge (stmaryrd)
18034 \DeclareTextCommand{\textowedge}{PU}{\9042\047\9040\335}%* U+2227 U+20DD
18035 %* \textowedge -> \varowedge (stmaryrd)
18036 % U+2228 LOGICAL OR; logicalor; \vee (LaTeX)
18037 \DeclareTextCommand{\textvee}{PU}{\9042\050}%* U+2228
18038 % \ovee (stmaryrd)
18039 \DeclareTextCommand{\textovee}{PU}{\9042\050\9040\335}%* U+2228 U+20DD
18040 %* \textovee -> \varovee (stmaryrd)
18041 % U+2229 INTERSECTION; intersection; \cap (LaTeX)
18042 \DeclareTextCommand{\textcap}{PU}{\9042\051}%* U+2229
18043 % U+222A UNION; union; \cup (LaTeX)
18044 \DeclareTextCommand{\textcup}{PU}{\9042\052}%* U+222A
18045 % U+222B INTEGRAL; integral; \int (LaTeX)
18046 \DeclareTextCommand{\textint}{PU}{\9042\053}%* U+222B
18047 %* \textint -> \varint (wasysym)
18048 % U+222C DOUBLE INTEGRAL; dblintegral; \iint (AmS)
18049 \DeclareTextCommand{\textiint}{PU}{\9042\054}%* U+222C
18050 % U+222D TRIPLE INTEGRAL; \iiint (AmS)
18051 \DeclareTextCommand{\textiiint}{PU}{\9042\055}%* U+222D
18052 % U+222E CONTOUR INTEGRAL; contourintegral; \oint (LaTeX)
18053 \DeclareTextCommand{\textoint}{PU}{\9042\056}%* U+222E
18054 %* \textoint -> \varoint (wasysym)
18055 % U+222F SURFACE INTEGRAL; \oiint (wasysym)
18056 \DeclareTextCommand{\textoiint}{PU}{\9042\057}%* U+222F
18057 % U+2232 CLOCKWISE CONTOUR INTEGRAL;
18058 % \ointclockwise (txfonts/pxfonts)

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18059 \DeclareTextCommand{\textointclockwise}{PU}{\9042\062}%* U+2232
18060 % U+2233 ANTICLOCKWISE CONTOUR INTEGRAL; \ointctrackwise (tx-
      fonts/pxfonts)
18061 \DeclareTextCommand{\textointctrackwise}{PU}{\9042\063}%* U+2233
18062 % U+2234 THEREFORE; therefore; \therefore (AmS)
18063 \DeclareTextCommand{\texttherefore}{PU}{\9042\064}%* U+2234
18064 %* \texttherefore -> uptherefore (MnSymbol)
18065 % U+2235 BECAUSE; because; \because (AmS)
18066 \DeclareTextCommand{\textbecause}{PU}{\9042\065}%* U+2235
18067 %* \textbecause -> \downtherefore (MnSymbol)
18068 % U+2236 RATIO; \vdotdot (MnSymbol)
18069 \DeclareTextCommand{\textvdotdot}{PU}{\9042\066}%* U+2236
18070 % U+2237 PROPORTION; \squaredots (MnSymbol)
18071 \DeclareTextCommand{\textsquaredots}{PU}{\9042\067}%* U+2237
18072 % U+2238 DOT MINUS; \dotminus (MnSymbol)
18073 \DeclareTextCommand{\textdotminus}{PU}{\9042\070}%* U+2238
18074 %* \textdotminus -> \textdotdiv (mathabx)
18075 % U+2239 EXCESS; \eqcolon (txfonts/pxfonts)
18076 \DeclareTextCommand{\texteqcolon}{PU}{\9042\071}%* U+2239
18077 % U+223C TILDE OPERATOR; similar; \sim (LaTeX)
18078 \DeclareTextCommand{\textsim}{PU}{\9042\074}%* U+223C
18079 %* \textsim -> \AC (wasysym)
18080 % U+223D REVERSED TILDE; reversedtilde; \backsim (AmS)
18081 \DeclareTextCommand{\textbacksim}{PU}{\9042\075}%* U+223D
18082 % \nbacksim (txfonts/pxfonts)
18083 \DeclareTextCommand{\textnbacksim}{PU}{\9042\075\83\070}%* U+223D U+0338
18084 % U+2240 WREATH PRODUCT; \wr (LaTeX)
18085 \DeclareTextCommand{\textwr}{PU}{\9042\100}%* U+2240
18086 %* \textwr -> \wreath (MnSymbol)
18087 % U+2241 NOT TILDE; \nsim (AmS)
18088 \DeclareTextCommand{\textnsim}{PU}{\9042\101}%* U+2241
18089 % U+2242 MINUS TILDE; \eqsim (MnSymbol)
18090 \DeclareTextCommand{\texteqsim}{PU}{\9042\102}%* U+2242
18091 % \neqsim (MnSymbol)
18092 \DeclareTextCommand{\textneqsim}{PU}{\9042\102\83\070}%* U+2242 U+0338
18093 % U+2243 ASYMPTOTICALLY EQUAL TO; asymptoticallyequal; \simeq (La-
      TeX)
18094 \DeclareTextCommand{\textsimeq}{PU}{\9042\103}%* U+2243
18095 % U+2244 NOT ASYMPTOTICALLY EQUAL TO; \nsimeq (txfonts/pxfonts)
18096 \DeclareTextCommand{\textnsimeq}{PU}{\9042\104}%* U+2244
18097 % U+2245 APPROXIMATELY EQUAL TO; approximatelyequal; \cong (LaTeX)
18098 \DeclareTextCommand{\textcong}{PU}{\9042\105}%* U+2245
18099 % U+2247 NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO;
18100 % \ncong (AmS)
18101 \DeclareTextCommand{\textncong}{PU}{\9042\107}%* U+2247
18102 % U+2248 ALMOST EQUAL TO; approxequal; \approx (LaTeX)
18103 \DeclareTextCommand{\textapprox}{PU}{\9042\110}%* U+2248
18104 % U+2249 NOT ALMOST EQUAL TO; \napprox (txfonts/pxfonts)
18105 \DeclareTextCommand{\textnapprox}{PU}{\9042\111}%* U+2249
18106 %* \textnapprox -> \nthickapprox (txfonts/pxfonts)
18107 % U+224A ALMOST EQUAL OR EQUAL TO; \approxeq (AmS)
18108 \DeclareTextCommand{\textapproxeq}{PU}{\9042\112}%* U+224A
18109 % \napproxeq (txfonts/pxfonts)
18110 \DeclareTextCommand{\textnapproxeq}{PU}{\9042\112\83\070}%* U+224A U+0338

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18111 % U+224B TRIPLE TILDE; \triplesim (MnSymbol)
18112 \DeclareTextCommand{\texttriplesim}{PU}{\9042\113}%* U+224B
18113 %* \texttriplesim -> \VHF (wasysym)
18114 % \ntriplesim (MnSymbol)
18115 \DeclareTextCommand{\textntriplesim}{PU}{\9042\113\83\070}%* U+224B U+0338
18116 % U+224C ALL EQUAL TO; allequal; \backcong (MnSymbol)
18117 \DeclareTextCommand{\textbackcong}{PU}{\9042\114}%* U+224C
18118 % \nbackcong (MnSymbol)
18119 \DeclareTextCommand{\textnbackcong}{PU}{\9042\114\83\070}%* U+224C U+0338
18120 % U+224D EQUIVALENT TO; \asymp (LaTeX)
18121 \DeclareTextCommand{\textasymp}{PU}{\9042\115}%* U+224D
18122 % \nasymp (txfonts/pxfonts)
18123 \DeclareTextCommand{\textnasymp}{PU}{\9042\115\83\070}%* U+224D U+0338
18124 %* \textnasymp -> \notasym (mathabx)
18125 % U+224E GEOMETRICALLY EQUIVALENT TO; \Bumpeq (AmS)
18126 \DeclareTextCommand{\textBumpeq}{PU}{\9042\116}%* U+224E
18127 % \nBumpeq (txfonts/pxfonts)
18128 \DeclareTextCommand{\textnBumpeq}{PU}{\9042\116\83\070}%* U+224E U+0338
18129 % U+224F DIFFERENCE BETWEEN; \bumpeq (AmS)
18130 \DeclareTextCommand{\textbumpeq}{PU}{\9042\117}%* U+224F
18131 % \nbumpeq (txfonts/pxfonts)
18132 \DeclareTextCommand{\textnbumpeq}{PU}{\9042\117\83\070}%* U+224F U+0338
18133 % U+2250 APPROACHES THE LIMIT; approaches; \doteq (LaTeX)
18134 \DeclareTextCommand{\textdoteq}{PU}{\9042\120}%* U+2250
18135 % \ndoteq (MnSymbol)
18136 \DeclareTextCommand{\textndoteq}{PU}{\9042\120\83\070}%* U+2250 U+0338
18137 % U+2251 GEOMETRICALLY EQUAL TO; geometricallyequal;
18138 % \doteqdot (AmS)
18139 \DeclareTextCommand{\textdoteqdot}{PU}{\9042\121}%* U+2251
18140 %* \textdoteqdot -> \Doteq (MnSymbol)
18141 % \nDoteq (MnSymbol)
18142 \DeclareTextCommand{\textnDoteq}{PU}{\9042\121\83\070}%* U+2251 U+0338
18143 % U+2252 APPROXIMATELY EQUAL TO OR THE IMAGE OF; approx-
qualorimage;
18144 % \fallingdotseq (AmS)
18145 \DeclareTextCommand{\textfallingdotseq}{PU}{\9042\122}%* U+2252
18146 % \nfallingdotseq (MnSymbol)
18147 \DeclareTextCommand{\textnfallingdotseq}{PU}{\9042\122\83\070}%* U+2252 U+0338
18148 % U+2253 IMAGE OF OR APPROXIMATELY EQUAL TO; imageorapproxi-
matelyequal;
18149 % \risingdotseq (AmS)
18150 \DeclareTextCommand{\textrisingdotseq}{PU}{\9042\123}%* U+2253
18151 % \nrisingdotseq (MnSymbol)
18152 \DeclareTextCommand{\textnrisingdotseq}{PU}{\9042\123\83\070}%* U+2253 U+0338
18153 % U+2254 COLON EQUALS; \colonequals (colonequals)
18154 \DeclareTextCommand{\textcolonequals}{PU}{\9042\124}%* U+2254
18155 % U+2255 EQUALS COLON; \equalscolon (colonequals)
18156 \DeclareTextCommand{\textequalscolon}{PU}{\9042\125}%* U+2255
18157 % U+2256 RING IN EQUAL TO; \eqcirc (AmS)
18158 \DeclareTextCommand{\texteqcirc}{PU}{\9042\126}%* U+2256
18159 % \neqcirc (MnSymbol)
18160 \DeclareTextCommand{\textneqcirc}{PU}{\9042\126\83\070}%* U+2256 U+0338
18161 % U+2257 RING EQUAL TO; \circeq (AmS)
18162 \DeclareTextCommand{\textcirceq}{PU}{\9042\127}%* U+2257

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18163 % \ncirceq (MnSymbol)
18164 \DeclareTextCommand{\textncirceq}{PU}{\9042\127\83\070}%* U+2257 U+0338
18165 % U+2259 ESTIMATES; \hateq (MnSymbol)
18166 \DeclareTextCommand{\texthateq}{PU}{\9042\131}%* U+2259
18167 %* \texthateq -> \corresponds (mathabx)
18168 %* \texthateq -> \Corresponds (marvosym)
18169 % \nhateq (MnSymbol)
18170 \DeclareTextCommand{\textnhateq}{PU}{\9042\131\83\070}%* U+2259 U+0338
18171 % U+225C DELTA EQUAL TO; \triangleeq (AmS)
18172 \DeclareTextCommand{\texttriangleeq}{PU}{\9042\134}%* U+225C
18173 % U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)
18174 \DeclareTextCommand{\textneq}{PU}{\9042\140}%* U+2260
18175 \DeclareTextCommand{\textne}{PU}{\9042\140}%* U+2260
18176 %* \textneq -> \nequal (MnSymbol)
18177 % U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)
18178 \DeclareTextCommand{\textequiv}{PU}{\9042\141}%* U+2261
18179 %* \textequiv -> \Congruent (marvosym)
18180 % U+2262 NOT IDENTICAL TO; notidentical; \notequiv (txfonts/pxfonts)
18181 \DeclareTextCommand{\textnequiv}{PU}{\9042\142}%* U+2262
18182 %* \textnequiv -> \NotCongruent (marvosym)
18183 %* \textnequiv -> \notequiv (mathabx)
18184 % U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)
18185 \DeclareTextCommand{\textleq}{PU}{\9042\144}%* U+2264
18186 \DeclareTextCommand{\textle}{PU}{\9042\144}%* U+2264
18187 %* \textleq -> \LessOrEqual (marvosym)
18188 % U+2265 GREATER-THAN OR EQUAL TO; greaterequal;
18189 % \ge (LaTeX), \geq (LaTeX)
18190 \DeclareTextCommand{\textgeq}{PU}{\9042\145}%* U+2265
18191 \DeclareTextCommand{\textge}{PU}{\9042\145}%* U+2265
18192 %* \textgeq -> \LargerOrEqual (marvosym)
18193 % U+2266 LESS-THAN OVER EQUAL TO; lessoverequal; \leqq (AmS)
18194 \DeclareTextCommand{\textleqq}{PU}{\9042\146}%* U+2266
18195 % \nleqq (txfonts/pxfonts)
18196 \DeclareTextCommand{\textnleqq}{PU}{\9042\146\83\070}%* U+2266 U+0338
18197 % U+2267 GREATER-THAN OVER EQUAL TO; greateroverequal; \geqq (AmS)
18198 \DeclareTextCommand{\textgeqq}{PU}{\9042\147}%* U+2267
18199 % \ngeqq (txfonts/pxfonts)
18200 \DeclareTextCommand{\textngeqq}{PU}{\9042\147\83\070}%* U+2267 U+0338
18201 % U+2268 LESS-THAN BUT NOT EQUAL TO; \lneqq (AmS)
18202 \DeclareTextCommand{\textlneqq}{PU}{\9042\150}%* U+2268
18203 % U+2269 GREATER-THAN BUT NOT EQUAL TO; \gneqq (AmS)
18204 \DeclareTextCommand{\textgneqq}{PU}{\9042\151}%* U+2269
18205 % U+226A MUCH LESS-THAN; muchless; \ll (LaTeX)
18206 \DeclareTextCommand{\textll}{PU}{\9042\152}%* U+226A
18207 % \nll (txfonts/pxfonts)
18208 \DeclareTextCommand{\textnll}{PU}{\9042\152\83\070}%* U+226A U+0338
18209 % U+226B MUCH GREATER-THAN; muchgreater; \gg (LaTeX)
18210 \DeclareTextCommand{\textgg}{PU}{\9042\153}%* U+226B
18211 % \ngg (txfonts/pxfonts)
18212 \DeclareTextCommand{\textngg}{PU}{\9042\153\83\070}%* U+226B U+0338
18213 % U+226C BETWEEN; \between (AmS)
18214 \DeclareTextCommand{\textbetween}{PU}{\9042\154}%* U+226C
18215 % U+226E NOT LESS-THAN; notless; \nless (AmS)
18216 \DeclareTextCommand{\textnless}{PU}{\9042\156}%* U+226E

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18217 % U+226F NOT GREATER-THAN; notgreater; \ngtr (AmS)  
18218 \DeclareTextCommand{\textngtr}{PU}{\9042\157}%\* U+226F  
18219 % U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal;  
18220 % \nleq (AmS)  
18221 \DeclareTextCommand{\textnleq}{PU}{\9042\160}%\* U+2270  
18222 % U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternorequal;  
18223 \ngeq (AmS)  
18224 \DeclareTextCommand{\textngeq}{PU}{\9042\161}%\* U+2271  
18224 % U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent; \lessim (AmS)  
18225 \DeclareTextCommand{\textlessim}{PU}{\9042\162}%\* U+2272  
18226 %\* \textlessim -> \apprle (wasysym)  
18227 % U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent; \gtrsim (AmS)  
18228 \DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%\* U+2273  
18229 %\* \textgtrsim -> \apprge (wasysym)  
18230 % U+2274 NEITHER LESS-THAN NOR EQUIVALENT TO; \nlessim (tx-fonts/pxfonts)  
18231 \DeclareTextCommand{\textnlessim}{PU}{\9042\164}%\* U+2274  
18232 % U+2275 NEITHER GREATER-THAN NOR EQUIVALENT TO; \ngtrsim (tx-fonts/pxfonts)  
18233 \DeclareTextCommand{\textngtrsim}{PU}{\9042\165}%\* U+2275  
18234 % U+2276 LESS-THAN OR GREATER-THAN; lessorgreater; \lessgtr (AmS)  
18235 \DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%\* U+2276  
18236 % U+2277 GREATER-THAN OR LESS-THAN; greaterorless; \gtrless (AmS)  
18237 \DeclareTextCommand{\textgtrless}{PU}{\9042\167}%\* U+2277  
18238 % U+2278 NEITHER LESS-THAN NOR GREATER-THAN; \ngtrless (tx-fonts/pxfonts)  
18239 \DeclareTextCommand{\textngtrless}{PU}{\9042\170}%\* U+2278  
18240 % U+2279 NEITHER GREATER-THAN NOR LESS-THAN; \nlessgtr (tx-fonts/pxfonts)  
18241 \DeclareTextCommand{\textnlessgtr}{PU}{\9042\171}%\* U+2279  
18242 % U+227A PRECEDES; precedes; \prec (LaTeX)  
18243 \DeclareTextCommand{\textprec}{PU}{\9042\172}%\* U+227A  
18244 % U+227B SUCCEEDS; succeeds; \succ (LaTeX)  
18245 \DeclareTextCommand{\textsucc}{PU}{\9042\173}%\* U+227B  
18246 % U+227C PRECEDES OR EQUAL TO; \preccurlyeq (AmS)  
18247 \DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%\* U+227C  
18248 % U+227D SUCCEEDS OR EQUAL TO; \succcurlyeq (AmS)  
18249 \DeclareTextCommand{\textsucccurlyeq}{PU}{\9042\175}%\* U+227D  
18250 % U+227E PRECEDES OR EQUIVALENT TO; \precsim (AmS)  
18251 \DeclareTextCommand{\textprecsim}{PU}{\9042\176}%\* U+227E  
18252 % \nprecsim (txfonts/pxfonts)  
18253 \DeclareTextCommand{\textnprecsim}{PU}{\9042\176\83\070}%\* U+227E U+0338  
18254 % U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)  
18255 \DeclareTextCommand{\textsuccsim}{PU}{\9042\177}%\* U+227F  
18256 % \nsuccsim (txfonts/pxfonts)  
18257 \DeclareTextCommand{\textnsuccsim}{PU}{\9042\177\83\070}%\* U+227F U+0338  
18258 % U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)  
18259 \DeclareTextCommand{\textnprec}{PU}{\9042\200}%\* U+2280  
18260 % U+2281 DOES NOT SUCCEED; notsucceds; \nsucc (AmS)  
18261 \DeclareTextCommand{\textnsucc}{PU}{\9042\201}%\* U+2281  
18262 % U+2282 SUBSET OF; propersubset; \subset (LaTeX)  
18263 \DeclareTextCommand{\textsubset}{PU}{\9042\202}%\* U+2282  
18264 % U+2283 SUPERSET OF; propersuperset; \supset (LaTeX)

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18265 \DeclareTextCommand{\textsupset}{PU}{\9042\203}%* U+2283
18266 % U+2284 NOT A SUBSET OF; notsubset; \nsubset (mathabx)
18267 \DeclareTextCommand{\textnsubset}{PU}{\9042\204}%* U+2284
18268 % U+2285 NOT A SUPERSET OF; notsuperset; \nsupset (mathabx)
18269 \DeclareTextCommand{\textnsupset}{PU}{\9042\205}%* U+2285
18270 % U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subseteq (LaTeX)
18271 \DeclareTextCommand{\textsubseteq}{PU}{\9042\206}%* U+2286
18272 % U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supseteq (LaTeX)
18273 \DeclareTextCommand{\textsupseteq}{PU}{\9042\207}%* U+2287
18274 % U+2288 NEITHER A SUBSET OF NOR EQUAL TO; \nsubseteq (AmS)
18275 \DeclareTextCommand{\textnsubsupseteq}{PU}{\9042\210}%* U+2288
18276 % U+2289 NEITHER A SUPERSET OF NOR EQUAL TO; \nsupseteq (AmS)
18277 \DeclareTextCommand{\textnsupseteq}{PU}{\9042\211}%* U+2289
18278 % U+228A SUBSET OF WITH NOT EQUAL TO; subsetnotequal; \subset-
      neq (AmS)
18279 \DeclareTextCommand{\textsubsupseteq}{PU}{\9042\212}%* U+228A
18280 % U+228B SUPERSET OF WITH NOT EQUAL TO; supersetnotequal; \supset-
      neq (AmS)
18281 \DeclareTextCommand{\textsupsetneq}{PU}{\9042\213}%* U+228B
18282 % U+228D MULTISSET MULTIPLICATION; \cupdot (MnSymbol)
18283 \DeclareTextCommand{\textcupdot}{PU}{\9042\215}%* U+228D
18284 % U+228E MULTISSET UNION; \cupplus (MnSymbol)
18285 \DeclareTextCommand{\textcupplus}{PU}{\9042\216}%* U+228E
18286 % U+228F SQUARE IMAGE OF; \sqsubset (latexsym, ...)
18287 \DeclareTextCommand{\textsqsubset}{PU}{\9042\217}%* U+228F
18288 % \nsqsubset (txfonts/pxfonts)
18289 \DeclareTextCommand{\textnssqsubset}{PU}{\9042\217\83\070}%* U+228F U+0338
18290 % U+2290 SQUARE ORIGINAL OF; \sqsupset (latexsym, ...)
18291 \DeclareTextCommand{\textsqsupset}{PU}{\9042\220}%* U+2290
18292 % \nsqsupset (txfonts/pxfonts)
18293 \DeclareTextCommand{\textnssqsupset}{PU}{\9042\220\83\070}%* U+2290 U+0338
18294 % U+2291 SQUARE IMAGE OF OR EQUAL TO; \sqsubsupseteq (LaTeX)
18295 \DeclareTextCommand{\textsqsubsupseteq}{PU}{\9042\221}%* U+2291
18296 % \nsqsubsupseteq (txfonts/pxfonts)
18297 \DeclareTextCommand{\textnssqsubsupseteq}{PU}{\9042\221\83\070}%* U+2291 U+0338
18298 % U+2292 SQUARE ORIGINAL OF OR EQUAL TO; \sqsupseteq (LaTeX)
18299 \DeclareTextCommand{\textsqsupseteq}{PU}{\9042\222}%* U+2292
18300 % \nsqsupseteq (txfonts/pxfonts)
18301 \DeclareTextCommand{\textnssqsupseteq}{PU}{\9042\222\83\070}%* U+2292 U+0338
18302 % U+2293 SQUARE CAP; \sqcap (LaTeX)
18303 \DeclareTextCommand{\textsqcap}{PU}{\9042\223}%* U+2293
18304 % U+2294 SQUARE CUP; \sqcup (LaTeX)
18305 \DeclareTextCommand{\textsqcup}{PU}{\9042\224}%* U+2294
18306 % U+2295 CIRCLED PLUS; circleplus; \oplus (LaTeX)
18307 \DeclareTextCommand{\textoplus}{PU}{\9042\225}%* U+2295
18308 %* \textoplus -> \varoplus (stmaryrd)
18309 % U+2296 CIRCLED MINUS; minuscircle; \ominus (LaTeX)
18310 \DeclareTextCommand{\textominus}{PU}{\9042\226}%* U+2296
18311 %* \textominus -> \varominus (stmaryrd)
18312 % U+2297 CIRCLED TIMES; circlemultiply; \otimes (LaTeX)
18313 \DeclareTextCommand{\textotimes}{PU}{\9042\227}%* U+2297
18314 %* \textotimes -> \varotimes (stmaryrd)
18315 % U+2298 CIRCLED DIVISION SLASH; \oslash (LaTeX)
18316 \DeclareTextCommand{\textoslash}{PU}{\9042\230}%* U+2298

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18317 %* \textoslash -> \varoslash (stmaryrd)
18318 % U+2299 CIRCLED DOT OPERATOR; circle(d?)ot; \odot (LaTeX)
18319 \DeclareTextCommand{\textodot}{PU}{\9042\231}%* U+2299
18320 %* \textodot -> \varodot (stmaryrd)
18321 % U+229A CIRCLED RING OPERATOR; \circledcirc (AmS)
18322 \DeclareTextCommand{\textcircledcirc}{PU}{\9042\232}%* U+229A
18323 %* \textcircledcirc -> \ocirc (mathabx)
18324 %* \textcircledcirc -> \varocircle (stmaryrd)
18325 % U+229B CIRCLED ASTERISK OPERATOR; \circledast (AmS)
18326 \DeclareTextCommand{\textcircledast}{PU}{\9042\233}%* U+229B
18327 %* \textcircledast -> \varoast (stmaryrd)
18328 %* \textcircledast -> \oasterisk (mathabx)
18329 % U+229D CIRCLED DASH; \circleddash (AmS)
18330 \DeclareTextCommand{\textcircleddash}{PU}{\9042\235}%* U+229D
18331 % U+229E SQUARED PLUS; \boxplus (AmS)
18332 \DeclareTextCommand{\textboxplus}{PU}{\9042\236}%* U+229E
18333 % U+229F SQUARED MINUS; \boxminus (AmS)
18334 \DeclareTextCommand{\textboxminus}{PU}{\9042\237}%* U+229F
18335 % U+22A0 SQUARED TIMES; \boxtimes (AmS)
18336 \DeclareTextCommand{\textboxtimes}{PU}{\9042\240}%* U+22A0
18337 % U+22A1 SQUARED DOT OPERATOR; \boxdot (AmS)
18338 \DeclareTextCommand{\textboxdot}{PU}{\9042\241}%* U+22A1
18339 % U+22A2 RIGHT TACK; \vdash (LaTeX)
18340 \DeclareTextCommand{\textvdash}{PU}{\9042\242}%* U+22A2
18341 %* \textvdash -> \rightvdash (MnSymbol)
18342 % U+22A3 LEFT TACK; tackleft; \dashv (LaTeX)
18343 \DeclareTextCommand{\textdashv}{PU}{\9042\243}%* U+22A3
18344 %* \textdashv -> \leftvdash (MnSymbol)
18345 % \ndashv (mathabx)
18346 \DeclareTextCommand{\textndashv}{PU}{\9042\243\83\070}%* U+22A3 U+0338
18347 %* \textndashv -> \leftvdash (MnSymbol)
18348 % U+22A4 DOWN TACK (=top); tackdown; \top (LaTeX)
18349 \DeclareTextCommand{\texttop}{PU}{\9042\244}%* U+22A4
18350 %* \texttop -> \downvdash (MnSymbol)
18351 % \ndownvdash (MnSymbol)
18352 \DeclareTextCommand{\textndownvdash}{PU}{\9042\244\83\070}%* U+22A4 U+0338
18353 % U+22A5 UP TACK (=base, bottom); \bot (LaTeX)
18354 \DeclareTextCommand{\textbot}{PU}{\9042\245}%* U+22A5
18355 %* \textbot -> \upvdash (MnSymbol)
18356 % \nupvdash (MnSymbol)
18357 \DeclareTextCommand{\textnupvdash}{PU}{\9042\245\83\070}%* U+22A5 U+0338
18358 %* \textnupvdash -> \nperp (MnSymbol)
18359 % U+22A8 TRUE; \vDash (AmS)
18360 \DeclareTextCommand{\textvDash}{PU}{\9042\250}%* U+22A8
18361 %* \textvDash -> \models (LaTeX)
18362 %* \textvDash -> \rightmodels (MnSymbol)
18363 % U+22A9 FORCES; \Vdash (AmS)
18364 \DeclareTextCommand{\textVdash}{PU}{\9042\251}%* U+22A9
18365 %* \textVdash -> \rightVdash (MnSymbol)
18366 % U+22AA TRIPLE VERTICAL BAR RIGHT TURNSTILE; \Vvdash (AmS)
18367 \DeclareTextCommand{\textVvdash}{PU}{\9042\252}%* U+22AA
18368 % \nVdash (mathabx)
18369 \DeclareTextCommand{\textnVdash}{PU}{\9042\252\83\070}%* U+22AA U+0338
18370 % U+22AB DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE;

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18371 % \VDash (mathabx)
18372 \DeclareTextCommand{\textVDash}{PU}{\9042\253}%* U+22AB
18373 %* \textVDash -> \rightModels (MnSymbol)
18374 % U+22AC DOES NOT PROVE; \nvDash (AmS)
18375 \DeclareTextCommand{\textnvDash}{PU}{\9042\254}%* U+22AC
18376 %* \textnvDash -> \nrightvdash (MnSymbol)
18377 % U+22AD NOT TRUE; \nVDash (AmS)
18378 \DeclareTextCommand{\textnvDash}{PU}{\9042\255}%* U+22AD
18379 %* \textnvDash -> \nrightmodels (MnSymbol)
18380 %* \textnvDash -> \nmodels (MnSymbol)
18381 % U+22AE DOES NOT FORCE; \nVdash (txfonts/pxfonts)
18382 \DeclareTextCommand{\textnVdash}{PU}{\9042\256}%* U+22AE
18383 %* \textnVdash -> \nrightVdash (MnSymbol)
18384 % U+22AF NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURN-
      STILE; \nVDash (AmS)
18385 \DeclareTextCommand{\textnVDash}{PU}{\9042\257}%* U+22AF
18386 %* \textnVDash -> \nrightModels (MnSymbol)
18387 % U+22B2 NORMAL SUBGROUP OF; \lhd (latexsym, ...)
18388 \DeclareTextCommand{\textlhd}{PU}{\9042\262}%* U+22B2
18389 %* \textlhd -> \lessclosed (MnSymbol)
18390 % U+22B3 CONTAINS AS NORMAL SUBGROUP; \rhd (latexsym, ...)
18391 \DeclareTextCommand{\textrhd}{PU}{\9042\263}%* U+22B3
18392 %* \textrhd -> \gtrclosed (MnSymbol)
18393 % U+22B4 NORMAL SUBGROUP OF OR EQUAL TO; \unlhd (latexsym, ...)
18394 \DeclareTextCommand{\textunlhd}{PU}{\9042\264}%* U+22B4
18395 %* \textunlhd -> \leqclosed (MnSymbol)
18396 %* \textunlhd -> \trianglelefteq (MnSymbol)
18397 % U+22B5 CONTAINS AS NORMAL SUBGROUP OR EQUAL TO; \unrhd (la-
      texsym, ...)
18398 \DeclareTextCommand{\textunrhd}{PU}{\9042\265}%* U+22B5
18399 %* \textunrhd -> \geqclosed (MnSymbol)
18400 %* \textunrhd -> \trianglerighteq (MnSymbol)
18401 % U+22B6 ORIGINAL OF; \multimapdotbothA (txfonts/pxfonts)
18402 \DeclareTextCommand{\textmultimapdotbothA}{PU}{\9042\266}%* U+22B6
18403 % U+22B7 IMAGE OF; \multimapdotbothB (txfonts/pxfonts)
18404 \DeclareTextCommand{\textmultimapdotbothB}{PU}{\9042\267}%* U+22B7
18405 % U+22B8 MULTIMAP; \multimap (AmS, txfonts/pxfonts)
18406 \DeclareTextCommand{\textmultimap}{PU}{\9042\270}%* U+22B8
18407 % U+22BB XOR; \veebar (AmS)
18408 \DeclareTextCommand{\textveebar}{PU}{\9042\273}%* U+22BB
18409 % U+22BC NAND; \barwedge (mathabx)
18410 \DeclareTextCommand{\textbarwedge}{PU}{\9042\274}%* U+22BC
18411 % U+22C6 STAR OPERATOR; \star (LaTeX)
18412 \DeclareTextCommand{\textstar}{PU}{\9042\306}%* U+22C6
18413 % U+22C7 DIVISION TIMES; \divideontimes (AmS)
18414 \DeclareTextCommand{\textdivideontimes}{PU}{\9042\307}%* U+22C7
18415 % U+22C8 BOWTIE; \bowtie (LaTeX)
18416 \DeclareTextCommand{\textbowtie}{PU}{\9042\310}%* U+22C8
18417 %* \textbowtie -> \Bowtie (wasysym)
18418 % U+22C9 LEFT NORMAL FACTOR SEMIDIRECT PRODUCT; \ltimes (AmS)
18419 \DeclareTextCommand{\textltimes}{PU}{\9042\311}%* U+22C9
18420 % U+22CA RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT;
18421 % \rtimes (AmS)
18422 \DeclareTextCommand{\textrtimes}{PU}{\9042\312}%* U+22CA

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18423 % U+22CB LEFT SEMIDIRECT PRODUCT; \leftthreetimes (AmS)  
18424 \DeclareTextCommand{\textleftthreetimes}{PU}{\9042\313}%\* U+22CB  
18425 % U+22CC RIGHT SEMIDIRECT PRODUCT; \rightthreetimes (AmS)  
18426 \DeclareTextCommand{\textrightthreetimes}{PU}{\9042\314}%\* U+22CC  
18427 % U+22CD REVERSED TILDE EQUALS; \backsimeq (AmS)  
18428 \DeclareTextCommand{\textbacksimeq}{PU}{\9042\315}%\* U+22CD  
18429 % \nbacksimeq (txfonts/pxfonts)  
18430 \DeclareTextCommand{\textnbacksimeq}{PU}{\9042\315\83\070}%\* U+22CD U+0338  
18431 % U+22CE CURLY LOGICAL OR; curlyor; \curlyvee (AmS)  
18432 \DeclareTextCommand{\textcurlyvee}{PU}{\9042\316}%\* U+22CE  
18433 %\* \textcurlyvee -> \varcurlyvee (stmaryrd)  
18434 % U+22CF CURLY LOGICAL AND; curlyand; \curlywedge (AmS)  
18435 \DeclareTextCommand{\textcurlywedge}{PU}{\9042\317}%\* U+22CF  
18436 %\* \textcurlywedge -> \varcurlywedge (stmaryrd)  
18437 % U+22D0 DOUBLE SUBSET; \Subset (AmS)  
18438 \DeclareTextCommand{\textSubset}{PU}{\9042\320}%\* U+22D0  
18439 % \nSubset (txfonts/pxfonts)  
18440 \DeclareTextCommand{\textnSubset}{PU}{\9042\320\83\070}%\* U+22D0 U+0338  
18441 % U+22D1 DOUBLE SUPERSET; \Supset (AmS)  
18442 \DeclareTextCommand{\textSupset}{PU}{\9042\321}%\* U+22D1  
18443 % \nSupset (txfonts/pxfonts)  
18444 \DeclareTextCommand{\textnSupset}{PU}{\9042\321\83\070}%\* U+22D1 U+0338  
18445 % U+22D2 DOUBLE INTERSECTION; \Cap (AmS)  
18446 \DeclareTextCommand{\textCap}{PU}{\9042\322}%\* U+22D2  
18447 %\* \textCap -> \doublecap (mathabx)  
18448 % U+22D3 DOUBLE UNION; \Cup (AmS)  
18449 \DeclareTextCommand{\textCup}{PU}{\9042\323}%\* U+22D3  
18450 %\* \textCup -> \doublecup (mathabx)  
18451 % U+22D4 PITCHFORK; \pitchfork (mathabx)  
18452 \DeclareTextCommand{\textpitchfork}{PU}{\9042\324}%\* U+22D4  
18453 % U+22D6 LESS-THAN WITH DOT; \lessdot (AmS)  
18454 \DeclareTextCommand{\textlessdot}{PU}{\9042\326}%\* U+22D6  
18455 % U+22D7 GREATER-THAN WITH DOT; \gtrdot (AmS)  
18456 \DeclareTextCommand{\textgtrdot}{PU}{\9042\327}%\* U+22D7  
18457 % U+22D8 VERY MUCH LESS-THAN; \lll (AmS)  
18458 \DeclareTextCommand{\textlll}{PU}{\9042\330}%\* U+22D8  
18459 % U+22D9 VERY MUCH GREATER-THAN; \ggg (AmS)  
18460 \DeclareTextCommand{\textggg}{PU}{\9042\331}%\* U+22D9  
18461 % U+22DA LESS-THAN EQUAL TO OR GREATER-THAN; lessequalorgreater;  
18462 % \lesseqgtr (AmS)  
18463 \DeclareTextCommand{\textlesseqgtr}{PU}{\9042\332}%\* U+22DA  
18464 % U+22DB GREATER-THAN EQUAL TO OR LESS-THAN; greaterequalorless;  
18465 % \gtreqless (AmS)  
18466 \DeclareTextCommand{\textgtreqless}{PU}{\9042\333}%\* U+22DB  
18467 % U+22DE EQUAL TO OR PRECEDES; \curlyeqprec (MnSymbol)  
18468 \DeclareTextCommand{\textcurlyeqprec}{PU}{\9042\336}%\* U+22DE  
18469 % \ncurlyeqprec (mathabx)  
18470 \DeclareTextCommand{\textncurlyeqprec}{PU}{\9042\336\83\070}%\* U+22DE U+0338  
18471 % U+22DF EQUAL TO OR SUCCEEDS; \curlyeqsucc (MnSymbol)  
18472 \DeclareTextCommand{\textcurlyeqsucc}{PU}{\9042\337}%\* U+22DF  
18473 % \ncurlyeqsucc (mathabx)  
18474 \DeclareTextCommand{\textncurlyeqsucc}{PU}{\9042\337\83\070}%\* U+22DF U+0338  
18475 % U+22E0 DOES NOT PRECEDE OR EQUAL; \npreccurlyeq (txfonts/pxfonts)  
18476 \DeclareTextCommand{\textnpreccurlyeq}{PU}{\9042\340}%\* U+22E0

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18477 % U+22E1 DOES NOT SUCCEED OR EQUAL; \nsucccurlyeq (txfonts/pxfonts)
18478 \DeclareTextCommand{\textnsucccurlyeq}{PU}{\9042\341}%* U+22E1
18479 % U+22E2 NOT SQUARE IMAGE OF OR EQUAL TO; \nsqsubseteq (tx-
      fonts/pxfonts)
18480 \DeclareTextCommand{\textnqsubseteq}{PU}{\9042\342}%* U+22E2
18481 % U+22E3 NOT SQUARE ORIGINAL OF OR EQUAL TO; \nsqsupseteq (tx-
      fonts/pxfonts)
18482 \DeclareTextCommand{\textnqsupseteq}{PU}{\9042\343}%* U+22E3
18483 % U+22E4 SQUARE IMAGE OF OR NOT EQUAL TO; \sqsubsetneq (mathabx)
18484 \DeclareTextCommand{\textsqsubsetneq}{PU}{\9042\344}%* U+22E4
18485 %* \textsqsubsetneq -> \varsqsubsetneq (mathabx)
18486 % U+22E5 SQUARE ORIGINAL OF OR NOT EQUAL TO; \sqsupsetneq (math-
      abx)
18487 \DeclareTextCommand{\textsqsupsetneq}{PU}{\9042\345}%* U+22E5
18488 %* \textsqsupsetneq -> \varsqsupsetneq (mathabx)
18489 % U+22E6 LESS-THAN BUT NOT EQUIVALENT TO; \lnsim (AmS)
18490 \DeclareTextCommand{\textlnsim}{PU}{\9042\346}%* U+22E6
18491 % U+22E7 GREATER-THAN BUT NOT EQUIVALENT TO; \gnsim (AmS)
18492 \DeclareTextCommand{\textgnsim}{PU}{\9042\347}%* U+22E7
18493 % U+22E8 PRECEDES BUT NOT EQUIVALENT TO; \precnsim (AmS)
18494 \DeclareTextCommand{\textprecnsim}{PU}{\9042\350}%* U+22E8
18495 % U+22E9 SUCCEEDS BUT NOT EQUIVALENT TO; \succnsim (AmS)
18496 \DeclareTextCommand{\textsuccnsim}{PU}{\9042\351}%* U+22E9
18497 % U+22EA NOT NORMAL SUBGROUP OF; \ntriangleleft (AmS)
18498 \DeclareTextCommand{\textntriangleleft}{PU}{\9042\352}%* U+22EA
18499 %* \textntriangleleft -> \nlessclosed (MnSymbol)
18500 % U+22EB DOES NOT CONTAIN AS NORMAL SUBGROUP; \ntriang-
      leright (AmS)
18501 \DeclareTextCommand{\textntriangleright}{PU}{\9042\353}%* U+22EB
18502 %* \textntriangleright -> \ngtrclosed (MnSymbol)
18503 % U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;
18504 % \ntrianglelefteq (AmS)
18505 \DeclareTextCommand{\textntrianglelefteq}{PU}{\9042\354}%* U+22EC
18506 % U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;
18507 % \ntrianglerighteq (AmS)
18508 \DeclareTextCommand{\textntrianglerighteq}{PU}{\9042\355}%* U+22ED
18509 %* \textntrianglerighteq -> \textngeqclosed
18510 % U+22EE VERTICAL ELLIPSIS; \vdots (LaTeX)
18511 \DeclareTextCommand{\textvdots}{PU}{\9042\356}%* U+22EE
18512 % U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)
18513 \DeclareTextCommand{\textcdots}{PU}{\9042\357}%* U+22EF
18514 % U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)
18515 \DeclareTextCommand{\textudots}{PU}{\9042\360}%* U+22F0
18516 % U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)
18517 \DeclareTextCommand{\textddots}{PU}{\9042\361}%* U+22F1
18518 % U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)
18519 \DeclareTextCommand{\textbarin}{PU}{\9042\366}%* U+22F6

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#### 46.2.23 Miscellaneous Technical: U+2300 to U+23FF

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18520 % U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)
18521 \DeclareTextCommand{\textdiameter}{PU}{\9043\000}%* U+2300
18522 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)
18523 \DeclareTextCommand{\textbackneg}{PU}{\9043\020}%* U+2310
18524 % U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)

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18525 \DeclareTextCommand{\textwasylozenge}{PU}{\9043\021}%* U+2311
18526 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)
18527 \DeclareTextCommand{\textinvbackneg}{PU}{\9043\031}%* U+2319
18528 % U+231A WATCH; \clock (wasysym)
18529 \DeclareTextCommand{\textclock}{PU}{\9043\032}%* U+231A
18530 %* \textclock -> \Clocklogo (marvosym)
18531 %* \textclock -> \ClockLogo (marvosym)
18532 % U+231C TOP LEFT CORNER; \ulcorner (AmS)
18533 \DeclareTextCommand{\textulcorner}{PU}{\9043\034}%* U+231C
18534 % U+231D TOP RIGHT CORNER; \urcorner (AmS)
18535 \DeclareTextCommand{\texturcorner}{PU}{\9043\035}%* U+231D
18536 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)
18537 \DeclareTextCommand{\textllcorner}{PU}{\9043\036}%* U+231E
18538 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)
18539 \DeclareTextCommand{\textlrcorner}{PU}{\9043\037}%* U+231F
18540 % U+2322 FROWN; \frown (LaTeX)
18541 \DeclareTextCommand{\textfrown}{PU}{\9043\042}%* U+2322
18542 % U+2323 SMILE; \smile (LaTeX)
18543 \DeclareTextCommand{\textsmile}{PU}{\9043\043}%* U+2323
18544 % U+2328 KEYBOARD; \Keyboard (marvosym)
18545 \DeclareTextCommand{\textKeyboard}{PU}{\9043\050}%* U+2328
18546 % U+2329 LEFT-POINTING ANGLE BRACKET; \angleleft; \angle (LaTeX)
18547 \DeclareTextCommand{\textlangle}{PU}{\9043\051}%* U+2329
18548 % U+232A RIGHT-POINTING ANGLE BRACKET; \angleright; \rangle (LaTeX)
18549 \DeclareTextCommand{\textrangle}{PU}{\9043\052}%* U+232A
18550 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)
18551 \DeclareTextCommand{\textAPLinv}{PU}{\9043\071}%* U+2339
18552 % U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (marvosym)
18553 \DeclareTextCommand{\textTumbler}{PU}{\9043\074}%* U+233C
18554 % U+233D APL FUNCTIONAL SYMBOL CIRCLE STILE; \baro (stmaryrd)
18555 \DeclareTextCommand{\textstmaryrdbaro}{PU}{\9043\075}% U+233D
18556 %* \textstmaryrdbaro -> \baro (stmaryrd)
18557 % U+233F APL FUNCTIONAL SYMBOL SLASH BAR; \notslash (wasysym)
18558 \DeclareTextCommand{\textnotslash}{PU}{\9043\077}%* U+233F
18559 % U+2340 APL FUNCTIONAL SYMBOL BACKSLASH BAR;
18560 % \notbackslash (wasysym)
18561 \DeclareTextCommand{\textnotbackslash}{PU}{\9043\100}%* U+2340
18562 % U+2342 APL FUNCTIONAL SYMBOL QUAD BACKSLASH; \boxbackslash (mathabx)
18563 \DeclareTextCommand{\textboxbackslash}{PU}{\9043\102}%* U+2342
18564 % U+2347 APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW;
18565 % \APLleftarrowbox (wasysym)
18566 \DeclareTextCommand{\textAPLleftarrowbox}{PU}{\9043\107}%* U+2347
18567 % U+2348 APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW;
18568 % \APLrightarrowbox (wasysym)
18569 \DeclareTextCommand{\textAPLrightarrowbox}{PU}{\9043\110}%* U+2348
18570 % U+2350 APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW; \APLuparrowbox (wasysym)
18571 \DeclareTextCommand{\textAPLuparrowbox}{PU}{\9043\120}%* U+2350
18572 % U+2357 APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW;
18573 % \APLdownarrowbox (wasysym)
18574 \DeclareTextCommand{\textAPLdownarrowbox}{PU}{\9043\127}%* U+2357
18575 % U+235E APL FUNCTIONAL SYMBOL QUOTE QUAD;

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18576 % \APLinput (wasysym)  
 18577 \DeclareTextCommand{\textAPLinput}{PU}{\9043\136}%\* U+235E  
 18578 % U+2370 APL FUNCTIONAL SYMBOL QUAD QUESTION; \Request (china2e)  
 18579 \DeclareTextCommand{\textRequest}{PU}{\9043\160}%\* U+2370  
 18580 % U+2393 DIRECT CURRENT SYMBOL FORM TWO; \Beam (marvosym)  
 18581 \DeclareTextCommand{\textBeam}{PU}{\9043\223}%\* U+2393  
 18582 % U+2394 SOFTWARE-FUNCTION SYMBOL; \hexagon (wasysym)  
 18583 \DeclareTextCommand{\texthexagon}{PU}{\9043\224}%\* U+2394  
 18584 % U+2395 APL FUNCTIONAL SYMBOL QUAD; \APLbox (wasysym)  
 18585 \DeclareTextCommand{\textAPLbox}{PU}{\9043\225}%\* U+2395  
 18586 % U+23ED BLACK RIGHT-POINTING DOUBLE TRIANGLE WITH VERTI-  
 CAL BAR;  
 18587 % \ForwardToIndex (marvosym)  
 18588 \DeclareTextCommand{\textForwardToIndex}{PU}{\9043\355}%\* U+23ED  
 18589 % U+23EE BLACK LEFT-POINTING DOUBLE TRIANGLE WITH VERTI-  
 CAL BAR;  
 18590 % \RewindToIndex (marvosym)  
 18591 \DeclareTextCommand{\textRewindToIndex}{PU}{\9043\356}%\* U+23EE

#### 46.2.24 Control Pictures: U+2400 to U+243F

18592 % U+2422 BLANK SYMBOL  
 18593 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 18594 % U+2423 OPEN BOX; blank  
 18595 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

#### 46.2.25 Optical Character Recognition: U+2440 to U+245F

18596 % U+244A OCR DOUBLE BACKSLASH; \bbslash (stmaryrd)  
 18597 \DeclareTextCommand{\textbbslash}{PU}{\9044\112}%\* U+244A  
 18598 %\* \textbbslash -> \varparalelinv (txfonts/pxfonts)

#### 46.2.26 Enclosed Alphanumerics: U+2460 to U+24FF

18599 % U+2460 CIRCLED DIGIT ONE; onecircle  
 18600 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 18601 % U+2461 CIRCLED DIGIT TWO; twocircle  
 18602 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 18603 % U+2462 CIRCLED DIGIT THREE; threecircle  
 18604 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 18605 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 18606 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 18607 % U+2464 CIRCLED DIGIT FIVE; fivcircle  
 18608 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 18609 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 18610 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 18611 % U+2466 CIRCLED DIGIT SEVEN; sevenscircle  
 18612 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
 18613 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
 18614 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
 18615 % U+2468 CIRCLED DIGIT NINE; ninecircle  
 18616 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
 18617 % U+2469 CIRCLED NUMBER TEN; tencircle  
 18618 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
 18619 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
 18620 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
 18621 % U+246B CIRCLED NUMBER TWELVE; twelvecircle

18622 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
18623 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
18624 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
18625 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
18626 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
18627 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
18628 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
18629 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
18630 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
18631 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
18632 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
18633 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
18634 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
18635 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
18636 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
18637 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
18638 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
18639 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
18640 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
18641 % \CircledA (marvosym)  
18642 \DeclareTextCommand{\textCircledA}{PU}{\9044\266}%\* U+24B6  
18643 %\* \textCircledA -> \CleaningA  
18644 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
18645 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
18646 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
18647 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
18648 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
18649 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
18650 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
18651 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
18652 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
18653 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
18654 % \CleaningF (marvosym)  
18655 \DeclareTextCommand{\textCleaningF}{PU}{\9044\273}%\* U+24BB  
18656 % \CleaningFF (marvosym)  
18657 \DeclareTextCommand{\textCleaningFF}{PU}{\9044\273\83\062}%\* U+24BB U+0332  
18658 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
18659 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
18660 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
18661 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
18662 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
18663 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
18664 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
18665 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
18666 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
18667 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
18668 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
18669 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
18670 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
18671 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
18672 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
18673 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
18674 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
18675 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4

18676 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
 18677 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
 18678 % \CleaningP (marvosym)  
 18679 \DeclareTextCommand{\textCleaningP}{PU}{\9044\305}%\* U+24C5  
 18680 % \CleaningPP (marvosym)  
 18681 \DeclareTextCommand{\textCleaningPP}{PU}{\9044\305\83\062}%\* U+24C5 U+0332  
 18682 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
 18683 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
 18684 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
 18685 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
 18686 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
 18687 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
 18688 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
 18689 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
 18690 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
 18691 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
 18692 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
 18693 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
 18694 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
 18695 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
 18696 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
 18697 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
 18698 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
 18699 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
 18700 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
 18701 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
 18702 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
 18703 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
 18704 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
 18705 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
 18706 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
 18707 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
 18708 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 18709 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 18710 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
 18711 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 18712 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 18713 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 18714 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 18715 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 18716 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 18717 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 18718 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 18719 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 18720 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 18721 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 18722 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 18723 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 18724 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 18725 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 18726 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 18727 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 18728 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 18729 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD

18730 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 18731 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 18732 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 18733 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 18734 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 18735 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 18736 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 18737 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 18738 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 18739 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 18740 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 18741 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 18742 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 18743 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 18744 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 18745 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 18746 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 18747 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 18748 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 18749 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 18750 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 18751 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 18752 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 18753 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 18754 % U+24EA CIRCLED DIGIT ZERO  
 18755 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

#### 46.2.27 Box Drawing: U+2500 to 257F

18756 % U+2504 BOX DRAWINGS LIGHT TRIPLE DASH HORIZONTAL; \Cutting-  
 Line (marvosym)  
 18757 \DeclareTextCommand{\textCuttingLine}{PU}{\9045\004}%\* U+2504  
 18758 %\* \textCuttingLine -> \Kutline (marvosym)  
 18759 %\* \textCuttingLine -> \CutLine (marvosym)  
 18760 %\* \textCuttingLine -> \Cutline (marvosym)

#### 46.2.28 Geometric Shapes: U+25A0 to U+25FF

18761 % U+25B2 BLACK UP-POINTING TRIANGLE; \UParrow (wasysym)  
 18762 \DeclareTextCommand{\textUParrow}{PU}{\9045\262}%\* U+25B2  
 18763 %\* \textUParrow -> \MoveUp (marvosym)  
 18764 % U+25B3 WHITE UP-POINTING TRIANGLE; whiteuppointingtriangle;  
 18765 % \bigtriangleup (LaTeX)  
 18766 \DeclareTextCommand{\textbigtriangleup}{PU}{\9045\263}%\* U+25B3  
 18767 %\* \textbigtriangleup -> \APLup (wasysym)  
 18768 %\* \textbigtriangleup -> \Bleech (marvosym)  
 18769 % U+25B6 BLACK RIGHT-POINTING TRIANGLE; \Forward (marvosym)  
 18770 \DeclareTextCommand{\textForward}{PU}{\9045\266}%\* U+25B6  
 18771 % U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restric-  
 tion);  
 18772 % whiterightpointingtriangle; \triangleright (LaTeX)  
 18773 \DeclareTextCommand{\texttriangleright}{PU}{\9045\267}%\* U+25B7  
 18774 % U+25BA BLACK RIGHT-POINTING POINTER; \RHD (wasysym)  
 18775 \DeclareTextCommand{\textRHD}{PU}{\9045\272}%\* U+25BA  
 18776 % U+25BC BLACK DOWN-POINTING TRIANGLE; \DOWNarrow (wasysym)  
 18777 \DeclareTextCommand{\textDOWNarrow}{PU}{\9045\274}%\* U+25BC

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18778 %* \textDOWNarrow -> \MoveDown (marvosym)
18779 % U+25BD WHITE DOWN-POINTING TRIANGLE; whitedownpointingtriangle;
18780 % \bigtriangledown (LaTeX)
18781 \DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%* U+25BD
18782 %* \textbigtriangledown -> \APLdown (wasysym)
18783 % U+25C0 BLACK LEFT-POINTING TRIANGLE; \Rewind (marvosym)
18784 \DeclareTextCommand{\textRewind}{PU}{\9045\300}%* U+25C0
18785 % U+25C1 WHITE RIGHT-POINTING TRIANGLE (= z notation domain restriction);
18786 % \whiteleftpointingtriangle; \triangleleft (LaTeX)
18787 \DeclareTextCommand{\texttriangleleft}{PU}{\9045\301}%* U+25C1
18788 % U+25C4 BLACK LEFT-POINTING POINTER; \LHD (wasysym)
18789 \DeclareTextCommand{\textLHD}{PU}{\9045\304}%* U+25C4
18790 % U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)
18791 \DeclareTextCommand{\textdiamond}{PU}{\9045\307}%* U+25C7
18792 %* \textdiamond -> \Diamond (wasysym)
18793 % U+25CA LOZENGE; lozenge; \lozenge (AmS)
18794 \DeclareTextCommand{\textlozenge}{PU}{\9045\312}%* U+25CA
18795 % U+25D6 LEFT HALF BLACK CIRCLE; \LEFTCIRCLE (wasysym)
18796 \DeclareTextCommand{\textLEFTCIRCLE}{PU}{\9045\326}%* U+25D6
18797 % U+25D7 RIGHT HALF BLACK CIRCLE; \RIGHTCIRCLE (wasysym)
18798 \DeclareTextCommand{\textRIGHTCIRCLE}{PU}{\9045\327}%* U+25D7
18799 % U+25E6 WHITE BULLET; *openbullet, whitebullet
18800 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%* U+25E6
18801 % U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE;
18802 % \boxbar (stmaryrd)
18803 \DeclareTextCommand{\textboxbar}{PU}{\9045\353}%* U+25EB
18804 % U+25EF LARGE CIRCLE; largecircle
18805 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%* U+25EF
18806 %* \textbigcircle -> \varbigcirc (stmaryrd)
18807 %

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#### 46.2.29 Miscellaneous Symbols: U+2600 to U+26FF

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18808 % U+2601 CLOUD; \Cloud (ifsym)
18809 \DeclareTextCommand{\textCloud}{PU}{\9046\001}%* U+2601
18810 % U+2605 BLACK STAR; \FiveStar (bding)
18811 \DeclareTextCommand{\textFiveStar}{PU}{\9046\005}%* U+2605
18812 % U+2606 WHITE STAR; \FiveStarOpen (bding)
18813 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9046\006}%* U+2606
18814 % U+260E BLACK TELEPHONE; telephoneblack; \Phone (bding)
18815 \DeclareTextCommand{\textPhone}{PU}{\9046\016}%* U+260E
18816 %* \textPhone -> \Telefon (marvosym)
18817 % U+2610 BALLOT BOX; \boxempty (stmaryrd)
18818 \DeclareTextCommand{\textboxempty}{PU}{\9046\020}%* U+2610
18819 %* \textboxempty -> \Box (wasysym)
18820 % U+2611 BALLOT BOX WITH CHECK; \Checkedbox (marvosym)
18821 \DeclareTextCommand{\textCheckedbox}{PU}{\9046\021}%* U+2611
18822 %* \textCheckedbox -> \CheckedBox (marvosym)
18823 % U+2612 BALLOT BOX WITH X; \Crossedbox (marvosym)
18824 \DeclareTextCommand{\textCrossedbox}{PU}{\9046\022}%* U+2612
18825 %* \textCrossedbox -> \XBox (wasysym)
18826 %* \textCrossedbox -> \CrossedBox (marvosym)
18827 % U+2615 HOT BEVERAGE; \Coffeecup (marvosym)

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18828 \DeclareTextCommand{\textCoffeecup}{PU}{\9046\025}%\* U+2615  
18829 % U+261A BLACK LEFT POINTING INDEX; \HandCuffLeft (bbding)  
18830 \DeclareTextCommand{\textHandCuffLeft}{PU}{\9046\032}%\* U+261A  
18831 % U+261B BLACK RIGHT POINTING INDEX; \HandCuffRight (bbding)  
18832 \DeclareTextCommand{\textHandCuffRight}{PU}{\9046\033}%\* U+261B  
18833 % U+261C WHITE LEFT POINTING INDEX; \HandLeft (bbding)  
18834 \DeclareTextCommand{\textHandLeft}{PU}{\9046\034}%\* U+261C  
18835 %\* \textHandLeft -> \rightpointleft (fourier)  
18836 % U+261E WHITE RIGHT POINTING INDEX; \HandRight (bbding)  
18837 \DeclareTextCommand{\textHandRight}{PU}{\9046\036}%\* U+261E  
18838 %\* \textHandRight -> \leftpointright (fourier)  
18839 %\* \textHandRight -> \PointingHand (marvosym)  
18840 %\* \textHandRight -> \Pointinghand (marvosym)  
18841 % U+2622 RADIOACTIVE SIGN; \Radioactivity (marvosym)  
18842 \DeclareTextCommand{\textRadioactivity}{PU}{\9046\042}%\* U+2622  
18843 %\* \textRadioactivity -> \Radiation (ifsym)  
18844 % U+2623 BIOHAZARD SIGN; \Biohazard (marvosym)  
18845 \DeclareTextCommand{\textBiohazard}{PU}{\9046\043}%\* U+2623  
18846 % U+2625 ANKH; \Ankh (marvosym)  
18847 \DeclareTextCommand{\textAnkh}{PU}{\9046\045}%\* U+2625  
18848 % U+262F YIN YANG; \YinYang (marvosym)  
18849 \DeclareTextCommand{\textYinYang}{PU}{\9046\057}%\* U+262F  
18850 %\* \textYinYang -> \Yinyang (marvosym)  
18851 %\* \textYinYang -> \YingYang (marvosym)  
18852 %\* \textYinYang -> \Yingyang (marvosym)  
18853 % U+2639 WHITE FROWNING FACE; \frownie (wasysym)  
18854 \DeclareTextCommand{\textfrownie}{PU}{\9046\071}%\* U+2639  
18855 %\* \textfrownie -> \Frowny (marvosym)  
18856 % U+263A WHITE SMILING FACE; \smiley (wasysym)  
18857 \DeclareTextCommand{\textsmiley}{PU}{\9046\072}%\* U+263A  
18858 %\* \textsmiley -> \Smiley (marvosym)  
18859 % U+263B BLACK SMILING FACE; \blacksmiley (wasysym)  
18860 \DeclareTextCommand{\textblacksmiley}{PU}{\9046\073}%\* U+263B  
18861 % U+263C WHITE SUN WITH RAYS; \sun (wasysym)  
18862 \DeclareTextCommand{\textsun}{PU}{\9046\074}%\* U+263C  
18863 %\* \textsun -> \Sun (marvosym)  
18864 % U+263D FIRST QUARTER MOON; \leftmoon (wasysym, mathabx)  
18865 \DeclareTextCommand{\textleftmoon}{PU}{\9046\075}%\* U+263D  
18866 % U+263E LAST QUARTER MOON; \rightmoon (wasysym, mathabx)  
18867 \DeclareTextCommand{\textrightmoon}{PU}{\9046\076}%\* U+263E  
18868 % U+263F MERCURY; \mercury (wasysym)  
18869 \DeclareTextCommand{\textmercury}{PU}{\9046\077}%\* U+263F  
18870 %\* \textmercury -> \Mercury (marvosym)  
18871 % U+2640 FEMALE SIGN; female; \female (wasysym)  
18872 \DeclareTextCommand{\textPUfemale}{PU}{\9046\100}% U+2640  
18873 %\* \textPUfemale -> \textfemale (tipx)  
18874 %\* \textPUfemale -> \female (wasysym)  
18875 %\* \textPUfemale -> \venus (wasysym)  
18876 %\* \textPUfemale -> \Venus (marvosym)  
18877 %\* \textPUfemale -> \Female (marvosym)  
18878 % U+2641 EARTH; \earth (wasysym)  
18879 \DeclareTextCommand{\textearth}{PU}{\9046\101}%\* U+2641  
18880 %\* \textearth -> \Earth (marvosym)  
18881 % U+2642 MALE SIGN; male, mars; \male (wasysym)

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18882 \DeclareTextCommand{\textmale}{PU}{\9046\102}%* U+2642
18883 %* \textmale -> \mars (wasysym)
18884 %* \textmale -> \Mars (marvosym)
18885 %* \textmale -> \Male (marvosym)
18886 % U+2643 JUPITER; \jupiter (wasysym)
18887 \DeclareTextCommand{\textjupiter}{PU}{\9046\103}%* U+2643
18888 %* \textjupiter -> \Jupiter (marvosym)
18889 % U+2644 SATURN; \saturn (wasysym)
18890 \DeclareTextCommand{\textsaturn}{PU}{\9046\104}%* U+2644
18891 %* \textsaturn -> \Saturn (marvosym)
18892 % U+2645 URANUS; \uranus (wasysym)
18893 \DeclareTextCommand{\texturanus}{PU}{\9046\105}%* U+2645
18894 %* \texturanus -> \Uranus (marvosym)
18895 % U+2646 NEPTUNE; \neptune (wasysym)
18896 \DeclareTextCommand{\textneptune}{PU}{\9046\106}%* U+2646
18897 %* \textneptune -> \Neptune (marvosym)
18898 % U+2647 PLUTO; \pluto (wasysym)
18899 \DeclareTextCommand{\textpluto}{PU}{\9046\107}%* U+2647
18900 %* \textpluto -> \Pluto (marvosym)
18901 % U+2648 ARIES; \aries (wasysym)
18902 \DeclareTextCommand{\textaries}{PU}{\9046\110}%* U+2648
18903 %* \textaries -> \Aries (marvosym)
18904 % U+2649 TAURUS; \taurus (wasysym)
18905 \DeclareTextCommand{\texttaurus}{PU}{\9046\111}%* U+2649
18906 %* \texttaurus -> \Taurus (marvosym)
18907 % U+264A GEMINI; \gemini (wasysym)
18908 \DeclareTextCommand{\textgemini}{PU}{\9046\112}%* U+264A
18909 %* \textgemini -> \Gemini (marvosym)
18910 % U+264B CANCER; \cancer (wasysym)
18911 \DeclareTextCommand{\textcancer}{PU}{\9046\113}%* U+264B
18912 %* \textcancer -> \Cancer (marvosym)
18913 % U+264C LEO; \leo (wasysym)
18914 \DeclareTextCommand{\textleo}{PU}{\9046\114}%* U+264C
18915 %* \textleo -> \Leo (marvosym)
18916 % U+264D VIRGO; \virgo (wasysym)
18917 \DeclareTextCommand{\textvirgo}{PU}{\9046\115}%* U+264D
18918 %* \textvirgo -> \Virgo (marvosym)
18919 % U+264E LIBRA; \libra (wasysym)
18920 \DeclareTextCommand{\textlibra}{PU}{\9046\116}%* U+264E
18921 %* \textlibra -> \Libra (marvosym)
18922 % U+264F SCORPIO; \scorpio (wasysym)
18923 \DeclareTextCommand{\textscorpio}{PU}{\9046\117}%* U+264F
18924 %* \textscorpio -> \Scorpio (marvosym)
18925 % U+2650 SAGITTARIUS; \sagittarius (wasysym)
18926 \DeclareTextCommand{\textsagittarius}{PU}{\9046\120}%* U+2650
18927 %* \textsagittarius -> \Sagittarius (marvosym)
18928 % U+2651 CAPRICORN; \capricornus (wasysym)
18929 \DeclareTextCommand{\textcapricornus}{PU}{\9046\121}%* U+2651
18930 %* \textcapricornus -> \Capricorn (marvosym)
18931 % U+2652 AQUARIUS; \aquarius (wasysym)
18932 \DeclareTextCommand{\textaquarius}{PU}{\9046\122}%* U+2652
18933 %* \textaquarius -> \Aquarius (marvosym)
18934 % U+2653 PISCES; \pisces (wasysym)
18935 \DeclareTextCommand{\textpisces}{PU}{\9046\123}%* U+2653

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18936 %\* \textpisces -> \Pisces (marvosym)  
18937 % U+2660 BLACK SPADE SUIT; spade, spadesuitblack; \spadesuit (LaTeX)  
18938 \DeclareTextCommand{\textspadesuitblack}{PU}{\9046\140}% U+2660  
18939 %\* \textspadesuitblack -> \spadesuit (MnSymbol)  
18940 % U+2661 WHITE HEART SUIT; heartsuitwhite; \heartsuit (LaTeX)  
18941 \DeclareTextCommand{\textheartsuitwhite}{PU}{\9046\141}% U+2661  
18942 %\* \textheartsuitwhite -> \Heart (marvosym)  
18943 %\* \textheartsuitwhite -> \heartsuit (MnSymbol)  
18944 % U+2662 WHITE DIAMOND SUIT; diamondsuitwhite; \diamondsuit (LaTeX)  
18945 \DeclareTextCommand{\textdiamondsuitwhite}{PU}{\9046\142}% U+2662  
18946 %\* \textdiamondsuitwhite -> \diamondsuit (MnSymbol)  
18947 % U+2663 BLACK CLUB SUIT; club, clubsuitblack; \clubsuit (LaTeX)  
18948 \DeclareTextCommand{\textclubsuitblack}{PU}{\9046\143}% U+2663  
18949 %\* \textclubsuitblack -> \clubsuit (MnSymbol)  
18950 % U+2664 WHITE SPADE SUIT; spadesuitwhite  
18951 \DeclareTextCommand{\textspadesuitwhite}{PU}{\9046\144}% U+2664  
18952 % U+2665 BLACK HEART SUIT; heartsuitblack, heart  
18953 \DeclareTextCommand{\textheartsuitblack}{PU}{\9046\145}% U+2665  
18954 % U+2666 BLACK DIAMOND SUIT; diamond  
18955 \DeclareTextCommand{\textdiamondsuitblack}{PU}{\9046\146}% U+2666  
18956 % U+2667 WHITE CLUB SUIT; clubsuitwhite  
18957 \DeclareTextCommand{\textclubsuitwhite}{PU}{\9046\147}% U+2667  
18958 % U+2669 QUARTER NOTE; quarternote; \quarternote (wasysym, arev)  
18959 \DeclareTextCommand{\textquarternote}{PU}{\9046\151}%\* U+2669  
18960 % U+266A EIGHTH NOTE; musicalnote; \textmusicalnote (textcomp)  
18961 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
18962 %\* \textmusicalnote -> \eighthnote (wasysym, arev)  
18963 % U+266B BEAMED EIGHTH NOTES; eighthnotebeamed; \twonotes (wasysym)  
18964 \DeclareTextCommand{\texttwonotes}{PU}{\9046\153}%\* U+266B  
18965 % U+266C BEAMED SIXTEENTH NOTES; beamedsixteenthnotes; \sixteenth-  
note (arev)  
18966 \DeclareTextCommand{\textsixteenthnote}{PU}{\9046\154}%\* U+266C  
18967 % U+266D MUSIC FLAT SIGN; musicflatsign; \flat (LaTeX)  
18968 \DeclareTextCommand{\textflat}{PU}{\9046\155}%\* U+266D  
18969 % U+266E MUSIC NATURAL SIGN; \natural (LaTeX)  
18970 \DeclareTextCommand{\textnatural}{PU}{\9046\156}%\* U+266E  
18971 % U+266F MUSIC SHARP SIGN; musicsharpsign; \sharp (LaTeX)  
18972 \DeclareTextCommand{\textsharp}{PU}{\9046\157}%\* U+266F  
18973 % U+2672 UNIVERSAL RECYCLING SYMBOL; \recycle (recycle)  
18974 \DeclareTextCommand{\textrecycle}{PU}{\9046\162}%\* U+2672  
18975 %\* \textrecycle -> \Recycling (marvosym)  
18976 % U+267F WHEELCHAIR SYMBOL; \Wheelchair (marvosym)  
18977 \DeclareTextCommand{\textWheelchair}{PU}{\9046\177}%\* U+267F  
18978 % U+2691 BLACK FLAG; \Flag (ifsym)  
18979 \DeclareTextCommand{\textFlag}{PU}{\9046\221}%\* U+2691  
18980 %\* \textFlag -> \VarFlag (ifsym)  
18981 % U+2692 HAMMER AND PICK; \MineSign (marvosym)  
18982 \DeclareTextCommand{\textMineSign}{PU}{\9046\222}%\* U+2692  
18983 % U+2694 CROSSED SWORDS; \dsmilitary (dictsym)  
18984 \DeclareTextCommand{\textdsmilitary}{PU}{\9046\224}%\* U+2694  
18985 %\* \textdsmilitary -> \textxswup (fourier)  
18986 % U+2695 STAFF OF AESCULAPIUS; \dsmedical (dictsym)  
18987 \DeclareTextCommand{\textdsmedical}{PU}{\9046\225}%\* U+2695  
18988 % U+2696 SCALES; \dsjuridical (dictsym)

18989 \DeclareTextCommand{\textdsjuridical}{PU}{\9046\226}%\* U+2696  
 18990 % U+2697 ALEMBIC; \dschemical (dictsym)  
 18991 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}%\* U+2697  
 18992 % U+2698 FLOWER; \dsbiological (dictsym)  
 18993 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}%\* U+2698  
 18994 % U+269A STAFF OF HERMES; \dscommercial (dictsym)  
 18995 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}%\* U+269A  
 18996 % U+269D OUTLINED WHITE STAR; \manstar (manfnt)  
 18997 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}%\* U+269D  
 18998 % U+26A0 WARNING SIGN; \danger (fourier)  
 18999 \DeclareTextCommand{\textdanger}{PU}{\9046\240}%\* U+26A0  
 19000 % U+26A2 DOUBLED FEMALE SIGN; \FemaleFemale (marvosym)  
 19001 \DeclareTextCommand{\textFemaleFemale}{PU}{\9046\242}%\* U+26A2  
 19002 % U+26A3 DOUBLED MALE SIGN; \MaleMale (marvosym)  
 19003 \DeclareTextCommand{\textMaleMale}{PU}{\9046\243}%\* U+26A3  
 19004 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \FemaleMale (marvosym)  
 19005 \DeclareTextCommand{\textFemaleMale}{PU}{\9046\244}%\* U+26A4  
 19006 % U+26A5 MALE AND FEMALE SIGN; \Hermaphrodite (marvosym)  
 19007 \DeclareTextCommand{\textHermaphrodite}{PU}{\9046\245}%\* U+26A5  
 19008 % U+26AA MEDIUM WHITE CIRCLE; \Neural (marvosym)  
 19009 \DeclareTextCommand{\textNeutral}{PU}{\9046\252}%\* U+26AA  
 19010 % U+26AD MARRIAGE SYMBOL  
 19011 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
 19012 % U+26AE DIVORCE SYMBOL  
 19013 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE  
 19014 % U+26B2 NEUTER; \textuncrfemale (tipx)  
 19015 \DeclareTextCommand{\textPUuncrfemale}{PU}{\9046\262}% U+26B2  
 19016 %\* \textPUuncrfemale -> \textuncrfemale (tipx)  
 19017 % U+26B9 SEXTILE; \hexstar (wasysym)  
 19018 \DeclareTextCommand{\texthexstar}{PU}{\9046\271}%\* U+26B9  
 19019 % U+26BD SOCCER BALL; \Football (marvosym)  
 19020 \DeclareTextCommand{\textSoccerBall}{PU}{\9046\275}% U+26BD  
 19021 %\* \textSoccerBall -> \Football (marvosym)  
 19022 % U+26C5 SUN BEHIND CLOUD; \SunCloud (ifsym)  
 19023 \DeclareTextCommand{\textSunCloud}{PU}{\9046\305}%\* U+26C5  
 19024 % U+26C6 RAIN; \Rain (ifsym)  
 19025 \DeclareTextCommand{\textRain}{PU}{\9046\306}%\* U+26C6  
 19026 % U+26D4 NO ENTRY; \noway (fourier)  
 19027 \DeclareTextCommand{\textnoway}{PU}{\9046\324}%\* U+26D4  
 19028 % U+26F0 MOUNTAIN; \Mountain (ifsym)  
 19029 \DeclareTextCommand{\textMountain}{PU}{\9046\360}%\* U+26F0  
 19030 % U+26FA TENT; \Tent (ifsym)  
 19031 \DeclareTextCommand{\textTent}{PU}{\9046\372}%\* U+26FA

#### 46.2.30 Dingbats: U+2700 to U+27BF

19032 % U+2701 UPPER BLADE SCISSORS; \ScissorRightBrokenBottom (bbding)  
 19033 \DeclareTextCommand{\textScissorRightBrokenBottom}{PU}{\9047\001}% U+2701  
 19034 %\* \textScissorRightBrokenBottom -> \CutLeft (marvosym)  
 19035 %\* \textScissorRightBrokenBottom -> \Cutright (marvosym)  
 19036 % U+2702 BLACK SCISSORS; \ScissorRight (bbding)  
 19037 \DeclareTextCommand{\textScissorRight}{PU}{\9047\002}%\* U+2702  
 19038 %\* \textScissorRight -> \RightScissors (marvosym)  
 19039 %\* \textScissorRight -> \Leftscissors (marvosym)

19040 % U+2703 LOWER BLADE SCISSORS; \ScissorRightBrokenTop (bding)  
 19041 \DeclareTextCommand{\textScissorRightBrokenTop}{PU}{\9047\003}%\* U+2703  
 19042 % U+2704 WHITE SCISSORS; \ScissorHollowRight (bding)  
 19043 \DeclareTextCommand{\textScissorHollowRight}{PU}{\9047\004}%\* U+2704  
 19044 % U+2706 TELEPHONE LOCATION SIGN; \PhoneHandset (bding)  
 19045 \DeclareTextCommand{\textPhoneHandset}{PU}{\9047\006}%\* U+2706  
 19046 % U+2707 TAPE DRIVE; \Tape (bding)  
 19047 \DeclareTextCommand{\textTape}{PU}{\9047\007}%\* U+2707  
 19048 % U+2708 AIRPLANE; \Plane (bding)  
 19049 \DeclareTextCommand{\textPlane}{PU}{\9047\010}%\* U+2708  
 19050 % U+2709 ENVELOPE; \Envelope (bding),  
 19051 \DeclareTextCommand{\textEnvelope}{PU}{\9047\011}%\* U+2709  
 19052 %\* \textEnvelope -> \Letter (marvosym)  
 19053 % U+270C VICTORY HAND; \Peace (bding)  
 19054 \DeclareTextCommand{\textPeace}{PU}{\9047\014}%\* U+270C  
 19055 % U+270D WRITING HAND; \WritingHand (marvosym)  
 19056 \DeclareTextCommand{\textWritingHand}{PU}{\9047\015}%\* U+270D  
 19057 %\* \textWritingHand -> \Writinghand (marvosym)  
 19058 % U+270E LOWER RIGHT PENCIL; \PencilRightDown (bding)  
 19059 \DeclareTextCommand{\textPencilRightDown}{PU}{\9047\016}%\* U+270E  
 19060 % U+270F PENCIL; \PencilRight (bding)  
 19061 \DeclareTextCommand{\textPencilRight}{PU}{\9047\017}%\* U+270F  
 19062 % U+2710 UPPER RIGHT PENCIL; \PencilRightUp (bding)  
 19063 \DeclareTextCommand{\textPencilRightUp}{PU}{\9047\020}%\* U+2710  
 19064 % U+2711 WHITE NIB; \NibRight (bding)  
 19065 \DeclareTextCommand{\textNibRight}{PU}{\9047\021}%\* U+2711  
 19066 % U+2712 BLACK NIB; \NibSolidRight (bding)  
 19067 \DeclareTextCommand{\textNibSolidRight}{PU}{\9047\022}%\* U+2712  
 19068 % U+2713 CHECK MARK; checkmark; \Checkmark (bding)  
 19069 \DeclareTextCommand{\textCheckmark}{PU}{\9047\023}%\* U+2713  
 19070 %\* \textCheckmark -> \checkmark (MnSymbol)  
 19071 % U+2714 HEAVY CHECK MARK; \CheckmarkBold (bding)  
 19072 \DeclareTextCommand{\textCheckmarkBold}{PU}{\9047\024}%\* U+2714  
 19073 % U+2715 MULTIPLICATION X; \XSolid (bding)  
 19074 \DeclareTextCommand{\textXSolid}{PU}{\9047\025}%\* U+2715  
 19075 % U+2716 HEAVY MULTIPLICATION X; \XSolidBold (bding)  
 19076 \DeclareTextCommand{\textXSolidBold}{PU}{\9047\026}%\* U+2716  
 19077 % U+2717 BALLOT X; \XSolidBrush (bding)  
 19078 \DeclareTextCommand{\textXSolidBrush}{PU}{\9047\027}%\* U+2717  
 19079 % U+2719 OUTLINED GREEK CROSS; \PlusOutline (bding)  
 19080 \DeclareTextCommand{\textPlusOutline}{PU}{\9047\031}%\* U+2719  
 19081 % U+271A HEAVY GREEK CROSS; \Plus (bding)  
 19082 \DeclareTextCommand{\textPlus}{PU}{\9047\032}%\* U+271A  
 19083 % U+271B OPEN CENTRE CROSS; \PlusThinCenterOpen (bding)  
 19084 \DeclareTextCommand{\textPlusThinCenterOpen}{PU}{\9047\033}%\* U+271B  
 19085 % U+271C HEAVY OPEN CENTRE CROSS; \PlusCenterOpen (bding)  
 19086 \DeclareTextCommand{\textPlusCenterOpen}{PU}{\9047\034}%\* U+271C  
 19087 % U+271D LATIN CROSS; \Cross (bding)  
 19088 \DeclareTextCommand{\textCross}{PU}{\9047\035}%\* U+271D  
 19089 % U+271E SHADOWED WHITE LATIN CROSS; \CrossOpenShadow (bding)  
 19090 \DeclareTextCommand{\textCrossOpenShadow}{PU}{\9047\036}%\* U+271E  
 19091 % U+271F OUTLINED LATIN CROSS; \CrossOutline (bding)  
 19092 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\037}%\* U+271F  
 19093 % U+2720 MALTESE CROSS; \CrossMaltese (bding)

19094 \DeclareTextCommand{\textCrossMaltese}{PU}{\9047\040}%\* U+2720  
 19095 % U+2721 STAR OF DAVID; \DavidStar (bding)  
 19096 \DeclareTextCommand{\textDavidStar}{PU}{\9047\041}%\* U+2721  
 19097 %\* \textDavidStar -> \davidstar (wasysym)  
 19098 % U+2722 FOUR TEARDROP-SPOKED ASTERISK; \FourAsterisk (bding)  
 19099 \DeclareTextCommand{\textFourAsterisk}{PU}{\9047\042}%\* U+2722  
 19100 % U+2723 FOUR BALLOON-SPOKED ASTERISK; \JackStar (bding)  
 19101 \DeclareTextCommand{\textJackStar}{PU}{\9047\043}%\* U+2723  
 19102 % U+2724 HEAVY FOUR BALLOON-SPOKED ASTERISK; \JackStarBold (bding)  
 19103 \DeclareTextCommand{\textJackStarBold}{PU}{\9047\044}%\* U+2724  
 19104 % U+2725 FOUR CLUB-SPOKED ASTERISK; \CrossClowerTips (bding)  
 19105 \DeclareTextCommand{\textClowerTips}{PU}{\9047\045}%\* U+2725  
 19106 % U+2726 BLACK FOUR POINTED STAR; \FourStar (bding)  
 19107 \DeclareTextCommand{\textFourStar}{PU}{\9047\046}%\* U+2726  
 19108 % U+2727 WHITE FOUR POINTED STAR; \FourStarOpen (bding)  
 19109 \DeclareTextCommand{\textFourStarOpen}{PU}{\9047\047}%\* U+2727  
 19110 % U+272A CIRCLED WHITE STAR; \FiveStarOpenCircled (bding)  
 19111 \DeclareTextCommand{\textFiveStarOpenCircled}{PU}{\9047\052}%\* U+272A  
 19112 % U+272B OPEN CENTRE BLACK STAR; \FiveStarCenterOpen (bding)  
 19113 \DeclareTextCommand{\textFiveStarCenterOpen}{PU}{\9047\053}%\* U+272B  
 19114 % U+272C BLACK CENTRE WHITE STAR; \FiveStarOpenDotted (bding)  
 19115 \DeclareTextCommand{\textFiveStarOpenDotted}{PU}{\9047\054}%\* U+272C  
 19116 % U+272D OUTLINED BLACK STAR; \FiveStarOutline (bding)  
 19117 \DeclareTextCommand{\textFiveStarOutline}{PU}{\9047\055}%\* U+272D  
 19118 % U+272E HEAVY OUTLINED BLACK STAR; \FiveStarOutlineHeavy (bding)  
 19119 \DeclareTextCommand{\textFiveStarOutlineHeavy}{PU}{\9047\056}%\* U+272E  
 19120 % U+272F PINWHEEL STAR; \FiveStarConvex (bding)  
 19121 \DeclareTextCommand{\textFiveStarConvex}{PU}{\9047\057}%\* U+272F  
 19122 % U+2730 SHADOWED WHITE STAR; \FiveStarShadow (bding)  
 19123 \DeclareTextCommand{\textFiveStarShadow}{PU}{\9047\060}%\* U+2730  
 19124 % U+2731 HEAVY ASTERISK; \AsteriskBold (bding)  
 19125 \DeclareTextCommand{\textAsteriskBold}{PU}{\9047\061}%\* U+2731  
 19126 % U+2732 OPEN CENTRE ASTERISK; \AsteriskCenterOpen (bding)  
 19127 \DeclareTextCommand{\textAsteriskCenterOpen}{PU}{\9047\062}%\* U+2732  
 19128 % U+2734 EIGHT POINTED BLACK STAR; \EightStarTaper (bding)  
 19129 \DeclareTextCommand{\textEightStarTaper}{PU}{\9047\064}%\* U+2734  
 19130 % U+2735 EIGHT POINTED PINWHEEL STAR; \EightStarConvex (bding)  
 19131 \DeclareTextCommand{\textEightStarConvex}{PU}{\9047\065}%\* U+2735  
 19132 % U+2736 SIX POINTED BLACK STAR; \SixStar (bding)  
 19133 \DeclareTextCommand{\textSixStar}{PU}{\9047\066}%\* U+2736  
 19134 % U+2737 EIGHT POINTED RECTILINEAR BLACK STAR; \EightStar (bding)  
 19135 \DeclareTextCommand{\textEightStar}{PU}{\9047\067}%\* U+2737  
 19136 % U+2738 HEAVY EIGHT POINTED RECTILINEAR BLACK STAR; \EightStarBold (bding)  
 19137 \DeclareTextCommand{\textEightStarBold}{PU}{\9047\070}%\* U+2738  
 19138 % U+2739 TWELVE POINTED BLACK STAR; \TwelveStar (bding)  
 19139 \DeclareTextCommand{\textTwelveStar}{PU}{\9047\071}%\* U+2739  
 19140 % U+273A SIXTEEN POINTED ASTERISK; \SixteenStarLight (bding)  
 19141 \DeclareTextCommand{\textSixteenStarLight}{PU}{\9047\072}%\* U+273A  
 19142 % U+273B TEARDROP-SPOKED ASTERISK; \SixFlowerPetalRemoved (bding)  
 19143 \DeclareTextCommand{\textSixFlowerPetalRemoved}{PU}{\9047\073}%\* U+273B

19144 % U+273C OPEN CENTRE TEARDROP-SPOKED ASTERISK;  
 19145 % \SixFlowerOpenCenter (bding)  
 19146 \DeclareTextCommand{\textSixFlowerOpenCenter}{PU}{\9047\074}%\* U+273C  
 19147 % U+273D HEAVY TEARDROP-SPOKED ASTERISK; \Asterisk (bding)  
 19148 \DeclareTextCommand{\textAsterisk}{PU}{\9047\075}%\* U+273D  
 19149 % U+273E SIX PETALLED BLACK AND WHITE FLORETTE; \SixFlowerAl-  
 ternate (bding)  
 19150 \DeclareTextCommand{\textSixFlowerAlternate}{PU}{\9047\076}%\* U+273E  
 19151 % U+273F BLACK FLORETTE; \FiveFlowerPetal (bding)  
 19152 \DeclareTextCommand{\textFiveFlowerPetal}{PU}{\9047\077}%\* U+273F  
 19153 % U+2740 WHITE FLORETTE; \FiveFlowerOpen (bding)  
 19154 \DeclareTextCommand{\textFiveFlowerOpen}{PU}{\9047\100}%\* U+2740  
 19155 % U+2741 EIGHT PETALLED OUTLINED BLACK FLORETTE; \EightFlow-  
 erPetal (bding)  
 19156 \DeclareTextCommand{\textEightFlowerPetal}{PU}{\9047\101}%\* U+2741  
 19157 % U+2742 CIRCLED OPEN CENTRE EIGHT POINTED STAR; \Sunshi-  
 neOpenCircled (bding)  
 19158 \DeclareTextCommand{\textSunshineOpenCircled}{PU}{\9047\102}%\* U+2742  
 19159 % U+2743 HEAVY TEARDROP-SPOKED PINWHEEL ASTERISK; \SixFlow-  
 erAltPetal (bding)  
 19160 \DeclareTextCommand{\textSixFlowerAltPetal}{PU}{\9047\103}%\* U+2743  
 19161 % U+2744 SNOWFLAKE; \SnowflakeChevron (bding)  
 19162 \DeclareTextCommand{\textSnowflakeChevron}{PU}{\9047\104}%\* U+2744  
 19163 % U+2745 TIGHT TRIFOLIATE SNOWFLAKE; \Snowflake (bding)  
 19164 \DeclareTextCommand{\textSnowflake}{PU}{\9047\105}%\* U+2745  
 19165 % U+2746 HEAVY CHEVRON SNOWFLAKE; \SnowflakeChevronBold (bding)  
 19166 \DeclareTextCommand{\textSnowflakeChevronBold}{PU}{\9047\106}%\* U+2746  
 19167 % U+2747 SPARKLE; \Sparkle (bding)  
 19168 \DeclareTextCommand{\textSparkle}{PU}{\9047\107}%\* U+2747  
 19169 % U+2748 HEAVY SPARKLE; \SparkleBold (bding)  
 19170 \DeclareTextCommand{\textSparkleBold}{PU}{\9047\110}%\* U+2748  
 19171 % U+2749 BALLOON-SPOKED ASTERISK; \AsteriskRoundedEnds (bding)  
 19172 \DeclareTextCommand{\textAsteriskRoundedEnds}{PU}{\9047\111}%\* U+2749  
 19173 % U+274A EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
 19174 % \EightFlowerPetalRemoved (bding)  
 19175 \DeclareTextCommand{\textEightFlowerPetalRemoved}{PU}{\9047\112}%\* U+274A  
 19176 % U+274B HEAVY EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
 19177 % \EightAsterisk (bding)  
 19178 \DeclareTextCommand{\textEightAsterisk}{PU}{\9047\113}%\* U+274B  
 19179 % U+274D SHADOWED WHITE CIRCLE; \CircleShadow (bding)  
 19180 \DeclareTextCommand{\textCircleShadow}{PU}{\9047\115}%\* U+274D  
 19181 % U+274F LOWER RIGHT DROP-SHADOWED WHITE SQUARE;  
 19182 % \SquareShadowBottomRight (bding)  
 19183 \DeclareTextCommand{\textSquareShadowBottomRight}{PU}{\9047\117}%\* U+274F  
 19184 % U+2750 UPPER RIGHT DROP-SHADOWED WHITE SQUARE;  
 19185 % \SquareShadowTopRight (bding)  
 19186 \DeclareTextCommand{\textSquareTopRight}{PU}{\9047\120}%\* U+2750  
 19187 % U+2751 LOWER RIGHT SHADOWED WHITE SQUARE;  
 19188 % \SquareCastShadowBottomRight (bding)  
 19189 \DeclareTextCommand{\textSquareCastShadowBottomRight}{PU}{\9047\121}%\* U+2751  
 19190 % U+2752 UPPER RIGHT SHADOWED WHITE SQUARE;  
 19191 % \SquareCastShadowTopRight (bding)  
 19192 \DeclareTextCommand{\textSquareCastShadowTopRight}{PU}{\9047\122}%\* U+2752  
 19193 % U+2756 BLACK DIAMOND MINUS WHITE X; \OrnamentDiamandSolid (bb-

ding)  
19194 \DeclareTextCommand{\textDiamandSolid}{PU}{\9047\126}%\* U+2756  
19195 % U+2758 LIGHT VERTICAL BAR; \RectangleThin (bbding)  
19196 \DeclareTextCommand{\textRectangleThin}{PU}{\9047\130}%\* U+2758  
19197 % U+2759 MEDIUM VERTICAL BAR; \Rectangle (bbding)  
19198 \DeclareTextCommand{\textRectangle}{PU}{\9047\131}%\* U+2759  
19199 % U+275A HEAVY VERTICAL BAR; \RectangleBold (bbding)  
19200 \DeclareTextCommand{\textRectangleBold}{PU}{\9047\132}%\* U+275A

#### 46.2.31 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

19201 % U+27C2 PERPENDICULAR; perpendicular; \perp (LaTeX)  
19202 \DeclareTextCommand{\textperp}{PU}{\9047\302}%\* U+27C2  
19203 % \notperp (mathabx)  
19204 \DeclareTextCommand{\textnotperp}{PU}{\9047\302\83\070}%\* U+27C2 U+0338  
19205 % U+27C7 OR WITH DOT INSIDE; \veedot (MnSymbol)  
19206 \DeclareTextCommand{\textveedot}{PU}{\9047\307}%\* U+27C7  
19207 % U+27D1 AND WITH DOT; \wedgedot (MnSymbol)  
19208 \DeclareTextCommand{\textwedgedot}{PU}{\9047\321}%\* U+27D1  
19209 % U+27DC LEFT MULTIMAP; \leftspoon (MnSymbol)  
19210 \DeclareTextCommand{\textleftspoon}{PU}{\9047\334}%\* U+27DC  
19211 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
19212 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}%\* U+27E6  
19213 %\* \textlbrackdbl -> \llbracket (stmaryrd)  
19214 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
19215 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}%\* U+27E7  
19216 %\* \textrbrackdbl -> \rrbracket (stmaryrd)

#### 46.2.32 Supplemental Arrows-A: U+27F0 to U+27FF

19217 % U+27F2 ANTICLOCKWISE GAPPED CIRCLE ARROW;  
19218 % \circlearrowleft (AmS)  
19219 \DeclareTextCommand{\textcirclearrowleft}{PU}{\9047\362}%\* U+27F2  
19220 % U+27F3 CLOCKWISE GAPPED CIRCLE ARROW; \circlearrowright (AmS)  
19221 \DeclareTextCommand{\textcirclearrowright}{PU}{\9047\363}%\* U+27F3  
19222 % U+27F5 LONG LEFTWARDS ARROW; \longleftarrow (AmS)  
19223 \DeclareTextCommand{\textlongleftarrow}{PU}{\9047\365}%\* U+27F5  
19224 % U+27F6 LONG RIGHTWARDS ARROW; \longrightarrow (AmS)  
19225 \DeclareTextCommand{\textlongrightarrow}{PU}{\9047\366}%\* U+27F6  
19226 % U+27F7 LONG LEFT RIGHT ARROW; \longlefttrightarrow (AmS)  
19227 \DeclareTextCommand{\textlonglefttrightarrow}{PU}{\9047\367}%\* U+27F7  
19228 % U+27F8 LONG LEFTWARDS DOUBLE ARROW; \Longleftarrow (AmS)  
19229 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\370}%\* U+27F8  
19230 % U+27F9 LONG RIGHTWARDS DOUBLE ARROW; \Longrightarrow (AmS)  
19231 \DeclareTextCommand{\textLongrightarrow}{PU}{\9047\371}%\* U+27F9  
19232 % U+27FA LONG LEFT RIGHT DOUBLE ARROW; \Longleftrightarrow (AmS)  
19233 \DeclareTextCommand{\textLongleftrightarrow}{PU}{\9047\372}%\* U+27FA  
19234 % U+27FC LONG RIGHTWARDS ARROW FROM BAR; \longmapsto (AmS)  
19235 \DeclareTextCommand{\textlongmapsto}{PU}{\9047\374}%\* U+27FC  
19236 % U+27FD LONG LEFTWARDS DOUBLE ARROW FROM BAR; \Longmaps-  
from (stmaryrd)  
19237 \DeclareTextCommand{\textLongmapsfrom}{PU}{\9047\375}%\* U+27FD  
19238 % U+27FE LONG RIGHTWARDS DOUBLE ARROW FROM BAR; \Longmap-  
sto (stmaryrd)  
19239 \DeclareTextCommand{\textLongmapsto}{PU}{\9047\376}%\* U+27FE



### 46.2.33 Supplemental Arrows-B: U+2900 to U+297F

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19240 % U+2921 NORTH WEST AND SOUTH EAST ARROW; \nwsearrow (MnSymbol)
19241 \DeclareTextCommand{\textnwsearrow}{PU}{\9051\041}%* U+2921
19242 % U+2922 NORTH EAST AND SOUTH WEST ARROW; \neswarrow (MnSymbol)
19243 \DeclareTextCommand{\textneswarrow}{PU}{\9051\042}%* U+2922
19244 % U+2923 NORTH WEST ARROW WITH HOOK; \lhooknwarrow (MnSymbol)
19245 \DeclareTextCommand{\textlhooknwarrow}{PU}{\9051\043}%* U+2923
19246 % U+2924 NORTH EAST ARROW WITH HOOK; \rhooknearrow (MnSymbol)
19247 \DeclareTextCommand{\textrhooknearrow}{PU}{\9051\044}%* U+2924
19248 % U+2925 SOUTH EAST ARROW WITH HOOK; \lhooksearrow (MnSymbol)
19249 \DeclareTextCommand{\textlhooksearrow}{PU}{\9051\045}%* U+2925
19250 % U+2926 SOUTH WEST ARROW WITH HOOK; \rhookswarrow (MnSymbol)
19251 \DeclareTextCommand{\textrhookswarrow}{PU}{\9051\046}%* U+2926
19252 % U+2933 WAVE ARROW POINTING DIRECTLY RIGHT; \leadsto (wasysym)
19253 \DeclareTextCommand{\textleadsto}{PU}{\9051\063}%* U+2933
19254 % U+2934 ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS;
19255 % \rcurvearrowne (MnSymbol)
19256 \DeclareTextCommand{\textrcurvearrowne}{PU}{\9051\064}%* U+2934
19257 % U+2935 ARROW POINTING RIGHTWARDS THEN CURVING DOWN-
19258 % \lcurvearrowse (MnSymbol)
19259 \DeclareTextCommand{\textlcurvearrowse}{PU}{\9051\065}%* U+2935
19260 % U+2936 ARROW POINTING DOWNWARDS THEN CURVING LEFT-
19261 % \lcurvearrowsw (MnSymbol)
19262 \DeclareTextCommand{\textlcurvearrowsw}{PU}{\9051\066}%* U+2936
19263 % U+2937 ARROW POINTING DOWNWARDS THEN CURVING RIGHT-
19264 % \rcurvearrowse (MnSymbol)
19265 \DeclareTextCommand{\textrcurvearrowse}{PU}{\9051\067}%* U+2937
19266 % U+2938 RIGHT-SIDE ARC CLOCKWISE ARROW; \lcurvearrowdown (Mn-
19267 % \textlcurvearrowdown}{PU}{\9051\070}%* U+2938
19268 %* \textlcurvearrowdown -> \RightTorque (marvosym)
19269 %* \textlcurvearrowdown -> \Righttorque (marvosym)
19270 % U+2939 LEFT-SIDE ARC ANTICLOCKWISE ARROW;
19271 % \rcurvearrowdown (MnSymbol)
19272 \DeclareTextCommand{\textrcurvearrowdown}{PU}{\9051\071}%* U+2939
19273 %* \textrcurvearrowdown -> \LeftTorque (marvosym)
19274 %* \textrcurvearrowdown -> \Lefttorque (marvosym)
19275 % U+293A TOP ARC ANTICLOCKWISE ARROW; \rcurvearrowleft (MnSym-
19276 % \textrcurvearrowleft}{PU}{\9051\072}%* U+293A
19277 % U+293B BOTTOM ARC ANTICLOCKWISE ARROW;
19278 % \rcurvearrowright (MnSymbol)
19279 \DeclareTextCommand{\textrcurvearrowright}{PU}{\9051\073}%* U+293B
19280 % U+294A LEFT BARB UP RIGHT BARB DOWN HARPOON; \leftrighthar-
19281 % \textleftrightharpoon}{PU}{\9051\112}%* U+294A
19282 % U+294B LEFT BARB DOWN RIGHT BARB UP HARPOON; \rightlefthar-
19283 % \textrightleftharpoon}{PU}{\9051\113}%* U+294B

```

19283 \DeclareTextCommand{\textrightleftharpoon}{PU}{\9051\113}%\* U+294B  
 19284 % U+294C UP BARB RIGHT DOWN BARB LEFT HARPOON;  
 19285 % \updownharpoonrightleft (MnSymbol)  
 19286 \DeclareTextCommand{\textupdownharpoonrightleft}{PU}{\9051\114}%\* U+294C  
 19287 % U+294D UP BARB LEFT DOWN BARB RIGHT HARPOON;  
 19288 % \updownharpoonleftright (MnSymbol)  
 19289 \DeclareTextCommand{\textupdownharpoonleftright}{PU}{\9051\115}%\* U+294D  
 19290 % U+2962 LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS  
 19291 % HARPOON WITH BARB DOWN; \leftleftharpoons (mathabx)  
 19292 \DeclareTextCommand{\textleftleftharpoons}{PU}{\9051\142}%\* U+2962  
 19293 % U+2963 UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS  
 19294 % HARPOON WITH BARB RIGHT; \upupharpoons (mathabx)  
 19295 \DeclareTextCommand{\textupupharpoons}{PU}{\9051\143}%\* U+2963  
 19296 % U+2964 RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHT-  
 WARDS HARPOON  
 19297 % WITH BARB DOWN; \rightrightarpoons (mathabx)  
 19298 \DeclareTextCommand{\textrightarpoons}{PU}{\9051\144}%\* U+2964  
 19299 % U+2965 DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWN-  
 WARDS HARPOON  
 19300 % WITH BARB RIGHT; \downdownharpoons (mathabx)  
 19301 \DeclareTextCommand{\textdowndownharpoons}{PU}{\9051\145}%\* U+2965  
 19302 % U+296A LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH;  
 19303 % \leftbarharpoon (mathabx)  
 19304 \DeclareTextCommand{\textleftbarharpoon}{PU}{\9051\152}%\* U+296A  
 19305 % U+296B LEFTWARDS HARPOON WITH BARB DOWN BELOW  
 19306 % LONG DASH; \barleftharpoon (mathabx)  
 19307 \DeclareTextCommand{\textbarleftharpoon}{PU}{\9051\153}%\* U+296B  
 19308 % U+296C RIGHTWARDS HARPOON WITH BARB UP ABOVE  
 19309 % LONG DASH; \rightbarharpoon (mathabx)  
 19310 \DeclareTextCommand{\textrightbarharpoon}{PU}{\9051\154}%\* U+296C  
 19311 % U+296D RIGHTWARDS HARPOON WITH BARB DOWN BELOW  
 19312 % LONG DASH; \barrightharpoon (mathabx)  
 19313 \DeclareTextCommand{\textbarrightharpoon}{PU}{\9051\155}%\* U+296D  
 19314 % U+296E UPWARDS HARPOON WITH BARB LEFT BESIDE DOWN-  
 WARDS HARPOON  
 19315 % WITH BARB RIGHT; \updownharpoons (mathabx)  
 19316 \DeclareTextCommand{\textupdownharpoons}{PU}{\9051\156}%\* U+296E  
 19317 % U+296F DOWNWARDS HARPOON WITH BARB LEFT BESIDE UP-  
 WARDS HARPOON  
 19318 % WITH BARB RIGHT; \downupharpoons (mathabx)  
 19319 \DeclareTextCommand{\textdownupharpoons}{PU}{\9051\157}%\* U+296F  
 19320 % U+297F DOWN FISH TAIL  
 19321 \DeclareTextCommand{\textmoo}{PU}{\9051\177\83\066}%\* U+297F U+0336

#### 46.2.34 Miscellaneous Mathematical Symbols-B: U+2980 to U+29FF

19322 % U+2987 Z NOTATION LEFT IMAGE BRACKET; \lparenthesis (stmaryrd)  
 19323 \DeclareTextCommand{\textlparenthesis}{PU}{\9051\207}%\* U+2987  
 19324 % U+2988 Z NOTATION RIGHT IMAGE BRACKET; \rrparenthesis (stmaryrd)  
 19325 \DeclareTextCommand{\textrrparenthesis}{PU}{\9051\210}%\* U+2988  
 19326 % U+29B0 REVERSED EMPTY SET; \invdiameter (wasysym)  
 19327 \DeclareTextCommand{\textinvdiameter}{PU}{\9051\260}%\* U+29B0  
 19328 % U+29B6 CIRCLED VERTICAL BAR; \obar (stmaryrd)  
 19329 \DeclareTextCommand{\textobar}{PU}{\9051\266}%\* U+29B6  
 19330 %\* \textobar -> \textvarobar (stmaryrd)

```

19331 % U+29B8 CIRCLED REVERSE SOLIDUS; \obslash (stmaryrd)
19332 \DeclareTextCommand{\textobslash}{PU}{\9051\270}%* U+29B8
19333 %* \textobslash -> \circledbslash (txfonts/pxfonts)
19334 %* \textobslash -> \obackslash (mathabx)
19335 %* \textobslash -> \varobslash (stmaryrd)
19336 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF
19337 % DIVIDED BY VERTICAL BAR; \obot (mathabx)
19338 \DeclareTextCommand{\textobot}{PU}{\9051\272}%* U+29BA
19339 %* \textobot -> \odplus (ulsy)
19340 % U+29BB CIRCLE WITH SUPERIMPOSED X; \NoChemicalCleaning (mar-
      vosym)
19341 \DeclareTextCommand{\textNoChemicalCleaning}{PU}{\9051\273}%* U+29BB
19342 % U+29C0 CIRCLED LESS-THAN; \olessthan (stmaryrd)
19343 \DeclareTextCommand{\textolessthan}{PU}{\9051\300}%* U+29C0
19344 %* \textolessthan -> \varolessthan (stmaryrd)
19345 % U+29C1 CIRCLED GREATER-THAN; \ogreaterthan (stmaryrd)
19346 \DeclareTextCommand{\textogreaterthan}{PU}{\9051\301}%* U+29C1
19347 %* \textogreaterthan -> \varogreaterthan (stmaryrd)
19348 % U+29C4 SQUARED RISING DIAGONAL SLASH; \boxslash (mathabx, stmaryrd)
19349 \DeclareTextCommand{\textboxslash}{PU}{\9051\304}%* U+29C4
19350 % U+29C5 SQUARED FALLING DIAGONAL SLASH; \boxbslash (stmaryrd)
19351 \DeclareTextCommand{\textboxbslash}{PU}{\9051\305}%* U+29C5
19352 % U+29C6 SQUARED ASTERISK; \boxast (stmaryrd)
19353 \DeclareTextCommand{\textboxast}{PU}{\9051\306}%* U+29C6
19354 % U+29C7 SQUARED SMALL CIRCLE; \boxcircle (stmaryrd)
19355 \DeclareTextCommand{\textboxcircle}{PU}{\9051\307}%* U+29C7
19356 % U+29C8 SQUARED SQUARE; \boxbox (stmaryrd)
19357 \DeclareTextCommand{\textboxbox}{PU}{\9051\310}%* U+29C8
19358 % U+29D3 BLACK BOWTIE; \Valve (marvosym)
19359 \DeclareTextCommand{\textValve}{PU}{\9051\323}%* U+29D3
19360 % U+29DF DOUBLE-ENDED MULTIMAP; \multimapboth (txfonts/pxfonts)
19361 \DeclareTextCommand{\textmultimapboth}{PU}{\9051\337}%* U+29DF
19362 % U+29E2 SHUFFLE PRODUCT; \shuffle (shuffle)
19363 \DeclareTextCommand{\textshuffle}{PU}{\9051\342}%* U+29E2

```

#### 46.2.35 Supplemental Mathematical Operators: U+2A00 to U+2AFF

```

19364 % U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)
19365 \DeclareTextCommand{\textuplus}{PU}{\9052\004}%* U+2A04
19366 % U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)
19367 \DeclareTextCommand{\textbigdoublewedge}{PU}{\9052\007}%* U+2A07
19368 % U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)
19369 \DeclareTextCommand{\textbigdoublevee}{PU}{\9052\010}%* U+2A08
19370 % U+2A1D JOIN; \Join (latexsym, amsfonts, amssymb, mathabx, txfonts,
19371 % pxfonts, wasysym)
19372 \DeclareTextCommand{\textJoin}{PU}{\9052\035}%* U+2A1D
19373 % U+2A1F Z NOTATION SCHEMA COMPOSITION; \fatsemi (stmaryrd)
19374 \DeclareTextCommand{\textfatsemi}{PU}{\9052\037}%* U+2A1F
19375 % U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \circplus (mathabx)
19376 \DeclareTextCommand{\textcircplus}{PU}{\9052\042}%* U+2A22
19377 % U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)
19378 \DeclareTextCommand{\textminusdot}{PU}{\9052\052}%* U+2A2A
19379 %* \textminusdot -> \divdot (mathabx)
19380 % U+2A30 MULTIPLICATION SIGN WITH DOT ABOVE; \dottimes (mathabx)
19381 \DeclareTextCommand{\textdottimes}{PU}{\9052\060}%* U+2A30

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19382 % U+2A32 SEMIDIRECT PRODUCT WITH BOTTOM CLOSED;
19383 % \dtimes (mathdesign)
19384 \DeclareTextCommand{\textdtimes}{PU}{\9052\062}%* U+2A32
19385 % U+2A38 CIRCLED DIVISION SIGN; \odiv (mathabx)
19386 \DeclareTextCommand{\textodiv}{PU}{\9052\070}%* U+2A38
19387 % U+2A3C INTERIOR PRODUCT; \invneg (MnSymbol)
19388 \DeclareTextCommand{\textinvneg}{PU}{\9052\074}%* U+2A3C
19389 % U+2A4E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)
19390 \DeclareTextCommand{\textsqdoublecap}{PU}{\9052\116}%* U+2A4E
19391 %* \textsqdoublecap -> \doublesqcap (MnSymbol)
19392 % U+2A40 INTERSECTION WITH DOT; \capdot (MnSymbol)
19393 \DeclareTextCommand{\textcapdot}{PU}{\9052\100}%* U+2A40
19394 % U+2A4F DOUBLE SQUARE UNION; \sqdoublecup (mathabx)
19395 \DeclareTextCommand{\textsqdoublecup}{PU}{\9052\117}%* U+2A4F
19396 %* \textsqdoublecup -> \doublesqcup (MnSymbol)
19397 % U+2A55 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)
19398 \DeclareTextCommand{\textdoublewedge}{PU}{\9052\125}%* U+2A55
19399 % U+2A56 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)
19400 \DeclareTextCommand{\textdoublevee}{PU}{\9052\126}%* U+2A56
19401 %* \textdoublevee -> \merge (stmaryrd)
19402 % U+2A5E LOGICAL AND WITH DOUBLE OVERBAR;
19403 % \doublebarwedge (AmS)
19404 \DeclareTextCommand{\textdoublebarwedge}{PU}{\9052\136}%* U+2A5E
19405 % U+2A63 LOGICAL OR WITH DOUBLE UNDERBAR;
19406 % \veedoublebar (mahtabx)
19407 \DeclareTextCommand{\textveedoublebar}{PU}{\9052\143}%* U+2A63
19408 % U+2A66 EQUALS SIGN WITH DOT BELOW; \eqdot (MnSymbol)
19409 \DeclareTextCommand{\texteqdot}{PU}{\9052\146}%* U+2A66
19410 % \neqdot (MnSymbol)
19411 \DeclareTextCommand{\textneqdot}{PU}{\9052\146\83\070}%* U+2A66 U+0338
19412 % U+2A74 DOUBLE COLON EQUAL; \coloncolonequals (colonequals)
19413 \DeclareTextCommand{\textcoloncolonequals}{PU}{\9052\164}%* U+2A74
19414 % U+2A7D LESS-THAN OR SLANTED EQUAL TO; \leqslant (AmS)
19415 \DeclareTextCommand{\textleqslant}{PU}{\9052\175}%* U+2A7D
19416 % \nleqslant (txfonts/pxfonts)
19417 \DeclareTextCommand{\textnleqslant}{PU}{\9052\175\83\070}%* U+2A7D U+0338
19418 % U+2A7E GREATER-THAN OR SLANTED EQUAL TO; \geqslant (AmS)
19419 \DeclareTextCommand{\textgeqslant}{PU}{\9052\176}%* U+2A7E
19420 % \ngeqslant (txfonts/pxfonts)
19421 \DeclareTextCommand{\textngeqslant}{PU}{\9052\176\83\070}%* U+2A7E U+0338
19422 % U+2A85 LESS-THAN OR APPROXIMATE; \lessapprox (AmS)
19423 \DeclareTextCommand{\textlessapprox}{PU}{\9052\205}%* U+2A85
19424 % \nlessapprox (txfonts/pxfonts)
19425 \DeclareTextCommand{\textnlessapprox}{PU}{\9052\205\83\070}%* U+2A85 U+0338
19426 % U+2A86 GREATER-THAN OR APPROXIMATE; \gtrapprox (AmS)
19427 \DeclareTextCommand{\textgtrapprox}{PU}{\9052\206}%* U+2A86
19428 % \ngtrapprox (txfonts/pxfonts)
19429 \DeclareTextCommand{\textngtrapprox}{PU}{\9052\206\83\070}%* U+2A86 U+0338
19430 % U+2A87 LESS-THAN AND SINGLE-LINE NOT EQUAL TO; \lneq (AmS)
19431 \DeclareTextCommand{\textlneq}{PU}{\9052\207}%* U+2A87
19432 % U+2A88 GREATER-THAN AND SINGLE-LINE NOT EQUAL TO;
19433 % \gneq (AmS)
19434 \DeclareTextCommand{\textgneq}{PU}{\9052\210}%* U+2A88
19435 % U+2A89 LESS-THAN AND NOT APPROXIMATE; \lnapprox (AmS)

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19436 \DeclareTextCommand{\textlnapprox}{PU}{\9052\211}%* U+2A89
19437 % U+2A8A GREATER-THAN AND NOT APPROXIMATE; \gnapprox (AmS)
19438 \DeclareTextCommand{\textgnapprox}{PU}{\9052\212}%* U+2A8A
19439 % U+2A8B LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-
    THAN;
19440 % \lesseqqgtr (AmS)
19441 \DeclareTextCommand{\textlesseqqgtr}{PU}{\9052\213}%* U+2A8B
19442 % U+2A8C GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-
    THAN;
19443 % \gtreqqless (AmS)
19444 \DeclareTextCommand{\textgtreqqless}{PU}{\9052\214}%* U+2A8C
19445 % U+2A95 SLANTED EQUAL TO OR LESS-THAN; \eqslantless (AmS)
19446 \DeclareTextCommand{\texteqslantless}{PU}{\9052\225}%* U+2A95
19447 % U+2A96 SLANTED EQUAL TO OR GREATER-THAN; \eqslantgtr (AmS)
19448 \DeclareTextCommand{\texteqslantgtr}{PU}{\9052\226}%* U+2A96
19449 % U+2AA6 LESS-THAN CLOSED BY CURVE; \leftslice (stmaryrd)
19450 \DeclareTextCommand{\textleftslice}{PU}{\9052\246}%* U+2AA6
19451 % U+2AA7 GREATER-THAN CLOSED BY CURVE; \rightslice (stmaryrd)
19452 \DeclareTextCommand{\textrightangle}{PU}{\9052\247}%* U+2AA7
19453 % U+2AAF PRECEDES ABOVE SINGLE-LINE EQUALS SIGN; \preceq (Mn-
    Symbol)
19454 \DeclareTextCommand{\textpreceq}{PU}{\9052\257}%* U+2AAF
19455 % \npreceq (txfonts/pxfonts)
19456 \DeclareTextCommand{\textnpreceq}{PU}{\9052\257\83\070}%* U+2AAF U+0338
19457 % U+2AB0 SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN; \succeq (Mn-
    Symbol)
19458 \DeclareTextCommand{\textsucceq}{PU}{\9052\260}%* U+2AB0
19459 % \nsucceq (txfonts/pxfonts)
19460 \DeclareTextCommand{\textnsucceq}{PU}{\9052\260\83\070}%* U+2AB0 U+0338
19461 % U+2AB1 PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO; \prec-
    neq (mathabx)
19462 \DeclareTextCommand{\textprecneq}{PU}{\9052\261}%* U+2AB1
19463 % U+2AB2 SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO; \succ-
    neq (mathabx)
19464 \DeclareTextCommand{\textsuccneq}{PU}{\9052\262}%* U+2AB2
19465 % U+2AB3 PRECEDES ABOVE EQUALS SIGN; \preceqq (txfonts/pxfonts)
19466 \DeclareTextCommand{\textpreceqq}{PU}{\9052\263}%* U+2AB3
19467 % \npreceqq (txfonts/pxfonts)
19468 \DeclareTextCommand{\textnpreceqq}{PU}{\9052\263\83\070}%* U+2AB3 U+0338
19469 % U+2AB4 SUCCEEDS ABOVE EQUALS SIGN; \succeqq (txfonts/pxfonts)
19470 \DeclareTextCommand{\textsucceqq}{PU}{\9052\264}%* U+2AB4
19471 % \nsucceqq (txfonts/pxfonts)
19472 \DeclareTextCommand{\textnsucceqq}{PU}{\9052\264\83\070}%* U+2AB4 U+0338
19473 % U+2AB5 PRECEDES ABOVE NOT EQUAL TO; \precneqq (txfonts/pxfonts)
19474 \DeclareTextCommand{\textprecneqq}{PU}{\9052\265}%* U+2AB5
19475 % U+2AB6 SUCCEEDS ABOVE NOT EQUAL TO; \succneqq (txfonts/pxfonts)
19476 \DeclareTextCommand{\textsuccneqq}{PU}{\9052\266}%* U+2AB6
19477 % U+2AB7 PRECEDES ABOVE ALMOST EQUAL TO; \precapprox (AmS)
19478 \DeclareTextCommand{\textprecapprox}{PU}{\9052\267}%* U+2AB7
19479 % \nprecapprox (txfonts/pxfonts)
19480 \DeclareTextCommand{\textnprecapprox}{PU}{\9052\267\83\070}%* U+2AB7 U+0338
19481 % U+2AB8 SUCCEEDS ABOVE ALMOST EQUAL TO; \succapprox (AmS)
19482 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\270}%* U+2AB8
19483 % \nsuccapprox (txfonts/pxfonts)

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19484 \DeclareTextCommand{\textnsuccapprox}{PU}{\9052\270\83\070}%* U+2AB8 U+0338
19485 % U+2AB9 PRECEDES ABOVE NOT ALMOST EQUAL TO; \precnap-
      prox (AmS)
19486 \DeclareTextCommand{\textprecnapprox}{PU}{\9052\271}%* U+2AB9
19487 % U+2ABA SUCCEEDS ABOVE NOT ALMOST EQUAL TO; \succnap-
      prox (AmS)
19488 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\272}%* U+2ABA
19489 % U+2AC5 SUBSET OF ABOVE EQUALS SIGN; \subseteqq (AmS)
19490 \DeclareTextCommand{\textsubseteqq}{PU}{\9052\305}%* U+2AC5
19491 % \nsubseteqq (txfonts/pxfonts, mathabx)
19492 \DeclareTextCommand{\textnsubseteqq}{PU}{\9052\305\83\070}%* U+2AC5 U+0338
19493 % U+2AC6 SUPERSET OF ABOVE EQUALS SIGN; \supseteqq (AmS)
19494 \DeclareTextCommand{\textsupseteqq}{PU}{\9052\306}%* U+2AC6
19495 % \nsupseteqq (mathabx)
19496 \DeclareTextCommand{\textnsupseteqq}{PU}{\9052\306\83\070}%* U+2AC6 U+0338
19497 % U+2AE3 DOUBLE VERTICAL BAR LEFT TURNSTILE
19498 \DeclareTextCommand{\textdashV}{PU}{\9052\343}%* U+2AE3
19499 %* \textdashV -> \leftVdash (MnSymbol)
19500 % \ndashV (mathabx)
19501 \DeclareTextCommand{\textndashV}{PU}{\9052\343\83\070}%* U+2AE3 U+0338
19502 %* \textndashV -> \nleftVdash (MnSymbol)
19503 % U+2AE4 VERTICAL BAR DOUBLE LEFT TURNSTILE; \Dashv (mathabx)
19504 \DeclareTextCommand{\textDashv}{PU}{\9052\344}%* U+2AE4
19505 %* \textDashv -> \leftmodels (MnSymbol)
19506 % \nDashv (mathabx)
19507 \DeclareTextCommand{\textnDashv}{PU}{\9052\344\83\070}%* U+2AE4 U+0338
19508 %* \textnDashv -> \nleftmodels (MnSymbol)
19509 % U+2AE5 DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;
19510 % \DashV (mathabx)
19511 \DeclareTextCommand{\textDashV}{PU}{\9052\345}%* U+2AE5
19512 %* \textDashV -> \leftModels (MnSymbol)
19513 % \nDashV (mathabx)
19514 \DeclareTextCommand{\textnDashV}{PU}{\9052\345\83\070}%* U+2AE5 U+0338
19515 %* \textnDashV -> \nleftModels (MnSymbol)
19516 % U+2AEA DOUBLE DOWN TACK; \downmodels (MnSymbol)
19517 \DeclareTextCommand{\textdownmodels}{PU}{\9052\352}%* U+2AEA
19518 % \ndownmodels (MnSymbol)
19519 \DeclareTextCommand{\textndownmodels}{PU}{\9052\352\83\070}%* U+2AEA U+0338
19520 % U+2AEB DOUBLE UP TACK; \upmodels (MnSymbol)
19521 \DeclareTextCommand{\textupmodels}{PU}{\9052\353}%* U+2AEB
19522 % \nupmodels (MnSymbol)
19523 \DeclareTextCommand{\textnupmodels}{PU}{\9052\353\83\070}%* U+2AEB U+0338
19524 % U+2AEF VERTICAL LINE WITH CIRCLE ABOVE; \upspoon (MnSymbol)
19525 \DeclareTextCommand{\textupspoon}{PU}{\9052\357}%* U+2AEF
19526 % U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION;
19527 % \interleave (stmaryrd)
19528 \DeclareTextCommand{\textinterleave}{PU}{\9052\364}%* U+2AF4
19529 % U+2AFD DOUBLE SOLIDUS OPERATOR; \slash (stmaryrd)
19530 \DeclareTextCommand{\textslash}{PU}{\9052\375}%* U+2AFD
19531 %* \textslash -> \varparallel (txfonts/pxfonts)

```

#### 46.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF

```

19532 % U+2B20 WHITE PENTAGON; \pentagon (wasysym)
19533 \DeclareTextCommand{\textpentagon}{PU}{\9053\040}%* U+2B20

```

19534 % U+2B21 WHITE HEXAGON; \varhexagon (wasysym)  
 19535 \DeclareTextCommand{\textvarhexagon}{PU}{\9053\041}%\* U+2B21

#### 46.2.37 Latin Extended-C: U+2C60 to U+2C7F

19536 % U+2C7C LATIN SUBSCRIPT SMALL LETTER J  
 19537 \DeclareTextCommand{\textjinferior}{PU}{\9054\174}%\* U+2C7C

#### 46.2.38 Supplemental Punctuation: U+2E00 to U+2E7F

19538 % U+2E13 DOTTED OBELOS; \slashdiv (MnSymbol)  
 19539 \DeclareTextCommand{\textslashdiv}{PU}{\9056\023}%\* U+2E13  
 19540 % U+2E18 INVERTED INTERROBANG; \textinterrobangdown (textcomp)  
 19541 \DeclareTextCommand{\textinterrobangdown}{PU}{\9056\030}% U+2E18  
 19542 % U+2E2D FIVE DOT MARK; \fivedots (MnSymbol)  
 19543 \DeclareTextCommand{\textfivedots}{PU}{\9056\055}%\* U+2E2D

#### 46.2.39 Modifier Tone Letters: U+A700 to U+A71F

19544 % U+A71B MODIFIER LETTER RAISED UP ARROW; \textupstep (tipa)  
 19545 \DeclareTextCommand{\textupstep}{PU}{\9247\033}% U+A71B  
 19546 % U+A71C MODIFIER LETTER RAISED DOWN ARROW;  
 19547 % \textdownstep (tipa)  
 19548 \DeclareTextCommand{\textdownstep}{PU}{\9247\034}% U+A71C

#### 46.2.40 Latin Extended-D: U+A720 to U+A7FF

19549 % U+A727 LATIN SMALL LETTER HENG; \textheng (tipx)  
 19550 \DeclareTextCommand{\textPUheng}{PU}{\9247\047}% U+A727  
 19551 %\* \textPUheng -> \textheng (tipx)  
 19552 % U+A72C LATIN CAPITAL LETTER CUATRILLO; \textlhookfour (tipx)  
 19553 \DeclareTextCommand{\textPUIhookfour}{PU}{\9247\054}% U+A72C  
 19554 %\* \textPUIhookfour -> \textlhookfour (tipx)  
 19555 % U+A730 LATIN LETTER SMALL CAPITAL F; \textscf (tipx)  
 19556 \DeclareTextCommand{\textPUscf}{PU}{\9247\060}% U+A730  
 19557 %\* \textPUscf -> \textscf (tipx)  
 19558 % U+A735 LATIN SMALL LETTER AO; \textao lig (tipx)  
 19559 \DeclareTextCommand{\textPUaolig}{PU}{\9247\065}% U+A735  
 19560 %\* \textPUaolig -> \textao lig (tipx)  
 19561 % U+A74F LATIN SMALL LETTER OO; \oo (wsuipa)  
 19562 \DeclareTextCommand{\textoo}{PU}{\9247\117}%\* U+A74F  
 19563 % U+A788 MODIFIER LETTER LOW CIRCUMFLEX ACCENT  
 19564 \DeclareTextCommand{\textcircumlow}{PU}{\9247\210}% U+A788

#### 46.2.41 Alphabetic Presentation Forms: U+FB00 to U+FB4F

19565 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 19566 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 19567 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 19568 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

#### 46.2.42 Musical Symbols: U+1D100 to U+1D1FF

19569 % U+1D13B MUSICAL SYMBOL WHOLE REST; \GaPa (harmony)  
 19570 \DeclareTextCommand{\textGaPa}{PU}{\9330\064\9335\073}%\* U+1D13B  
 19571 % U+1D13C MUSICAL SYMBOL HALF REST; \HaPa (harmony)  
 19572 \DeclareTextCommand{\textHaPa}{PU}{\9330\064\9335\074}%\* U+1D13C  
 19573 % U+1D13D MUSICAL SYMBOL QUARTER REST; \ViPa (harmony)  
 19574 \DeclareTextCommand{\textViPa}{PU}{\9330\064\9335\075}%\* U+1D13D  
 19575 % U+1D13E MUSICAL SYMBOL EIGHTH REST; \AcPa (harmony)

19576 \DeclareTextCommand{\textAcPa}{PU}{\9330\064\9335\076}%\* U+1D13E  
 19577 % U+1D13F MUSICAL SYMBOL SIXTEENTH REST; \SePa (harmony)  
 19578 \DeclareTextCommand{\textSePa}{PU}{\9330\064\9335\077}%\* U+1D13F  
 19579 % U+1D140 MUSICAL SYMBOL THIRTY-SECOND REST; \ZwPa (harmony)  
 19580 \DeclareTextCommand{\textZwPa}{PU}{\9330\064\9335\100}%\* U+1D140  
 19581 % U+1D15D MUSICAL SYMBOL WHOLE NOTE; \fullnote (wasysym)  
 19582 \DeclareTextCommand{\textfullnote}{PU}{\9330\064\9335\135}%\* U+1D15D  
 19583 %\* \textfullnote -> \Ganz (harmony)  
 19584 % U+1D15E MUSICAL SYMBOL HALF NOTE; \halfnote (wasysym)  
 19585 \DeclareTextCommand{\texthalfnote}{PU}{\9330\064\9335\136}%\* U+1D15E  
 19586 %\* \texthalfnote -> \Halb (harmony)  
 19587 % U+1D15F MUSICAL SYMBOL QUARTER NOTE; \Vier (harmony)  
 19588 \DeclareTextCommand{\textVier}{PU}{\9330\064\9335\137}%\* U+1D15F  
 19589 % U+1D160 MUSICAL SYMBOL EIGHTH NOTE; \Acht (harmony)  
 19590 \DeclareTextCommand{\textAcht}{PU}{\9330\064\9335\140}%\* U+1D160  
 19591 % U+1D161 MUSICAL SYMBOL SIXTEENTH NOTE; \Sech (harmony)  
 19592 \DeclareTextCommand{\textSech}{PU}{\9330\064\9335\141}%\* U+1D161  
 19593 % U+1D162 MUSICAL SYMBOL THIRTY-SECOND NOTE; \Zwdr (harmony)  
 19594 \DeclareTextCommand{\textZwdr}{PU}{\9330\064\9335\142}%\* U+1D162

#### 46.2.43 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

19595 % U+1F30D EARTH GLOBE EUROPE-AFRICA; \Mundus (marvosym)  
 19596 \DeclareTextCommand{\textMundus}{PU}{\9330\074\9337\015}%\* U+1F30D  
 19597 % U+1F319 CRESCENT MOON; \Moon (marvosym)  
 19598 \DeclareTextCommand{\textMoon}{PU}{\9330\074\9337\031}%\* U+1F319  
 19599 % U+1F468 MAN; \ManFace (marvosym)  
 19600 \DeclareTextCommand{\textManFace}{PU}{\9330\075\9334\150}%\* U+1F468  
 19601 % U+1F469 WOMAN; \WomanFace (marvosym)  
 19602 \DeclareTextCommand{\textWomanFace}{PU}{\9330\075\9334\151}%\* U+1F469  
 19603 %\* \textWomanFace -> \Womanface (marvosym)  
 19604 % U+1F4E0 FAX MACHINE; \Fax (marvosym)  
 19605 \DeclareTextCommand{\textFax}{PU}{\9330\075\9334\340}%\* U+1F4E0  
 19606 %\* \textFax -> \Faxmachine (marvosym)  
 19607 % U+1F525 FIRE; \Fire (ifsym)  
 19608 \DeclareTextCommand{\textFire}{PU}{\9330\075\9335\045}%\* U+1F525

#### 46.2.44 Transport and Map Symbols: U+1F680 to U+1F6FF

19609 % U+1F6B2 BICYCLE; \Bicycle (marvosym)  
 19610 \DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%\* U+1F6B2  
 19611 % U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)  
 19612 \DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%\* U+1F6B9  
 19613 % U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)  
 19614 \DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%\* U+1F6BA

#### 46.2.45 Miscellaneous

19615 \DeclareTextCommand{\SS}{PU}{SS}%  
 19616 % \textcopyleft (textcomp)  
 19617 \DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}% U+2184 U+20DD  
 19618 % \ccnc (ccllicenses)  
 19619 \DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%\* U+0024 U+20E0  
 19620 % \ccnd (ccllicenses)  
 19621 \DeclareTextCommand{\textccnd}{PU}{=\9040\335}%\* U+003D U+20DD  
 19622 % \ccsa (ccllicenses)  
 19623 \DeclareTextCommand{\textccsa}{PU}{\9047\362\9040\335}%\* U+27F2 U+20DD



```

19624 % \Info (marvosym, china2e)
19625 \DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\9040\336}%* U+1D422 U+20DE
19626 % \CESign (marvosym)
19627 \DeclareTextCommand{\textCESign}{PU}{\80\103\80\105}%* U+0043 U+0045
19628 %* \textCESign -> \CESign (marvosym)

```

#### 46.2.46 Aliases

Aliases (german.sty)

```

19629 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}%
19630 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}%
19631 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}%
19632 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}%
19633 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}%
19634 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}%
19635 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}%
19636 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}%

```

Aliases (math names)

```

19637 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%*
19638 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}%*
19639 \DeclareTextCommand{\textdiv}{PU}{\textdivide}%*
19640 \DeclareTextCommand{\textpm}{PU}{\textplusminus}%*
19641 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%*
19642 </puenc>

```

### 46.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

19643 < *puvnenc >
19644 \DeclareTextCommand{\abreve}{PU}{\81\003}% U+0103
19645 \DeclareTextCommand{\acircumflex}{PU}{\80\342}% U+00E2
19646 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}% U+00EA
19647 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}% U+00F4
19648 \DeclareTextCommand{\ohorn}{PU}{\81\241}% U+01A1
19649 \DeclareTextCommand{\uhorn}{PU}{\81\260}% U+01B0
19650 \DeclareTextCommand{\ABREVE}{PU}{\81\002}% U+0102
19651 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}% U+00C2
19652 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}% U+00CA
19653 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}% U+00D4
19654 \DeclareTextCommand{\OHORN}{PU}{\81\240}% U+01A0
19655 \DeclareTextCommand{\UHORN}{PU}{\81\257}% U+01AF
19656 \DeclareTextCompositeCommand{\' }{PU}{a}{\80\341}% U+00E1
19657 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1
19658 \DeclareTextCompositeCommand{\` }{PU}{a}{\80\340}% U+00E0
19659 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}% U+1EA3
19660 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3
19661 \DeclareTextCompositeCommand{\' }{PU}{\abreve}{\9036\257}% U+1EAF
19662 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}% U+1EB7
19663 \DeclareTextCompositeCommand{\` }{PU}{\abreve}{\9036\261}% U+1EB1
19664 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}% U+1EB3
19665 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}% U+1EB5
19666 \DeclareTextCompositeCommand{\' }{PU}{\acircumflex}{\9036\245}% U+1EA5

```

19667 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}% U+1EAD  
 19668 \DeclareTextCompositeCommand{\`}{PU}{\acircumflex}{\9036\247}% U+1EA7  
 19669 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}% U+1EA9  
 19670 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}% U+1EAB  
 19671 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
 19672 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
 19673 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
 19674 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}% U+1EBB  
 19675 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
 19676 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}% U+1EBF  
 19677 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}% U+1EC7  
 19678 \DeclareTextCompositeCommand{\`}{PU}{\ecircumflex}{\9036\301}% U+1EC1  
 19679 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}% U+1EC3  
 19680 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}% U+1EC5  
 19681 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
 19682 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
 19683 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
 19684 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}% U+1EC9  
 19685 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
 19686 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 19687 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
 19688 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 19689 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}% U+1ECF  
 19690 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 19691 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}% U+1ED1  
 19692 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}% U+1ED9  
 19693 \DeclareTextCompositeCommand{\`}{PU}{\ocircumflex}{\9036\323}% U+1ED3  
 19694 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}% U+1ED5  
 19695 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}% U+1ED7  
 19696 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}% U+1EDB  
 19697 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}% U+1EE3  
 19698 \DeclareTextCompositeCommand{\`}{PU}{\ohorn}{\9036\335}% U+1EDD  
 19699 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}% U+1EDF  
 19700 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}% U+1EE1  
 19701 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 19702 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
 19703 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 19704 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}% U+1EE7  
 19705 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
 19706 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}% U+1EE9  
 19707 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}% U+1EF1  
 19708 \DeclareTextCompositeCommand{\`}{PU}{\uhorn}{\9036\353}% U+1EEB  
 19709 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}% U+1EED  
 19710 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}% U+1EEF  
 19711 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 19712 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
 19713 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
 19714 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}% U+1EF7  
 19715 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9  
 19716 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
 19717 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
 19718 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
 19719 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}% U+1EA2  
 19720 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3

19721 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}% U+1EAE  
19722 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}% U+1EB6  
19723 \DeclareTextCompositeCommand{\`}{PU}{\ABREVE}{\9036\260}% U+1EB0  
19724 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}% U+1EB2  
19725 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}% U+1EB4  
19726 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}% U+1EA4  
19727 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}% U+1EAC  
19728 \DeclareTextCompositeCommand{\`}{PU}{\ACIRCUMFLEX}{\9036\246}% U+1EA6  
19729 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}% U+1EA8  
19730 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}% U+1EAA  
19731 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
19732 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
19733 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
19734 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}% U+1EBA  
19735 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
19736 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}% U+1EBE  
19737 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}% U+1EC6  
19738 \DeclareTextCompositeCommand{\`}{PU}{\ECIRCUMFLEX}{\9036\300}% U+1EC0  
19739 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}% U+1EC2  
19740 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}% U+1EC4  
19741 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
19742 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
19743 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
19744 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}% U+1EC8  
19745 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
19746 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
19747 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
19748 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
19749 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}% U+1ECE  
19750 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
19751 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}% U+1ED0  
19752 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}% U+1ED8  
19753 \DeclareTextCompositeCommand{\`}{PU}{\OCIRCUMFLEX}{\9036\322}% U+1ED2  
19754 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}% U+1ED4  
19755 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}% U+1ED6  
19756 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}% U+1EDA  
19757 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}% U+1EE2  
19758 \DeclareTextCompositeCommand{\`}{PU}{\OHORN}{\9036\334}% U+1EDC  
19759 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}% U+1EDE  
19760 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}% U+1EE0  
19761 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
19762 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4  
19763 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
19764 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}% U+1EE6  
19765 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
19766 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}% U+1EE8  
19767 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}% U+1EF0  
19768 \DeclareTextCompositeCommand{\`}{PU}{\UHORN}{\9036\352}% U+1EEA  
19769 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}% U+1EEC  
19770 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}% U+1EEE  
19771 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
19772 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4  
19773 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
19774 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}% U+1EF6

```

19775 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
19776 </puvnenc>

```

## 46.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

19777 <*puarenc>
19778 % U+0621;afii57409;ARABIC LETTER HAMZA
19779 \DeclareTextCommand{\hamza}{PU}{\86\041}% U+0621
19780 % U+0622;afii57410;ARABIC LETTER ALEF WITH MADDA ABOVE
19781 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% U+0622
19782 % U+0623;afii57411;ARABIC LETTER ALEF WITH HAMZA ABOVE
19783 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% U+0623
19784 % U+0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE
19785 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% U+0624
19786 % U+0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW
19787 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% U+0625
19788 % U+0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
19789 \DeclareTextCommand{\yahamza}{PU}{\86\046}% U+0626
19790 % U+0627;afii57415;ARABIC LETTER ALEF
19791 \DeclareTextCommand{\alef}{PU}{\86\047}% U+0627
19792 % U+0628;afii57416;ARABIC LETTER BEH
19793 \DeclareTextCommand{\baa}{PU}{\86\050}% U+0628
19794 % U+0629;afii57417;ARABIC LETTER TEH MARBUTA
19795 \DeclareTextCommand{\T}{PU}{\86\051}% U+0629
19796 % U+062A;afii57418;ARABIC LETTER TEH
19797 \DeclareTextCommand{\taa}{PU}{\86\052}% U+062A
19798 % U+062B;afii57419;ARABIC LETTER THEH
19799 \DeclareTextCommand{\thaa}{PU}{\86\053}% U+062B
19800 % U+062C;afii57420;ARABIC LETTER JEEM
19801 \DeclareTextCommand{\jeem}{PU}{\86\054}% U+062C
19802 % U+062D;afii57421;ARABIC LETTER HAH
19803 \DeclareTextCommand{\Haa}{PU}{\86\055}% U+062D
19804 % U+062E;afii57422;ARABIC LETTER KHAH
19805 \DeclareTextCommand{\kha}{PU}{\86\056}% U+062E
19806 % U+062F;afii57423;ARABIC LETTER DAL
19807 \DeclareTextCommand{\dal}{PU}{\86\057}% U+062F
19808 % U+0630;afii57424;ARABIC LETTER THAL
19809 \DeclareTextCommand{\dhal}{PU}{\86\060}% U+0630
19810 % U+0631;afii57425;ARABIC LETTER REH
19811 \DeclareTextCommand{\ra}{PU}{\86\061}% U+0631
19812 % U+0632;afii57426;ARABIC LETTER ZAIN
19813 \DeclareTextCommand{\zay}{PU}{\86\062}% U+0632
19814 % U+0633;afii57427;ARABIC LETTER SEEN
19815 \DeclareTextCommand{\seen}{PU}{\86\063}% U+0633
19816 % U+0634;afii57428;ARABIC LETTER SHEEN
19817 \DeclareTextCommand{\sheen}{PU}{\86\064}% U+0634
19818 % U+0635;afii57429;ARABIC LETTER SAD
19819 \DeclareTextCommand{\sad}{PU}{\86\065}% U+0635
19820 % U+0636;afii57430;ARABIC LETTER DAD
19821 \DeclareTextCommand{\dad}{PU}{\86\066}% U+0636
19822 % U+0637;afii57431;ARABIC LETTER TAH
19823 \DeclareTextCommand{\Ta}{PU}{\86\067}% U+0637

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19824 % U+0638;afii57432;ARABIC LETTER ZAH  
 19825 \DeclareTextCommand{\za}{PU}{\86\070}% U+0638  
 19826 % U+0639;afii57433;ARABIC LETTER AIN  
 19827 \DeclareTextCommand{\ayn}{PU}{\86\071}% U+0639  
 19828 % U+063A;afii57434;ARABIC LETTER GHAIN  
 19829 \DeclareTextCommand{\ghayn}{PU}{\86\072}% U+063A  
 19830 % U+0640;afii57440;ARABIC TATWEEL  
 19831 \DeclareTextCommand{\tatweel}{PU}{\86\100}% U+0640  
 19832 % U+0641;afii57441;ARABIC LETTER FEH  
 19833 \DeclareTextCommand{\fa}{PU}{\86\101}% U+0641  
 19834 % U+0642;afii57442;ARABIC LETTER QAF  
 19835 \DeclareTextCommand{\qaf}{PU}{\86\102}% U+0642  
 19836 % U+0643;afii57443;ARABIC LETTER KAF  
 19837 \DeclareTextCommand{\kaf}{PU}{\86\103}% U+0643  
 19838 % U+0644;afii57444;ARABIC LETTER LAM  
 19839 \DeclareTextCommand{\lam}{PU}{\86\104}% U+0644  
 19840 % U+0645;afii57445;ARABIC LETTER MEEM  
 19841 \DeclareTextCommand{\meem}{PU}{\86\105}% U+0645  
 19842 % U+0646;afii57446;ARABIC LETTER NOON  
 19843 \DeclareTextCommand{\nun}{PU}{\86\106}% U+0646  
 19844 % U+0647;afii57470;ARABIC LETTER HEH  
 19845 \DeclareTextCommand{\ha}{PU}{\86\107}% U+0647  
 19846 % U+0648;afii57448;ARABIC LETTER WAW  
 19847 \DeclareTextCommand{\waw}{PU}{\86\110}% U+0648  
 19848 % U+0649;afii57449;ARABIC LETTER ALEF MAKSURA  
 19849 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% U+0649  
 19850 % U+064A;afii57450;ARABIC LETTER YEH  
 19851 \DeclareTextCommand{\ya}{PU}{\86\112}% U+064A  
  
 19852 % U+064B;afii57451;ARABIC FATHATAN  
 19853 \DeclareTextCommand{\nasb}{PU}{\86\113}% U+064B  
 19854 % U+064C;afii57452;ARABIC DAMMATAN  
 19855 \DeclareTextCommand{\raff}{PU}{\86\114}% U+064C  
 19856 % U+064D;afii57453;ARABIC KASRATAN  
 19857 \DeclareTextCommand{\jarr}{PU}{\86\115}% U+064D  
 19858 % U+064E;afii57454;ARABIC FATHA  
 19859 \DeclareTextCommand{\fatha}{PU}{\86\116}% U+064E  
 19860 % U+064F;afii57455;ARABIC DAMMA  
 19861 \DeclareTextCommand{\damma}{PU}{\86\117}% U+064F  
 19862 % U+0650;afii57456;ARABIC KASRA  
 19863 \DeclareTextCommand{\kasra}{PU}{\86\120}% U+0650  
 19864 % U+0651;afii57457;ARABIC SHADDA  
 19865 \DeclareTextCommand{\shadda}{PU}{\86\121}% U+0651  
 19866 % U+0652;afii57458;ARABIC SUKUN  
 19867 \DeclareTextCommand{\sukun}{PU}{\86\122}% U+0652  
  
 Farsi  
 19868 % U+067E ARABIC LETTER PEH; afii57506  
 19869 \DeclareTextCommand{\peh}{PU}{\86\176}% U+067E  
 19870 % U+0686 ARABIC LETTER TCHEH; afii57507  
 19871 \DeclareTextCommand{\tcheh}{PU}{\86\206}% U+0686  
 19872 % U+0698 ARABIC LETTER JEH; afii57508  
 19873 \DeclareTextCommand{\jeh}{PU}{\86\230}% U+0698  
 19874 % U+06A9 ARABIC LETTER KEHEH  
 19875 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% U+06A9

19876 % U+06AF ARABIC LETTER GAF; afi57509  
 19877 \DeclareTextCommand{\gaf}{PU}{\86\257}% U+06AF  
 19878 % U+06CC ARABIC LETTER FARSI YEH  
 19879 \DeclareTextCommand{\farsiya}{PU}{\86\314}% U+06CC  
  
 19880 % U+200C ZERO WIDTH NON-JOINER; afi61664  
 19881 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% U+200C  
 19882 % U+200D ZERO WIDTH JOINER; afi301  
 19883 \DeclareTextCommand{\textEncodingNoboundary}{PU}{\9040\015}% U+200D  
  
 19884 (/puarenc)  
  
 19885 (\*psdextra)  
 19886 \Hy@VersionCheck{psdextra.def}  
 19887 \newcommand\*{\psdmapshortnames}{%  
 19888 \let\MVPlus\textMVPlus  
 19889 \let\MVComma\textMVComma  
 19890 \let\MVMinus\textMVMinus  
 19891 \let\MVPeriod\textMVPeriod  
 19892 \let\MVDivision\textMVDivision  
 19893 \let\MVZero\textMVZero  
 19894 \let\MVOne\textMVOne  
 19895 \let\MVTwo\textMVTwo  
 19896 \let\MVThree\textMVThree  
 19897 \let\MVFour\textMVFour  
 19898 \let\MVFive\textMVFive  
 19899 \let\MVSix\textMVSix  
 19900 \let\MVSeven\textMVSeven  
 19901 \let\MVEight\textMVEight  
 19902 \let\MVNine\textMVNine  
 19903 \let\MVAt\textMVAt  
 19904 \let\copyright\textcopyright  
 19905 \let\twosuperior\texttwosuperior  
 19906 \let\threesuperior\textthreesuperior  
 19907 \let\onesuperior\textonesuperior  
 19908 \let\Thorn\textThorn  
 19909 \let\thorn\textthorn  
 19910 \let\hbar\texthbar  
 19911 \let\hausaB\texthausaB  
 19912 \let\hausaD\texthausaD  
 19913 \let\hausaK\texthausaK  
 19914 \let\barl\textbarl  
 19915 \let\inve\textinve  
 19916 \let\slashc\textslashc  
 19917 \let\scripta\textscripta  
 19918 \let\openo\textopeno  
 19919 \let\rtaild\textrtaild  
 19920 \let\reve\textreve  
 19921 \let\schwa\textschwa  
 19922 \let\niepsilon\textniepsilon  
 19923 \let\revepsilon\textrevepsilon  
 19924 \let\rhookrevepsilon\texthookrevepsilon  
 19925 \let\scriptg\textscriptg  
 19926 \let\scg\textscg  
 19927 \let\ipagamma\textipagamma  
 19928 \let\babygamma\textbabygamma

19929 \let\bari\textbari  
 19930 \let\niota\textniota  
 19931 \let\sci\textsci  
 19932 \let\scn\textscn  
 19933 \let\niphi\textniphi  
 19934 \let\longlegr\textlonglegr  
 19935 \let\scr\textscr  
 19936 \let\invscr\textinvscr  
 19937 \let\esh\textesh  
 19938 \let\baru\textbaru  
 19939 \let\niupsilon\textniupsilon  
 19940 \let\scriptv\textscriptv  
 19941 \let\turnv\textturnv  
 19942 \let\turnw\textturnw  
 19943 \let\turny\textturny  
 19944 \let\scy\textscy  
 19945 \let\yogh\textyogh  
 19946 \let\glotstop\textglotstop  
 19947 \let\revglotstop\textrevglotstop  
 19948 \let\invglotstop\textinvglotstop  
 19949 \let\Gamma\textGamma  
 19950 \let\Delta\textDelta  
 19951 \let\Theta\textTheta  
 19952 \let\Lambda\textLambda  
 19953 \let\Xi\textXi  
 19954 \let\Pi\textPi  
 19955 \let\Sigma\textSigma  
 19956 \let\Upsilon\textUpsilon  
 19957 \let\Phi\textPhi  
 19958 \let\Psi\textPsi  
 19959 \let\Omega\textOmega  
 19960 \let\alpha\textalpha  
 19961 \let\beta\textbeta  
 19962 \let\gamma\textgamma  
 19963 \let\delta\textdelta  
 19964 \let\epsilon\textepsilon  
 19965 \let\zeta\textzeta  
 19966 \let\eta\texteta  
 19967 \let\theta\texttheta  
 19968 \let\iota\textiota  
 19969 \let\kappa\textkappa  
 19970 \let\lambda\textlambda  
 19971 \let\mu\textmu  
 19972 \let\mugreek\textmugreek  
 19973 \let\nu\textnu  
 19974 \let\xi\textxi  
 19975 \let\pi\textpi  
 19976 \let\rho\textrho  
 19977 \let\varsigma\textvarsigma  
 19978 \let\sigma\textsigma  
 19979 \let\tau\texttau  
 19980 \let\upsilon\textupsilon  
 19981 \let\phi\textphi  
 19982 \let\chi\textchi

19983 \let\psi\textpsi  
 19984 \let\omega\textomega  
 19985 \let\scd\textscd  
 19986 \let\scu\textscu  
 19987 \let\iinferior\textiinferior  
 19988 \let\rinferior\textrinferior  
 19989 \let\uinferior\textuinferior  
 19990 \let\vinferior\textvinferior  
 19991 \let\betainferior\textbetainferior  
 19992 \let\gammainferior\textgammainferior  
 19993 \let\rhoinferior\textrhoinferior  
 19994 \let\phiinferior\textphiinferior  
 19995 \let\chiinferior\textchiinferior  
 19996 \let\barsci\textbarsci  
 19997 \let\barp\textbarp  
 19998 \let\barscu\textbarscu  
 19999 \let\htrtaild\texthtrtaild  
 20000 \let\dagger\textdagger  
 20001 \let\bullet\textbullet  
 20002 \let\hdotfor\texthdotfor  
 20003 \let\prime\textprime  
 20004 \let\second\textsecond  
 20005 \let\third\textthird  
 20006 \let\backprime\textbackprime  
 20007 \let\lefttherefore\textlefttherefore  
 20008 \let\fourth\textfourth  
 20009 \let\diamonddots\textdiamonddots  
 20010 \let\zerosuperior\textzerosuperior  
 20011 \let\isuperior\textisuperior  
 20012 \let\foursuperior\textfoursuperior  
 20013 \let\fivesuperior\textfivesuperior  
 20014 \let\sixsuperior\textsixsuperior  
 20015 \let\sevensuperior\textsevensuperior  
 20016 \let\eightsuperior\texteightsuperior  
 20017 \let\ninesuperior\textninesuperior  
 20018 \let\plussuperior\textplussuperior  
 20019 \let\minussuperior\textminussuperior  
 20020 \let\equalsuperior\textequalsuperior  
 20021 \let\parenleftsuperior\textparenleftsuperior  
 20022 \let\parenrightsuperior\textparenrightsuperior  
 20023 \let\nsuperior\textnsuperior  
 20024 \let\zeroinferior\textzeroinferior  
 20025 \let\oneinferior\textoneinferior  
 20026 \let\twoinferior\texttwoinferior  
 20027 \let\threeinferior\textthreeinferior  
 20028 \let\fourinferior\textfourinferior  
 20029 \let\fiveinferior\textfiveinferior  
 20030 \let\sixinferior\textsixinferior  
 20031 \let\seveninferior\textseveninferior  
 20032 \let\eightinferior\texteightinferior  
 20033 \let\nineinferior\textnineinferior  
 20034 \let\plusinferior\textplusinferior  
 20035 \let\minusinferior\textminusinferior  
 20036 \let\equalsinferior\textequalsinferior



20037 \let\parenleftinferior\textparenleftinferior  
 20038 \let\parenrightinferior\textparenrightinferior  
 20039 \let\ainferior\textainferior  
 20040 \let\einferior\texteinferior  
 20041 \let\oinferior\textoinferior  
 20042 \let\xinferior\textxinferior  
 20043 \let\schwainferior\textschwainferior  
 20044 \let\hinferior\texthinferior  
 20045 \let\kinferior\textkinferior  
 20046 \let\linferior\textlinferior  
 20047 \let\minferior\textminferior  
 20048 \let\ninferior\textninferior  
 20049 \let\pinferior\textpinferior  
 20050 \let\sinferior\textsinferior  
 20051 \let\tinferior\texttinferior  
 20052 \let\Deleatur\textDeleatur  
 20053 \let\hslash\texthslash  
 20054 \let\Im\textIm  
 20055 \let\ell\textell  
 20056 \let\wp\textwp  
 20057 \let\Re\textRe  
 20058 \let\mho\textmho  
 20059 \let\riota\textriota  
 20060 \let\Finv\textFinv  
 20061 \let\aleph\textaleph  
 20062 \let\beth\textbeth  
 20063 \let\gimel\textgimel  
 20064 \let\daleth\textdaleth  
 20065 \let\xfax\textfax  
 20066 \let\Game\textGame  
 20067 \let\leftarrow\textleftarrow  
 20068 \let\uparrow\textuparrow  
 20069 \let\rightarrow\textrightarrow  
 20070 \let\downarrow\textdownarrow  
 20071 \let\leftrightarrow\textleftrightarrow  
 20072 \let\updownarrow\textupdownarrow  
 20073 \let\nwarrow\textnwarrow  
 20074 \let\nearrow\textnearrow  
 20075 \let\searrow\textsearrow  
 20076 \let\swarrow\textswarrow  
 20077 \let\nleftarrow\textnleftarrow  
 20078 \let\nrightarrow\textnrightarrow  
 20079 \let\twoheadleftarrow\texttwoheadleftarrow  
 20080 \let\ntwoheadleftarrow\textntwoheadleftarrow  
 20081 \let\twoheaduparrow\texttwoheaduparrow  
 20082 \let\twoheadrightarrow\texttwoheadrightarrow  
 20083 \let\ntwoheadrightarrow\textntwoheadrightarrow  
 20084 \let\twoheaddownarrow\texttwoheaddownarrow  
 20085 \let\leftarrowtail\textleftarrowtail  
 20086 \let\rightarrowtail\textrightarrowtail  
 20087 \let\mapsto\textmapsto  
 20088 \let\hookleftarrow\texthookleftarrow  
 20089 \let\hookrightarrow\texthookrightarrow  
 20090 \let\looparrowleft\textlooparrowleft

20091 `\let\looparrowright\textlooparrowright`  
 20092 `\let\neftrightarrow\textneftrightarrow`  
 20093 `\let\lightning\textlightning`  
 20094 `\let\dlsh\textdlsh`  
 20095 `\let\curvearrowleft\textcurvearrowleft`  
 20096 `\let\curvearrowright\textcurvearrowright`  
 20097 `\let\leftharpoonup\textleftharpoonup`  
 20098 `\let\leftharpoondown\textleftharpoondown`  
 20099 `\let\upharpoonright\textupharpoonright`  
 20100 `\let\upharpoonleft\textupharpoonleft`  
 20101 `\let\rightharpoonup\text\rightharpoonup`  
 20102 `\let\rightharpoondown\text\rightharpoondown`  
 20103 `\let\downharpoonright\textdownharpoonright`  
 20104 `\let\downharpoonleft\textdownharpoonleft`  
 20105 `\let\rightleftarrows\textrightleftarrows`  
 20106 `\let\updownarrows\textupdownarrows`  
 20107 `\let\leftrightarrows\textleftrightarrows`  
 20108 `\let\leftleftarrows\textleftleftarrows`  
 20109 `\let\upuparrows\textupuparrows`  
 20110 `\let\righttrightarrows\textrighttrightarrows`  
 20111 `\let\downdownarrows\textdowndownarrows`  
 20112 `\let\leftrightharpoons\textleftrightharpoons`  
 20113 `\let\rightleftharpoons\textrightleftharpoons`  
 20114 `\let\Leftarrow\textLeftarrow`  
 20115 `\let\Leftarrow\textLeftarrow`  
 20116 `\let\rightarrow\textrightarrow`  
 20117 `\let\Leftarrow\textLeftarrow`  
 20118 `\let\Uparrow\textUparrow`  
 20119 `\let\rightarrow\textrightarrow`  
 20120 `\let\Downarrow\textDownarrow`  
 20121 `\let\Leftarrow\textLeftarrow`  
 20122 `\let\Updownarrow\textUpdownarrow`  
 20123 `\let\Narrow\textNarrow`  
 20124 `\let\Narrow\textNarrow`  
 20125 `\let\searrow\textsearrow`  
 20126 `\let\searrow\textsearrow`  
 20127 `\let\Leftarrow\textLeftarrow`  
 20128 `\let\rightarrow\textrightarrow`  
 20129 `\let\leftsquigarrow\textleftsquigarrow`  
 20130 `\let\rightsquigarrow\textrightsquigarrow`  
 20131 `\let\dashleftarrow\textdashleftarrow`  
 20132 `\let\dasheduparrow\textdasheduparrow`  
 20133 `\let\dashrightarrow\textdashrightarrow`  
 20134 `\let\dasheddownarrow\textdasheddownarrow`  
 20135 `\let\pointer\textpointer`  
 20136 `\let\downuparrows\textdownuparrows`  
 20137 `\let\leftarrowtriangle\textleftarrowtriangle`  
 20138 `\let\rightarrowtriangle\textrightarrowtriangle`  
 20139 `\let\leftrightarrowtriangle\textleftrightarrowtriangle`  
 20140 `\let\forall\textforall`  
 20141 `\let\complement\textcomplement`  
 20142 `\let\partial\textpartial`  
 20143 `\let\exists\textexists`  
 20144 `\let\nexists\textnexists`

20145 `\let\emptyset\textemptyset`  
 20146 `\let\triangle\texttriangle`  
 20147 `\let\nabla\textnabla`  
 20148 `\let\in\textin`  
 20149 `\let\notin\textnotin`  
 20150 `\let\smallin\textsmallin`  
 20151 `\let\ni\textni`  
 20152 `\let\notowner\textnotowner`  
 20153 `\let\smallowns\textsmallowns`  
 20154 `\let\prod\textprod`  
 20155 `\let\amalg\textamalg`  
 20156 `\let\sum\textsum`  
 20157 `\let\mp\textmp`  
 20158 `\let\dotplus\textdotplus`  
 20159 `\let\Divides\textDivides`  
 20160 `\let\DividesNot\textDividesNot`  
 20161 `\let\setminus\textsetminus`  
 20162 `\let\ast\textast`  
 20163 `\let\circ\textcirc`  
 20164 `\let\surd\textsurd`  
 20165 `\let\propto\textpropto`  
 20166 `\let\infty\textinfty`  
 20167 `\let\angle\textangle`  
 20168 `\let\measuredangle\textmeasuredangle`  
 20169 `\let\sphericalangle\textsphericalangle`  
 20170 `\let\mid\textmid`  
 20171 `\let\nmid\textnmid`  
 20172 `\let\parallel\textparallel`  
 20173 `\let\nparallel\textnparallel`  
 20174 `\let\wedge\textwedge`  
 20175 `\let\owedge\textowedge`  
 20176 `\let\vee\textvee`  
 20177 `\let\ovee\textovee`  
 20178 `\let\cap\textcap`  
 20179 `\let\cup\textcup`  
 20180 `\let\int\textint`  
 20181 `\let\iint\textiint`  
 20182 `\let\iiint\textiiiint`  
 20183 `\let\oint\textoint`  
 20184 `\let\oiint\textoiint`  
 20185 `\let\ointclockwise\textointclockwise`  
 20186 `\let\ointctrlockwise\textointctrlockwise`  
 20187 `\let\therefore\texttherefore`  
 20188 `\let\because\textbecause`  
 20189 `\let\vdots\textvdots`  
 20190 `\let\squaredots\textsquaredots`  
 20191 `\let\dotminus\textdotminus`  
 20192 `\let\eqcolon\texteqcolon`  
 20193 `\let\sim\textsim`  
 20194 `\let\backsim\textbacksim`  
 20195 `\let\nbacksim\textnbacksim`  
 20196 `\let\wr\textwr`  
 20197 `\let\sim\textnsim`  
 20198 `\let\eqsim\texteqsim`

20199 \let\neqsim\textneqsim  
 20200 \let\simeq\textsimeq  
 20201 \let\nsimeq\textnsimeq  
 20202 \let\cong\textcong  
 20203 \let\ncong\textncong  
 20204 \let\approx\textapprox  
 20205 \let\napprox\textnapprox  
 20206 \let\approxeq\textapproxeq  
 20207 \let\napproxeq\textnapproxeq  
 20208 \let\triplesim\texttriplesim  
 20209 \let\ntriplesim\textntriplesim  
 20210 \let\backcong\textbackcong  
 20211 \let\nbackcong\textnbackcong  
 20212 \let\asymp\textasymp  
 20213 \let\nasymp\textnasymp  
 20214 \let\Bumpeq\textBumpeq  
 20215 \let\NBumpeq\textNBumpeq  
 20216 \let\bumpeq\textbumpeq  
 20217 \let\Nbumpeq\textNbumpeq  
 20218 \let\doteq\textdoteq  
 20219 \let\ndoteq\textndoteq  
 20220 \let\doteqdot\textdoteqdot  
 20221 \let\NDoteq\textNDoteq  
 20222 \let\fallingdoteq\textfallingdoteq  
 20223 \let\Nfallingdoteq\textNfallingdoteq  
 20224 \let\risingdoteq\textrisingdoteq  
 20225 \let\Nrisingdoteq\textNrisingdoteq  
 20226 \let\colonequals\textcolonequals  
 20227 \let\equalscolon\textequalscolon  
 20228 \let\eqcirc\texteqcirc  
 20229 \let\neqcirc\textneqcirc  
 20230 \let\circeq\textcirceq  
 20231 \let\ncirceq\textncirceq  
 20232 \let\hateq\texthateq  
 20233 \let\nhateq\textnhateq  
 20234 \let\triangleeq\texttriangleeq  
 20235 \let\neq\textneq  
 20236 \let\ne\textne  
 20237 \let\equiv\textequiv  
 20238 \let\nequiv\textnequiv  
 20239 \let\leq\textleq  
 20240 \let\le\textle  
 20241 \let\geq\textgeq  
 20242 \let\ge\textge  
 20243 \let\leqq\textleqq  
 20244 \let\Nleqq\textNleqq  
 20245 \let\geqq\textgeqq  
 20246 \let\Ngeqq\textNgeqq  
 20247 \let\lneqq\textlneqq  
 20248 \let\gneqq\textgneqq  
 20249 \let\ll\textll  
 20250 \let\nll\textnll  
 20251 \let\gg\textgg  
 20252 \let\ngg\textngg

20253 \let\between\textbetween  
 20254 \let\nless\textnless  
 20255 \let\ngtr\textngtr  
 20256 \let\nleq\textnleq  
 20257 \let\ngeq\textngeq  
 20258 \let\lessim\textlessim  
 20259 \let\gtrsim\textgtrsim  
 20260 \let\nlessim\textnlessim  
 20261 \let\ngtrsim\textngtrsim  
 20262 \let\lessgtr\textlessgtr  
 20263 \let\gtrless\textgtrless  
 20264 \let\ngtrless\textngtrless  
 20265 \let\nlessgtr\textnlessgtr  
 20266 \let\prec\textprec  
 20267 \let\succ\textsucc  
 20268 \let\preccurlyeq\textpreccurlyeq  
 20269 \let\succcurlyeq\textsucccurlyeq  
 20270 \let\precsim\textprecsim  
 20271 \let\nprecsim\textnprecsim  
 20272 \let\succsim\textsuccsim  
 20273 \let\nsuccsim\textnsuccsim  
 20274 \let\nprec\textnprec  
 20275 \let\nsucc\textnsucc  
 20276 \let\subset\textsubset  
 20277 \let\supset\textsupset  
 20278 \let\nsubset\textnsubset  
 20279 \let\nsupset\textnsupset  
 20280 \let\subseteq\textsubseteq  
 20281 \let\supseteq\textsupseteq  
 20282 \let\nsubseteq\textnsubseteq  
 20283 \let\nsupseteq\textnsupseteq  
 20284 \let\subsetneq\textsubsetneq  
 20285 \let\supsetneq\textsupsetneq  
 20286 \let\cupdot\textcupdot  
 20287 \let\cupplus\textcupplus  
 20288 \let\sqsubset\textsqssubset  
 20289 \let\nsqsubset\textnsqsubset  
 20290 \let\sqsupset\textsqsupset  
 20291 \let\nsqsupset\textnsqsupset  
 20292 \let\sqsubseteq\textsqssubseq  
 20293 \let\nsqsubseq\textnsqsubseq  
 20294 \let\sqsupseteq\textsqsupseq  
 20295 \let\nsqsupseq\textnsqsupseq  
 20296 \let\sqcap\textsqqcap  
 20297 \let\sqcup\textsqqcup  
 20298 \let\oplus\textoplus  
 20299 \let\ominus\textominus  
 20300 \let\otimes\textotimes  
 20301 \let\oslash\textoslash  
 20302 \let\odot\textodot  
 20303 \let\circledcirc\textcircledcirc  
 20304 \let\circledast\textcircledast  
 20305 \let\circleddash\textcircleddash  
 20306 \let\boxplus\textboxplus

20307  $\backslash\text{let}\backslash\text{boxminus}\backslash\text{textboxminus}$   
 20308  $\backslash\text{let}\backslash\text{boxtimes}\backslash\text{textboxtimes}$   
 20309  $\backslash\text{let}\backslash\text{boxdot}\backslash\text{textboxdot}$   
 20310  $\backslash\text{let}\backslash\text{vdash}\backslash\text{textvdash}$   
 20311  $\backslash\text{let}\backslash\text{dashv}\backslash\text{textdashv}$   
 20312  $\backslash\text{let}\backslash\text{ndashv}\backslash\text{textndashv}$   
 20313  $\backslash\text{let}\backslash\text{top}\backslash\text{texttop}$   
 20314  $\backslash\text{let}\backslash\text{ndownvdash}\backslash\text{textndownvdash}$   
 20315  $\backslash\text{let}\backslash\text{bot}\backslash\text{textbot}$   
 20316  $\backslash\text{let}\backslash\text{nupvdash}\backslash\text{textnupvdash}$   
 20317  $\backslash\text{let}\backslash\text{vDash}\backslash\text{textvDash}$   
 20318  $\backslash\text{let}\backslash\text{VDash}\backslash\text{textVDash}$   
 20319  $\backslash\text{let}\backslash\text{Vvdash}\backslash\text{textVvdash}$   
 20320  $\backslash\text{let}\backslash\text{nVdash}\backslash\text{textnVdash}$   
 20321  $\backslash\text{let}\backslash\text{VDash}\backslash\text{textVDash}$   
 20322  $\backslash\text{let}\backslash\text{nvDash}\backslash\text{textnvDash}$   
 20323  $\backslash\text{let}\backslash\text{nvDash}\backslash\text{textnvDash}$   
 20324  $\backslash\text{let}\backslash\text{nVdash}\backslash\text{textnVdash}$   
 20325  $\backslash\text{let}\backslash\text{nVDash}\backslash\text{textnVDash}$   
 20326  $\backslash\text{let}\backslash\text{lhs}\backslash\text{textrhs}$   
 20327  $\backslash\text{let}\backslash\text{rhd}\backslash\text{textrhd}$   
 20328  $\backslash\text{let}\backslash\text{unlhd}\backslash\text{textunlhd}$   
 20329  $\backslash\text{let}\backslash\text{unrhd}\backslash\text{textunrhd}$   
 20330  $\backslash\text{let}\backslash\text{multimapdotbothA}\backslash\text{textmultimapdotbothA}$   
 20331  $\backslash\text{let}\backslash\text{multimapdotbothB}\backslash\text{textmultimapdotbothB}$   
 20332  $\backslash\text{let}\backslash\text{multimap}\backslash\text{textmultimap}$   
 20333  $\backslash\text{let}\backslash\text{veebar}\backslash\text{textveebar}$   
 20334  $\backslash\text{let}\backslash\text{barwedge}\backslash\text{textbarwedge}$   
 20335  $\backslash\text{let}\backslash\text{star}\backslash\text{textstar}$   
 20336  $\backslash\text{let}\backslash\text{divideontimes}\backslash\text{textdivideontimes}$   
 20337  $\backslash\text{let}\backslash\text{bowtie}\backslash\text{textbowtie}$   
 20338  $\backslash\text{let}\backslash\text{ltimes}\backslash\text{texltimes}$   
 20339  $\backslash\text{let}\backslash\text{rtimes}\backslash\text{textrtimes}$   
 20340  $\backslash\text{let}\backslash\text{leftthreetimes}\backslash\text{textleftthreetimes}$   
 20341  $\backslash\text{let}\backslash\text{rightthreetimes}\backslash\text{textrightthreetimes}$   
 20342  $\backslash\text{let}\backslash\text{backsimeq}\backslash\text{textbacksimeq}$   
 20343  $\backslash\text{let}\backslash\text{nbacksimeq}\backslash\text{textnbacksimeq}$   
 20344  $\backslash\text{let}\backslash\text{curlyvee}\backslash\text{textcurlyvee}$   
 20345  $\backslash\text{let}\backslash\text{curlywedge}\backslash\text{textcurlywedge}$   
 20346  $\backslash\text{let}\backslash\text{Subset}\backslash\text{textSubset}$   
 20347  $\backslash\text{let}\backslash\text{nSubset}\backslash\text{textnSubset}$   
 20348  $\backslash\text{let}\backslash\text{Supset}\backslash\text{textSupset}$   
 20349  $\backslash\text{let}\backslash\text{nSupset}\backslash\text{textnSupset}$   
 20350  $\backslash\text{let}\backslash\text{Cap}\backslash\text{textCap}$   
 20351  $\backslash\text{let}\backslash\text{Cup}\backslash\text{textCup}$   
 20352  $\backslash\text{let}\backslash\text{pitchfork}\backslash\text{textpitchfork}$   
 20353  $\backslash\text{let}\backslash\text{lessdot}\backslash\text{textlessdot}$   
 20354  $\backslash\text{let}\backslash\text{gtrdot}\backslash\text{textgtrdot}$   
 20355  $\backslash\text{let}\backslash\text{lll}\backslash\text{textlll}$   
 20356  $\backslash\text{let}\backslash\text{ggg}\backslash\text{textggg}$   
 20357  $\backslash\text{let}\backslash\text{lesseqgtr}\backslash\text{textlesseqgtr}$   
 20358  $\backslash\text{let}\backslash\text{gtreqless}\backslash\text{textgtreqless}$   
 20359  $\backslash\text{let}\backslash\text{curlyeqprec}\backslash\text{textcurlyeqprec}$   
 20360  $\backslash\text{let}\backslash\text{ncurlyeqprec}\backslash\text{textncurlyeqprec}$

20361 \let\curlyeqsucc\textcurlyeqsucc  
 20362 \let\ncurlyeqsucc\textncurlyeqsucc  
 20363 \let\mpreccurlyeq\textmpreccurlyeq  
 20364 \let\msucccurlyeq\textmsucccurlyeq  
 20365 \let\mqsubseteq\textmqsubseteq  
 20366 \let\mqsupseteq\textmqsupseteq  
 20367 \let\sqsubsetneq\textsqsubsetneq  
 20368 \let\sqsupsetneq\textsqsupsetneq  
 20369 \let\lnsim\textlnsim  
 20370 \let\gnsim\textgnsim  
 20371 \let\precnsim\textprecnsim  
 20372 \let\succnsim\textsuccnsim  
 20373 \let\ntiangleleft\textntiangleleft  
 20374 \let\ntriangleright\textntriangleright  
 20375 \let\ntianglelefteq\textntianglelefteq  
 20376 \let\ntrianglerighteq\textntrianglerighteq  
 20377 \let\vdots\textvdots  
 20378 \let\cdots\textcdots  
 20379 \let\udots\textudots  
 20380 \let\ddots\textddots  
 20381 \let\barin\textbarin  
 20382 \let\diameter\textdiameter  
 20383 \let\backneg\textbackneg  
 20384 \let\wasylounge\textwasylounge  
 20385 \let\invbackneg\textinvbackneg  
 20386 \let\clock\textclock  
 20387 \let\ulcorner\textulcorner  
 20388 \let\urcorner\texturcorner  
 20389 \let\llcorner\textllcorner  
 20390 \let\lrcorner\textlrcorner  
 20391 \let\frown\textfrown  
 20392 \let\smile\textsmile  
 20393 \let\Keyboard\textKeyboard  
 20394 \let\langle\textlangle  
 20395 \let\rangle\textrangle  
 20396 \let\APLinv\textAPLinv  
 20397 \let\Tumbler\textTumbler  
 20398 \let\notslash\textnotslash  
 20399 \let\notbackslash\textnotbackslash  
 20400 \let\boxbackslash\textboxbackslash  
 20401 \let\APLleftarrowbox\textAPLleftarrowbox  
 20402 \let\APLrightarrowbox\textAPLrightarrowbox  
 20403 \let\APLuparrowbox\textAPLuparrowbox  
 20404 \let\APLdownarrowbox\textAPLdownarrowbox  
 20405 \let\APLinput\textAPLinput  
 20406 \let\Request\textRequest  
 20407 \let\Beam\textBeam  
 20408 \let\hexagon\texthexagon  
 20409 \let\APLbox\textAPLbox  
 20410 \let\ForwardToIndex\textForwardToIndex  
 20411 \let\RewindToIndex\textRewindToIndex  
 20412 \let\bbslash\textbbslash  
 20413 \let\CircledA\textCircledA  
 20414 \let\CleaningF\textCleaningF

20415 \let\CleaningFF\textCleaningFF  
 20416 \let\CleaningP\textCleaningP  
 20417 \let\CleaningPP\textCleaningPP  
 20418 \let\CuttingLine\textCuttingLine  
 20419 \let\UParrow\textUParrow  
 20420 \let\bigtriangleup\textbigtriangleup  
 20421 \let\Forward\textForward  
 20422 \let\triangleright\texttriangleright  
 20423 \let\RHD\textRHD  
 20424 \let\DOWNarrow\textDOWNarrow  
 20425 \let\bigtriangledown\textbigtriangledown  
 20426 \let\Rewind\textRewind  
 20427 \let\triangleleft\texttriangleleft  
 20428 \let\LHD\textLHD  
 20429 \let\diamond\textdiamond  
 20430 \let\lozenge\textlozenge  
 20431 \let\LEFTCIRCLE\textLEFTCIRCLE  
 20432 \let\RIGHTCIRCLE\textRIGHTCIRCLE  
 20433 \let\openbullet\textopenbullet  
 20434 \let\boxbar\textboxbar  
 20435 \let\bigcircle\textbigcircle  
 20436 \let\Cloud\textCloud  
 20437 \let\FiveStar\textFiveStar  
 20438 \let\FiveStarOpen\textFiveStarOpen  
 20439 \let\Phone\textPhone  
 20440 \let\boxempty\textboxempty  
 20441 \let\Checkedbox\textCheckedbox  
 20442 \let\Crossedbox\textCrossedbox  
 20443 \let\Coffeecup\textCoffeecup  
 20444 \let\HandCuffLeft\textHandCuffLeft  
 20445 \let\HandCuffRight\textHandCuffRight  
 20446 \let\HandLeft\textHandLeft  
 20447 \let\HandRight\textHandRight  
 20448 \let\Radioactivity\textRadioactivity  
 20449 \let\Biohazard\textBiohazard  
 20450 \let\Ankh\textAnkh  
 20451 \let\YinYang\textYinYang  
 20452 \let\frownie\textfrownie  
 20453 \let\smiley\textsmiley  
 20454 \let\blacksmiley\textblacksmiley  
 20455 \let\sun\textsun  
 20456 \let\leftmoon\textleftmoon  
 20457 \let\rightmoon\textrightmoon  
 20458 \let\mercury\textmercury  
 20459 \let\earth\textearth  
 20460 \let\male\textmale  
 20461 \let\jupiter\textjupiter  
 20462 \let\saturn\textsaturn  
 20463 \let\uranus\texturanus  
 20464 \let\neptune\textneptune  
 20465 \let\pluto\textpluto  
 20466 \let\aries\textaries  
 20467 \let\taurus\texttaurus  
 20468 \let\gemini\textgemini



20469 \let\cancer\textcancer  
 20470 \let\leo\textleo  
 20471 \let\virgo\textvirgo  
 20472 \let\libra\textlibra  
 20473 \let\scorpio\textscorpio  
 20474 \let\sagittarius\textsagittarius  
 20475 \let\capricornus\textcapricornus  
 20476 \let\aquarius\textaquarius  
 20477 \let\pisces\textpisces  
 20478 \let\quarternote\textquarternote  
 20479 \let\twonotes\texttwonotes  
 20480 \let\sixteenthnote\textsixteenthnote  
 20481 \let\flat\textflat  
 20482 \let\natural\textnatural  
 20483 \let\sharp\textsharp  
 20484 \let\recycle\textrecycle  
 20485 \let\Wheelchair\textWheelchair  
 20486 \let\Flag\textFlag  
 20487 \let\MineSign\textMineSign  
 20488 \let\ds military\textds military  
 20489 \let\ds medical\textds medical  
 20490 \let\ds juridical\textds juridical  
 20491 \let\ds chemical\textds chemical  
 20492 \let\ds biological\textds biological  
 20493 \let\ds commercial\textds commercial  
 20494 \let\manstar\textmanstar  
 20495 \let\danger\textdanger  
 20496 \let\FemaleFemale\textFemaleFemale  
 20497 \let\MaleMale\textMaleMale  
 20498 \let\FemaleMale\textFemaleMale  
 20499 \let\Hermaphrodite\textHermaphrodite  
 20500 \let\Neutral\textNeutral  
 20501 \let\hexstar\texthexstar  
 20502 \let\SunCload\textSunCload  
 20503 \let\Rain\textRain  
 20504 \let\noway\textnoway  
 20505 \let\Mountain\textMountain  
 20506 \let\Tent\textTent  
 20507 \let\ScissorRight\textScissorRight  
 20508 \let\ScissorRightBrokenTop\textScissorRightBrokenTop  
 20509 \let\ScissorHollowRight\textScissorHollowRight  
 20510 \let\PhoneHandset\textPhoneHandset  
 20511 \let\Tape\textTape  
 20512 \let\Plane\textPlane  
 20513 \let\Envelope\textEnvelope  
 20514 \let\Peace\textPeace  
 20515 \let\WritingHand\textWritingHand  
 20516 \let\PencilRightDown\textPencilRightDown  
 20517 \let\PencilRight\textPencilRight  
 20518 \let\PencilRightUp\textPencilRightUp  
 20519 \let\NibRight\textNibRight  
 20520 \let\NibSolidRight\textNibSolidRight  
 20521 \let\Checkmark\textCheckmark  
 20522 \let\CheckmarkBold\textCheckmarkBold

20523 \let\XSolid\textXSolid  
 20524 \let\XSolidBold\textXSolidBold  
 20525 \let\XSolidBrush\textXSolidBrush  
 20526 \let\PlusOutline\textPlusOutline  
 20527 \let\Plus\textPlus  
 20528 \let\PlusThinCenterOpen\textPlusThinCenterOpen  
 20529 \let\PlusCenterOpen\textPlusCenterOpen  
 20530 \let\Cross\textCross  
 20531 \let\CrossOpenShadow\textCrossOpenShadow  
 20532 \let\CrossOutline\textCrossOutline  
 20533 \let\CrossMaltese\textCrossMaltese  
 20534 \let\DavidStar\textDavidStar  
 20535 \let\FourAsterisk\textFourAsterisk  
 20536 \let\JackStar\textJackStar  
 20537 \let\JackStarBold\textJackStarBold  
 20538 \let\ClowerTips\textClowerTips  
 20539 \let\FourStar\textFourStar  
 20540 \let\FourStarOpen\textFourStarOpen  
 20541 \let\FiveStarOpenCircled\textFiveStarOpenCircled  
 20542 \let\FiveStarCenterOpen\textFiveStarCenterOpen  
 20543 \let\FiveStarOpenDotted\textFiveStarOpenDotted  
 20544 \let\FiveStarOutline\textFiveStarOutline  
 20545 \let\FiveStarOutlineHeavy\textFiveStarOutlineHeavy  
 20546 \let\FiveStarConvex\textFiveStarConvex  
 20547 \let\FiveStarShadow\textFiveStarShadow  
 20548 \let\AsteriskBold\textAsteriskBold  
 20549 \let\AsteriskCenterOpen\textAsteriskCenterOpen  
 20550 \let\EightStarTaper\textEightStarTaper  
 20551 \let\EightStarConvex\textEightStarConvex  
 20552 \let\SixStar\textSixStar  
 20553 \let\EightStar\textEightStar  
 20554 \let\EightStarBold\textEightStarBold  
 20555 \let\TwelveStar\textTwelveStar  
 20556 \let\SixteenStarLight\textSixteenStarLight  
 20557 \let\SixFlowerPetalRemoved\textSixFlowerPetalRemoved  
 20558 \let\SixFlowerOpenCenter\textSixFlowerOpenCenter  
 20559 \let\Asterisk\textAsterisk  
 20560 \let\SixFlowerAlternate\textSixFlowerAlternate  
 20561 \let\FiveFlowerPetal\textFiveFlowerPetal  
 20562 \let\FiveFlowerOpen\textFiveFlowerOpen  
 20563 \let\EightFlowerPetal\textEightFlowerPetal  
 20564 \let\SunshineOpenCircled\textSunshineOpenCircled  
 20565 \let\SixFlowerAltPetal\textSixFlowerAltPetal  
 20566 \let\SnowflakeChevron\textSnowflakeChevron  
 20567 \let\Snowflake\textSnowflake  
 20568 \let\SnowflakeChevronBold\textSnowflakeChevronBold  
 20569 \let\Sparkle\textSparkle  
 20570 \let\SparkleBold\textSparkleBold  
 20571 \let\AsteriskRoundedEnds\textAsteriskRoundedEnds  
 20572 \let\EightFlowerPetalRemoved\textEightFlowerPetalRemoved  
 20573 \let\EightAsterisk\textEightAsterisk  
 20574 \let\CircleShadow\textCircleShadow  
 20575 \let\SquareShadowBottomRight\textSquareShadowBottomRight  
 20576 \let\SquareTopRight\textSquareTopRight

20577 `\let\SquareCastShadowBottomRight\textSquareCastShadowBottomRight`  
 20578 `\let\SquareCastShadowTopRight\textSquareCastShadowTopRight`  
 20579 `\let\DiamandSolid\textDiamandSolid`  
 20580 `\let\RectangleThin\textRectangleThin`  
 20581 `\let\Rectangle\textRectangle`  
 20582 `\let\RectangleBold\textRectangleBold`  
 20583 `\let\perp\textperp`  
 20584 `\let\notperp\textnotperp`  
 20585 `\let\veedot\textveedot`  
 20586 `\let\wedgedot\textwedgedot`  
 20587 `\let\leftspoon\textleftspoon`  
 20588 `\let\lbrackdbl\textlbrackdbl`  
 20589 `\let\rbrackdbl\textrbrackdbl`  
 20590 `\let\circlearrowleft\textcirclearrowleft`  
 20591 `\let\circlearrowright\textcirclearrowright`  
 20592 `\let\longleftarrow\textlongleftarrow`  
 20593 `\let\longrightarrow\textlongrightarrow`  
 20594 `\let\longlefttrightarrow\textlonglefttrightarrow`  
 20595 `\let\Longleftarrow\textLongleftarrow`  
 20596 `\let\Longrightarrow\textLongrightarrow`  
 20597 `\let\Longlefttrightarrow\textLonglefttrightarrow`  
 20598 `\let\longmapsto\textlongmapsto`  
 20599 `\let\Longmapsfrom\textLongmapsfrom`  
 20600 `\let\Longmapsto\textLongmapsto`  
 20601 `\let\nwsearrow\textnwsearrow`  
 20602 `\let\neswarrow\textneswarrow`  
 20603 `\let\lhooknearrow\textlhooknearrow`  
 20604 `\let\rhooknearrow\texthooknearrow`  
 20605 `\let\lhooksearrow\textlhooksearrow`  
 20606 `\let\rhooksearrow\texthooksearrow`  
 20607 `\let\leadsto\textleadsto`  
 20608 `\let\rcurvearrowne\textrcurvearrowne`  
 20609 `\let\lcurvearrowse\textlcurvearrowse`  
 20610 `\let\lcurvearrowsw\textlcurvearrowsw`  
 20611 `\let\rcurvearrowse\textrcurvearrowse`  
 20612 `\let\lcurvearrowdown\textlcurvearrowdown`  
 20613 `\let\rcurvearrowdown\textrcurvearrowdown`  
 20614 `\let\rcurvearrowleft\textrcurvearrowleft`  
 20615 `\let\rcurvearrowright\textrcurvearrowright`  
 20616 `\let\leftrightharpoon\textleftrightharpoon`  
 20617 `\let\rightrightarpoon\textrightleftharpoon`  
 20618 `\let\updownharpoonrightleft\textupdownharpoonrightleft`  
 20619 `\let\updownharpoonleftright\textupdownharpoonleftright`  
 20620 `\let\leftleftharpoons\textleftleftharpoons`  
 20621 `\let\upupharpoons\textupupharpoons`  
 20622 `\let\righttrightharpoons\textrighttrightharpoons`  
 20623 `\let\downdownharpoons\textdowndownharpoons`  
 20624 `\let\leftbarharpoon\textleftbarharpoon`  
 20625 `\let\barleftharpoon\textbarleftharpoon`  
 20626 `\let\rightbarharpoon\textrightbarharpoon`  
 20627 `\let\barrightharpoon\textbarrightharpoon`  
 20628 `\let\updownharpoons\textupdownharpoons`  
 20629 `\let\downupharpoons\textdownupharpoons`  
 20630 `\let\moo\textmoo`

20631  $\backslash\mathrm{llparenthesis}\text{llparenthesis}$   
 20632  $\backslash\mathrm{rrparenthesis}\text{rrparenthesis}$   
 20633  $\backslash\mathrm{invdiameter}\text{invdiameter}$   
 20634  $\backslash\mathrm{obar}\text{tobar}$   
 20635  $\backslash\mathrm{obslash}\text{tobslash}$   
 20636  $\backslash\mathrm{obot}\text{tobot}$   
 20637  $\backslash\mathrm{NoChemicalCleaning}\text{NoChemicalCleaning}$   
 20638  $\backslash\mathrm{olessthan}\text{tolessthan}$   
 20639  $\backslash\mathrm{ogreaterthan}\text{togreaterthan}$   
 20640  $\backslash\mathrm{boxslash}\text{tboxslash}$   
 20641  $\backslash\mathrm{boxbslash}\text{tboxbslash}$   
 20642  $\backslash\mathrm{boxast}\text{tboxast}$   
 20643  $\backslash\mathrm{boxcircle}\text{tboxcircle}$   
 20644  $\backslash\mathrm{boxbox}\text{tboxbox}$   
 20645  $\backslash\mathrm{Valve}\text{tValve}$   
 20646  $\backslash\mathrm{multimapboth}\text{tmultimapboth}$   
 20647  $\backslash\mathrm{shuffle}\text{tshuffle}$   
 20648  $\backslash\mathrm{uplus}\text{tuplus}$   
 20649  $\backslash\mathrm{bigdoublewedge}\text{tbigdoublewedge}$   
 20650  $\backslash\mathrm{bigdoublevee}\text{tbigdoublevee}$   
 20651  $\backslash\mathrm{Join}\text{tJoin}$   
 20652  $\backslash\mathrm{fatsemi}\text{tfatsemi}$   
 20653  $\backslash\mathrm{circplus}\text{tcircplus}$   
 20654  $\backslash\mathrm{minusdot}\text{tminusdot}$   
 20655  $\backslash\mathrm{dotimes}\text{tdotimes}$   
 20656  $\backslash\mathrm{dtimes}\text{tdtimes}$   
 20657  $\backslash\mathrm{odiv}\text{todiv}$   
 20658  $\backslash\mathrm{invneg}\text{tinvneg}$   
 20659  $\backslash\mathrm{sqdoublecap}\text{tsqdoublecap}$   
 20660  $\backslash\mathrm{capdot}\text{tcapdot}$   
 20661  $\backslash\mathrm{sqdoublecup}\text{tsqdoublecup}$   
 20662  $\backslash\mathrm{doublewedge}\text{tdoublewedge}$   
 20663  $\backslash\mathrm{doublevee}\text{tdoublevee}$   
 20664  $\backslash\mathrm{doublebarwedge}\text{tdoublebarwedge}$   
 20665  $\backslash\mathrm{veedoublebar}\text{tveedoublebar}$   
 20666  $\backslash\mathrm{eqdot}\text{teqdot}$   
 20667  $\backslash\mathrm{neqdot}\text{tneqdot}$   
 20668  $\backslash\mathrm{coloncolonequals}\text{tcoloncolonequals}$   
 20669  $\backslash\mathrm{leqslant}\text{tleqslant}$   
 20670  $\backslash\mathrm{nleqslant}\text{tnleqslant}$   
 20671  $\backslash\mathrm{geqslant}\text{tgeqslant}$   
 20672  $\backslash\mathrm{ngeqslant}\text{tngeqslant}$   
 20673  $\backslash\mathrm{lessapprox}\text{tlessapprox}$   
 20674  $\backslash\mathrm{nlessapprox}\text{tnlessapprox}$   
 20675  $\backslash\mathrm{gtrapprox}\text{tgtrapprox}$   
 20676  $\backslash\mathrm{ngtrapprox}\text{tngtrapprox}$   
 20677  $\backslash\mathrm{lneq}\text{tlneq}$   
 20678  $\backslash\mathrm{gneq}\text{tgneq}$   
 20679  $\backslash\mathrm{lnapprox}\text{tlnapprox}$   
 20680  $\backslash\mathrm{gnapprox}\text{tgnapprox}$   
 20681  $\backslash\mathrm{lesseqqgtr}\text{tlesseqqgtr}$   
 20682  $\backslash\mathrm{gtreqqlless}\text{tgtreqqlless}$   
 20683  $\backslash\mathrm{eqslantless}\text{teqslantless}$   
 20684  $\backslash\mathrm{eqslantgtr}\text{teqslantgtr}$

20685 \let\leftslice\textleftslice  
 20686 \let\rightslice\textrightslice  
 20687 \let\preceq\textpreceq  
 20688 \let\npreceq\textnpreceq  
 20689 \let\succeq\textsucceq  
 20690 \let\nsucceq\textnsucceq  
 20691 \let\precneq\textprecneq  
 20692 \let\succneq\textsuccneq  
 20693 \let\preceqq\textpreceqq  
 20694 \let\npreceqq\textnpreceqq  
 20695 \let\succeqq\textsucceqq  
 20696 \let\nsucceqq\textnsucceqq  
 20697 \let\precneqq\textprecneqq  
 20698 \let\succneqq\textsuccneqq  
 20699 \let\precapprox\textprecapprox  
 20700 \let\nprecapprox\textnprecapprox  
 20701 \let\succapprox\textsuccapprox  
 20702 \let\nsuccapprox\textnsuccapprox  
 20703 \let\precnapprox\textprecnapprox  
 20704 \let\succnapprox\textsuccnapprox  
 20705 \let\subseteqq\textsubseteqq  
 20706 \let\nsubseteqq\textnsubseteqq  
 20707 \let\supseteqq\textsupseteqq  
 20708 \let\nsupseteqq\textnsupseteqq  
 20709 \let\dashV\textdashV  
 20710 \let\ndashV\textndashV  
 20711 \let\Dashv\textDashv  
 20712 \let\ndashv\textndashv  
 20713 \let\DashV\textDashV  
 20714 \let\ndashV\textndashV  
 20715 \let\downmodels\textdownmodels  
 20716 \let\ndownmodels\textndownmodels  
 20717 \let\upmodels\textupmodels  
 20718 \let\nupmodels\textnupmodels  
 20719 \let\upspoon\textupspoon  
 20720 \let\interleave\textinterleave  
 20721 \let\slash\textslash  
 20722 \let\pentagon\textpentagon  
 20723 \let\varhexagon\textvarhexagon  
 20724 \let\jinferior\textjinferior  
 20725 \let\slashdiv\textslashdiv  
 20726 \let\fivedots\textfivedots  
 20727 \let\oo\textoo  
 20728 \let\GaPa\textGaPa  
 20729 \let\HaPa\textHaPa  
 20730 \let\ViPa\textViPa  
 20731 \let\AcPa\textAcPa  
 20732 \let\SePa\textSePa  
 20733 \let\ZwPa\textZwPa  
 20734 \let\fullnote\textfullnote  
 20735 \let\halfnote\texthalfnote  
 20736 \let\Vier\textVier  
 20737 \let\Acht\textAcht  
 20738 \let\Sech\textSech

20739 \let\Zwdr\textZwdr  
 20740 \let\Mundus\textMundus  
 20741 \let\Moon\textMoon  
 20742 \let\ManFace\textManFace  
 20743 \let\WomanFace\textWomanFace  
 20744 \let\Fax\textFax  
 20745 \let\Fire\textFire  
 20746 \let\Bicycle\textBicycle  
 20747 \let\Gentsroom\textGentsroom  
 20748 \let\Ladiesroom\textLadiesroom  
 20749 \let\ccnc\textccnc  
 20750 \let\ccsa\textccsa  
 20751 \let\Info\textInfo  
 20752 \let\CESign\textCESign  
 20753 \let\neg\textneg  
 20754 \let\times\texttimes  
 20755 \let\div\textdiv  
 20756 \let\pm\textpm  
 20757 \let\cdot\textcdot  
 20758 }% \psdmapshortnames  
 20759 \newcommand\*{\psdaliasnames}{%  
 20760 \let\epsdice\HyPsd@DieFace  
 20761 \let\fcdice\HyPsd@DieFace  
 20762 \let\MoonPha\HyPsd@MoonPha  
 20763 \let\mathdollar\textdollar  
 20764 \let\EyesDollar\textdollar  
 20765 \let\binampersand\textampersand  
 20766 \let\with\textampersand  
 20767 \let\mathunderscore\textunderscore  
 20768 \let\textvertline\textbar  
 20769 \let\mathsterling\textsterling  
 20770 \let\pounds\textsterling  
 20771 \let\brokenvert\textbrokenbar  
 20772 \let\mathsection\textsection  
 20773 \let\S\textsection  
 20774 \let\mathparagraph\textparagraph  
 20775 \let\MultiplicationDot\textperiodcentered  
 20776 \let\Squaredot\textperiodcentered  
 20777 \let\vartimes\textmultiply  
 20778 \let\MVMultiplication\textmultiply  
 20779 \let\eth\dh  
 20780 \let\crossd\textcrd  
 20781 \let\textbard\textcrd  
 20782 \let\bard\textcrd  
 20783 \let\textcrh\texthbar  
 20784 \let\crossh\texthbar  
 20785 \let\planck\texthbar  
 20786 \let\eng\ng  
 20787 \let\engma\ng  
 20788 \let\crossb\textcrb  
 20789 \let\textbarb\textcrb  
 20790 \let\barb\textcrb  
 20791 \let\Florin\textflorin  
 20792 \let\hv\texthvlig

20793 \let\hausak\texthtk  
 20794 \let\crossnilambda\textcrlambda  
 20795 \let\barlambda\textcrlambda  
 20796 \let\lambdabar\textcrlambda  
 20797 \let\lambdaslash\textcrlambda  
 20798 \let\textnrleg\textPUnrleg  
 20799 \let\textpipevar\textpipe  
 20800 \let\textdoublepipevar\textdoublepipe  
 20801 \let\textdoublebarpipevar\textdoublebarpipe  
 20802 \let\textcrg\textgslash  
 20803 \let\textdblig\textPUdblig  
 20804 \let\textqplig\textPUqplig  
 20805 \let\textcentoldstyle\textslashc  
 20806 \let\textbarc\textslashc  
 20807 \let\inva\textturna  
 20808 \let\vara\textscripta  
 20809 \let\invscripta\textturnscripta  
 20810 \let\rotvara\textturnscripta  
 20811 \let\hookb\texthtb  
 20812 \let\hausab\texthtb  
 20813 \let\varopeno\textopeno  
 20814 \let\curlyc\textctc  
 20815 \let\taild\textrtaild  
 20816 \let\hookd\texthtd  
 20817 \let\hausad\texthtd  
 20818 \let\er\textrhooschwa  
 20819 \let\epsi\textniepsilon  
 20820 \let\hookrepsilon\textrhoosepsilon  
 20821 \let\closedrepsilon\textcloserepsilon  
 20822 \let\barj\textbardotlessj  
 20823 \let\hookg\texthtg  
 20824 \let\varg\textscriptg  
 20825 \let\vod\textipagamma  
 20826 \let\invh\textturnh  
 20827 \let\udesc\textturnh  
 20828 \let\hookh\texthth  
 20829 \let\voicedh\texthth  
 20830 \let\hookheng\texththeng  
 20831 \let\ibar\textbari  
 20832 \let\vari\textniiota  
 20833 \let\tildel\textltilde  
 20834 \let\latfric\textbeltl  
 20835 \let\taill\textrtail  
 20836 \let\lz\textlyoghlig  
 20837 \let\invm\textturnm  
 20838 \let\rotm\textturnm  
 20839 \let\legm\textturnmrleg  
 20840 \let\labdentalnas\textltailm  
 20841 \let\emgma\textltailm  
 20842 \let\nj\textltailn  
 20843 \let\enya\textltailn  
 20844 \let\tailn\textrtailn  
 20845 \let\closedniomega\textcloseomega  
 20846 \let\varomega\textcloseomega

20847 \let\invr\textturnr  
 20848 \let\rotr\textturnr  
 20849 \let\invlegr\textturnlonglegr  
 20850 \let\tailinvr\textturnrrtail  
 20851 \let\legr\textlonglegr  
 20852 \let\tailr\textrtailr  
 20853 \let\flapr\textfishhookr  
 20854 \let\flap\textfishhookr  
 20855 \let\tails\textrtails  
 20856 \let\curlyesh\textctesh  
 20857 \let\clickt\textturnt  
 20858 \let\tailt\texttrtailt  
 20859 \let\ubar\textbaru  
 20860 \let\rotOmega\textniupsilon  
 20861 \let\invv\textturnv  
 20862 \let\pwedge\textturnv  
 20863 \let\invw\textturnw  
 20864 \let\rotw\textturnw  
 20865 \let\invy\textturny  
 20866 \let\roty\textturny  
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 20868 \let\curlyz\textctz  
 20869 \let\curlyyogh\textctyogh  
 20870 \let\ejective\textglotstop  
 20871 \let\glottal\textglotstop  
 20872 \let\reveject\textrevglotstop  
 20873 \let\clickc\textstretchc  
 20874 \let\textstretchcvar\textstretchc  
 20875 \let\clickb\textbullseye  
 20876 \let\textObullseye\textbullseye  
 20877 \let\textctjvar\textctj  
 20878 \let\textturnsck\textturnk  
 20879 \let\dz\textdzlig  
 20880 \let\tesh\textteshlig  
 20881 \let\digamma\textdigammagreek  
 20882 \let\hardsign\cyrhrdsn  
 20883 \let\softsign\cyrsoftsn  
 20884 \let\hebsin\hebshin  
 20885 \let\textsck\textPUsck  
 20886 \let\textscm\textPUscm  
 20887 \let\textscp\textPUscp  
 20888 \let\textrevscr\textPUrevscr  
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 20890 \let\textrhooke\textPURhooke  
 20891 \let\textrhookepsilon\textPURhookepsilon  
 20892 \let\textrhookopeno\textPURhookopeno  
 20893 \let\textdoublevertline\textbardbl  
 20894 \let\dag\textdagger  
 20895 \let\ddagger\textdaggerdbl  
 20896 \let\ddag\textdaggerdbl  
 20897 \let\mathellipsis\textellipsis  
 20898 \let\EurDig\texteuro  
 20899 \let\EURdig\texteuro  
 20900 \let\EurHv\texteuro



20901 \let\EURhv\texteuro  
 20902 \let\EurCr\texteuro  
 20903 \let\EURcr\texteuro  
 20904 \let\EurTm\texteuro  
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 20907 \let\Denarius\textDeleatur  
 20908 \let\agemO\textmho  
 20909 \let\EstimatedSign\textestimated  
 20910 \let\Ecommerce\textestimated  
 20911 \let\bindnasrepma\textinvamp  
 20912 \let\parr\textinvamp  
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 20914 \let\MVRightarrow\textrightarrow  
 20915 \let\MVArrowDown\textdownarrow  
 20916 \let\Force\textdownarrow  
 20917 \let\textglobrise\textnearrow  
 20918 \let\textglobfall\textsearrow  
 20919 \let\Lightning\textlightning  
 20920 \let\Conclusion\textRightarrow  
 20921 \let\dashedleftarrow\textdashleftarrow  
 20922 \let\dashedrightarrow\textdashrightarrow  
 20923 \let\varnothing\textemptyset  
 20924 \let\owns\textni  
 20925 \let\notni\textnotowner  
 20926 \let\varprop\textpropto  
 20927 \let\varangle\textsphericalangle  
 20928 \let\Anglesign\textsphericalangle  
 20929 \let\AngleSign\textsphericalangle  
 20930 \let\notdivides\textnmid  
 20931 \let\varowedge\textowedge  
 20932 \let\varovee\textovee  
 20933 \let\varint\textint  
 20934 \let\varoint\textoint  
 20935 \let\downtherefore\textbecause  
 20936 \let\textdotdiv\textdotminus  
 20937 \let\AC\textsim  
 20938 \let\wreath\textwr  
 20939 \let\nthickapprox\textnapprox  
 20940 \let\VHF\texttriplesim  
 20941 \let\notasymp\textnasymp  
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 20943 \let\corresponds\texthateq  
 20944 \let\Corresponds\texthateq  
 20945 \let\nequal\textneq  
 20946 \let\Congruent\textequiv  
 20947 \let\NotCongruent\textnequiv  
 20948 \let\notequiv\textnequiv  
 20949 \let\LessOrEqual\textleq  
 20950 \let\LargerOrEqual\textgeq  
 20951 \let\apprle\textlesssim  
 20952 \let\apprge\textgtsim  
 20953 \let\varoplus\textoplus  
 20954 \let\varominus\textominus

20955 \let\varotimes\textotimes  
 20956 \let\varoslash\textoslash  
 20957 \let\varodot\textodot  
 20958 \let\ocirc\textcircledcirc  
 20959 \let\varocircle\textcircledcirc  
 20960 \let\varoast\textcircledast  
 20961 \let\oasterisk\textcircledast  
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 20963 \let\leftvdash\textdashv  
 20964 \let\leftvdash\textndashv  
 20965 \let\downvdash\texttop  
 20966 \let\upvdash\textbot  
 20967 \let\perp\textnupvdash  
 20968 \let\models\textvDash  
 20969 \let\models\textvDash  
 20970 \let\models\textVdash  
 20971 \let\models\textVdash  
 20972 \let\models\textnvDash  
 20973 \let\models\textnvDash  
 20974 \let\models\textnvDash  
 20975 \let\models\textnVdash  
 20976 \let\models\textnVdash  
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 20978 \let\gtrclosed\textrhd  
 20979 \let\leqclosed\textunlhd  
 20980 \let\trianglelefteq\textunlhd  
 20981 \let\geqclosed\textunrhd  
 20982 \let\trianglerighteq\textunrhd  
 20983 \let\Bowtie\textbowtie  
 20984 \let\varcurlyvee\textcurlyvee  
 20985 \let\varcurlywedge\textcurlywedge  
 20986 \let\doublecap\textCap  
 20987 \let\doublecup\textCup  
 20988 \let\varsubsetneq\textsubsetneq  
 20989 \let\varsupsetneq\textsupsetneq  
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 20991 \let\ngtrclosed\textntriangleright  
 20992 \let\Clocklogo\textclock  
 20993 \let\ClockLogo\textclock  
 20994 \let\baro\textstmaryrdbaro  
 20995 \let\varparallel\textbbslash  
 20996 \let\CleaningA\textCircledA  
 20997 \let\Kutline\textCuttingLine  
 20998 \let\CutLine\textCuttingLine  
 20999 \let\CutLine\textCuttingLine  
 21000 \let\MoveUp\textUParrow  
 21001 \let\APLup\textbigtriangleup  
 21002 \let\Bleech\textbigtriangleup  
 21003 \let\MoveDown\textDOWNarrow  
 21004 \let\APLdown\textbigtriangledown  
 21005 \let\Diamond\textdiamond  
 21006 \let\varbigcirc\textbigcircle  
 21007 \let\Telefon\textPhone  
 21008 \let\Box\textboxempty

21009 \let\CheckedBox\textCheckedbox  
 21010 \let\XBox\textCrossedbox  
 21011 \let\CrossedBox\textCrossedbox  
 21012 \let\rightpointleft\textHandLeft  
 21013 \let\leftpointright\textHandRight  
 21014 \let\PointingHand\textHandRight  
 21015 \let\Pointinghand\textHandRight  
 21016 \let\Radiation\textRadioactivity  
 21017 \let\Yinyang\textYinYang  
 21018 \let\YingYang\textYinYang  
 21019 \let\Yingyang\textYinYang  
 21020 \let\Frowny\textfrownie  
 21021 \let\Smiley\textsmiley  
 21022 \let\Sun\textsun  
 21023 \let\Mercury\textmercury  
 21024 \let\textfemale\textPUfemale  
 21025 \let\female\textPUfemale  
 21026 \let\venus\textPUfemale  
 21027 \let\Venus\textPUfemale  
 21028 \let\Female\textPUfemale  
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 21030 \let\mars\textmale  
 21031 \let\Mars\textmale  
 21032 \let\Male\textmale  
 21033 \let\Jupiter\textjupiter  
 21034 \let\Saturn\textsaturn  
 21035 \let\Uranus\texturanus  
 21036 \let\Neptune\textneptune  
 21037 \let\Pluto\textpluto  
 21038 \let\Aries\textaries  
 21039 \let\Taurus\texttaurus  
 21040 \let\Gemini\textgemini  
 21041 \let\Cancer\textcancer  
 21042 \let\Leo\textleo  
 21043 \let\Virgo\textvirgo  
 21044 \let\Libra\textlibra  
 21045 \let\Scorpio\textscorpio  
 21046 \let\Sagittarius\textsagittarius  
 21047 \let\Capricorn\textcapricornus  
 21048 \let\Aquarius\textaquarius  
 21049 \let\Pisces\textpisces  
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 21051 \let\Heart\textheartsuitwhite  
 21052 \let\heartsuit\textheartsuitwhite  
 21053 \let\diamondsuit\textdiamondsuitwhite  
 21054 \let\clubsuit\textclubsuitblack  
 21055 \let\ eighthnote\textmusicalnote  
 21056 \let\Recycling\textrecycle  
 21057 \let\VarFlag\textFlag  
 21058 \let\textxswup\textds military  
 21059 \let\textuncrfemale\textPUuncrfemale  
 21060 \let\Football\textSoccerBall  
 21061 \let\CutLeft\textScissorRightBrokenBottom  
 21062 \let\Cutright\textScissorRightBrokenBottom

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21063 \let\RightScissors\textScissorRight
21064 \let\Leftscissors\textScissorRight
21065 \let\Letter\textEnvelope
21066 \let\Writinghand\textWritingHand
21067 \let\checkmark\textCheckmark
21068 \let\davidstar\textDavidStar
21069 \let\llbracket\textlbrackdbl
21070 \let\rrbracket\textrrackdbl
21071 \let\RightTorque\textlcurvearrowdown
21072 \let\Righttorque\textlcurvearrowdown
21073 \let\LeftTorque\textrcurvearrowdown
21074 \let\Lefttorque\textrcurvearrowdown
21075 \let\textvarobar\textobar
21076 \let\circledbslash\textobslash
21077 \let\obackslash\textobslash
21078 \let\varobslash\textobslash
21079 \let\odplus\textobot
21080 \let\varolessthan\textolessthan
21081 \let\varogreaterthan\textogreaterthan
21082 \let\divdot\textminusdot
21083 \let\doublesqcap\textsqdoublingcap
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21085 \let\merge\textdoublevee
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21091 \let\nleftModels\textnDashV
21092 \let\varparallel\textsslash
21093 \let\textheng\textPUheng
21094 \let\textlhookfour\textPUlhookfour
21095 \let\textscf\textPUscf
21096 \let\textaoilig\textPUaolig
21097 \let\Ganz\textfullnote
21098 \let\Halb\texthalfnote
21099 \let\Womanface\textWomanFace
21100 \let\Faxmachine\textFax
21101 \let\CEsign\textCESign
21102 }% \psdaliasnames
21103 </psdextra>

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21105 \typeout{}
21106 \begin{document}
21107 \end{document}
21108 </check>

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