

# Hypertext marks in $\text{\LaTeX}$

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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).

**README** The **README** file (also available as text file). Here information is collected that is not yet in the manual: new features, package compatibility, limitations, known problems, ...


**ChangeLog** This file records the version history (also available as text file).

**Options** This file provides a short option summary.

**Bookmark talk, slides** Slides for the talk “PDF information and navigation elements with `hyperref`, `pdfTeX` and `thumbpdf`” at Euro $\text{\TeX}$  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  $\text{\LaTeX}$ ”

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### 3 File hyccheck.tex

Many commands of  $\LaTeX$  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  $\LaTeX$ 's `\CheckCommand`, because it takes `\DeclareRobustCommand` and optional parameters better into account.

```

1 \langle *check\rangle
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{hyccheck}{%
62       Unknown command '\expandafter\strip@prefix\meaning\HyC@cmd'%
63     }\@ehd
64     \expandafter\endinput
65   \fi
66   \@ifstar{%
67     \def\HyC@star{*}%
68     \HyC@check
69   }{%
70     \let\HyC@star\@empty
71     \HyC@check
72   }%
73 }
```

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

```

74 \def\HyC@check#1{%
75   \def\HyC@cmd{#1}%
76   \let\HyC@org@cmd#1%
77   \let#1\relax
78   \let\HyC@param\@empty
79   \HyC@Toks{}%
80   \let\HyC@org@optcmd\HyC@noValue
81   \let\HyC@org@robustcmd\HyC@noValue
82   \let\HyC@org@robustoptcmd\HyC@noValue
83   \HyC@next
84 }
```

`\HyC@noValue`

```

85 \def\HyC@noValue{NoValue}
```

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



```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

\HyC@edef
125 \def\HyC@def#1#1{%
126   \HyC@Toks={#1}%

```

```

127 \HyC@nc@noopt
128 }
129 \let\HyC@edef\HyC@def

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

181 \def\Hy@SetCatcodes{%
182   \makeother\‘%
183   \makeother\=%
184   \catcode'\$=3 %
185   \catcode'\&=4 %
186   \catcode'\^=7 %
187   \catcode'\_ =8 %
188   \makeother\| %
189   \makeother\: %
190   \makeother\(%
191   \makeother\)%
192   \makeother\[ %
193   \makeother\] %
194   \makeother\/ %
195   \makeother\! %
196   \makeother\< %
197   \makeother\> %
198   \makeother\. %
199   \makeother\; %
200   \makeother\+ %
201   \makeother\- %
202   \makeother\" %
203   \makeother\' %
204 }

```

\Hy@RestoreCatcodes

```

205 \begingroup
206 \def\x#1{\catcode'\noexpand#1=\the\catcode'#1\relax}%
207 \xdef\Hy@RestoreCatcodes{%
208   \the\toks@
209   \x\$%
210   \x\&%
211   \x\^%
212   \x\_ %
213   \x\| %
214   \x\: %
215   \x\(%

```

```

216 \x\)%
217 \x\[%
218 \x\]%
219 \x\/%
220 \x\!%
221 \x\<%
222 \x\>%
223 \x\.%
224 \x\;%
225 \x\+%
226 \x\-%
227 \x\"%
228 \x\'%
229 }%
230 \endgroup

```

```

231 \Hy@SetCatcodes

```

It needs the December 95 release of L<sup>A</sup>T<sub>E</sub>X, because it uses `\protected@write`, and it defines commands in options; and the page setup internal code changed at that point. It'll probably break with the later releases!

```

232 \RequirePackage{ltxcmds}[2010/03/09]
233 \RequirePackage{infwarerr}[2010/04/08]
234 \RequirePackage{keyval}[1997/11/10]
235 \RequirePackage{kvsetkeys}[2007/09/29]
236 \RequirePackage{pdfescape}[2007/11/11]
237 \RequirePackage{ifpdf}[2006/02/20]
238 \RequirePackage{ifvtex}
239 \RequirePackage{ifxetex}[2006/08/21]
240 \RequirePackage{hycolor}
241 \RequirePackage{letltxmacro}[2008/06/13]
242 \def\Hy@Error#1{\@PackageError{hyperref}}
243 \def\Hy@Warning#1{\@PackageWarning{hyperref}{#1}}
244 \def\Hy@WarningNoLine#1{\@PackageWarningNoLine{hyperref}{#1}}
245 \def\Hy@Info#1{\@PackageInfo{hyperref}{#1}}
246 \def\Hy@InfoNoLine{\@PackageInfoNoLine{hyperref}}
247 \def\Hy@Message#1{%
248   \GenericWarning{%
249     (hyperref)\@spaces\@spaces\@spaces\@spaces
250   }{%
251     Package hyperref Message: #1\ltx@gobble
252   }%
253 }

```

## 4.2 Checks with regular expressions

```

254 \ltx@ifundefined{pdfmatch}{%
255   \def\Hy@Match#1#2#3#4{%
256   }{%
257   \def\Hy@Match#1#2{%
258     \begingroup
259     \edef\~{\ltx@backslashchar\string~}%
260     \edef\.{\ltx@backslashchar.}%
261     \edef\[\{\ltx@backslashchar[]}%
262     \edef\${\ltx@backslashchar$}%
263     \edef\(\{\ltx@backslashchar(}%
264     \edef\)\{\ltx@backslashchar)}%
265     \edef\|{\ltx@backslashchar|}%

```

```

266 \edef\*{\ltx@backslashchar*}%
267 \edef\+{\ltx@backslashchar+}%
268 \edef\?{\ltx@backslashchar?}%
269 \edef\{{\ltx@backslashchar\ltx@leftbracechar}%
270 \edef\}\{\ltx@rightbracechar}%
271 \edef\\{\ltx@backslashchar\ltx@backslashchar}%
272 \ifnum\pdfmatch{#2}{#1}=\ltx@one
273 \endgroup
274 \expandafter\ltx@firstoftwo
275 \else
276 \endgroup
277 \expandafter\ltx@secondoftwo
278 \fi
279 }%
280 }
281 \ltx@ifpackagelater{ltxcmds}{2010/09/11}{-}{-}%
282 \begingroup
283 \lccode'0='\{\relax
284 \lowercase{\endgroup
285 \def\ltx@leftbracechar{0}%
286 }%
287 \begingroup
288 \lccode'0='\}\relax
289 \lowercase{\endgroup
290 \def\ltx@rightbracechar{0}%
291 }%
292 }

```

### 4.3 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  $\text{\LaTeX}$  processing.

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

```

293 \@ifundefined{AfterBeginDocument}{-}{-}%
294 \def\AfterBeginDocument{\AtBeginDocument}%
295 }{-}%

```

`\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.

```

296 \def\Hy@AtBeginDocument{%
297 \ltx@LocalAppendToMacro\Hy@AtBeginDocumentHook
298 }

```

`\Hy@AtEndOfPackage`

```

299 \def\Hy@AtEndOfPackage{%
300 \ltx@LocalAppendToMacro\Hy@AtEndOfPackageHook
301 }

```

`\Hy@AtBeginDocumentHook`

```

302 \def\Hy@AtBeginDocumentHook{

```

`\Hy@AtEndOfPackageHook`

```
303 \def\Hy@AtEndOfPackageHook{}
```

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

```
304 \AtEndOfPackage{%
305   \Hy@AtEndOfPackageHook
306   \let\Hy@AtEndOfPackageHook\@undefined
307   \AfterBeginDocument{%
308     \Hy@AtBeginDocumentHook}%
309     \let\Hy@AtBeginDocumentHook\@undefined
310   }%
311 }
```

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

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

## 4.4 Switches

```
313 \newif\ifHy@typexml
314 \newif\ifHy@activeanchor
315 \newif\ifHy@backref
316 \newif\ifHy@bookmarks
317 \newif\ifHy@bookmarksnumbered
318 \newif\ifHy@bookmarksopen
319 \newif\ifHy@breaklinks
320 \newif\ifHy@centerwindow
321 \newif\ifHy@CJKbookmarks
322 \newif\ifHy@colorlinks
323 \newif\ifHy@draft
324 \let\Hy@finaltrue\Hy@draftfalse
325 \let\Hy@finalfalse\Hy@drafttrue
326 \newif\ifHy@escapeform
327 \newif\ifHy@figures
328 \newif\ifHy@fitwindow
329 \newif\ifHy@frenchlinks
330 \newif\ifHy@hyperfootnotes
331 \newif\ifHy@hyperindex
332 \newif\ifHy@hypertextnames
333 \newif\ifHy@implicit
334 \newif\ifHy@linktocpage
335 \newif\ifHy@localanchorname
336 \newif\ifHy@menubar
337 \newif\ifHy@naturalnames
338 \newif\ifHy@nesting
339 \newif\ifHy@newwindowset
340 \newif\ifHy@newwindow
341 \newif\ifHy@ocgcolorlinks
342 \newif\ifHy@pageanchor
343 \newif\ifHy@pagelabels
344 \newif\ifHy@pdfpagehidden
345 \newif\ifHy@pdfstring
346 \newif\ifHy@plainpages
347 \newif\ifHy@psize
348 \newif\ifHy@raiselinks
349 \newif\ifHy@seminarslides
350 \newif\ifHy@setpagesize
```

```

351 \newif\ifHy@texht
352 \newif\ifHy@toolbar
353 \newif\ifHy@unicode
354 \newif\ifHy@usetitle
355 \newif\ifHy@verbose
356 \newif\ifHy>windowui
357 \newif\ifHy@displaydoctitle
358 \newif\ifHy@pdfa

```

Defaults for the switches are now set.

```

359 \Hy@backreffalse
360 \Hy@bookmarksnumberedfalse
361 \Hy@bookmarksopenfalse
362 \Hy@bookmarkstrue
363 \Hy@breaklinksfalse
364 \Hy@centerwindowfalse
365 \Hy@CJKbookmarksfalse
366 \Hy@escapeformfalse
367 \Hy@figuresfalse
368 \Hy@fitwindowfalse
369 \Hy@hyperfootnotetrue
370 \Hy@hyperindextrue
371 \Hy@hypertextnamestrue
372 \Hy@implicittrue
373 \Hy@linktopagefalse
374 \Hy@localanchornamefalse
375 \Hy@menubartrue
376 \Hy@naturalnamesfalse
377 \Hy@nestingfalse
378 \Hy@newwindowsetfalse
379 \Hy@newwindowfalse
380 \Hy@pageanchortrue
381 \Hy@pagelabelstrue
382 \Hy@pdfpagehiddenfalse
383 \Hy@pdfstringfalse
384 \Hy@plainpagesfalse
385 \Hy@raiselinksfalse
386 \Hy@setpagesizetrue
387 \Hy@texhtfalse
388 \Hy@toolbartrue
389 \Hy@typexmlfalse
390 \Hy@unicodefalse
391 \Hy@usetitlefalse
392 \Hy@verbosefalse
393 \Hy>windowuitrue
394 \Hy@displaydoctitlefalse
395 \Hy@pdfafalse

```

## 5 Common help macros

\Hy@StepCount

```

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

```

\Hy@GlobalStepCount

```

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

```

```

398 \newdimen\@linkdim
399 \let\Hy@driver\@empty

```

```

400 \let\MaybeStopEarly\relax
401 \newcount\Hy@linkcounter
402 \newcount\Hy@pagecounter
403 \Hy@linkcounter0
404 \Hy@pagecounter0

```

## 5.1 Macros for recursions

`\Hy@ReturnAfterElseFi` The commands `\Hy@ReturnAfterElseFi` and `\Hy@ReturnAfterFi` avoid a too deep `\if`-nesting especially for recursive macros.

```

405 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
406 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

407 \let\Hy@ReturnEnd\@empty
408 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
409 \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 `\Hy@safe@activesfalse` babel is not loaded.

```

410 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
411 \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).

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

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

- It cannot be used inside `\usepackage`, because LaTeX expands the options before package `hyperref` is loaded and `\hypercalsbp` is defined.
- With e-TeX extensions an expandable implementation is very easy; `\hypercalsbp` can be used everywhere and is expanded at use.
- Without e-TeX's features `\hypercalsbp` cannot be implemented expandable (practically) and have to be supported by `\hypercalsbpdef`. Limitations:
  - Works only in options that use `\hypercalsbpdef` (currently only `pdfstartview`).
  - For calculations package `calc` has to be loaded.
  - The expansion of the argument is done at definition time.

Example (TeX):

```

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

```



`\hypercalcbp`

```

412 \begingroup\expandafter\expandafter\expandafter\endgroup
413 \expandafter\ifx\csname dimexpr\endcsname\relax
414 \def\hypercalcbpdef#1#2{%
415 \begingroup
416 \toks@{%
417 \HyCal@scan#2\hypercalcbp\@nil
418 \expandafter\endgroup
419 \expandafter\def\expandafter#1\expandafter{\the\toks@}%
420 }%
421 \def\HyCal@scan#1\hypercalcbp#2\@nil{%
422 \toks@\expandafter{\the\toks@ #1}%
423 \ifx\#2\%
424 \else
425 \Hy@ReturnAfterFi{%
426 \HyCal@do#2\@nil
427 }%
428 \fi
429 }%
430 \def\HyCal@do#1#2\@nil{%
431 \ifpackageloaded{calc}{}%
432 \Hy@Warning{%
433 For calculations \string\hypercalcbp\space needs\MessageBreak
434 package calc or e-TeX%
435 }%
436 }%
437 \setlength{\dimen@}{#1}%
438 \setlength{\dimen@}{0.99626401\dimen@}%
439 \edef\x{%
440 \toks@{%
441 \the\toks@
442 \strip@pt\dimen@
443 }%
444 }\x
445 \HyCal@scan#2\@nil
446 }%
447 \else
448 \def\hypercalcbp#1{%
449 \strip@pt\dimexpr 0.99626401\dimexpr #1\relax\relax
450 }%
451 \def\hypercalcbpdef{\def}%
452 \fi

```

## 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 ISOLatin1 and is compatible with Unicode with character codes below 256, or in Unicode.

## 6.2 Definition of `\pdfstringdef`

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

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

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

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

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

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

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

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

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

```
454 \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 (v $\text{\TeX}$  driver, Unicode support).

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

```
455 \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.

```
456 \edef\0{\string\0}%
457 \edef\1{\string\1}%
458 \edef\2{\string\2}%
459 \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.

```
460 \ifHy@unicode
461 \edef\8{\string\8}%
462 \edef\9{\string\9}%
463 \fontencoding{PU}%
464 \HyPsd@UTFviii
465 \def\ifpdfstringunicode##1##2{##1}%
466 \else
467 \fontencoding{PD1}%
468 \def\ifpdfstringunicode##1##2{##2}%
469 \fi
470 \let\utf@viii@undeferr\HyPsd@utf@viii@undeferr
471 \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).

```
472 \@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).

```
473 \let\@inmathwarn\HyPsd@inmathwarn
```

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

```
474 \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.

```
475 \let\{\textbraceleft
476 \let\}\textbraceright
477 \let\\textbackslash
478 \let\#\textnumbersign
```

```

479 \let\$ \textdollar
480 \let\%\textpercent
481 \let\&\textampersand
482 % \let\~\textasciitilde
483 \let\_ \textunderscore
484 \let\P\textparagraph
485 \let\ldots\textellipsis
486 \let\dots\textellipsis

```

**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.

```

487 \def\{\pdfstringdefWarn\\}%
488 \def\newline{\pdfstringdefWarn\newline}%

```

**Logos.** Because the box shifting used in the  $\TeX$  logo does not work while writing to a file, the standard  $\TeX$  logos are redefined.

```

489 \def\TeX{\TeX}%
490 \def\LaTeX{La\TeX}%
491 \def\LaTeXe{%
492   \LaTeX2%
493   \ifHy@unicode\textepsilon\else e\fi
494 }%
495 \def\eTeX{%
496   \ifHy@unicode\textepsilon\else e\fi
497   -\TeX%
498 }%
499 \def\SliTeX{Sli\TeX}%
500 \def\MF{Metafont}%
501 \def\MP{Metapost}%

```

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

```

502 \let\fontencoding\@gobble
503 \let\fontfamily\@gobble
504 \let\fontseries\@gobble
505 \let\fontshape\@gobble
506 \let\fontsize\@gobbletwo
507 \let\selectfont\@empty
508 \let\usefont\@gobblefour
509 \let\emph\@firstofone
510 \let\textnormal\@firstofone
511 \let\textrm\@firstofone
512 \let\textsf\@firstofone
513 \let\texttt\@firstofone
514 \let\textbf\@firstofone
515 \let\textmd\@firstofone

```

```

516 \let\textit\@firstofone
517 \let\textsc\@firstofone
518 \let\textsl\@firstofone
519 \let\textup\@firstofone
520 \let\normalfont\@empty
521 \let\rmfamily\@empty
522 \let\sffamily\@empty
523 \let\ttfamily\@empty
524 \let\bfseries\@empty
525 \let\mdseries\@empty
526 \let\itshape\@empty
527 \let\scshape\@empty
528 \let\slshape\@empty
529 \let\upshape\@empty
530 \let\em\@empty
531 \let\rm\@empty
532 \let\Huge\@empty
533 \let\LARGE\@empty
534 \let\Large\@empty
535 \let\footnotesize\@empty
536 \let\huge\@empty
537 \let\large\@empty
538 \let\normalsize\@empty
539 \let\scriptsize\@empty
540 \let\small\@empty
541 \let\tiny\@empty
542 \let\mathversion\@gobble
543 \let\phantom\@gobble
544 \let\vphantom\@gobble
545 \let\hphantom\@gobble

```

#### Package color.

```

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

```

#### Upper- and lowercase.

```

547 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
548 \def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}%

```

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

```

549 \let\textlatin\@firstofone
550 \let\IfUndefined{language@group}{-}{%
551   \csname HyPsd@babel@language@group\endcsname
552 }%
553 \HyPsd@GreekPatch
554 \HyPsd@SpanishPatch
555 \HyPsd@RussianPatch
556 \HyPsd@BabelPatch
557 \let\@safe@activetrue\relax
558 \let\@safe@activesfalse\relax

```

Disable \cyr, used in russianb.ldf.

```

559 \let\cyr\relax

```

Redefine \es@roman, used in spanish.ldf.

```

560 \let\es@roman\@Roman

```

**Package german.**

```
561 \let\glqq\textglqq
562 \let\grqq\textgrqq
563 \let\glq\textglq
564 \let\grq\textgrq
565 \let\flqq\textflqq
566 \let\frqq\textfrqq
567 \let\flq\textflq
568 \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}
569 \let\if@mid@expandable\@firstoftwo
```

**AMS classes.**

```
570 \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.

```
571 \let\hspace\HyPsd@hspace
```

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

```
572 \let\label\@gobble
573 \let\index\@gobble
574 \let\glossary\@gobble
575 \let\href\HyPsd@href
576 \let\@mkboth\@gobbletwo
```

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

```
577 \let\ref\HyPsd@ref
578 \let\pageref\HyPsd@pageref
579 \let\nameref\HyPsd@nameref
580 \let\autoref\HyPsd@autoref
```

**Miscellaneous commands.**

```
581 \let\leavevmode\@empty
582 \let\mbox\@empty
```

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

```
583 \def\halign{\pdfstringdefWarn\halign\@gobble}%
584 \let\ignorespaces\HyPsd@ignorespaces
585 \let\Hy@SectionAnchorHref\@gobble
```

**Patch for cjk bookmarks.**

```
586 \HyPsd@CJKhook
```

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

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

```
587 \Hy@pdfstringtrue
588 \pdfstringdefPreHook
```

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

```
589 \HyPsd@LetUnexpandableSpace\space
590 \HyPsd@LetUnexpandableSpace\ %
591 \HyPsd@LetUnexpandableSpace~%
592 \HyPsd@LetUnexpandableSpace\nobreakspace
```

**Package xspace.**

```
593 \ltx@ifundefined{@xspace}{%
594   \let\xspace\HyPsd@ITALCORR
595 }{%
596   \let\xspace\HyPsd@XSPACE
597 }%
598 \let\/\HyPsd@ITALCORR
599 \let\bgroup\/%
600 \let\egroup\/%
```

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

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

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

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

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

```
602 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
603 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
604 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
605 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'xargs':

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

## 6.2.2 Expansion

There are several possibilities to expand tokens within  $\LaTeX$ :

**\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).

```
607 \begingroup
608 \let\GenericError\@gobblefour
609 \let\GenericWarning\@gobbletwo
610 \let\GenericInfo\@gobbletwo
```

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

```
611 \ifx\nofrenchguillemets\@undefined
612 \else
613 \nofrenchguillemets
614 \fi
```

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

```
615 \let\Hy@temp\xdef
616 \let\def\HyPsd@DefCommand
617 \let\gdef\HyPsd@DefCommand
618 \let\edef\HyPsd@DefCommand
619 \let\xdef\HyPsd@DefCommand
620 \let\futurelet\HyPsd@LetCommand
621 \let\let\HyPsd@LetCommand
622 \Hy@temp#1{#2}%
623 \endgroup
```



### 6.2.3 Postprocessing

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

```
624 \ifx#1\@empty
625 \else
```

**Protecting spaces and removing grouping characters.** In order to check the tokens we must separate them. This will be done with T<sub>E</sub>X's argument parsing. With this method we must the following item takes into account, that makes makes things a little more complicate:

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

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

```
626 \HyPsd@ProtectSpaces#1%
627 \let\HyPsd@String\@empty
628 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
629 \global\let#1\HyPsd@String
```

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

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

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

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

```
630 \let\HyPsd@SPACEOPTI\relax
631 {%
632 \let\HyPsd@String\@empty
633 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
634 \global\let#1\HyPsd@String
635}%
636 \expandafter\HyPsd@RemoveMask\expandafter
637 \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.

```
638 \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
639 \let\HyPsd@String\@empty
640 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
641 \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.

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

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

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

```
643 \ifHy@unicode
644 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
645 \HyPsd@SPACEOPTI#1%
646 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
647 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
648 {\HyPsd@SPACEOPTI\80\273}#1%
649 \else
650 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
651 \expandafter\HyPsd@Subst\expandafter{%
652 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
653 \string\273}{\HyPsd@SPACEOPTI\273}#1%
654 \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.

```
655 \ifHy@unicode
656 \HyPsd@StringSubst{\)}{\80\051}#1%
657 \HyPsd@Subst){\80\051}#1%
658 \let\HyPsd@empty\relax
659 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
660 {\HyPsd@empty\80\051}#1%
661 \else
662 \HyPsd@StringSubst{\)}{\051}#1%
663 \HyPsd@Subst){\051}#1%
664 \let\HyPsd@empty\relax
```

```

665      \HyPsd@StringSubst{\051}{\HyPsd@empty\string\)}#1%
666      \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.

```

667      \expandafter\HyPsd@Subst\expandafter{\}\HyPsd@empty#1%
668      \ltx@ifundefined{@xspace}{%
669      }{%
670          \let\HyPsd@xspace\relax
671          \expandafter\HyPsd@Subst\expandafter
672              {\HyPsd@XSPACE}\HyPsd@xspace#1%
673          \let\HyPsd@xspace\HyPsd@doxspace
674      }%
675      \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 6.781.

```

676      \HyPsd@Subst{---}\textemdash#1%
677      \HyPsd@Subst{--}\textendash#1%
678 %      \HyPsd@Subst{fi}\textfi#1%
679 %      \HyPsd@Subst{fl}\textfl#1%
680      \HyPsd@Subst{!'}\textexclamdown#1%
681      \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

682      \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.

```

683      \ifHy@unicode
684          \HyPsd@StringSubst{\textparenleft#1%
685          \HyPsd@Subst(\textparenleft#1%
686      \else

```

```

687 \HyPsd@StringSubst\({\050}#1%
688 \HyPsd@Subst({\050}#1%
689 \HyPsd@StringSubst{\050}{\string\{ }#1%
690 \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.

```

691 \ifHy@unicode
692 \edef\HyPsd@SPACEOPTI{\80\040}%
693 \else
694 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
695 \fi
696 \xdef#1{#1\@empty}%
697 \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.

```

698 \endgroup
699 \begingroup
700 \ifHy@unicode
701 \HyPsd@ConvertToUnicode#1%

```

**Try conversion back to PDFDocEncoding.**

```

702 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
703 \ltx@ifundefined{StringEncodingConvertTest}{%
704 }{%
705 \EdefUnescapeString\HyPsd@temp#1%
706 \ifxetex
707 \let\HyPsd@UnescapedString\HyPsd@temp
708 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
709 {utf16be}{ascii-print}{%
710 \EdefEscapeString\HyPsd@temp\HyPsd@temp
711 \global\let#1\HyPsd@temp
712 \HyPsd@EscapeTeX#1%
713 \Hy@unicodedefalse
714 }{%
715 \HyPsd@ToBigChars#1%
716 }%
717 \else
718 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
719 {utf16be}{pdfdoc}{%
720 \EdefEscapeString\HyPsd@temp\HyPsd@temp
721 \global\let#1\HyPsd@temp
722 \HyPsd@EscapeTeX#1%
723 \Hy@unicodedefalse
724 }{%
725 \fi
726 }%
727 \fi
728 \fi
729 \HyPsd@XeTeXBigCharsfalse

```

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

```
730 \pdfstringdefPostHook#1%
731 \endgroup
732 }
```

`\Hy@pdfstringdef`

```
733 \def\Hy@pdfstringdef#1#2{%
734 \pdfstringdef\Hy@gtemp{#2}%
735 \let#1\Hy@gtemp
736 }
```

## 6.3 Encodings

### 6.3.1 Xe<sub>TeX</sub>

```
737 \edef\Hy@temp{\catcode0=\the\catcode0\relax}
738 \catcode\z@=12 %
739 \ifxetex
740 \expandafter\@firstofone
741 \else
742 \let\HyPsd@XeTeXBigCharstrue\@empty
743 \let\HyPsd@XeTeXBigCharsfalse\@empty
744 \expandafter\@gobble
745 \fi
746 {%
747 \newif\ifHyPsd@XeTeXBigChars
748 \def\HyPsd@XeTeXBigCharsfalse{%
749 \global\let\ifHyPsd@XeTeXBigChars\iffalse
750 }%
751 \def\HyPsd@XeTeXBigCharstrue{%
752 \global\let\ifHyPsd@XeTeXBigChars\iftrue
753 }%
754 \def\HyPsd@ToBigChars#1{%
755 \ifHyPsd@XeTeXBigChars
756 \EdefEscapeHex\HyPsd@UnescapedString{%
757 \expandafter\@gobbletwo\HyPsd@UnescapedString
758 }%
759 \begingroup
760 \toks@{%
761 \escapechar=92\relax
762 \let\x\HyPsd@ToBigChar
763 \expandafter\HyPsd@ToBigChar\HyPsd@UnescapedString
764 \relax\relax\relax\relax\relax\relax
765 \edef\x{%
766 \endgroup
767 \gdef\noexpand#1{\the\toks@}%
768 }%
769 \x
770 \fi
771 }%
772 \def\HyPsd@ToBigChar#1#2#3#4{%
773 \ifx\relax#1\relax
774 \let\x\relax
775 \else
776 \count@=#1#2#3#4\relax
777 \let\y\@empty
```

```

778 \lccode\z@=\count@
779 \ifnum\count@=40 % (
780 \let\y\@backslashchar
781 \else
782 \ifnum\count@=41 % )
783 \let\y\@backslashchar
784 \else
785 \ifnum\count@=92 % backslash
786 \let\y\@backslashchar
787 \else
788 \ifnum\count@=10 % newline
789 \edef\y###1{\string\n}%
790 \else
791 \ifnum\count@=13 % carriage return
792 \edef\y###1{\string\r}%
793 \fi
794 \fi
795 \fi
796 \fi
797 \fi
798 \lowercase{%
799 \toks@\expandafter{%
800 \the\expandafter\toks@
801 \y
802 ^^@%
803 }%
804 }%
805 \fi
806 \x
807 }%
808 }
809 \Hy@temp

```

### 6.3.2 Workaround for package linguex

```

810 \@ifpackageloaded{linguex}{%
811 \let\HyLinguex@OrgB\b
812 \let\HyLinguex@OrgC\c
813 \let\HyLinguex@OrgD\d
814 \def\HyLinguex@Restore{%
815 \let\b\HyLinguex@OrgB
816 \let\c\HyLinguex@OrgC
817 \let\d\HyLinguex@OrgD
818 }%
819 \Hy@AtEndOfPackage{%
820 \pdfstringdefDisableCommands{%
821 \ltx@ifundefined{oldb}{\let\b\oldb}%
822 \ltx@ifundefined{oldc}{\let\c\oldc}%
823 \ltx@ifundefined{oldd}{\let\d\oldd}%
824 }%
825 }%
826 }{%
827 \let\HyLinguex@Restore\relax
828 }%

```

### 6.3.3 PD1 encoding

The PD1 encoding implements the PDFDocEncoding for use with  $\text{\LaTeX 2}_{\epsilon}$ 's NFSS. Because the informational strings are not set by  $\text{\TeX}$ 's typesetting mechanism but for inter-

preting 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.

```
829 \ifundefined{T@PD1}{%
830   \input{pd1enc.def}%
831   \HyLinguex@Restore
832 }{}
833 \DeclareFontFamily{PD1}{pdf}{}
834 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
835 \DeclareFontSubstitution{PD1}{pdf}{m}{n}
```

### 6.3.4 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.

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

```
836 \def\HyPsd@InitUnicode{%
837   \ifundefined{T@PU}{%
838     \input{puenc.def}%
839     \HyLinguex@Restore
840   }{}%
841   \DeclareFontFamily{PU}{pdf}{}%
842   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
843   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
844   \let\HyPsd@InitUnicode\relax
845 }
```

## 6.4 Additional user commands

### 6.4.1 \texorpdfstring

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

```
846 \def\texorpdfstring{%
847   \ifHy@pdfstring
848     \expandafter\@secondoftwo
849   \else
850     \expandafter\@firstoftwo
851   \fi
852 }
```

### 6.4.2 Hooks for \pdfstringdef

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

```
853 \ifundefined{pdfstringdefPreHook}{%
854   \let\pdfstringdefPreHook\@empty
855 }{}
```

```

856 \@ifundefined{pdfstringdefPostHook}{%
857   \let\pdfstringdefPostHook\@gobble
858 }{}

```

`\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`.

```

859 \def\pdfstringdefDisableCommands{%
860   \begingroup
861   \makeatletter
862   \HyPsd@DisableCommands
863 }

```

`\HyPsd@DisableCommands`

```

864 \long\def\HyPsd@DisableCommands#1{%
865   \toks0=\expandafter{\pdfstringdefPreHook}%
866   \toks1={#1}%
867   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
868   \endgroup
869 }

```

`\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`.

```

870 \def\pdfstringdefWarn#1{%
871   \expandafter\noexpand\csname\<>-string#1\endcsname
872 }

```

## 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.

```

873 \begingroup

```



```

874 \catcode0=12 %
875 \def\x{\endgroup
876 \def\HyPsd@ignorespaces{%
877 \romannumeral\expandafter'\expandafter^^@%
878 \romannumeral'^^@%
879 }%
880 }%
881 \x

```

### 6.5.2 Babel languages

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

```

\pdfstringdefDisableCommands{%
\languageshorthands{system}%
}

```

As consequence the shorthands are shown in the bookmarks, not its result. Therefore `\languageshorthands` is disabled before the user hook. If there is a need to use the command, then `\HyOrg@languageshorthands` can be used inside `\pdfstringdefDisableCommands`.

```

882 \def\HyPsd@BabelPatch{%
883 \let\HyOrg@languageshorthands\languageshorthands
884 \let\languageshorthands\HyPsd@LanguageShorthands
885 }
886 \RequirePackage{pdfdoccmds}[2009/04/10]
887 \begingroup\expandafter\expandafter\expandafter\endgroup
888 \expandafter\ifx\csname pdf@strcmp\endcsname\relax
889 \let\HyPsd@langshort@system\@empty
890 \def\HyPsd@LanguageShorthands#1{%
891 \expandafter\ifx\csname HyPsd@langshort@#1\endcsname
892 \HyPsd@langshort@system
893 \expandafter\@gobble
894 \else
895 \expandafter\@firstofone
896 \fi
897 {%
898 \HyOrg@languageshorthands{#1}%
899 }%
900 }%
901 \else
902 \def\HyPsd@LanguageShorthands#1{%
903 \ifnum\pdf@strcmp{#1}{system}=\z@
904 \expandafter\@gobble
905 \else
906 \expandafter\@firstofone
907 \fi
908 {%
909 \HyOrg@languageshorthands{#1}%
910 }%
911 }%
912 \fi
913 \def\Hy@temp{%
914 \@ifpackageloaded{babel}{%
915 \@ifpackagelater{babel}{2008/03/16}{%
916 \let\Hy@temp\@empty
917 }{%

```

```

918 \def\HyPsd@BabelPatch{%
919 \let\HyOrg@languageshorthands\languageshorthands
920 }%
921 }%
922 }{}%
923 }
924 \Hy@temp
925 \expandafter\Hy@AtBeginDocument\expandafter{\Hy@temp}
926 \newif\ifHy@next

Nothing to do for english.
927 \ltx@ifundefined{danish@sh@.sel}{}{}%
928 \def\HyPsd@babel@danish{%
929 \declare@shorthand{danish}{"}{}%
930 \declare@shorthand{danish}{"}~{}{}%
931 }%
932 }
933 \ltx@ifundefined{dutch@sh@.sel}{}{}%
934 \def\HyPsd@babel@dutch{%
935 \declare@shorthand{dutch}{"}{}%
936 \declare@shorthand{dutch}{"}~{}{}%
937 }%
938 }
939 \ltx@ifundefined{finnish@sh@.sel}{}{}%
940 \def\HyPsd@babel@finnish{%
941 \declare@shorthand{finnish}{"}{}%
942 }%
943 }
944 \ltx@ifundefined{french@sh@.sel}{}{}%
945 \def\HyPsd@babel@frenchb{%
946 \def\guill@spacing{ }%
947 }%
948 }
949 \ltx@ifundefined{german@sh@.sel}{}{}%
950 \def\HyPsd@babel@german{%
951 \declare@shorthand{german}{"}f{}f{}%
952 \declare@shorthand{german}{"}|{}{}%
953 \declare@shorthand{german}{"}~{}{}%
954 }%
955 }
956 \ltx@ifundefined{macedonian@sh@.sel}{}{}%
957 \def\HyPsd@babel@macedonian{%
958 \declare@shorthand{macedonian}{"}|{}{}%
959 \declare@shorthand{macedonian}{"}~{}{}%
960 }%
961 }{}
962 \ltx@ifundefined{ngerman@sh@.sel}{}{}%
963 \def\HyPsd@babel@ngerman{%
964 \declare@shorthand{ngerman}{"}|{}{}%
965 \declare@shorthand{ngerman}{"}~{}{}%
966 }%
967 }
968 \ltx@ifundefined{portuges@sh@.sel}{}{}%
969 \def\HyPsd@babel@portuges{%
970 \declare@shorthand{portuges}{"}|{}{}%
971 }%
972 }

```

```

973 \ltx@ifundefined{russian@sh@"@sel}{-}{%
974   \def\HyPsd@babel@russian{%
975     \declare@shorthand{russian}{-}{-}%
976     \declare@shorthand{russian}{-}{-}%
977   }%
978 }
979 \ltx@ifundefined{slovene@sh@"@sel}{-}{%
980   \def\HyPsd@babel@slovene{%
981     \declare@shorthand{slovene}{-}{-}%
982   }%
983 }

```

Nested quoting environments are not supported (<<, >>).

```

984 \ltx@ifundefined{spanish@sh@>@sel}{-}{%
985   \def\HyPsd@babel@spanish{%
986     \declare@shorthand{spanish}{<<}{\guillemotleft}%
987     \declare@shorthand{spanish}{>>}{\guillemotright}%
988     \declare@shorthand{spanish}{=}{}-%
989     \declare@shorthand{spanish}{-}{-}%
990     \declare@shorthand{spanish}{!}{\textexclamdown}%
991     \declare@shorthand{spanish}{?}{\textquestiondown}%
992   }%
993 }
994 \ltx@ifundefined{swedish@sh@"@sel}{-}{%
995   \def\HyPsd@babel@swedish{%
996     \declare@shorthand{swedish}{-}{-}%
997     \declare@shorthand{swedish}{-}{-}%
998   }%
999 }
1000 \ltx@ifundefined{ukrainian@sh@"@sel}{-}{%
1001   \def\HyPsd@babel@ukrainian{%
1002     \declare@shorthand{ukrainian}{-}{-}%
1003     \declare@shorthand{ukrainian}{-}{-}%
1004   }%
1005 }
1006 \ltx@ifundefined{usorbian@sh@"@sel}{-}{%
1007   \def\HyPsd@babel@usorbian{%
1008     \declare@shorthand{usorbian}{f}{f}%
1009     \declare@shorthand{usorbian}{-}{-}%
1010   }%
1011 }
1012 \ltx@ifundefined{greek@sh@\string~@sel}{-}{%
1013   \let\HyPsd@GreekPatch\empty
1014 }{%
1015   \def\HyPsd@GreekPatch{%
1016     \let\greeknumeral\HyPsd@greeknumeral
1017     \let\Greeknatural\HyPsd@greeknumeral
1018   }%
1019 }
1020 \def\HyPsd@greeknumeral#1{%
1021   \HyPsd@GreekNum\@firstoftwo{#1}%
1022 }
1023 \def\HyPsd@Greeknatural#1{%
1024   \HyPsd@GreekNum\@secondoftwo{#1}%
1025 }
1026 \def\HyPsd@GreekNum#1#2{%
1027   \ifHy@unicode
1028     \ifnum#2<\@ne

```

```

1029 \@arabic{#2}%
1030 \else
1031 \ifnum#2<1000000 %
1032 \HyPsd@@GreekNum#1{#2}%
1033 \else
1034 \@arabic{#2}%
1035 \fi
1036 \fi
1037 \else
1038 \@arabic{#2}%
1039 \fi
1040 }
1041 \def\HyPsd@@GreekNum#1#2{%
1042 \ifnum#2<\@m
1043 \ifnum#2<10 %
1044 \expandafter\HyPsd@GreekNumI
1045 \expandafter\@gobble\expandafter#1\number#2%
1046 \else
1047 \ifnum#2<100 %
1048 \expandafter\HyPsd@GreekNumII
1049 \expandafter\@gobble\expandafter#1\number#2%
1050 \else
1051 \expandafter\HyPsd@GreekNumIII
1052 \expandafter\@gobble\expandafter#1\number#2%
1053 \fi
1054 \fi
1055 \ifnum#2>\z@
1056 \textnumeralsigngreek
1057 \fi
1058 \else
1059 \ifnum#2<\@M
1060 \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
1061 \else
1062 \ifnum#2<100000 %
1063 \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
1064 \else
1065 \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
1066 \fi
1067 \fi
1068 \fi
1069 }
1070 \def\HyPsd@GreekNumI#1#2#3{%
1071 #1{%
1072 \ifnum#3>\z@
1073 \textnumeralsignlowergreek
1074 \fi
1075 }%
1076 \expandafter#2%
1077 \ifcase#3 %
1078 {}{}%
1079 \or\textalpha\textAlpha
1080 \or\textbeta\textBeta
1081 \or\textgamma\textGamma
1082 \or\textdelta\textDelta
1083 \or\textepsilon\textEpsilon
1084 \or\textstigmagreek\textStigmagreek
1085 \or\textzeta\textZeta

```

```

1086 \or\texteta\textEta
1087 \or\texttheta\textTheta
1088 \else
1089   {}{}%
1090 \fi
1091 }
1092 \def\HyPsd@GreekNumII#1#2#3#4{%
1093   #1{%
1094     \ifnum#3>\z@
1095       \textnumeralsignlowergreek
1096     \fi
1097   }%
1098   \expandafter#2%
1099   \ifcase#3 %
1100     {}{}%
1101   \or\textiota\textIota
1102   \or\textkappa\textKappa
1103   \or\textlambda\textLambda
1104   \or\textmu\textMu
1105   \or\textnu\textNu
1106   \or\textxi\textXi
1107   \or\textomicron\textOmicron
1108   \or\textpi\textPi
1109   \or\textkoppagreek\textKoppagreek
1110   \else
1111     {}{}%
1112   \fi
1113   \HyPsd@GreekNumI#1#2#4%
1114 }
1115 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
1116   #1{%
1117     \ifnum#3>\z@
1118       \textnumeralsignlowergreek
1119     \fi
1120   }%
1121   \expandafter#2%
1122   \ifcase#3 %
1123     {}{}%
1124   \or\textrho\textRho
1125   \or\textsigma\textSigma
1126   \or\texttau\textTau
1127   \or\textupsilon\textUpsilon
1128   \or\textphi\textPhi
1129   \or\textchi\textChi
1130   \or\textpsi\textPsi
1131   \or\textomega\textOmega
1132   \or\textsampigreek\textSampigreek
1133   \else
1134     {}{}%
1135   \fi
1136   \HyPsd@GreekNumII#1#2#4#5%
1137 }
1138 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
1139   \HyPsd@GreekNumI\@firstofone#1#2%
1140   \HyPsd@@GreekNum#1{#3#4#5}%
1141 }
1142 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%

```

```

1143 \HyPsd@GreekNumII\@firstofone#1#2#3%
1144 \HyPsd@@GreekNum#1{#4#5#6}%
1145 }
1146 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
1147 \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
1148 \HyPsd@@GreekNum#1{#5#6#7}%
1149 }

1150 \def\HyPsd@SpanishPatch{%
1151 \ltx@ifundefined{es@save@dot}{%
1152 }{%
1153 \let\.\es@save@dot
1154 }%
1155 }

```

Shorthand "- of 'russianb.ldf' is not expandable, therefore it is disabled and replaced by -.

```

1156 \def\HyPsd@RussianPatch{%
1157 \ltx@ifundefined{russian@sh@"@-@}{%
1158 }{%
1159 \@namedef{russian@sh@"@-@}{-}%
1160 }%
1161 }

```

### 6.5.3 CJK patch

```

1162 \RequirePackage{intcalc}[2007/09/27]

```

\HyPsd@CJKhook

```

1163 \def\HyPsd@CJKhook{%
1164 \ltx@ifpackageloaded{CJK}{%
1165 \let\CJK@kern\relax
1166 \let\CJKkern\relax
1167 \let\CJK@CJK\relax
1168 \ifHy@CJKbookmarks
1169 \HyPsd@CJKhook@bookmarks
1170 \fi
1171 \HyPsd@CJKhook@unicode
1172 }{%
1173 }

```

### 6.5.4 CJK bookmarks

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

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

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

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

```

1174 \begingroup
1175 \catcode"7F=\active
1176 \toks@{%
1177 \let\CJK@ignorespaces\empty
1178 \def\CJK@char#1{\@gobbletwo}%

```

```

1179 \let\CJK@charx\@gobblefour
1180 \let\CJK@punctchar\@gobblefour
1181 \def\CJK@punctcharx#1{\@gobblefour}%
1182 \catcode"7F=\active
1183 \def^^7f#1^^7f#2^^7f{%
1184   \string #1\HyPsd@DecimalToOctal{#2}%
1185 }%
1186 % ... ?
1187 \ifHy@unicode
1188   \def\Hy@cjkpup{\80}%
1189 \else
1190   \let\Hy@cjkpup\@empty
1191 \fi
1192 \HyPsd@CJKActiveChars
1193 }%
1194 \count@=127 %
1195 \@whilenum\count@<255 \do{%
1196   \advance\count@ by 1 %
1197   \lccode'\~=\count@
1198   \lowercase{%
1199     \toks@\expandafter{\the\toks@ ~}%
1200   }%
1201 }%
1202 \toks@\expandafter{\the\toks@ !}%
1203 \xdef\HyPsd@CJKhook@bookmarks{%
1204   \the\toks@
1205 }%
1206 \endgroup

```

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

```

1207 \def\HyPsd@CJKActiveChars#1{%
1208   \ifx#1!%
1209     \let\HyPsd@CJKActiveChars\relax
1210   \else
1211     \edef#1{\noexpand\Hy@cjkpup\string#1}%
1212   \fi
1213   \HyPsd@CJKActiveChars
1214 }

```

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

```

1215 \def\HyPsd@DecimalToOctal#1{%
1216   \ifcase #1 %
1217     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1218     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1219     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1220     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1221     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1222     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1223     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1224     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
1225     \or @\or A\or B\or C\or D\or E\or F\or G%
1226     \or H\or I\or J\or K\or L\or M\or N\or O%
1227     \or P\or Q\or R\or S\or T\or U\or V\or W%
1228     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
1229     \or \140\or a\or b\or c\or d\or e\or f\or g%
1230     \or h\or i\or j\or k\or l\or m\or n\or o%

```

```

1231 \or p\or q\or r\or s\or t\or u\or v\or w%
1232 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
1233 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1234 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1235 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1236 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1237 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1238 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1239 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1240 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1241 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1242 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1243 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1244 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1245 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1246 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1247 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1248 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1249 \fi
1250 }

```

### 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

1251 \def\HyPsd@CJKhook@unicode{%
1252 \let\Unicode\HyPsd@CJK@Unicode
1253 \let\CJKnumber\HyPsd@CJKnumber
1254 \let\CJKdigits\HyPsd@CJKdigits
1255 }

```

\HyPsd@CJK@Unicode

```

1256 \def\HyPsd@CJK@Unicode#1#2{%
1257 \ifnum#1<256 %
1258 \HyPsd@DecimalToOctalFirst{#1}%
1259 \HyPsd@DecimalToOctalSecond{#2}%
1260 \else
1261 \933%
1262 \expandafter\expandafter\expandafter\HyPsd@HighA
1263 \intcalcDiv{#1}{4}!%
1264 \933%
1265 \ifcase\intcalcMod{#1}{4} %
1266 4\or 5\or 6\or 7%
1267 \fi
1268 \HyPsd@DecimalToOctalSecond{#2}%
1269 \fi
1270 }

1271 \def\HyPsd@HighA#1!{%
1272 \expandafter\expandafter\expandafter\HyPsd@HighB
1273 \IntCalcDiv#1!64!!%
1274 \expandafter\expandafter\expandafter\HyPsd@HighD
1275 \IntCalcMod#1!64!!%
1276 }
1277 \def\HyPsd@HighB#1!{%
1278 \expandafter\expandafter\expandafter\HyPsd@HighC
1279 \IntCalcDec#1!!%
1280 }

```



```

1281 \def\HyPsd@HighC#1!{%
1282   \IntCalcDiv#1!4!%
1283   \@backslashchar
1284   \IntCalcMod#1!4!%
1285 }
1286 \def\HyPsd@HighD#1!{%
1287   \ifcase\IntCalcDiv#1!8! %
1288     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1289   \fi
1290   \ifcase\IntCalcMod#1!8! %
1291     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1292   \fi
1293 }
1294 \def\HyPsd@DecimalToOctalFirst#1{%
1295   \9%
1296   \ifcase#1 %
1297     000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1298     \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%
1299     \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1300     \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1301     \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1302     \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1303     \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1304     \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1305     \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1306     \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1307     \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1308     \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1309     \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1310     \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1311     \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
1312     \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1313     \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1314     \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1315     \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1316     \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1317     \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1318     \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1319     \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1320     \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1321     \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1322     \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1323     \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1324     \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1325     \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1326     \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1327     \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1328     \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1329   \fi
1330 }
1331 \def\HyPsd@DecimalToOctalSecond#1{%
1332   \ifcase #1 %
1333     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1334     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1335     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1336     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1337     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%

```

```

1338 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1339 \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1340 \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1341 \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1342 \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1343 \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1344 \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1345 \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1346 \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1347 \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1348 \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1349 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1350 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1351 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1352 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1353 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1354 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1355 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1356 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1357 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1358 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1359 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1360 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1361 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1362 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1363 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1364 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1365 \fi
1366 }

1367 \def\HyPsd@CJKNnumber#1{%
1368 \ifnum#1<\z@
1369 \CJK@minus
1370 \expandafter\HyPsd@@CJKNnumber\expandafter{\number-\number#1}%
1371 \else
1372 \expandafter\HyPsd@@CJKNnumber\expandafter{\number#1}%
1373 \fi
1374 }

1375 \def\HyPsd@@CJKNnumber#1{%
1376 \ifcase#1 %
1377 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1378 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1379 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1380 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1381 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1382 \CJK@ten\CJK@nine
1383 \else
1384 \ifnum#1<10000 %
1385 \HyPsd@CJKNnumberFour#1!\@empty{20}%
1386 \@empty
1387 \else
1388 \ifnum#1<100000000 %
1389 \expandafter\expandafter\expandafter\HyPsd@CJKNnumberFour
1390 \IntCalcDiv#1!10000!%
1391 !}{20}%
1392 \CJK@tenthousand
1393 \expandafter\expandafter\expandafter\HyPsd@CJKNnumberFour
1394 \IntCalcMod#1!10000!%

```

```

1395      !\CJK@zero{10}%
1396      \@empty
1397      \else
1398      \expandafter\HyPsd@CJKnumberLarge
1399      \number\IntCalcDiv#1!100000000!\expandafter!%
1400      \number\IntCalcMod#1!100000000!!%
1401      \fi
1402      \fi
1403      \fi
1404  }
1405  \def\HyPsd@CJKnumberLarge#1!#2!{%
1406  \HyPsd@CJKnumberFour#1!{}{20}%
1407  \CJK@hundredmillion
1408  \ifnum#2=\z@
1409  \else
1410  \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1411  \IntCalcDiv#2!10000!%
1412  !\CJK@zero{10}%
1413  \CJK@tenthousand
1414  \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1415  \IntCalcMod#2!10000!%
1416  !\CJK@zero{10}%
1417  \@empty
1418  \fi
1419  }
1420  \def\HyPsd@CJKnumberFour#1!#2#3{%
1421  \ifnum#1=\z@
1422  \expandafter\@gobble
1423  \else
1424  \ifnum#1<1000 %
1425  #2%
1426  \HyPsd@CJKnumberThree#1!{}{#3}%
1427  \else
1428  \HyPsd@@@CJKnumber{\IntCalcDiv#1!1000!}%
1429  \CJK@thousand
1430  \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1431  \IntCalcMod#1!1000!%
1432  !\CJK@zero{10}%
1433  \fi
1434  \fi
1435  }
1436  \def\HyPsd@CJKnumberThree#1!#2#3{%
1437  \ifnum#1=\z@
1438  \else
1439  \ifnum#1<100 %
1440  #2%
1441  \HyPsd@CJKnumberTwo#1!{}{#3}%
1442  \else
1443  \HyPsd@@@CJKnumber{\IntCalcDiv#1!100!}%
1444  \CJK@hundred
1445  \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1446  \IntCalcMod#1!100!%
1447  !\CJK@zero{10}%
1448  \fi
1449  \fi
1450  }
1451  \def\HyPsd@CJKnumberTwo#1!#2#3{%

```

```

1452 \ifnum#1=\z@
1453 \else
1454 \ifnum#1<#3 %
1455   #2%
1456   \HyPsd@@CJKnumber{#1}%
1457 \else
1458   \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1459   \CJK@ten
1460   \ifnum\IntCalcMod#1!10!=\z@
1461   \else
1462     \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1463   \fi
1464 \fi
1465 \fi
1466 }

1467 \def\HyPsd@CJKdigits#1{%
1468   \ifx*#1\relax
1469     \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1470   \else
1471     \HyPsd@@CJKdigits\CJK@null{#1}%
1472   \fi
1473 }

1474 \def\HyPsd@@CJKdigits#1#2{%
1475   \ifx\#2\%
1476   \else
1477     \HyPsd@@@CJKdigits#1#2\@nil
1478   \fi
1479 }%

1480 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1481   \HyPsd@CJKdigit#1{#2}%
1482   \ifx\#3\%
1483     \expandafter\@gobble
1484   \else
1485     \expandafter\@firstofone
1486   \fi
1487   {%
1488     \HyPsd@@@CJKdigits#1#3\@nil
1489   }%
1490 }

1491 \def\HyPsd@CJKdigit#1#2{%
1492   \ifcase#2 %
1493     #1\or
1494     \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1495     \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1496   \fi
1497 }

```

### 6.5.6 \@inmathwarn-Patch

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

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

1498 \def\HyPsd@inmathwarn#1#2{%
1499   \ifx#2\expandafter
1500     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1501       \HyPsd@GLYPHERR
1502       \expandafter\@gobble\string#1%
1503       >%
1504       \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1505     \else
1506       \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1507     \fi
1508   \else
1509     \expandafter#2%
1510   \fi
1511 }
1512 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1513 \def\HyPsd@EndWithElse#1\else\else{}

\HyPsd@add@accent

1514 \def\HyPsd@add@accent#1#2{%
1515   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1516   #2%
1517 }%

```

### 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`.

```
1518 \def\HyPsd@LetUnexpandableSpace#1{%
1519   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1520 }
```

`\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.

```
1521 \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.

```
1522 \edef\HyPsd@XSPACE{\string#\string X}
1523 \edef\HyPsd@ITALCORR{\string#\string I}
1524 \edef\HyPsd@GLYPHERR{\string#\string G}
```

### 6.5.9 `\hspace fix`

`\HyPsd@hspace`

```
1525 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}
```

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

```
1526 \def\HyPsd@@hspace#1*#2\END{%
1527   \ifx\#2\%
1528     \HyPsd@hspacetest{#1}%
1529   \else
1530     \expandafter\HyPsd@hspacetest
1531   \fi
1532 }
```

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

```
1533 \def\HyPsd@hspacetest#1{\ifdim#1>z@\space\fi}
```

### 6.5.10 Fix for AMS classes

```
1534 \ltx@ifundefined{tocsection}{%
1535   \let\HyPsd@AMSClassfix\relax
1536 }{%
1537   \def\HyPsd@AMSClassfix{%
1538     \let\tocpart\HyPsd@tocsection
1539     \let\tocchapter\HyPsd@tocsection
1540     \let\tocappendix\HyPsd@tocsection
```

```

1541 \let\tocsection\HyPsd@tocsection
1542 \let\tocsubsection\HyPsd@tocsection
1543 \let\tocsubsubsection\HyPsd@tocsection
1544 \let\tocparagraph\HyPsd@tocsection
1545 }%
1546 \def\HyPsd@tocsection#1#2#3{%
1547 \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1548 #3%
1549 }%
1550 }

```

### 6.5.11 Reference commands

`\HyPsd@href`

```

1551 \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.

```

1552 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%

```

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

```

1553 \def\HyPsd@@ref#1*#2\END{%
1554 \ifx\#2\%
1555 \HyPsd@@@ref{#1}%
1556 \else
1557 \expandafter\HyPsd@@@ref
1558 \fi
1559 }%

```

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

```

1560 \def\HyPsd@@@ref#1{%
1561 \expandafter\ifx\csname r@#1\endcsname\relax
1562 ??%
1563 \else
1564 \expandafter\expandafter\expandafter
1565 \@car\csname r@#1\endcsname\@nil
1566 \fi
1567 }

```

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

```

1568 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

```

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

```

1569 \def\HyPsd@@pageref#1*#2\END{%
1570 \ifx\#2\%
1571 \HyPsd@@@pageref{#1}%
1572 \else
1573 \expandafter\HyPsd@@@pageref
1574 \fi
1575 }

```

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

```

1576 \def\HyPsd@@@pageref#1{%
1577 \expandafter\ifx\csname r@#1\endcsname\relax
1578 ??%

```

```

1579 \else
1580 \expandafter\expandafter\expandafter\expandafter
1581 \expandafter\expandafter\expandafter\@car
1582 \expandafter\expandafter\expandafter\@gobble
1583 \csname r@#1\endcsname{}\@nil
1584 \fi
1585 }

```

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

```

1586 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}

```

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

```

1587 \def\HyPsd@@nameref#1*#2\END{%
1588 \ifx\#2\%
1589 \HyPsd@@@nameref{#1}%
1590 \else
1591 \expandafter\HyPsd@@@nameref
1592 \fi
1593 }

```

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

```

1594 \def\HyPsd@@@nameref#1{%
1595 \expandafter\ifx\csname r@#1\endcsname\relax
1596 ??%
1597 \else
1598 \expandafter\expandafter\expandafter\expandafter
1599 \expandafter\expandafter\expandafter\@car
1600 \expandafter\expandafter\expandafter\@gobbletwo
1601 \csname r@#1\endcsname{}\@nil
1602 \fi
1603 }

```

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

```

1604 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}

```

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

```

1605 \def\HyPsd@@autoref#1*#2\END{%
1606 \ifx\#2\%
1607 \HyPsd@@@autoref{#1}%
1608 \else
1609 \expandafter\HyPsd@@@autoref
1610 \fi
1611 }

```

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

```

1612 \def\HyPsd@@@autoref#1{%
1613 \expandafter\ifx\csname r@#1\endcsname\relax
1614 ??%
1615 \else
1616 \expandafter\expandafter\expandafter\HyPsd@autorefname
1617 \csname r@#1\endcsname{}\@nil
1618 \expandafter\expandafter\expandafter
1619 \@car\csname r@#1\endcsname\@nil
1620 \fi
1621 }

```



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

```
1622 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1623   \ifx\#4\%
1624   \else
1625     \HyPsd@@autorefname#4.\@nil
1626   \fi
1627 }
```

`\HyPsd@@autorefname`

```
1628 \def\HyPsd@@autorefname#1.#2\@nil{%
1629   \ltx@ifundefined{#1autorefname}{%
1630     \ltx@ifundefined{#1name}{%
1631       }{%
1632         \csname#1name\endcsname\space
1633       }%
1634     }{%
1635       \csname#1autorefname\endcsname\space
1636     }%
1637 }
```

### 6.5.12 Redefining the defining commands

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

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

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

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

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

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

`\HyPsd@DefCommand`

`\HyPsd@LetCommand`

```
1638 \begingroup
1639 \def\x#1#2{%
1640   \endgroup
1641   \let#1\def
```

```

1642 \def\HyPsd@DefCommand##1##2##3{%
1643   #1%
1644   \expandafter\noexpand
1645   \csname\expandafter\@gobble\string##1\@empty\endcsname
1646   \@gobble
1647 }%
1648 \let#2\let
1649 \def\HyPsd@@LetCommand##1{%
1650   \expandafter\ifx\csname##1\expandafter\endcsname
1651     \csname iftrue\endcsname
1652     \pdfstringdefWarn\let
1653     \expandafter\@gobble
1654   \else
1655     \expandafter\ifx\csname##1\expandafter\endcsname
1656       \csname iffalse\endcsname
1657       \pdfstringdefWarn\let
1658       \expandafter\expandafter\expandafter\@gobble
1659     \else
1660       #2%
1661       \expandafter\noexpand
1662       \csname##1\expandafter\expandafter\expandafter\endcsname
1663     \fi
1664   \fi
1665 }%
1666 }%
1667 \expandafter\x\csname <def>-command\expandafter\endcsname
1668   \csname <let>-command\endcsname
1669 \def\HyPsd@LetCommand#1{%
1670   \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1671   \expandafter\expandafter\expandafter{%
1672     \expandafter\@gobble\string#1\@empty
1673   }%
1674 }

```

### 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).

```

1675 \def\HyPsd@ifnextchar#1{%
1676   \pdfstringdefWarn#1%
1677   \expandafter\@gobbletwo\@gobble
1678 }

```

### 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`.

```
1679 \def\HyPsd@protected@testopt#1{%
1680   \pdfstringdefWarn#1%
1681   \@gobbletwo
1682 }
```

## 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:

```
1683 \def\HyPsd@Warning#1{%
1684   \begingroup
1685   \def\space{ }%
1686   \Hy@Warning{#1}%
1687   \endgroup
1688 }
```

### 6.6.2 Protecting spaces

```
1689 \RequirePackage{etexcmds}[2007/09/09]
1690 \ifetex@unexpanded
1691   \expandafter\@secondoftwo
1692 \else
1693   \expandafter\@firstoftwo
1694 \fi
1695 {%
```

`\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`.

```
1696 \def\HyPsd@ProtectSpaces#1{%
1697   \iftrue
1698     \expandafter\HyPsd@@ProtectSpacesFi
1699     \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1700   \fi
1701   }%
```

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

```
1702 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1703   \fi
1704   \ifx\scrollmode#2\scrollmode
1705     \HyPsd@RemoveMask#1\HyPsd@End#3%
1706   \else
1707     \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1708     \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1709   \fi
1710   }%
```

**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.

```

1711 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1712   \toks@\expandafter{#1}%
1713   \xdef#2{\the\toks@}%
1714 }%

1715 }{%
1716 \let\HyPsd@fi\fi
1717 \def\HyPsd@ProtectSpaces#1{%
1718   \xdef#1{%
1719     \iftrue
1720       \expandafter\HyPsd@@ProtectSpacesFi
1721       \expandafter|\expandafter\@empty#1| %
1722       \HyPsd@fi
1723   }%
1724   \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1725 }%
1726 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1727   \fi
1728   \etex@unexpanded{#1}%
1729   \ifx\scrollmode#2\scrollmode
1730   \else
1731     \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1732   \HyPsd@fi
1733 }%
1734 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1735   \xdef#2{\etex@unexpanded\expandafter{#1}}%
1736 }%
1737 }

```

### 6.6.3 Remove grouping braces

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

```

1738 \def\HyPsd@RemoveBraces#1{%
1739   \ifx\scrollmode#1\scrollmode
1740   \else
1741     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1742   \fi
1743 }

```

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

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

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

```

1744 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1745   \fi
1746   \def\Hy@temp@A{#1#2}%
1747   \def\Hy@temp@B{#3}%
1748   \ifx\Hy@temp@A\Hy@temp@B
1749     \expandafter\def\expandafter\HyPsd@String\expandafter{%

```

```

1750 \HyPsd@String#1%
1751 }%
1752 \ifx\scrollmode#2\scrollmode
1753 \else
1754 \Hy@ReturnAfterFiFiEnd{%
1755 \HyPsd@RemoveBraces{#2}%
1756 }%
1757 \fi
1758 \else
1759 \def\Hy@temp@A{#1}%
1760 \HyPsd@AppendItalcorr\HyPsd@String
1761 \ifx\Hy@temp@A\@empty
1762 \Hy@ReturnAfterElseFiFiEnd{%
1763 \HyPsd@RemoveBraces{#2}%
1764 }%
1765 \else
1766 \HyPsd@ProtectSpaces\Hy@temp@A
1767 \HyPsd@AppendItalcorr\Hy@temp@A
1768 \Hy@ReturnAfterFiFiEnd{%
1769 \expandafter\HyPsd@RemoveBraces\expandafter
1770 {\Hy@temp@A#2}%
1771 }%
1772 \fi
1773 \fi
1774 \Hy@ReturnEnd
1775 }

```

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

```

1776 \def\HyPsd@AppendItalcorr#1{%
1777 \expandafter\HyPsd@@AppendItalcorr\expandafter{/}#1%
1778 }
1779 \def\HyPsd@@AppendItalcorr#1#2{%
1780 \expandafter\def\expandafter#2\expandafter{#2#1}%
1781 }

```

#### 6.6.4 Catcode check

##### 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).

```

1782 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1783 \global\let\HyPsd@Rest\relax
1784 \ifcat\relax\noexpand#1\relax
1785 \ifx#1\protect
1786 \else
1787 \ifx#1\penalty
1788 \setbox\z@=\hbox{%

```

```

1789     \afterassignment\HyPsd@AfterCountRemove
1790     \count@=#2\HyPsd@End
1791 }%
1792 \else
1793   \ifx#1\kern
1794     \setbox\z@=\hbox{%
1795       \afterassignment\HyPsd@AfterDimenRemove
1796       \dimen@=#2\HyPsd@End
1797     }%
1798   \else
1799     \ifx#1\hskip
1800       \setbox\z@=\hbox{%
1801         \afterassignment\HyPsd@AfterSkipRemove
1802         \skip@=#2\HyPsd@End
1803       }%
1804     \else
1805       \HyPsd@CatcodeWarning{#1}%
1806     \fi
1807   \fi
1808 \fi
1809 \fi
1810 \else
1811   \ifcat#1A% letter
1812     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1813       \HyPsd@String#1%
1814     }%
1815   \else
1816     \ifcat#1 % SPACE
1817       \expandafter\def\expandafter\HyPsd@String\expandafter{%
1818         \HyPsd@String\HyPsd@SPACEOPTI
1819       }%
1820     \else
1821       \ifcat$#1%
1822         \HyPsd@CatcodeWarning{math shift}%
1823       \else
1824         \ifcat&#1%
1825           \HyPsd@CatcodeWarning{alignment tab}%
1826         \else
1827           \ifcat^#1%
1828             \HyPsd@CatcodeWarning{superscript}%
1829           \else
1830             \ifcat_#1%
1831               \HyPsd@CatcodeWarning{subscript}%
1832             \else
1833               \expandafter\def\expandafter\HyPsd@String\expandafter{%
1834                 \HyPsd@String#1%
1835               }%
1836             \fi
1837           \fi
1838         \fi
1839       \fi
1840     \fi
1841   \fi
1842 \fi
1843 \ifx\HyPsd@Rest\relax
1844   \ifx\scrollmode#2\scrollmode
1845     \else

```

```

1846 \Hy@ReturnAfterFiFiEnd{%
1847 \HyPsd@CheckCatcodes#2\HyPsd@End
1848 }%
1849 \fi
1850 \else
1851 \ifx\HyPsd@Rest\@empty
1852 \else
1853 \Hy@ReturnAfterFiFiEnd{%
1854 \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1855 }%
1856 \fi
1857 \fi
1858 \Hy@ReturnEnd
1859 }

```

### Remove counts, dimens, skips.

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

```

1860 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1861 \gdef\HyPsd@Rest{#1}%
1862 }

```

\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.

```

1863 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1864 \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@\fi>1ex %
1865 \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1866 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1867 \else
1868 \ifdim\dimen@=\z@
1869 \else
1870 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1871 \fi
1872 \gdef\HyPsd@Rest{#1}%
1873 \fi
1874 }

```

\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).

```

1875 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1876 \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@\fi>1ex %
1877 \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1878 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1879 \else
1880 \ifdim\skip@=\z@
1881 \else
1882 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1883 \fi
1884 \gdef\HyPsd@Rest{#1}%
1885 \fi
1886 }

```

### Catcode warnings.

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

```
1887 \def\HyPsd@CatcodeWarning#1{%
1888   \HyPsd@Warning{%
1889     Token not allowed in a PDF string (%)
1890     \ifHy@unicode
1891       Unicode%
1892     \else
1893       PDFDocEncoding%
1894     \fi
1895   }:%
1896   \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1897 }%
1898 }
1899 \begingroup
1900   \catcode'\|=0 %
1901   \catcode'\|=12 %
1902   \gdef\HyPsd@RemoveCmdPrefix#1{%
1903     \expandafter\HyPsd@@RemoveCmdPrefix
1904     \string#1|@empty\<>-|@empty|@empty
1905   }%
1906   \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1907 \endgroup
```

\HyPsd@RemoveSpaceWarning

```
1908 \def\HyPsd@RemoveSpaceWarning#1{%
1909   \HyPsd@Warning{%
1910     Token not allowed in a PDF string (%)
1911     \ifHy@unicode
1912       Unicode%
1913     \else
1914       PDFDocEncoding%
1915     \fi
1916   }:%
1917   \MessageBreak #1\MessageBreak
1918   removed%
1919 }%
1920 }
```

\HyPsd@ReplaceSpaceWarning

```
1921 \def\HyPsd@ReplaceSpaceWarning#1{%
1922   \HyPsd@Warning{%
1923     Token not allowed in a PDF string (%)
1924     \ifHy@unicode
1925       Unicode%
1926     \else
1927       PDFDocEncoding%
1928     \fi
1929   }:%
1930   \MessageBreak #1\MessageBreak
1931   replaced by space%
1932 }%
1933 }
```

### 6.6.5 Check for wrong glyphs

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



```

1934 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1935   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1936     \HyPsd@String#1%
1937   }%
1938   \ifx\#2\%
1939   \else
1940     \Hy@ReturnAfterFi{%
1941       \HyPsd@GlyphProcessWarning#2\@empty
1942     }%
1943   \fi
1944 }
1945 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1946   \HyPsd@@@GlyphProcessWarning#1++>%
1947   \HyPsd@GlyphProcess#2\@empty
1948 }
1949 \def\HyPsd@@@GlyphProcessWarning#1+#2+#3>{%
1950   \ifx\#2\%
1951     \HyPsd@Warning{%
1952       Glyph not defined in %
1953       P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1954       removing '@backslashchar#1'%
1955     }%
1956   \else
1957     \HyPsd@Warning{%
1958       Composite letter '@backslashchar#1+#2'\MessageBreak
1959       not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
1960       \MessageBreak
1961       removing '@backslashchar#1'%
1962     }%
1963   \fi
1964 }

```

## 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`.

```

1965 \def\HyPsd@spaceopti#1{ % first space
1966   \ifx\HyPsd@spaceopti#1%
1967     \040%
1968   \else
1969     #1%
1970   \fi
1971 }%

```

### 6.6.6 Replacing tokens

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

- `#1` Exact the tokens that should be replaced.
- `#2` The replacement (don't need to be expanded).
- `#3` Command with the string.

```

1972 \def\HyPsd@Subst#1#2#3{%
1973   \def\HyPsd@@@ReplaceFi##1#1##2\END\fi{%
1974     \fi

```

```

1975   ##1%
1976   \ifx\scrollmode##2\scrollmode
1977   \else
1978     #2%
1979     \HyPsd@@ReplaceFi##2\END
1980   \fi
1981 }%
1982 \xdef#3{%
1983   \iftrue
1984     \expandafter\HyPsd@@ReplaceFi#3#1\END
1985   \fi
1986 }%
1987 }

```

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

```

1988 \def\HyPsd@StringSubst#1{%
1989   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1990 }

```

`\HyPsd@EscapeTeX`

```

1991 \begingroup
1992 \lccode'\!='\%%
1993 \lccode'\|='\%%
1994 \lccode'\(='\{%
1995 \lccode'\)='\}%
1996 \lccode'0=\ltx@zero
1997 \lccode'1=\ltx@zero
1998 \lccode'3=\ltx@zero
1999 \lccode'4=\ltx@zero
2000 \lccode'5=\ltx@zero
2001 \lccode'7=\ltx@zero
2002 \lowercase{\endgroup
2003 \def\HyPsd@EscapeTeX#1{%
2004   \HyPsd@Subst!{|045}#1%
2005   \HyPsd@Subst({|173}#1%
2006   \HyPsd@Subst){|175}#1%
2007 }%
2008 }

```

### 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.

```

2009 \def\HyPsd@doxspace#1{%
2010   \ifx#1\relax\else
2011     \ifx#1.\else
2012       \ifx#1:\else
2013         \ifx#1,\else
2014         \ifx#1;\else
2015         \ifx#1!\else
2016         \ifx#1?\else
2017         \ifx#1/\else
2018         \ifx#1-\else
2019         \ifx#1'\else

```

```

2020         \HyPsd@SPACEOPTI
2021         \fi
2022         \fi
2023         \fi
2024         \fi
2025         \fi
2026         \fi
2027         \fi
2028         \fi
2029         \fi
2030         \fi
2031         #1%
2032     }%

```

### 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.

```

2033 \begingroup
2034   \catcode'\|=0 %
2035   \catcode'\|=12 %

```

\HyPsd@ConvertToUnicode

```

2036 |gdef|HyPsd@ConvertToUnicode#1{%
2037 |xdef#1{%
2038   |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
2039 }%
2040 |ifx#1|@empty
2041 |else
2042   |xdef#1{%
2043     \376\377%
2044     #1%
2045   }%
2046 |fi
2047 }%

```

\HyPsd@DoConvert

```

2048 |gdef|HyPsd@DoConvert#1{%
2049 |ifx#1|@empty
2050 |else
2051   |Hy@ReturnAfterFi{%
2052     |ifx#1\%%
2053     \%%
2054     |expandafter|HyPsd@DoEscape
2055   |else
2056     |HyPsd@Char{#1}%
2057     |expandafter|HyPsd@DoConvert
2058   |fi
2059 }%
2060 |fi
2061 }%

```

\HyPsd@DoEscape

```

2062 |gdef|HyPsd@DoEscape#1{%
2063 |ifx#19%

```

```

2064 |expandafter|HyPsd@GetTwoBytes
2065 |else
2066 |Hy@ReturnAfterFi{%
2067 |ifx#18%
2068 00%
2069 |expandafter|HyPsd@GetTwoBytes
2070 |else
2071 #1%
2072 |expandafter|HyPsd@GetOneByte
2073 |fi
2074 }%
2075 |fi
2076 }%

```

\HyPsd@GetTwoBytes

```

2077 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
2078 #1\#2#3#4%
2079 |HyPsd@DoConvert
2080 }%

```

\HyPsd@GetOneByte

```

2081 |gdef|HyPsd@GetOneByte#1#2{%
2082 #1#2%
2083 |HyPsd@DoConvert
2084 }%
2085 |endgroup

```

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

```

2086 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
2087 \xdef#4{#4#1#2}%
2088 \HyPsd@@ConvertToUnicode#3\END#4%
2089 }

```

\HyPsd@Char

```

2090 \begingroup
2091 \catcode0=9 %
2092 \catcode'\^=7 %
2093 \catcode'\^^=12 %
2094 \def\x{^^^^0000}%
2095 \expandafter\endgroup
2096 \ifx\x\@empty
2097 \def\HyPsd@Char#1{%
2098 \ifnum'#1<128 %
2099 \@backslashchar 000#1%
2100 \else
2101 \ifnum'#1<65536 %
2102 \expandafter\HyPsd@CharTwoByte\number'#1!%
2103 \else
2104 \expandafter\expandafter\expandafter\HyPsd@CharSurrogate
2105 \intcalcSub{'#1}{65536}!%
2106 \fi
2107 \fi
2108 }%
2109 \def\HyPsd@CharTwoByte#1!{%
2110 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2111 \IntCalcDiv#1!256!!%
2112 \expandafter\expandafter\expandafter\HyPsd@CharOctByte

```

```

2113 \IntCalcMod#1!256!!%
2114 }%
2115 \def\HyPsd@CharOctByte#1!{%
2116 \@backslashchar
2117 \IntCalcDiv#1!64!%
2118 \intcalcDiv{\IntCalcMod#1!64!}{8}%
2119 \IntCalcMod#1!8!%
2120 }%
2121 \def\HyPsd@CharSurrogate#1!{%
2122 \@backslashchar 33%
2123 \IntCalcDiv#1!262144!%
2124 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2125 \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
2126 \@backslashchar 33%
2127 \expandafter\expandafter\expandafter\IntCalcAdd
2128 \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
2129 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2130 \IntCalcMod#1!256!!%
2131 }%
2132 \else
2133 \def\HyPsd@Char#1{%
2134 \@backslashchar 000#1%
2135 }%
2136 \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`

```

2137 \begingroup\expandafter\expandafter\expandafter\endgroup
2138 \expandafter\ifx\csname numexpr\endcsname\relax
2139 \let\HyPsd@UTFviii\relax
2140 \else
2141 \begingroup
2142 \lccode'\~='^^f4\relax
2143 \lowercase{\endgroup
2144 \def\HyPsd@UTFviii{%
2145 \let\UTFviii@two@octets\HyPsd@UTFviii@two
2146 \let\UTFviii@three@octets\HyPsd@UTFviii@three
2147 \let\UTFviii@four@octets\HyPsd@UTFviii@four
2148 \ifx~\HyPsd@UTFviii@ccxliv@undef
2149 \let~\HyPsd@UTFviii@ccxliv@def
2150 \fi
2151 \let\unichar\HyPsd@unichar
2152 }%
2153 }%
2154 \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
2155 \edef\HyPsd@UTFviii@ccxliv@def{%

```

```

2156 \noexpand\UTFviii@four@octets\string ^f4%
2157 }%

```

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.

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

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

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

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

$$(5)$$

```

2158 \def\HyPsd@UTFviii@two#1#2{%
2159 \expandafter\HyPsd@UTFviii@@two
2160 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter| %
2161 \number'#1\expandafter| %
2162 \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter| %
2163 \number'#2 \@nil
2164 }%
2165 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
2166 \expandafter\8%
2167 \number\numexpr #1-48\expandafter\relax
2168 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
2169 \number\numexpr #3-8*%
2170 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
2171 \number\numexpr #4-8*#3\relax
2172 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

2173 \def\HyPsd@UTFviii@three#1#2#3{%
2174 \expandafter\HyPsd@UTFviii@@three
2175 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter| %
2176 \number'#1\expandafter| %
2177 \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter| %
2178 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter| %
2179 \number'#2\expandafter| %
2180 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter| %
2181 \number'#3 \@nil
2182 }%
2183 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
2184 \expandafter\9%
2185 \number\numexpr #1-56\expandafter\relax
2186 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
2187 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax

```

```

2188 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
2189 \number\numexpr #6-16\expandafter\relax
2190 \number\numexpr #7-8*#6\relax
2191 }%

```

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

```

```

2192 \def\HyPsd@UTFviii@four#1#2{%
2193 \expandafter\HyPsd@@UTFviii@four\number
2194 \numexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
2195 \expandafter|\number
2196 \numexpr'#2-16*\dimexpr.0625\dimexpr'#2sp| %
2197 }%
2198 \def\HyPsd@@UTFviii@four#1|#2|#3{%
2199 \933\number\dimexpr.25\dimexpr#1sp\relax\relax
2200 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
2201 \ifodd#2 %
2202 \number\numexpr(#2-1)/2\relax
2203 \else
2204 \number\numexpr#2/2\relax
2205 \fi
2206 \number\numexpr\ifodd#2 4+\fi
2207 \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
2208 \933%
2209 \expandafter\HyPsd@@@UTFviii@four\number
2210 \numexpr'#3-16*\dimexpr.0625\dimexpr'#3sp| %
2211 }%
2212 \def\HyPsd@@@UTFviii@four#1|#2{%
2213 \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
2214 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
2215 \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
2216 \number\numexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
2217 }%

```

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

```

2218 \def\HyPsd@unichar#1{%
2219 \ifHy@unicode
2220 \ifnum#1>"10FFFF %
2221 \HyPsd@UnicodeReplacementCharacter % illegal
2222 \else
2223 \ifnum#1>"FFFF %

```

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

```

2224 \expandafter\HyPsd@unichar\expandafter{%
2225 \number\numexpr 55296+%
2226 \dimexpr.0009765625\dimexpr\number#1sp-\p@
2227 \relax\relax\relax
2228 }%

```

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

```

2229 \expandafter\HyPsd@unichar\expandafter{%
2230 \number\numexpr#1-9216%

```

```

2231         -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
2232         \relax\relax\relax
2233     }%
2234     \else
2235         \ifnum#1>"7FF %
2236         \9%
2237         \expandafter\HyPsd@unichar@first@byte\expandafter{%
2238         \number
2239         \dimexpr.00390625\dimexpr\number#1sp\relax\relax
2240         }%
2241     \else
2242         \8%
2243         \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
2244     \fi
2245     \expandafter\HyPsd@unichar@second@byte\expandafter{%
2246     \number
2247     \numexpr#1-256*\number
2248     \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
2249     }%
2250     \fi
2251     \fi
2252     \else
2253     .% unsupported (Unicode -> PDF Doc Encoding)
2254     \fi
2255     }%
2256     \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
2257     \def\HyPsd@unichar@first@byte#1{%
2258     \number\dimexpr.015625\dimexpr#1sp\relax\relax
2259     \expandafter\HyPsd@unichar@octtwo\expandafter{%
2260     \number
2261     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2262     \relax\relax\relax
2263     }%
2264     }%
2265     \def\HyPsd@unichar@second@byte#1{%
2266     \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2267     \expandafter\HyPsd@unichar@octtwo\expandafter{%
2268     \number
2269     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2270     \relax\relax\relax
2271     }%
2272     }%
2273     \def\HyPsd@unichar@octtwo#1{%
2274     \number\dimexpr.125\dimexpr#1sp\relax\relax
2275     \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2276     \relax\relax\relax
2277     }%
2278     \fi

```

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

```

2279 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2280 \ifx\@gobble#1%
2281 \else
2282 [Please insert \textbackslash PrerenderUnicode%
2283 \textbraceleft#1\textbraceright\space
2284 into preamble]%
2285 \fi

```



```
2286 }%
```

## 7 Support of other packages

### 7.1 Class memoir

```
2287 \ifclassloaded{memoir}{}%
2288 \Hy@AtEndOfPackage{\RequirePackage{memhfixc}}}%
2289 }{}
```

### 7.2 Package subfigure

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

```
2290 \ifpackageloaded{subfigure}{}%
2291 \ltx@ifundefined{sub@label}{}%
2292 \Hy@hypertexnamesfalse
2293 }{%
2294 \renewcommand*{\sub@label}[1]{%
2295 \@bsphack
2296 \subfig@oldlabel{#1}%
2297 \if@filesw
2298 \begingroup
2299 \edef\@currentlabstr{%
2300 \expandafter\strip@prefix\meaning\@currentlabelname
2301 }%
2302 \protected@write\@auxout{}{%
2303 \string\newlabel{sub@#1}{%
2304 {\@nameuse{@@thesub}\@capytype}}%
2305 {\thepage}%
2306 {%
2307 \expandafter\strip@period\@currentlabstr
2308 \relax.\relax\@@@%
2309 }%
2310 {\@currentHref}%
2311 }}%
2312 }%
2313 }%
2314 \endgroup
2315 \fi
2316 \@esphack
2317 }%
2318 \ifpackagelater{subfigure}{2002/03/26}{}%
2319 \providecommand*\toclevel@subfigure{1}%
2320 \providecommand*\toclevel@subtable{1}%
2321 }%
2322 }%
2323 }{}
```

### 7.3 Package xr and xr-hyper

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

```
2324 \ltx@ifundefined{XR@addURL}{}%
2325 }{}
```

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.

```

2326 \def\XR@addURL#1{\XR@dURL#1{}{}{}\\}%
2327 \def\XR@dURL#1#2#3#4#5\{\{%
2328   {#1}{#2}%
2329   \if!#4!%
2330   \else
2331     {#3}{#4}{\XR@URL}%
2332   \fi
2333 }%
2334 }

2335 \def\Hy@true{true}
2336 \def\Hy@false{false}

```

Providing dummy definitions.

```

2337 \let\literalps@out\@gobble
2338 \newcommand\pdfbookmark[3]{}{}
2339 \def\Acrobatmenu#1#2{\leavevmode#2}
2340 \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

```

2341 \let\HyperRaiseLinkHook\@empty
2342 \def\HyperRaiseLinkDefault{\baselineskip}

```

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

```

2343 \newcount\Hy@SavedSpaceFactor
2344 \def\Hy@SaveSpaceFactor{%
2345   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2346 }
2347 \def\Hy@RestoreSpaceFactor{%
2348   \relax
2349   \ifhmode
2350     \ifnum\Hy@SavedSpaceFactor>\z@
2351       \spacefactor=\Hy@SavedSpaceFactor
2352     \fi
2353   \fi
2354 }
2355 \def\Hy@SaveSavedSpaceFactor{%
2356   \edef\Hy@RestoreSavedSpaceFactor{%
2357     \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2358   }%
2359 }
2360 \def\Hy@raisedlink#1{%
2361   \ifvmode
2362     #1%
2363   \else

```

```

2364 \Hy@SaveSpaceFactor
2365 \penalty\@M
2366 \smash{%
2367 \begingroup
2368 \let\HyperRaiseLinkLength\@tempdima
2369 \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2370 \HyperRaiseLinkHook
2371 \expandafter\endgroup
2372 \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2373 \Hy@RestoreSpaceFactor
2374 #1%
2375 \Hy@SaveSpaceFactor
2376 }%
2377 }%
2378 \Hy@RestoreSpaceFactor
2379 \fi
2380 }

```

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

```

2381 \def\Hy@SaveLastskip{%
2382 \let\Hy@RestoreLastskip\relax
2383 \ifvmode
2384 \ifdim\lastskip=\z@
2385 \let\Hy@RestoreLastskip\nobreak
2386 \else
2387 \begingroup
2388 \skip@=-\lastskip
2389 \edef\x{%
2390 \endgroup
2391 \def\noexpand\Hy@RestoreLastskip{%
2392 \noexpand\ifvmode
2393 \noexpand\nobreak
2394 \vskip\the\skip@
2395 \vskip\the\lastskip\relax
2396 \noexpand\fi
2397 }%
2398 }%
2399 \x
2400 \fi
2401 \else
2402 \ifhmode
2403 \ifdim\lastskip=\z@
2404 \let\Hy@RestoreLastskip\nobreak
2405 \else
2406 \begingroup
2407 \skip@=-\lastskip
2408 \edef\x{%
2409 \endgroup
2410 \def\noexpand\Hy@RestoreLastskip{%
2411 \noexpand\ifhmode
2412 \noexpand\nobreak
2413 \hskip\the\skip@
2414 \hskip\the\lastskip\relax
2415 \noexpand\fi
2416 }%
2417 }%
2418 \x

```

```

2419     \fi
2420   \fi
2421 \fi
2422 }%

```

## 9 Options

```

2423 \SetupKeyvalOptions{%
2424   family=Hyp,%
2425   prefix=HyOpt%
2426 }

```

### 9.1 Help macros

\Hy@boolkey

```

2427 \def\Hy@boolkey{\@dblarg\Hy@@boolkey}
2428 \def\Hy@@boolkey[#1]#2#3{%
2429   \edef\Hy@tempa{#3}%
2430   \lowercase\expandafter{%
2431     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2432   }%
2433   \ifx\Hy@tempa\@empty
2434     \let\Hy@tempa\Hy@true
2435   \fi
2436   \ifx\Hy@tempa\Hy@true
2437   \else
2438     \ifx\Hy@tempa\Hy@false
2439   \else
2440     \let\Hy@tempa\relax
2441   \fi
2442 \fi
2443 \ifx\Hy@tempa\relax
2444   \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
2445 \else
2446   \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
2447   \csname Hy@#2\Hy@tempa\endcsname
2448 \fi
2449 }

```

\Hy@WarnOptionValue

```

2450 \def\Hy@WarnOptionValue#1#2#3{%
2451   \Hy@Warning{%
2452     Unexpected value ‘#1’\MessageBreak
2453     of option ‘#2’ instead of\MessageBreak
2454     #3%
2455   }%
2456 }

```

\Hy@DisableOption

```

2457 \def\Hy@DisableOption#1{%
2458   \ifundefined{KV@Hyp@#1@default}{%
2459     \define@key{Hyp}{#1}%
2460   }{%
2461     \define@key{Hyp}{#1}[]%
2462   }%
2463   {\Hy@WarnOptionDisabled{#1}}%
2464 }

```

\Hy@WarnOptionDisabled

```
2465 \def\Hy@WarnOptionDisabled#1{%
2466   \Hy@Warning{%
2467     Option '#1' has already been used,\MessageBreak
2468     setting the option has no effect%
2469   }%
2470 }
```

\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.

```
2471 \def\Hy@CheckOptionValue#1#2#3{%
2472   \begingroup
2473   \edef\x{#1}%
2474   \@onelevel@sanitize\x
2475   \let\y=y%
2476   \def\do##1##2{%
2477     \def\z{##1}%
2478     \@onelevel@sanitize\z
2479     \ifx\x\z
2480       \let\y=n%
2481       \let\do\@gobbletwo
2482     \fi
2483   }%
2484   #3%
2485   \ifx\y y%
2486     \def\do##1##2{%
2487       *'##1'%
2488       \ifx\\##2\\\else\space##2\\\fi
2489       \MessageBreak
2490     }%
2491     \Hy@Warning{%
2492       Values of option '#2':\MessageBreak
2493       #3%
2494       * An empty value disables the option.\MessageBreak
2495       Unknown value '\x'%
2496     }%
2497   \fi
2498   \endgroup
2499 }
```

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

```
2500 \def\Hy@DefNameKey#1{%
2501   \expandafter\Hy@@@DefNameKey\csname @#1\endcsname{#1}%
2502 }
```

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

```
2503 \def\Hy@@@DefNameKey#1#2#3{%
2504   \define@key{Hyp}{#2}{%
2505     \edef#1{##1}%
2506     \ifx#1\@empty
2507     \else
2508       \Hy@CheckOptionValue{##1}{#2}{#3}%
2509     \fi
2510   }
```

```

2509 \fi
2510 }%
2511 \let#1\@empty
2512 }

```

\Hy@UseNameKey

```

2513 \def\Hy@UseNameKey#1#2{%
2514 \ifx#2\@empty
2515 \else
2516 /#1/#2%
2517 \fi
2518 }

```

## 9.2 Defining the options

```

2519 \define@key{Hyp}{implicit}[true]{%
2520 \Hy@boolkey{implicit}{#1}%
2521 }
2522 \define@key{Hyp}{draft}[true]{%
2523 \Hy@boolkey{draft}{#1}%
2524 }
2525 \define@key{Hyp}{final}[true]{%
2526 \Hy@boolkey{final}{#1}%
2527 }
2528 \let\KV@Hyp@nolinks\KV@Hyp@draft
2529 \def\Hy@ObsoletePaperOption#1{%
2530 \Hy@WarningNoLine{%
2531 Option ‘#1’ is no longer used%
2532 }%
2533 \define@key{Hyp}{#1}[true]{}%
2534 }
2535 \def\Hy@temp#1{%
2536 \define@key{Hyp}{#1}[true]{%
2537 \Hy@ObsoletePaperOption{#1}%
2538 }%
2539 }
2540 \Hy@temp{a4paper}
2541 \Hy@temp{a5paper}
2542 \Hy@temp{b5paper}
2543 \Hy@temp{letterpaper}
2544 \Hy@temp{legalpaper}
2545 \Hy@temp{executivepaper}
2546 \define@key{Hyp}{setpagesize}[true]{%
2547 \Hy@boolkey{setpagesize}{#1}%
2548 }
2549 \define@key{Hyp}{debug}[true]{%
2550 \Hy@boolkey[debug]{verbose}{#1}%
2551 }
2552 \define@key{Hyp}{linktocpage}[true]{%
2553 \Hy@boolkey{linktocpage}{#1}%
2554 \ifHy@linktocpage
2555 \let\Hy@linktoc\Hy@linktoc@page
2556 \else
2557 \let\Hy@linktoc\Hy@linktoc@section
2558 \fi
2559 }

```

```

2560 \chardef\Hy@linktoc@none=0 %
2561 \chardef\Hy@linktoc@section=1 %
2562 \chardef\Hy@linktoc@page=2 %
2563 \chardef\Hy@linktoc@all=3 %
2564 \ifHy@linktocpage
2565   \let\Hy@linktoc\Hy@linktoc@page
2566 \else
2567   \let\Hy@linktoc\Hy@linktoc@section
2568 \fi
2569 \define@key{Hyp}{linktoc}{%
2570   \ifundefined{Hy@linktoc@#1}{%
2571     \Hy@Warning{%
2572       Unexpected value ‘#1’ of\MessageBreak
2573       option ‘linktoc’ instead of ‘none’,\MessageBreak
2574       ‘section’, ‘page’ or ‘all’%
2575     }%
2576   }{%
2577     \expandafter\let\expandafter\Hy@linktoc
2578     \csname Hy@linktoc@#1\endcsname
2579   }%
2580 }
2581 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2582 \let\XR@ext\relax
2583 \define@key{Hyp}{verbose}[true]{%
2584   \Hy@boolkey{verbose}{#1}%
2585 }
2586 \define@key{Hyp}{typexml}[true]{%
2587   \Hy@boolkey{typexml}{#1}%
2588 }

```

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.

```

2589 \define@key{Hyp}{raiselinks}[true]{%
2590   \Hy@boolkey{raiselinks}{#1}%
2591 }

```

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

```

2592 \def\Hy@setbreaklinks#1{%
2593   \csname breaklinks#1\endcsname
2594 }
2595 \def\Hy@breaklinks@unsupported{%
2596   \ifx\Hy@setbreaklinks\@gobble
2597     \ifHy@breaklinks
2598       \Hy@WarningNoLine{%
2599         You have enabled option ‘breaklinks’.\MessageBreak
2600         But driver ‘\Hy@driver.def’ does not support this.\MessageBreak
2601         Expect trouble with the link areas of broken links%
2602       }%
2603     \fi
2604   \fi
2605 }
2606 \define@key{Hyp}{breaklinks}[true]{%
2607   \Hy@boolkey{breaklinks}{#1}%
2608   \let\Hy@setbreaklinks\@gobble
2609 }

```

```

2610 \define@key{Hyp}{localanchorname}[true]{%
2611   \Hy@boolkey{localanchorname}{#1}%
2612 }

```

Determines whether an automatic anchor is put on each page

```

2613 \define@key{Hyp}{pageanchor}[true]{%
2614   \Hy@boolkey{pageanchor}{#1}%
2615 }

```

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.

```

2616 \define@key{Hyp}{plainpages}[true]{%
2617   \Hy@boolkey{plainpages}{#1}%
2618 }

```

Are the names for anchors made as per the HyperTeX system, or do they simply use what  $\LaTeX$  provides?

```

2619 \define@key{Hyp}{naturalnames}[true]{%
2620   \Hy@boolkey{naturalnames}{#1}%
2621 }

```

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

```

2622 \define@key{Hyp}{hypertexnames}[true]{%
2623   \Hy@boolkey{hypertexnames}{#1}%
2624 }

```

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

```

2625 \define@key{Hyp}{nesting}[true]{%
2626   \Hy@boolkey{nesting}{#1}%
2627 }

```

```

2628 \define@key{Hyp}{unicode}[true]{%
2629   \Hy@boolkey{unicode}{#1}%
2630   \ifHy@unicode
2631     \def\HyPsd@pdfencoding{unicode}%
2632     \HyPsd@LoadUnicode
2633   \else
2634     \def\HyPsd@pdfencoding{pdfdoc}%
2635   \fi
2636 }
2637 \def\HyPsd@LoadUnicode{%
2638   \@ifundefined{T@PU}{%
2639     \input{puenc.def}%
2640     \HyLinguex@Restore
2641   }{}%
2642   \DeclareFontFamily{PU}{pdf}{}%
2643   \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
2644   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
2645   \global\let\HyPsd@LoadUnicode\relax
2646 }
2647 \Hy@AtBeginDocument{%
2648   \ifx\HyPsd@LoadUnicode\relax
2649     \else
2650     \def\HyPsd@LoadUnicode{%
2651       \Hy@Error{%
2652         Unicode support for bookmarks is not available.\MessageBreak
2653         Activate unicode support by using one of the options\MessageBreak
2654         'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
2655         in the preamble%
2656       }\@ehc

```



```

2657 \global\let\HyPsd@LoadUnicode\relax
2658 \global\Hy@unicodedefalse
2659 \global\let\Hy@unicodetrue\Hy@unicodedefalse
2660 }%
2661 \fi
2662 }

2663 \define@key{Hyp}{pdfencoding}{%
2664 \edef\HyPsd@temp{#1}%
2665 \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2666 \let\HyPsd@pdfencoding\HyPsd@temp
2667 \Hy@unicodedefalse
2668 \else
2669 \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2670 \z@
2671 \else
2672 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2673 \z@
2674 \else
2675 \@ne
2676 \fi
2677 \fi
2678 \let\HyPsd@pdfencoding\HyPsd@temp
2679 \hypersetup{unicode}%
2680 \ifHy@unicode
2681 \def\HyPsd@pdfencoding{#1}%
2682 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2683 \HyPsd@LoadStringEnc
2684 \fi
2685 \else
2686 \Hy@Warning{Cannot switch to unicode bookmarks}%
2687 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2688 \fi
2689 \else
2690 \@onelevel@sanitize\HyPsd@temp
2691 \Hy@Warning{%
2692 Values of option 'pdfencoding':\MessageBreak
2693 'pdfdoc', 'unicode', 'auto'.\MessageBreak
2694 Ignoring unknown value '\HyPsd@temp'%
2695 }%
2696 \fi
2697 \fi
2698 }

2699 \def\HyPsd@pdfencoding@auto{auto}
2700 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2701 \def\HyPsd@pdfencoding@unicode{unicode}
2702 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
2703 \def\HyPsd@LoadStringEnc{%
2704 \RequirePackage{stringenc}[2009/12/15]%
2705 \let\HyPsd@LoadStringEnc\relax
2706 }

2707 \Hy@AtBeginDocument{%
2708 \@ifpackageloaded{stringenc}{%
2709 \let\HyPsd@LoadStringEnc\relax
2710 }{%
2711 \def\HyPsd@LoadStringEnc{%
2712 \Hy@WarningNoLine{%
2713 Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak

```

```

2714     in the preamble or load the package there%
2715 }%
2716 }%
2717 }%
2718 }

2719 \def\hypersetup{\kvsetkeys{Hyp}}

2720 \newif\ifHy@setpdfversion
2721 \define@key{Hyp}{pdfversion}{%
2722   \ifundefined{Hy@pdfversion@#1}{%
2723     \PackageWarning{hyperref}{%
2724       Unsupported PDF version '#1'.\MessageBreak
2725       Valid values: 1.2 until 1.9%
2726   }%
2727 }{%
2728   \Hy@setpdfversiontrue
2729   \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
2730 }%
2731 }

2732 \@namedef{Hy@pdfversion@1.2}{2}%
2733 \@namedef{Hy@pdfversion@1.3}{3}%
2734 \@namedef{Hy@pdfversion@1.4}{4}%
2735 \@namedef{Hy@pdfversion@1.5}{5}%
2736 \@namedef{Hy@pdfversion@1.6}{6}%
2737 \@namedef{Hy@pdfversion@1.7}{7}%
2738 \@namedef{Hy@pdfversion@1.8}{8}%
2739 \@namedef{Hy@pdfversion@1.9}{9}%
2740 \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

2741 \newif\ifHy@DviMode
2742 \let\Hy@DviErrMsg\ltx@empty
2743 \ifpdf
2744   \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2745 \else
2746   \ifxetex
2747     \def\Hy@DviErrMsg{XeTeX is running}%
2748   \else
2749     \ifvtex
2750       \ifvtexdvi
2751         \Hy@DviModetrue
2752       \else
2753         \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2754       \fi
2755     \else
2756       \Hy@DviModetrue
2757     \fi
2758   \fi
2759 \fi

2760 \def\HyOpt@CheckDvi#1{%
2761   \ifHy@DviMode
2762     \expandafter\ltx@firstofone
2763   \else
2764     \Hy@Error{%
2765       Wrong DVI mode driver option '#1',\MessageBreak
2766       because \Hy@DviErrMsg
2767     }\@ehc

```

```

2768 \expandafter\ltx@gobble
2769 \fi
2770 }

2771 \DeclareVoidOption{tex4ht}{%
2772 \Hy@texhttrue
2773 \kvsetkeys{Hyp}{colorlinks=true}%
2774 \def\BeforeTeXIVht{\RequirePackage{color}}%
2775 \def\Hy@driver{htex4ht}%
2776 \def\MaybeStopEarly{%
2777 \Hy@Message{Stopped early}%
2778 \Hy@AtBeginDocument{%
2779 \PDF@FinishDoc
2780 \gdef\PDF@FinishDoc{}%
2781 }%
2782 \endinput
2783 }%
2784 }

2785 \DeclareVoidOption{pdftex}{%
2786 \ifpdf
2787 \def\Hy@driver{hpdftex}%
2788 \else
2789 \Hy@Error{%
2790 Wrong driver option 'pdftex',\MessageBreak
2791 because pdfTeX in PDF mode is not detected%
2792 }\@ehc
2793 \fi
2794 }

2795 \DeclareVoidOption{nativepdf}{%
2796 \HyOpt@CheckDvi{nativepdf}{%
2797 \def\Hy@driver{hdvips}%
2798 }%
2799 }

2800 \DeclareVoidOption{dvipdfm}{%
2801 \HyOpt@CheckDvi{dvipdfm}{%
2802 \def\Hy@driver{hdvipdfm}%
2803 }%
2804 }

2805 \DeclareVoidOption{dvipdfmx}{%
2806 \HyOpt@CheckDvi{dvipdfmx}{%
2807 \def\Hy@driver{hdvipdfm}%
2808 }%
2809 }

2810 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2811 \expandafter\ifx\csname if#1\expandafter\endcsname
2812 \csname iftrue\endcsname
2813 \chardef\SpecialDvipdfmxOutlineOpen\@ne
2814 \else
2815 \chardef\SpecialDvipdfmxOutlineOpen\z@
2816 \fi
2817 }

2818 \DeclareVoidOption{xetex}{%
2819 \ifxetex
2820 \def\Hy@driver{hxetex}%
2821 \else
2822 \Hy@Error{%
2823 Wrong driver option 'xetex',\MessageBreak
2824 because XeTeX is not detected%

```

```

2825   }\@ehc
2826 \fi
2827 }
2828 \DeclareVoidOption{pdfmark}{%
2829   \HyOpt@CheckDvi{pdfmark}{%
2830     \def\Hy@driver{hdvips}%
2831   }%
2832 }
2833 \DeclareVoidOption{dvips}{%
2834   \HyOpt@CheckDvi{dvips}{%
2835     \def\Hy@driver{hdvips}%
2836   }%
2837 }
2838 \DeclareVoidOption{hypertex}{%
2839   \HyOpt@CheckDvi{hypertex}{%
2840     \def\Hy@driver{hypertex}%
2841   }%
2842 }
2843 \let\Hy@MaybeStopNow\relax
2844 \DeclareVoidOption{vtex}{%
2845   \ifvtex
2846     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2847     \def\Hy@driver{hvtex}%
2848   \else
2849     \ifnum\OpMode=10\relax
2850       \def\Hy@driver{hvtexhtm}%
2851       \def\MaybeStopEarly{%
2852         \Hy@Message{Stopped early}%
2853         \Hy@AtBeginDocument{%
2854           \PDF@FinishDoc
2855           \gdef\PDF@FinishDoc{}}%
2856       }%
2857       \endinput
2858     }%
2859   \else
2860     \Hy@Error{%
2861       Wrong driver option 'vtex',\MessageBreak
2862       because of wrong OpMode (\the\OpMode)%
2863     }\@ehc
2864   \fi
2865 \fi
2866 \else
2867   \Hy@Error{%
2868     Wrong driver option 'vtex',\MessageBreak
2869     because VTeX is not running%
2870   }\@ehc
2871 \fi
2872 }
2873 \DeclareVoidOption{vtexpdfmark}{%
2874   \ifvtex
2875     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2876     \def\Hy@driver{hvtexmrk}%
2877   \else
2878     \Hy@Error{%
2879       Wrong driver option 'vtexpdfmark',\MessageBreak
2880       because of wrong OpMode (\the\OpMode)%
2881     }\@ehc

```

```

2882 \fi
2883 \else
2884 \Hy@Error{%
2885   Wrong driver option 'vtexpdfmark,\MessageBreak
2886   because VTeX is not running%
2887 } \@ehc
2888 \fi
2889 }
2890 \DeclareVoidOption{dviwindo}{%
2891 \HyOpt@CheckDvi{dviwindo}{%
2892 \def\Hy@driver{hdviwind}%
2893 \kvsetkeys{Hyp}{colorlinks}%
2894 \PassOptionsToPackage{dviwindo}{color}%
2895 }%
2896 }
2897 \DeclareVoidOption{dvipsone}{%
2898 \HyOpt@CheckDvi{dvipsone}{%
2899 \def\Hy@driver{hdvipson}%
2900 }%
2901 }
2902 \DeclareVoidOption{textures}{%
2903 \HyOpt@CheckDvi{textures}{%
2904 \def\Hy@driver{httexture}%
2905 }%
2906 }
2907 \DeclareVoidOption{latex2html}{%
2908 \HyOpt@CheckDvi{latex2html}{%
2909 \Hy@AtBeginDocument{\@@@latex2htmlX}%
2910 }%
2911 }

```

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

```

2912 \DeclareVoidOption{ps2pdf}{%
2913 \HyOpt@CheckDvi{ps2pdf}{%
2914 \def\Hy@driver{hdvips}%
2915 }%
2916 }
2917 \let\HyOpt@DriverFallback\ltx@empty
2918 \define@key{Hyp}{driverfallback}{%
2919 \ifHy@DviMode
2920 \def\HyOpt@DriverFallback{#1}%
2921 \Hy@Match\HyOpt@DriverFallback{%
2922   ^(|dvipdfm|dvipdfmx|dvips|dvipsone|dviwindo|hypertex|ps2pdf|
2923   latex2html|tex4ht)$%
2924 }{ }{%
2925 \let\HyOpt@DriverFallback\ltx@empty
2926 }%
2927 \fi
2928 }

```

## 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.

```

2929 \define@key{Hyp}{hyperfigures}[true]{%
2930 \Hy@boolkey[hyperfigures]{figures}{#1}%
2931 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```
2932 \define@key{Hyp}{hyperfootnotes}[true]{%
2933   \Hy@boolkey{hyperfootnotes}{#1}%
2934 }
```

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

```
2935 \def\back@none{none}
2936 \def\back@section{section}
2937 \def\back@page{page}
2938 \def\back@slide{slide}
2939 \define@key{Hyp}{backref}[section]{%
2940   \lowercase{\def\Hy@tempa{#1}}%
2941   \ifx\Hy@tempa\@empty
2942     \let\Hy@tempa\back@section
2943   \fi
2944   \ifx\Hy@tempa\Hy@false
2945     \let\Hy@tempa\back@none
2946   \fi
2947   \ifx\Hy@tempa\back@slide
2948     \let\Hy@tempa\back@section
2949   \fi
2950   \ifx\Hy@tempa\back@page
2951     \PassOptionsToPackage{hyperpageref}{backref}%
2952     \Hy@backreftrue
2953   \else
2954     \ifx\Hy@tempa\back@section
2955       \PassOptionsToPackage{hyperref}{backref}%
2956       \Hy@backreftrue
2957     \else
2958       \ifx\Hy@tempa\back@none
2959         \Hy@backreffalse
2960       \else
2961         \Hy@WarnOptionValue{#1}{backref}{%
2962           'section', 'slide', 'page', 'none',\MessageBreak
2963           or 'false'}%
2964       \fi
2965     \fi
2966   \fi
2967 }
2968 \define@key{Hyp}{pagebackref}[true]{%
2969   \edef\Hy@tempa{#1}%
2970   \lowercase\expandafter{%
2971     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2972   }%
2973   \ifx\Hy@tempa\@empty
2974     \let\Hy@tempa\Hy@true
2975   \fi
2976   \ifx\Hy@tempa\Hy@true
2977     \PassOptionsToPackage{hyperpageref}{backref}%
2978     \Hy@backreftrue
2979   \else
2980     \ifx\Hy@tempa\Hy@false
2981       \Hy@backreffalse
2982     \else
2983       \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
2984     \fi
2985   \fi
2986 }
```

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

```
2987 \define@key{Hyp}{hyperindex}[true]{%
2988   \Hy@boolkey{hyperindex}{#1}%
2989 }
```

Configuration of encap char.

```
2990 \define@key{Hyp}{encap}[|]{%
2991   \def\HyInd@EncapChar{#1}%
2992 }
```

## 12 Language options

The `\autoref` feature depends on the language.

```
2993 \def\HyLang@afrikaans{%
2994   \def\equationautorefname{Vergelyking}%
2995   \def\footnoteautorefname{Voetnota}%
2996   \def\itemautorefname{Item}%
2997   \def\figureautorefname{Figuur}%
2998   \def\tableautorefname{Tabel}%
2999   \def\partautorefname{Deel}%
3000   \def\appendixautorefname{Bylae}%
3001   \def\chapterautorefname{Hoofstuk}%
3002   \def\sectionautorefname{Afdeling}%
3003   \def\subsectionautorefname{Subafdeling}%
3004   \def\subsubsectionautorefname{Subsubafdeling}%
3005   \def\paragraphautorefname{Paragraaf}%
3006   \def\subparagraphautorefname{Subparagraaf}%
3007   \def\FancyVerbLineautorefname{Lyn}%
3008   \def\theoremautorefname{Teorema}%
3009   \def\pageautorefname{Bladsy}%
3010 }
3011 \def\HyLang@english{%
3012   \def\equationautorefname{Equation}%
3013   \def\footnoteautorefname{footnote}%
3014   \def\itemautorefname{item}%
3015   \def\figureautorefname{Figure}%
3016   \def\tableautorefname{Table}%
3017   \def\partautorefname{Part}%
3018   \def\appendixautorefname{Appendix}%
3019   \def\chapterautorefname{chapter}%
3020   \def\sectionautorefname{section}%
3021   \def\subsectionautorefname{subsection}%
3022   \def\subsubsectionautorefname{subsubsection}%
3023   \def\paragraphautorefname{paragraph}%
3024   \def\subparagraphautorefname{subparagraph}%
3025   \def\FancyVerbLineautorefname{line}%
3026   \def\theoremautorefname{Theorem}%
3027   \def\pageautorefname{page}%
3028 }
3029 \def\HyLang@french{%
3030   \def\equationautorefname{'Equation}%
3031   \def\footnoteautorefname{note}%
3032   \def\itemautorefname{item}%
3033   \def\figureautorefname{Figure}%
3034   \def\tableautorefname{Tableau}%

```

```

3035 \def\partautorefname{Partie}%
3036 \def\appendixautorefname{Appendice}%
3037 \def\chapterautorefname{chapitre}%
3038 \def\sectionautorefname{section}%
3039 \def\subsectionautorefname{sous-section}%
3040 \def\subsubsectionautorefname{sous-sous-section}%
3041 \def\paragraphautorefname{paragraphe}%
3042 \def\subparagraphautorefname{sous-paragraphe}%
3043 \def\FancyVerbLineautorefname{ligne}%
3044 \def\theoremautorefname{Th\'eor\'eme}%
3045 \def\pageautorefname{page}%
3046 }
3047 \def\HyLang@german{%
3048 \def\equationautorefname{Gleichung}%
3049 \def\footnoteautorefname{Fu\ss note}%
3050 \def\itemautorefname{Punkt}%
3051 \def\figureautorefname{Abbildung}%
3052 \def\tableautorefname{Tabelle}%
3053 \def\partautorefname{Teil}%
3054 \def\appendixautorefname{Anhang}%
3055 \def\chapterautorefname{Kapitel}%
3056 \def\sectionautorefname{Abschnitt}%
3057 \def\subsectionautorefname{Unterabschnitt}%
3058 \def\subsubsectionautorefname{Unterunterabschnitt}%
3059 \def\paragraphautorefname{Absatz}%
3060 \def\subparagraphautorefname{Unterabsatz}%
3061 \def\FancyVerbLineautorefname{Zeile}%
3062 \def\theoremautorefname{Theorem}%
3063 \def\pageautorefname{Seite}%
3064 }
3065 \def\HyLang@italian{%
3066 \def\equationautorefname{Equazione}%
3067 \def\footnoteautorefname{nota}%
3068 \def\itemautorefname{punto}%
3069 \def\figureautorefname{Figura}%
3070 \def\tableautorefname{Tabella}%
3071 \def\partautorefname{Parte}%
3072 \def\appendixautorefname{Appendice}%
3073 \def\chapterautorefname{Capitolo}%
3074 \def\sectionautorefname{sezione}%
3075 \def\subsectionautorefname{sottosezione}%
3076 \def\subsubsectionautorefname{sottosottosezione}%
3077 \def\paragraphautorefname{paragrafo}%
3078 \def\subparagraphautorefname{sottoparagrafo}%
3079 \def\FancyVerbLineautorefname{linea}%
3080 \def\theoremautorefname{Teorema}%
3081 \def\pageautorefname{Pag.\@}%
3082 }
3083 \def\HyLang@magyar{%
3084 \def\equationautorefname{Egyenlet}%
3085 \def\footnoteautorefname{l\'abjegyzet}%
3086 \def\itemautorefname{Elem}%
3087 \def\figureautorefname{\'Abra}%
3088 \def\tableautorefname{T\'abl\'azat}%
3089 \def\partautorefname{R\'esz}%
3090 \def\appendixautorefname{F\'uggel\'ek}%
3091 \def\chapterautorefname{fejezet}%

```



```

3092 \def\sectionautorefname{szakasz}%
3093 \def\subsectionautorefname{alszakasz}%
3094 \def\subsubsectionautorefname{alalszakasz}%
3095 \def\paragraphautorefname{bekezd'es}%
3096 \def\subparagraphautorefname{albekezd'es}%
3097 \def\FancyVerbLineautorefname{sor}%
3098 \def\theoremautorefname{T'etel}%
3099 \def\pageautorefname{oldal}%
3100 }
3101 \def\HyLang@portuges{%
3102 \def\equationautorefname{Equa\c c~ao}%
3103 \def\footnoteautorefname{Nota de rodap'e}%
3104 \def\itemautorefname{Item}%
3105 \def\figureautorefname{Figura}%
3106 \def\tableautorefname{Tabela}%
3107 \def\partautorefname{Parte}%
3108 \def\appendixautorefname{Ap~endice}%
3109 \def\chapterautorefname{Cap~itulo}%
3110 \def\sectionautorefname{Se\c c~ao}%
3111 \def\subsectionautorefname{Subse\c c~ao}%
3112 \def\subsubsectionautorefname{Subsubse\c c~ao}%
3113 \def\paragraphautorefname{par'agrafo}%
3114 \def\subparagraphautorefname{subpar'agrafo}%
3115 \def\FancyVerbLineautorefname{linha}%
3116 \def\theoremautorefname{Teorema}%
3117 \def\pageautorefname{P'agina}%
3118 }

```

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`.

```

3119 \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`?

```

3120 \def\equationautorefname{\cyr\cyrv\cyrery\cyr.}%

```

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

```

3121 % \def\equationautorefname{%
3122 %   \cyr\cyrv\cyrery\cyr\cyra\cyrzh\cyre\cyrn\cyri\cyre
3123 % }%

```

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

```

3124 \def\footnoteautorefname{%
3125   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyr.\ \cyrp\cyr\cyri\cyr.m.%
3126 }%

```

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}`”

```

3127 % \def\footnoteautorefname{%

```

```

3128 % \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
3129 % \cyrp\cyrr\cyri\cyrm\cyre\cyrch\cyra\cyrn\cyri\cyre
3130 % }%

```

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

```

3131 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
3132 % \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.

```

3133 \def\itemautorefname{\cyr\cyrp.}%
3134 % \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.

```

3135 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
3136 \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.

```

3137 \def\partautorefname{\cyr\cyrch.}%
3138 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
3139 \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.

```

3140 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
3141 % \def\appendixautorefname{%
3142 % \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrz\cyre\cyrn\cyri\cyre
3143 % }%

```

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.

```

3144 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
3145 \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.

```

3146 \def\paragraphautorefname{\cyr\cyrp.}%
3147 \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.

```

3148 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
3149 % \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.

```

3150 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%

```

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

```
3151 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
3152 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
3153 % \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 ...

```
3154 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
3155 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
3156 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
3157 \def\pageautorefname{\cyr\cyrs.}%
3158 }
```

```
3159 \def\HyLang@spanish{%
3160 \def\equationautorefname{Ecuaci\'on}%
3161 \def\footnoteautorefname{Nota a pie de p\'agina}%
3162 \def\itemautorefname{Elemento}%
3163 \def\figureautorefname{Figura}%
3164 \def\tableautorefname{Tabla}%
3165 \def\partautorefname{Parte}%
3166 \def\appendixautorefname{Ap\'endice}%
3167 \def\chapterautorefname{Cap\'itulo}%
3168 \def\sectionautorefname{Secci\'on}%
3169 \def\subsectionautorefname{Subsecci\'on}%
3170 \def\subsubsectionautorefname{Subsubsecci\'on}%
3171 \def\paragraphautorefname{P\'arrafo}%
3172 \def\subparagraphautorefname{Subp\'arrafo}%
3173 \def\FancyVerbLineautorefname{L\'inea}%
3174 \def\theoremautorefname{Teorema}%
3175 \def\pageautorefname{P\'agina}%
3176 }
3177 \def\HyLang@vietnamese{%
3178 \def\equationautorefname{Ph\uhorn{}\ohorn{}}ng tr\'inh}%
3179 \def\footnoteautorefname{Ch\'u th\'ich}%
3180 \def\itemautorefname{m\{d\{u\}c\}%
3181 \def\figureautorefname{H\'inh}%
3182 \def\tableautorefname{B\h{a}ng}%
3183 \def\partautorefname{Ph\'acircumflex{n}%
3184 \def\appendixautorefname{Ph\{d\{u\} l\{d\{u\}c\}%
3185 \def\chapterautorefname{ch\uhorn{}\ohorn{}}ng}%
3186 \def\sectionautorefname{m\{d\{u\}c\}%
3187 \def\subsectionautorefname{m\{d\{u\}c\}%
3188 \def\subsubsectionautorefname{m\{d\{u\}c\}%
3189 \def\paragraphautorefname{\dj{ }o\{d\{a\}n\}%
3190 \def\subparagraphautorefname{\dj{ }o\{d\{a\}n\}%
3191 \def\FancyVerbLineautorefname{d\'ong}%
3192 \def\theoremautorefname{DJ\{ }\{d\{i\}nh l\'y}%
3193 \def\pageautorefname{Trang}%
3194 }
```

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

```

3195 \def\HyLang@addto#1#2{%
3196   #2%
3197   \@temptokena{#2}%
3198   \ifx#1\relax
3199     \let#1\@empty
3200   \fi
3201   \ifx#1\@undefined
3202     \edef#1{\the\@temptokena}%
3203   \else
3204     \toks@\expandafter{#1}%
3205     \edef#1{\the\toks@\the\@temptokena}%
3206   \fi
3207   \@temptokena{}\toks@\@temptokena
3208 }

3209 \def\HyLang@DeclareLang#1#2#3{%
3210   \@ifpackagewith{babel}{#1}{%
3211     \expandafter\HyLang@addto
3212       \csname extras#1\expandafter\endcsname
3213       \csname HyLang@#2\endcsname
3214     \begingroup
3215       \edef\x{\endgroup
3216         #3%
3217       }%
3218       \x
3219       \@namedef{HyLang@#1@done}{}%
3220     }{}%
3221   \begingroup
3222     \edef\x##1#2{%
3223       \noexpand\ifx##2\relax
3224         \errmessage{No definitions for language #2' found!}%
3225       \noexpand\fi
3226     \endgroup
3227     \noexpand\define@key{Hyp}{#1}[]{}%
3228     \noexpand\@ifundefined{HyLang@#1@done}{%
3229       \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3230       #3%
3231       \noexpand\@namedef{HyLang@#1@done}{}%
3232     }{}%
3233   }%
3234 }%
3235 \expandafter\x\csname extras#1\expandafter\endcsname
3236       \csname HyLang@#2\endcsname
3237 }

3238 \HyLang@DeclareLang{english}{english}{}
3239 \HyLang@DeclareLang{UKenglish}{english}{}
3240 \HyLang@DeclareLang{british}{english}{}
3241 \HyLang@DeclareLang{USenglish}{english}{}
3242 \HyLang@DeclareLang{american}{english}{}
3243 \HyLang@DeclareLang{german}{german}{}
3244 \HyLang@DeclareLang{austrian}{german}{}
3245 \HyLang@DeclareLang{ngerman}{german}{}
3246 \HyLang@DeclareLang{naustrian}{german}{}
3247 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3248 \HyLang@DeclareLang{brazil}{portuges}{}
3249 \HyLang@DeclareLang{brazilian}{portuges}{}

```

```

3250 \HyLang@DeclareLang{portuguese}{portuges}{}
3251 \HyLang@DeclareLang{spanish}{spanish}{}
3252 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3253 \HyLang@DeclareLang{french}{french}{}
3254 \HyLang@DeclareLang{frenchb}{french}{}
3255 \HyLang@DeclareLang{français}{french}{}
3256 \HyLang@DeclareLang{acadian}{french}{}
3257 \HyLang@DeclareLang{canadien}{french}{}
3258 \HyLang@DeclareLang{italian}{italian}{}
3259 \HyLang@DeclareLang{magyar}{magyar}{}
3260 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

3261 \DeclareVoidOption{vietnamese}{%
3262   \HyLang@addto\extravietnamese\HyLang@vietnamese
3263   \Hy@AtEndOfPackage{%
3264     \ifundefined{T@PU}{}{}%
3265     \input{puvnenc.def}%
3266   }%
3267 }%
3268 }
3269 \DeclareVoidOption{vietnam}{%
3270   \HyLang@addto\extravietnam\HyLang@vietnamese
3271   \Hy@AtEndOfPackage{%
3272     \ifundefined{T@PU}{}{}%
3273     \input{puvnenc.def}%
3274   }%
3275 }%
3276 }

```

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

```

3277 \DeclareVoidOption{arabic}{}%
3278 \Hy@AtEndOfPackage{%
3279   \ifundefined{T@PU}{}{}%
3280   \input{puarenc.def}%
3281 }%
3282 }%
3283 }

```

## 13 Options to change appearance of links

Colouring links at the  $\LaTeX$  level is useful for debugging, perhaps.

```

3284 \define@key{Hyp}{colorlinks}[true]{}%
3285 \Hy@boolkey{colorlinks}{#1}%
3286 }
3287 \define@key{Hyp}{ocgcolorlinks}[true]{}%
3288 \Hy@boolkey{ocgcolorlinks}{#1}%
3289 }
3290 \Hy@AtBeginDocument{%
3291   \begingroup
3292     \ifundefined{OBJ@OCG@view}{}%
3293     \ifHy@ocgcolorlinks
3294       \Hy@Warning{%
3295         Driver does not support ‘ocgcolorlinks’,\MessageBreak
3296         using ‘colorlinks’ instead%
3297       }%
3298     \fi

```

```

3299   }{}%
3300   \endgroup
3301 }
3302 \define@key{Hyp}{frenchlinks}[true]{%
3303   \Hy@boolkey{frenchlinks}{#1}%
3304 }

```

## 14 Bookmarking

```

3305 \begingroup\expandafter\expandafter\expandafter\endgroup
3306 \expandafter\ifx\csname chapter\endcsname\relax
3307   \def\toclevel@part{0}%
3308   \else
3309     \def\toclevel@part{-1}%
3310   \fi
3311   \def\toclevel@chapter{0}
3312   \def\toclevel@section{1}
3313   \def\toclevel@subsection{2}
3314   \def\toclevel@subsubsection{3}
3315   \def\toclevel@paragraph{4}
3316   \def\toclevel@subparagraph{5}
3317   \def\toclevel@figure{0}
3318   \def\toclevel@table{0}
3319   \@ifpackageloaded{listings}{%
3320     \providecommand*\theHlstlisting{\thelstlisting}%
3321     \providecommand*\toclevel@lstlisting{0}%
3322   }{}
3323   \@ifpackageloaded{listing}{%
3324     \providecommand*\theHlisting{\thelisting}%
3325     \providecommand*\toclevel@listing{0}%
3326   }{}

3327 \define@key{Hyp}{bookmarks}[true]{%
3328   \Hy@boolkey{bookmarks}{#1}%
3329 }

3330 \define@key{Hyp}{bookmarksopen}[true]{%
3331   \Hy@boolkey{bookmarksopen}{#1}%
3332 }

```

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.

```

3333 \let\Hy@bookmarksdepth\c@tocdepth
3334 \define@key{Hyp}{bookmarksdepth}[]{}%
3335 \begingroup
3336   \edef\x{#1}%
3337   \ifx\x\empty
3338     \global\let\Hy@bookmarksdepth\c@tocdepth
3339   \else

```

```

3340 \ifundefined{toclevel@x}{%
3341 \onelevel@sanitize\x
3342 \edef\y{\expandafter\@car\x\@nil}%
3343 \ifcase 0\expandafter\ifx\y-1\fi
3344 \expandafter\ifnum\expandafter'\y>47 %
3345 \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
3346 \Hy@Warning{Unknown document division name (\x)}%
3347 \else
3348 \setbox\z@=\hbox{%
3349 \count@=\x
3350 \xdef\Hy@bookmarksdepth{\the\count@}%
3351 }%
3352 \fi
3353 }{%
3354 \setbox\z@=\hbox{%
3355 \count@=\csname toclevel@x\endcsname
3356 \xdef\Hy@bookmarksdepth{\the\count@}%
3357 }%
3358 }%
3359 \fi
3360 \endgroup
3361 }

```

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

```

3362 \define@key{Hyp}{bookmarksopenlevel}{%
3363 \def\@bookmarksopenlevel{#1}%
3364 }
3365 \def\@bookmarksopenlevel{\maxdimen}
3366 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
3367 \define@key{Hyp}{bookmarkstype}{%
3368 \def\Hy@bookmarkstype{#1}%
3369 }
3370 \def\Hy@bookmarkstype{toc}

```

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

```

3371 \define@key{Hyp}{bookmarksnumbered}[true]{%
3372 \Hy@boolkey{bookmarksnumbered}{#1}%
3373 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

3374 \define@key{Hyp}{CJKbookmarks}[true]{%
3375 \Hy@boolkey{CJKbookmarks}{#1}%
3376 }

3377 \def\Hy@temp#1{%
3378 \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3379 }
3380 \def\Hy@@temp#1#2#3{%
3381 \define@key{Hyp}{#2color}{%
3382 \HyColor@HyperrefColor{##1}#1%
3383 }%
3384 \def#1{#3}%
3385 }
3386 \Hy@temp{link}{red}
3387 \Hy@temp{anchor}{black}
3388 \Hy@temp{cite}{green}
3389 \Hy@temp{file}{cyan}
3390 \Hy@temp{url}{magenta}

```

```

3391 \Hy@temp{menu}{red}
3392 \Hy@temp{run}{\@filecolor}
3393 \define@key{Hyp}{pagecolor}{%
3394   \Hy@WarningPageColor
3395 }
3396 \def\Hy@WarningPageColor{%
3397   \Hy@WarningNoLine{Option 'pagecolor' is not available anymore}%
3398   \global\let\Hy@WarningPageColor\relax
3399 }

3400 \def\hyperbaseurl#1{\def\@baseurl{#1}}
3401 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
3402 \let\@baseurl\@empty
3403 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
3404 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
3405 \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.

```

3406 \let\@pdfpagetransition\relax
3407 \define@key{Hyp}{pdfpagetransition}{%
3408   \def\@pdfpagetransition{#1}%
3409 }

```

`\@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.

```

3410 \let\@pdfpageduration\relax
3411 \define@key{Hyp}{pdfpageduration}{%
3412   \def\@pdfpageduration{#1}%
3413   \Hy@Match\@pdfpageduration{%
3414     ^([0-9]+\.[0-9]*|[0-9]*\.[0-9]+)$%
3415   }{}%
3416   \Hy@Warning{%
3417     Invalid value '\@pdfpageduration'\MessageBreak
3418     of 'pdfpageduration'\MessageBreak
3419     is replaced by an empty value%
3420   }%
3421   \let\@pdfpageduration\ltx@empty
3422 }%
3423 }

```

The entry for the `/Hid` key in the page object is only necessary, if it is used and set to true for at least one time. If it is always false, then the `/Hid` key is not written to the pdf page object in order not to enlarge the pdf file.

```

3424 \newif\ifHy@useHidKey
3425 \Hy@useHidKeyfalse
3426 \define@key{Hyp}{pdfpagehidden}[true]{%
3427   \Hy@boolkey{pdfpagehidden}{#1}%
3428   \ifHy@pdfpagehidden
3429     \global\Hy@useHidKeytrue
3430   \fi
3431 }

```



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).

```

3432 \def\Hy@ColorList{cite,file,link,menu,run,url}
3433 \for\Hy@temp:=\Hy@ColorList\do{%
3434   \edef\Hy@temp{%
3435     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
3436       \noexpand\HyColor@HyperrefBorderColor
3437         {##1}%
3438       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
3439       {hyperref}%
3440       {\Hy@temp bordercolor}%
3441     }%
3442   }%
3443   \Hy@temp
3444 }
3445 \define@key{Hyp}{pagebordercolor}{%
3446   \Hy@WarningPageBorderColor
3447 }
3448 \def\Hy@WarningPageBorderColor{%
3449   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
3450   \global\let\Hy@WarningPageBorderColor\relax
3451 }

3452 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{##1}}
3453 \Hy@DefNameKey{pdfhighlight}{%
3454   \do{/I}{Invert}%
3455   \do{/N}{None}%
3456   \do{/O}{Outline}%
3457   \do{/P}{Push}%
3458 }
3459 \define@key{Hyp}{pdfborder}{%
3460   \def\Hy@temp{##1}%
3461   \Hy@Match\Hy@temp{%
3462     ^(\HyPat@NonNegativeReal/ %
3463     \HyPat@NonNegativeReal/ %
3464     \HyPat@NonNegativeReal/%
3465     ( ?[\HyPat@NonNegativeReal/(\HyPat@NonNegativeReal/)*])?)$%
3466   }{%
3467     \let\@pdfborder\Hy@temp
3468   }{%
3469     \Hy@Warning{%
3470       Invalid value '\Hy@temp'\MessageBreak
3471       for option 'pdfborder'\MessageBreak
3472       Option setting is ignored%
3473     }%
3474   }%
3475 }
3476 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{##1}}
3477 \def\Hy@setpdfborder{%
3478   \ifx\@pdfborder\@empty
3479     \else
3480       /Border[\@pdfborder]%

```

```

3481 \fi
3482 \ifx\@pdfborderstyle\@empty
3483 \else
3484 /BS<<\@pdfborderstyle>>%
3485 \fi
3486 }
3487 \Hy@DefNameKey{pdfpagemode}{%
3488 \do{UseNone}{}%
3489 \do{UseOutlines}{}%
3490 \do{UseThumbs}{}%
3491 \do{FullScreen}{}%
3492 \do{UseOC}{PDF 1.5}%
3493 \do{UseAttachments}{PDF 1.6}%
3494 }
3495 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3496 \do{UseNone}{}%
3497 \do{UseOutlines}{}%
3498 \do{UseThumbs}{}%
3499 \do{FullScreen}{}%
3500 \do{UseOC}{PDF 1.5}%
3501 \do{UseAttachments}{PDF 1.6}%
3502 }
3503 \Hy@DefNameKey{pdfdirection}{%
3504 \do{L2R}{Left to right}%
3505 \do{R2L}{Right to left}%
3506 }
3507 \Hy@DefNameKey{pdfviewarea}{%
3508 \do{MediaBox}{}%
3509 \do{CropBox}{}%
3510 \do{BleedBox}{}%
3511 \do{TrimBox}{}%
3512 \do{ArtBox}{}%
3513 }
3514 \Hy@DefNameKey{pdfviewclip}{%
3515 \do{MediaBox}{}%
3516 \do{CropBox}{}%
3517 \do{BleedBox}{}%
3518 \do{TrimBox}{}%
3519 \do{ArtBox}{}%
3520 }
3521 \Hy@DefNameKey{pdfprintarea}{%
3522 \do{MediaBox}{}%
3523 \do{CropBox}{}%
3524 \do{BleedBox}{}%
3525 \do{TrimBox}{}%
3526 \do{ArtBox}{}%
3527 }
3528 \Hy@DefNameKey{pdfprintclip}{%
3529 \do{MediaBox}{}%
3530 \do{CropBox}{}%
3531 \do{BleedBox}{}%
3532 \do{TrimBox}{}%
3533 \do{ArtBox}{}%
3534 }
3535 \Hy@DefNameKey{pdfprintscaling}{%
3536 \do{AppDefault}{}%
3537 \do{None}{}%

```

```

3538 }
3539 \Hy@DefNameKey{pdfduplex}{%
3540   \do{Simplex}{}%
3541   \do{DuplexFlipShortEdge}{}%
3542   \do{DuplexFlipLongEdge}{}%
3543 }
3544 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3545   \do{true}{}%
3546   \do{false}{}%
3547 }
3548 \define@key{Hyp}{pdfprintpagerange}{%
3549   \def\@pdfprintpagerange{#1}%
3550 }
3551 \Hy@DefNameKey{pdfnumcopies}{%
3552   \do{2}{two copies}%
3553   \do{3}{three copies}%
3554   \do{4}{four copies}%
3555   \do{5}{five copies}%
3556 }

3557 \define@key{Hyp}{pdfusetitle}[true]{%
3558   \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
3559 }
3560 \def\HyXeTeX@CheckUnicode{%
3561   \ifxetex
3562     \ifHy@unicode
3563     \else
3564       \Hy@WarningNoLine{%
3565         XeTeX driver only supports unicode.\MessageBreak
3566         Enabling option 'unicode'%
3567       }%
3568       \kvsetkeys{Hyp}{unicode}%
3569     \fi
3570   \else
3571     \let\HyXeTeX@CheckUnicode\relax
3572   \fi
3573 }
3574 \def\HyPsd@PrerenderUnicode#1{%
3575   \begingroup
3576     \expandafter\ifx\csname PrerenderUnicode\endcsname\relax
3577     \else
3578       \sbox0{%
3579         \let\GenericInfo\@gobbletwo
3580         \let\GenericWarning\@gobbletwo
3581         \let\GenericError\@gobblefour
3582         \PrerenderUnicode{#1}%
3583       }%
3584     \fi
3585   \endgroup
3586 }
3587 \define@key{Hyp}{pdftitle}{%
3588   \HyXeTeX@CheckUnicode
3589   \HyPsd@XeTeXBigCharstrue
3590   \HyPsd@PrerenderUnicode{#1}%
3591   \pdfstringdef\@pdftitle{#1}%
3592 }
3593 \define@key{Hyp}{pdfauthor}{%
3594   \HyXeTeX@CheckUnicode

```

```

3595 \HyPsd@XeTeXBigCharstrue
3596 \HyPsd@PrerenderUnicode{#1}%
3597 \pdfstringdef\@pdfauthor{#1}%
3598 }
3599 \define@key{Hyp}{pdfproducer}{%
3600 \HyXeTeX@CheckUnicode
3601 \HyPsd@XeTeXBigCharstrue
3602 \HyPsd@PrerenderUnicode{#1}%
3603 \pdfstringdef\@pdfproducer{#1}%
3604 }
3605 \define@key{Hyp}{pdfcreator}{%
3606 \HyXeTeX@CheckUnicode
3607 \HyPsd@XeTeXBigCharstrue
3608 \HyPsd@PrerenderUnicode{#1}%
3609 \pdfstringdef\@pdfcreator{#1}%
3610 }
3611 \define@key{Hyp}{pdfcreationdate}{%
3612 \begingroup
3613 \Hy@unicodedefalse
3614 \pdfstringdef\@pdfcreationdate{#1}%
3615 \endgroup
3616 }
3617 \define@key{Hyp}{pdfmoddate}{%
3618 \begingroup
3619 \Hy@unicodedefalse
3620 \pdfstringdef\@pdfmoddate{#1}%
3621 \endgroup
3622 }
3623 \define@key{Hyp}{pdfsubject}{%
3624 \HyXeTeX@CheckUnicode
3625 \HyPsd@XeTeXBigCharstrue
3626 \HyPsd@PrerenderUnicode{#1}%
3627 \pdfstringdef\@pdfsubject{#1}%
3628 }
3629 \define@key{Hyp}{pdfkeywords}{%
3630 \HyXeTeX@CheckUnicode
3631 \HyPsd@XeTeXBigCharstrue
3632 \HyPsd@PrerenderUnicode{#1}%
3633 \pdfstringdef\@pdfkeywords{#1}%
3634 }
3635 \define@key{Hyp}{pdftrapped}{%
3636 \lowercase{\edef\Hy@temp{#1}}%
3637 \ifx\Hy@temp\HyInfo@trapped@true
3638 \def\@pdftrapped{True}%
3639 \else
3640 \ifx\Hy@temp\HyInfo@trapped@false
3641 \def\@pdftrapped{False}%
3642 \else
3643 \ifx\Hy@temp\HyInfo@trapped@unknown
3644 \def\@pdftrapped{Unknown}%
3645 \else
3646 \ifx\Hy@temp\@empty
3647 \else
3648 \Hy@Warning{%
3649     Unsupported value '#1'\MessageBreak
3650     for option 'pdftrapped'%
3651 }%

```

```

3652     \fi
3653     \def\@pdftrapped{}%
3654     \fi
3655     \fi
3656 \fi
3657 }
3658 \def\HyInfo@trapped@true{true}
3659 \def\HyInfo@trapped@false{false}
3660 \def\HyInfo@trapped@unknown{unknown}
3661 \def\HyInfo@TrappedUnsupported{%
3662   \ifx\@pdftrapped\@empty
3663   \else
3664     \Hy@WarningNoLine{'pdftrapped' is not supported by this driver}%
3665     \gdef\HyInfo@TrappedUnsupported{}%
3666   \fi
3667 }
3668 \define@key{Hyp}{pdfinfo}{%
3669   \kvsetkeys{pdfinfo}{#1}%
3670 }
3671 \def\Hy@temp#1{%
3672   \lowercase{\Hy@temp@A{#1}}{#1}%
3673 }
3674 \def\Hy@temp@A#1#2{%
3675   \define@key{pdfinfo}{#2}{%
3676     \hypersetup{pdf#1={##1}}}%
3677   }%
3678 }
3679 \Hy@temp{Title}
3680 \Hy@temp{Author}
3681 \Hy@temp{Keywords}
3682 \Hy@temp{Subject}
3683 \Hy@temp{Creator}
3684 \Hy@temp{Producer}
3685 \Hy@temp{CreationDate}
3686 \Hy@temp{ModDate}
3687 \Hy@temp{Trapped}
3688 \newif\ifHyInfo@AddonUnsupported
3689 \kv@set@family@handler{pdfinfo}{%
3690   \HyInfo@AddonHandler{#1}{#2}%
3691 }
3692 \let\HyInfo@do\relax
3693 \def\HyInfo@AddonHandler#1#2{%
3694   \ifx\kv@value\relax
3695     \Hy@Warning{%
3696       Option 'pdfinfo': ignoring key '\kv@key' without value%
3697     }%
3698   \else
3699     \EdefEscapeName\HyInfo@KeyEscaped{\kv@key}%
3700     \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3701     \expandafter\ifx\csname KV@pdfinfo@\HyInfo@Key\endcsname\relax
3702       \ifHyInfo@AddonUnsupported
3703         \Hy@Warning{%
3704           This driver does not support additional\MessageBreak
3705           information entries, therefore\MessageBreak
3706           '\kv@key' is ignored%
3707         }%
3708       \else

```

```

3709 \define@key{pdfinfo}{\HyInfo@Key}{%
3710 \HyXeTeX@CheckUnicode
3711 \HyPsd@XeTeXBigCharstrue
3712 \HyPsd@PrerenderUnicode{##1}%
3713 \pdfstringdef\HyInfo@Value{##1}%
3714 \expandafter\let\csname HyInfo@Value@\HyInfo@Key\endcsname
3715 \HyInfo@Value
3716 }%
3717 \edef\HyInfo@AddonList{%
3718 \HyInfo@AddonList
3719 \HyInfo@do{\HyInfo@Key}%
3720 }%
3721 \kv@parse@normalized{%
3722 \HyInfo@Key={#2}%
3723 }{%
3724 \kv@processor@default{pdfinfo}%
3725 }%
3726 \fi
3727 \else
3728 \kv@parse@normalized{%
3729 \HyInfo@Key={#2}%
3730 }{%
3731 \kv@processor@default{pdfinfo}%
3732 }%
3733 \fi
3734 \fi
3735 }
3736 \def\HyInfo@GenerateAddons{%
3737 \ifHyInfo@AddonUnsupported
3738 \def\HyInfo@Addons{}%
3739 \else
3740 \begingroup
3741 \toks@{}%
3742 \def\HyInfo@do##1{%
3743 \EdefEscapeName\HyInfo@Key{##1}%
3744 \edef\x{%
3745 \toks@{%
3746 \the\toks@
3747 /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
3748 }%
3749 }%
3750 \x
3751 }%
3752 \HyInfo@AddonList
3753 \edef\x{\endgroup
3754 \def\noexpand\HyInfo@Addons{\the\toks@}%
3755 }%
3756 \x
3757 \fi
3758 }
3759 \def\HyInfo@AddonList{}

3760 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}
3761 \define@key{Hyp}{pdfinkmargin}{\setpdfinkmargin{#1}}
3762 \let\setpdfinkmargin\gobble
3763 \def\calculate@pdfview#1 #2\{\%
3764 \def\@pdfview{#1}%
3765 \ifx\#2\%

```

```

3766 \def\@pdfviewparams{ -32768}%
3767 \else
3768 \def\@pdfviewparams{ #2}%
3769 \fi
3770 }
3771 \begingroup\expandafter\expandafter\expandafter\endgroup
3772 \expandafter\ifx\csname numexpr\endcsname\relax
3773 \def\Hy@number#1{%
3774 \expandafter\@firstofone\expandafter{\number#1}%
3775 }%
3776 \else
3777 \def\Hy@number#1{%
3778 \the\numexpr#1\relax
3779 }%
3780 \fi
3781 \define@key{Hyp}{pdfstartpage}{%
3782 \ifx\#1\%
3783 \def\@pdfstartpage{}%
3784 \else
3785 \edef\@pdfstartpage{\Hy@number{#1}}%
3786 \fi
3787 }%
3788 \define@key{Hyp}{pdfstartview}{%
3789 \ifx\#1\%
3790 \def\@pdfstartview{}%
3791 \else
3792 \hypercalcbpdef\@pdfstartview{/#1}%
3793 \fi
3794 }
3795 \def\HyPat@NonNegativeReal/{%
3796 ([0-9]+\.[0-9]*|[0-9]*\.[0-9]+)%
3797 }
3798 \define@key{Hyp}{pdfremotestartview}{%
3799 \ifx\#1\%
3800 \def\@pdfremotestartview{/Fit}%
3801 \else
3802 \hypercalcbpdef\@pdfremotestartview{#1}%
3803 \edef\@pdfremotestartview{\@pdfremotestartview}%
3804 \Hy@Match\@pdfremotestartview{%
3805 ^{XYZ}-(null|\HyPat@NonNegativeReal/)%
3806 -(null|\HyPat@NonNegativeReal/)%
3807 (null|\HyPat@NonNegativeReal/)|%
3808 Fit(|B|)%
3809 (H|V|B|H|B|V)(null|\HyPat@NonNegativeReal/)|%
3810 R \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/ %
3811 \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/%
3812 )}$%
3813 }{}{%
3814 \Hy@Warning{%
3815 Invalid value '\@pdfremotestartview'\MessageBreak
3816 of 'pdfremotestartview'\MessageBreak
3817 is replaced by 'Fit'%
3818 }%
3819 \let\@pdfremotestartview\@empty
3820 }%
3821 \ifx\@pdfremotestartview\@empty
3822 \def\@pdfremotestartview{/Fit}%

```

```

3823 \else
3824 \edef\@pdfremotestartview{/ \@pdfremotestartview}%
3825 \fi
3826 \fi
3827 }
3828 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
3829 \define@key{Hyp}{pdftoolbar}[true]{%
3830 \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
3831 }
3832 \define@key{Hyp}{pdfmenubar}[true]{%
3833 \Hy@boolkey[pdfmenubar]{menubar}{#1}%
3834 }
3835 \define@key{Hyp}{pdfwindowui}[true]{%
3836 \Hy@boolkey[pdfwindowui]{windowui}{#1}%
3837 }
3838 \define@key{Hyp}{pdffitwindow}[true]{%
3839 \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
3840 }
3841 \define@key{Hyp}{pdfcenterwindow}[true]{%
3842 \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
3843 }
3844 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
3845 \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
3846 }
3847 \define@key{Hyp}{pdfa}[true]{%
3848 \Hy@boolkey[pdfa]{#1}%
3849 }
3850 \define@key{Hyp}{pdfnewwindow}[true]{%
3851 \def\Hy@temp{#1}%
3852 \ifx\Hy@temp\@empty
3853 \Hy@newwindowsetfalse
3854 \else
3855 \Hy@newwindowsettrue
3856 \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
3857 \fi
3858 }
3859 \def\Hy@SetNewWindow{%
3860 \ifHy@newwindowset
3861 /NewWindow %
3862 \ifHy@newwindow true\else false\fi
3863 \fi
3864 }
3865 \Hy@DefNameKey{pdfpagelayout}{%
3866 \do{SinglePage}{}%
3867 \do{OneColumn}{}%
3868 \do{TwoColumnLeft}{}%
3869 \do{TwoColumnRight}{}%
3870 \do{TwoPageLeft}{PDF 1.5}%
3871 \do{TwoPageRight}{PDF 1.5}%
3872 }
3873 \define@key{Hyp}{pdflang}{%
3874 \def\@pdflang{#1}%
3875 }
3876 \define@key{Hyp}{pdfpagelabels}[true]{%
3877 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
3878 }
3879 \define@key{Hyp}{pdfescapeform}[true]{%

```



```

3880 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
3881 }

```

Default values:

```

3882 \def\@linkbordercolor{1 0 0}
3883 \def\@urlbordercolor{0 1 1}
3884 \def\@menubordercolor{1 0 0}
3885 \def\@filebordercolor{0 .5 .5}
3886 \def\@runbordercolor{0 .7 .7}
3887 \def\@citebordercolor{0 1 0}
3888 \def\@pdfhighlight{/I}
3889 \def\@pdftitle{}
3890 \def\@pdfauthor{}
3891 \let\@pdfproducer\relax
3892 \def\@pdfcreator{LaTeX with hyperref package}
3893 \def\@pdfcreationdate{}
3894 \def\@pdfmoddate{}
3895 \def\@pdfsubject{}
3896 \def\@pdfkeywords{}
3897 \def\@pdftrapped{}
3898 \def\@pdfpagescrop{}
3899 \def\@pdfstartview{/Fit}
3900 \def\@pdfremotestartview{/Fit}
3901 \def\@pdfstartpage{1}
3902 \def\@pdfprintpagerange{}
3903 \def\@pdflang{}
3904 \let\PDF@SetupDoc\@empty
3905 \let\PDF@FinishDoc\@empty
3906 \let\phantomsection\@empty
3907 \let\special@paper\@empty
3908 \def\HyperDestNameFilter#1{#1}
3909 \Hy@AtBeginDocument{%
3910   \begingroup
3911     \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
3912     \dimen@=\x\relax
3913     \ifdim\dimen@>\z@
3914       \else
3915         \dimen@=11in\relax
3916         \Hy@WarningNoLine{%
3917           Height of page (\expandafter\string\x) %
3918           is invalid (\the\x),\MessageBreak
3919           using 11in%
3920         }%
3921       \fi
3922       \dimen@=0.99626401\dimen@
3923       \xdef\Hy@pageheight{\strip@pt\dimen@}%
3924     \endgroup
3925 }
3926 \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.

```

3927 \let\hyper@normalise\ExecuteOptions
3928 \let\ExecuteOptions\hypersetup
3929 \Hy@RestoreCatcodes
3930 \InputIfFileExists{hyperref.cfg}{-}{-}
3931 \Hy@SetCatcodes

```

```

3932 \let\ExecuteOptions\hyper@normalise
3933 \Hy@MaybeStopNow

```

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.

```

3934 \SetupKeyvalOptions{family=Hyp}
3935 \DeclareLocalOptions{%
3936   a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
3937 }

```

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

```

3938 \@ifpackageloaded{tex4ht}{%
3939   \@ifpackagewith{hyperref}{tex4ht}{-}{%
3940     \PassOptionsToPackage{tex4ht}{hyperref}%
3941   }%
3942 }{}

3943 \let\ReadBookmarks\relax
3944 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

3945 \Hy@AtBeginDocument{%
3946   \ifHy@draft
3947     \let\hyper@@anchor\@gobble
3948     \gdef\hyper@link#1#2#3{#3}%
3949     \let\hyper@anchorstart\@gobble
3950     \let\hyper@anchorend\@empty
3951     \let\hyper@linkstart\@gobbletwo
3952     \let\hyper@linkend\@empty
3953     \def\hyper@linkurl#1#2{#1}%
3954     \def\hyper@linkfile#1#2#3{#1}%
3955     \def\hyper@link@{#1}#2#3{}%
3956     \def\Acrobatmenu#1#2{\leavevmode#2}%
3957     \let\PDF@SetupDoc\@empty
3958     \let\PDF@FinishDoc\@empty
3959     \let\@fifthoffive\@secondoftwo
3960     \let\@secondoffive\@secondoftwo
3961     \let\ReadBookmarks\relax
3962     \let\WriteBookmarks\relax
3963     \Hy@WarningNoLine{Draft mode on}%
3964   \fi
3965   \Hy@DisableOption{draft}%
3966   \Hy@DisableOption{nolinks}%
3967   \Hy@DisableOption{final}%
3968 }

```

## 15.1 PDF/A

```

3969 \Hy@DisableOption{pdfa}

3970 \ifHy@pdfa
3971   \kvsetkeys{Hyp}{pdfversion=1.4}%
3972   \def\Hy@Acrobatmenu#1#2{%
3973     \leavevmode
3974     \begingroup
3975       \edef\x{#1}%
3976       \@onelevel@sanitize\x
3977       \ifx\x\Hy@NextPage
3978         \let\y=Y%

```

```

3979 \else
3980 \ifx\x\Hy@PrevPage
3981 \let\y=Y%
3982 \else
3983 \ifx\x\Hy@FirstPage
3984 \let\y=Y%
3985 \else
3986 \ifx\x\Hy@LastPage
3987 \let\y=Y%
3988 \else
3989 \let\y=N%
3990 \fi
3991 \fi
3992 \fi
3993 \fi
3994 \expandafter\endgroup
3995 \ifx\y Y%
3996 \else
3997 \Hy@Error{%
3998 PDF/A: Named action '#1' is not permitted%
3999 }\@ehc
4000 {#2}%
4001 \expandafter\@gobble
4002 \fi
4003 }%
4004 \def\Hy@temp#1{%
4005 \expandafter\def\csname Hy@#1\endcsname{#1}%
4006 \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
4007 }%
4008 \Hy@temp{NextPage}%
4009 \Hy@temp{PrevPage}%
4010 \Hy@temp{FirstPage}%
4011 \Hy@temp{LastPage}%
4012 \else
4013 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4014 \fi

```

## 15.2 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.

```

4015 \Hy@nextfalse
4016 \ltx@ifundefined{spanish@sh@"@sel}{\Hy@nexttrue}
4017 \ltx@ifundefined{galician@sh@"@sel}{\Hy@nexttrue}
4018 \ltx@ifundefined{estonian@sh@"@sel}{\Hy@nexttrue}
4019 \ifHy@next
4020 \let\texttilde\~%
4021 \fi
4022 \ifHy@figures
4023 \Hy@Info{Hyper figures ON}%
4024 \else
4025 \Hy@Info{Hyper figures OFF}%
4026 \fi
4027 \ifHy@nesting
4028 \Hy@Info{Link nesting ON}%
4029 \else
4030 \Hy@Info{Link nesting OFF}%

```

```

4031 \fi
4032 \ifHy@hyperindex
4033   \Hy@Info{Hyper index ON}%
4034 \else
4035   \Hy@Info{Hyper index OFF}%
4036 \fi
4037 \ifHy@plainpages
4038   \Hy@Info{Plain pages ON}%
4039 \else
4040   \Hy@Info{Plain pages OFF}%
4041 \fi
4042 \ifHy@backref
4043   \Hy@Info{Backreferencing ON}%
4044 \else
4045   \Hy@Info{Backreferencing OFF}%
4046 \fi
4047 \ifHy@typexml
4048   \Hy@AtEndOfPackage{%
4049     \RequirePackage{color}%
4050     \RequirePackage{nameref}%
4051   }%
4052 \fi
4053 \Hy@DisableOption{typexml}
4054 \ifHy@implicit
4055   \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4056 \else
4057   \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4058   \def\MaybeStopEarly{%
4059     \Hy@Message{Stopped early}%
4060     \Hy@AtBeginDocument{%
4061       \PDF@FinishDoc
4062       \gdef\PDF@FinishDoc{}%
4063     }%
4064   \endinput
4065   }%
4066   \Hy@AtBeginDocument{%
4067     \let\autoref\ref
4068     \let\autopageref\pageref
4069     \ifx\@pdfpagemode\@empty
4070       \gdef\@pdfpagemode{UseNone}%
4071     \fi
4072     \global\Hy@backreffalse
4073   }%
4074   \Hy@AtEndOfPackage{%
4075     \global\let\ReadBookmarks\relax
4076     \global\let\WriteBookmarks\relax
4077   }%
4078 \fi
4079 \Hy@DisableOption{implicit}

```

### 15.2.1 Driver loading

```

4080 \Hy@AtEndOfPackage{%
4081   \@ifpackageloaded{tex4ht}{%
4082     \def\Hy@driver{htex4ht}%
4083     \Hy@texhttrue
4084   }{}%

```

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.

```

4085 \ifx\Hy@driver\@empty
4086 \else
4087 \def\Hy@temp{hpdftex}%
4088 \ifpdf
4089 \ifx\Hy@driver\Hy@temp
4090 \else
4091 \Hy@WarningNoLine{%
4092   Wrong driver '\Hy@driver.def';\MessageBreak
4093   pdfTeX is running in PDF mode.\MessageBreak
4094   Forcing driver '\Hy@temp.def'%
4095 }%
4096 \let\Hy@driver\Hy@temp
4097 \fi
4098 \else
4099 \ifx\Hy@driver\Hy@temp
4100 \Hy@WarningNoLine{%
4101   Wrong driver '\Hy@driver.def';\MessageBreak
4102   pdfTeX is not running in PDF mode.\MessageBreak
4103   Using default driver%
4104 }%
4105 \let\Hy@driver\@empty
4106 \fi
4107 \fi
4108 \fi
4109 \ifx\Hy@driver\@empty
4110 \else
4111 \def\Hy@temp{hxdetex}%
4112 \ifxdetex
4113 \ifx\Hy@driver\Hy@temp
4114 \else
4115 \Hy@WarningNoLine{%
4116   Wrong driver '\Hy@driver.def';\MessageBreak
4117   XeTeX is running.\MessageBreak
4118   Forcing driver '\Hy@temp.def' for XeTeX%
4119 }%
4120 \let\Hy@driver\Hy@temp
4121 \fi
4122 \fi
4123 \fi
4124 \ifx\Hy@driver\@empty
4125 \else
4126 \def\Hy@temp{hvtexhtml}%
4127 \ifvtexhtml
4128 \ifx\Hy@driver\Hy@temp
4129 \else
4130 \Hy@WarningNoLine{%
4131   Wrong driver '\Hy@driver.def';\MessageBreak
4132   VTeX is running in HTML mode.\MessageBreak
4133   Forcing driver '\Hy@temp.def'%
4134 }%
4135 \let\Hy@driver\Hy@temp
4136 \fi
4137 \else
4138 \ifx\Hy@driver\Hy@temp
4139 \Hy@WarningNoLine{%

```

```

4140      Wrong driver ‘\Hy@driver.def’;\MessageBreak
4141      VTeX is not running in HTML mode.\MessageBreak
4142      Using default driver%
4143    }%
4144    \let\Hy@driver\@empty
4145  \fi
4146 \fi
4147 \fi

```

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

```

4148 \def\HyOpt@DriverType{}%
4149 \ifx\Hy@driver\@empty
4150   \def\HyOpt@DriverType{ (autodetected)}%
4151   \providecommand*{\Hy@defaultdriver}{hypertex}%
4152   \ifpdf
4153     \def\Hy@driver{hpdfTeX}%
4154   \else
4155     \ifxetex
4156       \def\Hy@driver{hxetex}%
4157     \else
4158       \ifvtexhtml
4159         \def\Hy@driver{hvtexhtm}%
4160         \def\MaybeStopEarly{%
4161           \Hy@Message{Stopped early}%
4162           \Hy@AtBeginDocument{%
4163             \PDF@FinishDoc
4164             \gdef\PDF@FinishDoc{}}%
4165         }%
4166         \endinput
4167       }%
4168     \else
4169       \ifvtexpdf
4170         \def\Hy@driver{hvtex}%
4171       \else
4172         \ifvtexps
4173           \def\Hy@driver{hvtex}%
4174         \else
4175           \ifx\HyOpt@DriverFallback\ltx@empty
4176             \let\Hy@driver\Hy@defaultdriver
4177             \def\HyOpt@DriverType{ (default)}%
4178           \else
4179             \begingroup
4180               \toks@{\expandafter{\HyOpt@DriverFallback}}%
4181               \edef\x{\endgroup
4182                 \noexpand\kvsetkeys{Hyp}{\the\toks@}}%
4183             }%
4184             \x
4185           \ifx\Hy@driver\ltx@empty
4186             \let\Hy@driver\Hy@defaultdriver
4187             \def\HyOpt@DriverType{ (default)}%
4188           \else
4189             \def\HyOpt@DriverType{ (fallback)}%
4190           \fi
4191         \fi
4192       \fi
4193     \fi
4194   \fi
4195 \fi

```

```

4196 \fi
4197 \ifx\Hy@driver\Hy@defaultdriver
4198 \def\Hy@temp{hdvwind}%
4199 \ifx\Hy@temp\Hy@driver
4200 \kvsetkeys{Hyp}{colorlinks}%
4201 \PassOptionsToPackage{dviwindo}{color}%
4202 \fi
4203 \fi
4204 \fi
4205 \Hy@Message{Driver\HyOpt@DriverType: \Hy@driver}%
4206 \input{\Hy@driver.def}%
4207 \let\@unprocessedoptions\relax
4208 \Hy@RestoreCatcodes
4209 \Hy@DisableOption{tex4ht}%
4210 \Hy@DisableOption{pdftex}%
4211 \Hy@DisableOption{nativpdf}%
4212 \Hy@DisableOption{dvipdfm}%
4213 \Hy@DisableOption{dvipdfmx}%
4214 \Hy@DisableOption{dvipdfmx-outline-open}%
4215 \Hy@DisableOption{pdfmark}%
4216 \Hy@DisableOption{dvips}%
4217 \Hy@DisableOption{hypertex}%
4218 \Hy@DisableOption{vtex}%
4219 \Hy@DisableOption{vtexpdfmark}%
4220 \Hy@DisableOption{dviwindo}%
4221 \Hy@DisableOption{dvipsone}%
4222 \Hy@DisableOption{textures}%
4223 \Hy@DisableOption{latex2html}%
4224 \Hy@DisableOption{ps2pdf}%
4225 \Hy@DisableOption{xetex}%
4226 \Hy@DisableOption{pdfversion}%
4227 }

```

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.

```

4228 \newif\ifHy@DvipdfmxOutlineOpen
4229 \ifxetex
4230 \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4231 \else
4232 \Hy@DvipdfmxOutlineOpentru
4233 \fi
4234 \fi
4235 \begingroup\expandafter\expandafter\expandafter\endgroup
4236 \expandafter\ifx\cename{SpecialDvipdfmxOutlineOpen}\endcename\relax
4237 \else
4238 \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4239 \Hy@DvipdfmxOutlineOpentru
4240 \fi
4241 \fi

```

### 15.2.2 Bookmarks

```

4242 \def\WriteBookmarks{0}
4243 \def\@bookmarkopenstatus#1{%
4244 \ifHy@bookmarksopen

```

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

```

4245 \ifnum#1<\expandafter\@firstofone\expandafter
4246     {\number\@bookmarksoopenlevel} % explicit space
4247 \else
4248     -%
4249 \fi
4250 \else
4251     -%
4252 \fi
4253 }
4254 \ifHy@bookmarks
4255 \Hy@Info{Bookmarks ON}%
4256 \ifx\@pdfpagemode\@empty
4257 \def\@pdfpagemode{UseOutlines}%
4258 \fi
4259 \else
4260 \def\@bookmarkopenstatus#1{%
4261 \Hy@Info{Bookmarks OFF}%
4262 \Hy@AtEndOfPackage{%
4263 \global\let\ReadBookmarks\relax
4264 \global\let\WriteBookmarks\relax
4265 }%
4266 \ifx\@pdfpagemode\@empty
4267 \def\@pdfpagemode{UseNone}%
4268 \fi
4269 \fi
4270 \Hy@DisableOption{bookmarks}

Add wrapper for setting standard catcodes (babel's shorthands).
4271 \def\Hy@CatcodeWrapper#1{%
4272 \def\Hy@EndWrap{%
4273 \def\TMP@EnsureCode##1##2{%
4274 \edef\Hy@EndWrap{%
4275 \Hy@EndWrap
4276 \catcode##1 \the\catcode##1\relax
4277 }%
4278 \catcode##1 ##2\relax
4279 }%
4280 \TMP@EnsureCode{10}{12}% ^^J
4281 \TMP@EnsureCode{33}{12}% !
4282 \TMP@EnsureCode{34}{12}% "
4283 \TMP@EnsureCode{36}{3}% $ (math)
4284 \TMP@EnsureCode{38}{4}% & (alignment)
4285 \TMP@EnsureCode{39}{12}% '
4286 \TMP@EnsureCode{40}{12}% (
4287 \TMP@EnsureCode{41}{12}% )
4288 \TMP@EnsureCode{42}{12}% *
4289 \TMP@EnsureCode{43}{12}% +
4290 \TMP@EnsureCode{44}{12}% ,
4291 \TMP@EnsureCode{45}{12}% -
4292 \TMP@EnsureCode{46}{12}% .
4293 \TMP@EnsureCode{47}{12}% /
4294 \TMP@EnsureCode{58}{12}% :
4295 \TMP@EnsureCode{59}{12}% ;
4296 \TMP@EnsureCode{60}{12}% <
4297 \TMP@EnsureCode{61}{12}% =
4298 \TMP@EnsureCode{62}{12}% >
4299 \TMP@EnsureCode{63}{12}% ?
4300 \TMP@EnsureCode{91}{12}% [

```



```

4301 \TMP@EnsureCode{93}{12}% ]
4302 \TMP@EnsureCode{94}{7}% ^ (superscript)
4303 \TMP@EnsureCode{95}{8}% _ (subscript)
4304 \TMP@EnsureCode{96}{12}% ‘
4305 \TMP@EnsureCode{124}{12}% |
4306 \TMP@EnsureCode{126}{13}% ~ (active)
4307 #1\relax
4308 \Hy@EndWrap
4309 }

```

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

```

4310 \Hy@AtBeginDocument{%
4311   \ifHy@ocgcolorlinks
4312     \kvsetkeys{Hyp}{colorlinks}%
4313     \ifHy@pdfa
4314       \Hy@Warning{%
4315         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4316         using ‘colorlinks’ instead of ‘ocgcolorlinks’%
4317       }%
4318       \Hy@ocgcolorlinksfalse
4319     \fi
4320   \fi
4321   \ifHy@ocgcolorlinks
4322   \else
4323     \Hy@DisableOption{ocgcolorlinks}%
4324   \fi
4325   \ifHy@colorlinks
4326     \def\@pdfborder{0 0 0}%
4327     \let\@pdfborderstyle\@empty
4328     \ifHy@typexml
4329     \else
4330       \Hy@CatcodeWrapper{%
4331         \RequirePackage{color}%
4332       }%
4333     \fi
4334     \def\Hy@colorlink#1{%
4335       \begingroup
4336       \HyColor@UseColor#1%
4337     }%
4338     \def\Hy@endcolorlink{\endgroup}%
4339     \Hy@Info{Link coloring ON}%
4340   \else
4341     \ifHy@frenchlinks
4342       \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
4343       \def\Hy@endcolorlink{\endgroup}%
4344       \Hy@Info{French linking ON}%
4345     \else

```

for grouping consistency:

```

4346   \def\Hy@colorlink#1{\begingroup}%
4347   \def\Hy@endcolorlink{\endgroup}%
4348   \Hy@Info{Link coloring OFF}%
4349   \fi
4350 \fi
4351 \Hy@DisableOption{colorlinks}%
4352 \Hy@DisableOption{frenchlinks}%
4353 \ifHy@texht
4354   \long\def\@firstoffive#1#2#3#4#5{#1}%

```

```

4355 \long\def\@secondoffive#1#2#3#4#5{#2}%
4356 \long\def\@thirdoffive#1#2#3#4#5{#3}%
4357 \long\def\@fourthoffive#1#2#3#4#5{#4}%
4358 \long\def\@fifthoffive#1#2#3#4#5{#5}%
4359 \providecommand*\@safe@activestruet{}%
4360 \providecommand*\@safe@activesfalse{}%
4361 \def\T@ref#1{%
4362   \Hy@safe@activestruet
4363   \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
4364   \Hy@safe@activesfalse
4365 }%
4366 \def\T@pageref#1{%
4367   \Hy@safe@activestruet
4368   \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
4369   \Hy@safe@activesfalse
4370 }%
4371 \else
4372 \ifHy@typexml
4373 \else
4374   \Hy@CatcodeWrapper{%
4375     \RequirePackage{nameref}%
4376   }%
4377 \fi
4378 \fi
4379 \DeclareRobustCommand\ref{%
4380   \@ifstar\@refstar\T@ref
4381 }%
4382 \DeclareRobustCommand\pageref{%
4383   \@ifstar\@pagerefstar\T@pageref
4384 }%
4385 % \@ifclassloaded{memoir}{%
4386 %   \ltx@ifundefined{@mem@titlerefno link}\ltx@secondoftwo{%
4387 %     \ltx@ifundefined{@mem@titleref}\ltx@secondoftwo\ltx@firstoftwo
4388 %   }%
4389 % } \ltx@secondoftwo
4390 % {%
4391 %   \DeclareRobustCommand*{\nameref}{%
4392 %     \@ifstar\@mem@titlerefno link\@mem@titleref
4393 %   }%
4394 % }{%
4395   \DeclareRobustCommand*{\nameref}{%
4396     \@ifstar\@namerefstar\T@nameref
4397   }%
4398 % }%
4399 }
4400 \Hy@AtBeginDocument{%
4401   \ifHy@texht
4402   \else
4403     \Hy@CatcodeWrapper{%
4404       \ReadBookmarks
4405     }%
4406   \fi
4407 }
4408 \ifHy@backref
4409   \RequirePackage{backref}%
4410 \else
4411   \let\Hy@backout\@gobble

```

```

4412 \fi
4413 \Hy@DisableOption{backref}
4414 \Hy@DisableOption{pagebackref}
4415 \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.

```

4416 \begingroup
4417 \endlinechar=-1 %
4418 \catcode'\^^A=14 %
4419 \catcode'\^^M\active
4420 \catcode'\%\active
4421 \catcode'\#\active
4422 \catcode'\_\active
4423 \catcode'\$\active
4424 \catcode'\&\active
4425 \gdef\hyper@normalise{^^A
4426 \begingroup
4427 \catcode'\^^M\active
4428 \def^^M{ }^^A
4429 \catcode'\%\active
4430 \let%\@percentchar
4431 \let%\@percentchar
4432 \catcode'\#\active
4433 \def#{\hyper@hash}^^A
4434 \def\#{\hyper@hash}^^A
4435 \@makeother\&^^A
4436 \edef&{\string&}^^A
4437 \edef&{\string&}^^A
4438 \edef\textunderscore{\string_}^^A
4439 \let_\textunderscore
4440 \catcode'\_\active
4441 \let_\textunderscore
4442 \let~\hyper@tilde
4443 \let~\hyper@tilde
4444 \let\textasciitilde\hyper@tilde
4445 \let\\ \@backslashchar
4446 \edef$\string$}^^A
4447 \Hy@safe@activetrue
4448 \hyper@n@rmalise
4449 }^^A
4450 \catcode'\#=6 ^^A
4451 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4452 \gdef\hyper@n@rmalise#1#2{^^A
4453 \def\Hy@tempa{#2}^^A
4454 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4455 \Hy@ReturnAfterElseFi{^^A
4456 \hyper@@normalise{#1}^^A
4457 }^^A
4458 \else

```

```

4459 \Hy@ReturnAfterFi{^^A
4460 \hyper@@normalise{#1}{#2}^^A
4461 }^^A
4462 \fi
4463 }^^A
4464 \gdef\hyper@@normalise#1#2{^^A
4465 \edef\Hy@tempa{^^A
4466 \endgroup
4467 \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4468 }^^A
4469 \Hy@tempa
4470 }^^A
4471 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4472 #1^^A
4473 \ifx\limits#2\limits
4474 \else
4475 \Hy@ReturnAfterFi{^^A
4476 \Hy@RemovePercentCr #2\@nil
4477 }^^A
4478 \fi
4479 }^^A
4480 \endgroup
4481 \providecommand*\hyper@chars{%
4482 \let\#\hyper@hash
4483 \let\%\@percentchar
4484 \Hy@safe@activetrue
4485 }

4486 \def\hyperlink#1#2{%
4487 \hyper@@link{#1}{#2}%
4488 }

4489 \def\Hy@VerboseLinkStart#1#2{%
4490 \ifHy@verbose
4491 \begingroup
4492 \Hy@safe@activetrue
4493 \xdef\Hy@VerboseGlobalTemp{(#1) '#2'}%
4494 \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4495 \xdef\Hy@VerboseGlobalTemp{%
4496 \Hy@VerboseGlobalTemp, %
4497 line \the\inputlineno
4498 }%
4499 \endgroup
4500 \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4501 \@onelevel@sanitize\Hy@VerboseLinkInfo
4502 \fi
4503 }

4504 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4505 \def\Hy@VerboseLinkStop{%
4506 \ifHy@verbose
4507 \begingroup
4508 \edef\x{\endgroup
4509 \write\m@ne{%
4510 Package 'hyperref' Info: %
4511 End of reference \Hy@VerboseLinkInfo.%
4512 }%
4513 }%
4514 \x

```

```

4515 \fi
4516 }

4517 \def\Hy@VerboseAnchor#1{%
4518 \ifHy@verbose
4519 \begingroup
4520 \Hy@safe@activetrue
4521 \Hy@Info{Anchor '\HyperDestNameFilter{#1}'}%
4522 \endgroup
4523 \fi
4524 }

4525 \def\Hy@AllowHyphens{%
4526 \relax
4527 \ifhmode
4528 \penalty\@M
4529 \hskip\z@skip
4530 \fi
4531 }

4532 \DeclareRobustCommand*\href{[1][]{%
4533 \begingroup
4534 \setkeys{href}{#1}%
4535 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4536 }
4537 \def\Hy@href#1{%
4538 \hyper@normalise\href@
4539 }

4540 \begingroup
4541 \catcode'\$=6 %
4542 \catcode'\#=12 %
4543 \gdef\href$1{\expandafter\href@split$1##\}%
4544 \gdef\href@split$1#$2#$3\\$4{%
4545 \hyper@@link{$1}{$2}{$4}%
4546 \endgroup
4547 }%
4548 \endgroup

```

Option ‘page’.

```

4549 \define@key{href}{page}{%
4550 \def\Hy@href@page{#1}%
4551 }
4552 \let\Hy@href@page\@empty
4553 \newcount\c@Hy@tempcnt
4554 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4555 \def\Hy@MakeRemoteAction{%
4556 \ifx\Hy@href@page\@empty
4557 \def\Hy@href@page{0}%
4558 \else
4559 \setcounter{Hy@tempcnt}{\Hy@href@page}%
4560 \ifnum\c@Hy@tempcnt<\@ne
4561 \Hy@Warning{%
4562 Invalid page number (\theHy@tempcnt)\MessageBreak
4563 for remote PDF file.\MessageBreak
4564 Using page 1%
4565 }%
4566 \def\Hy@href@page{0}%
4567 \else
4568 \global\advance\c@Hy@tempcnt\m@ne
4569 \edef\Hy@href@page{\theHy@tempcnt}%

```

```

4570 \fi
4571 \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.

```

4572 \ifx\Hy@href@nextactionraw\@empty
4573 \else
4574 \Hy@newwindowsettrue
4575 \Hy@newwindowtrue
4576 \fi
4577 }

```

Option ‘pdfremotestartview’.

```

4578 \define@key{href}{pdfremotestartview}{%
4579 \setkeys{Hyp}{pdfremotestartview={#1}}}%
4580 }

```

Option ‘pdfnewwindow’.

```

4581 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4582 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4583 \newif\ifHy@href@ismap
4584 \define@key{href}{ismap}[true]{%
4585 \ltx@ifundefined{Hy@href@ismap#1}{%
4586 \Hy@Error{%
4587 Invalid value (#1) for key ‘ismap’.\MessageBreak
4588 Permitted values are ‘true’ or ‘false’.\MessageBreak
4589 Ignoring ‘ismap’%
4590 }\@ehc
4591 }{%
4592 \csname Hy@href@ismap#1\endcsname
4593 }%
4594 }

```

Option ‘nextactionraw’.

```

4595 \let\Hy@href@nextactionraw\@empty
4596 \define@key{href}{nextactionraw}{%
4597 \edef\Hy@href@nextactionraw{#1}%
4598 \ifx\Hy@href@nextactionraw\@empty
4599 \else
4600 \Hy@Match\Hy@href@nextactionraw{%
4601 ^(\HyPat@ObjRef/|<<.*[/S[ /.+>>|
4602 \[( ?\HyPat@ObjRef/|<<.*[/S[ /.+>>)+ ?])$%
4603 }{ }{%
4604 \Hy@Warning{Invalid value for ‘nextactionraw’:\MessageBreak
4605 \Hy@href@nextactionraw\MessageBreak
4606 The action is discarded%
4607 }%
4608 }%
4609 \ifx\Hy@href@nextactionraw\@empty
4610 \else
4611 \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4612 \fi
4613 \fi
4614 }
4615 \def\HyPat@ObjRef/{.+}

```

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

```

4616 \RequirePackage{url}

```

```

4617 \let\HyOrg@url\url
4618 \def\Hurl{\begingroup \Url}
4619 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
4620 \def\nolinkurl@#1{\Hurl{#1}}
4621 \DeclareRobustCommand*\url{\hyper@normalise\url@}
4622 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

4623 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
4624 \providecommand\hyper@image[2]{#2}

4625 \def\hypertarget#1#2{%
4626   \ifHy@nesting
4627     \hyper@@anchor{#1}{#2}%
4628   \else
4629     \hyper@@anchor{#1}{\relax}#2%
4630   \fi
4631 }

```

`\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.

```

4632 \DeclareRobustCommand*\hyperref{%
4633   \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref
4634 }
4635 \def\Hy@babelnormalise#1[#2]{%
4636   \begingroup
4637     \Hy@safe@activetrue
4638     \edef\Hy@tempa{%
4639       \endgroup
4640       \noexpand#1[#2]}%
4641   }%
4642   \Hy@tempa
4643 }
4644 \def\@hyperref{\hyper@normalise\@hyperref}
4645 \def\@hyperref#1#2#3{%
4646   \edef\ref@one{\ifx\#2\\\else#2.\fi#3}%
4647   \expandafter\tryhyper@link\ref@one\{#1}%
4648 }
4649 \def\tryhyper@link#1\#2{%
4650   \hyper@@link{#2}{#1}%
4651 }

4652 \def\hyperdef{\@ifnextchar{\label@hyperdef}\@hyperdef}
4653 \def\@hyperdef#1#2#3{%, category, name, text
4654   \ifx\#1\%
4655     \def\Hy@AnchorName{#2}%
4656   \else
4657     \def\Hy@AnchorName{#1.#2}%
4658   \fi
4659   \ifHy@nesting
4660     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4661   \else
4662     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4663   \fi
4664 }

```

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.

```

4665 \def\label@hyperref[#1]{%
4666   \expandafter\label@hyperref\csname r@#1\endcsname{#1}%
4667 }%
4668 \def\label@hyperref#1#2#3{%
4669   \ifx#1\relax
4670     \protect\G@refundefinedtrue
4671     \@latex@warning{%
4672       Hyper reference ‘#2’ on page \thepage \space undefined%
4673     }%
4674     \hyper@@link{}{??}{#3}%
4675   \else
4676     \hyper@@link{\expandafter\@fifthoffive#1}%
4677     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
4678   \fi
4679 }
4680 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
4681                               % anchor text
4682   \@bsphack
4683   \ifx\#2\%
4684     \def\Hy@AnchorName{#3}%
4685   \else
4686     \def\Hy@AnchorName{#2.#3}%
4687   \fi
4688   \if@filesw
4689     \protected@write\@auxout{}{%
4690       \string\newlabel{#1}{\{}{\}}{\}\Hy@AnchorName}{}}%
4691   }%
4692 \fi
4693 \@esphack
4694 \ifHy@nesting
4695   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
4696 \else
4697   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
4698 \fi
4699 }

```

## 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.

```

4700 \def\hyper@@link{\let\Hy@reserved@a\relax
4701   \@ifnextchar{\hyper@link@}{\hyper@link@[link]}%
4702 }
4703 \def\hyper@link@[#1]#2#3#4{%
4704   \begingroup
4705     \protected@edef\Hy@tempa{#2}%
4706     \Hy@safe@activestrue
4707     \edef\x{#3}%
4708     \ifx\Hy@tempa\@empty
4709       \toks0{\hyper@link{#1}}%
4710     \else
4711       \toks0{\expandafter\hyper@readexternallink#2\{#1}}%

```



```

4712 \fi
4713 \toks2{%
4714   \Hy@safe@activesfalse
4715   #4%
4716 }%
4717 \edef\Hy@tempa{\the\toks2}%
4718 \edef\x{\endgroup
4719   \ifx\Hy@tempa\@empty
4720     \noexpand\Hy@Warning{Suppressing empty link}%
4721   \else
4722     \the\toks0 {\x}{\the\toks2}%%
4723   \fi
4724 }%
4725 \x
4726 }

```

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.

```

4727 \def\hyper@readexternallink#1\#2#3#4{%
4728   \begingroup
4729   \let\relax
4730   \expandafter\endgroup
4731   \expandafter\@hyper@readexternallink#1\#{#2}{#3}{#4}%
4732 }
4733 \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.

```

4734 \@hyper@readexternallink{#2}{#3}{#4}#1::\#{#1}%
4735 }

```

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

```

4736 \def\pdftempwordfile{file}%
4737 \def\pdftempwordrun{run}%
4738 \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:

```

4739 \ifx\#6\%
4740   \@hyper@linkfile file:#7\#{#3}{#2}{#7}%
4741 \else
4742   \ifx\#4\%
4743     \@hyper@linkfile file:#7\#{#3}{#2}{#7}%
4744   \else

```

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

```
4745 \def\@pdftempa{#4}%  
4746 \ifx\@pdftempa\@pdftempwordfile  
4747 \@hyper@linkfile#7\{\#3}{\#2}{\#7}%  
4748 \else
```

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

```
4749 \ifx\@pdftempa\@pdftempwordrun  
4750 \ifHy@pdfa  
4751 \Hy@Error{%  
4752 PDF/A: Launch action is prohibited%  
4753 }\@ehc  
4754 \begingroup  
4755 \leavevmode  
4756 #2%  
4757 \endgroup  
4758 \else  
4759 \@hyper@launch#7\{\#3}{\#2}%  
4760 \fi  
4761 \else
```

otherwise its a URL

```
4762 \hyper@linkurl{\#3}{\#7\ifx\#2\\\else\hyper@hash#2\fi}%  
4763 \fi  
4764 \fi  
4765 \fi  
4766 \fi  
4767 }
```

By default, turn run: into file:

```
4768 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname  
4769 \hyper@linkurl{\#2}{%  
4770 \Hy@linkfileprefix  
4771 #1%  
4772 \ifx\#3\%  
4773 \else  
4774 \hyper@hash  
4775 #3%  
4776 \fi  
4777 }%  
4778 }
```

D P Story <story@uakron.edu> pointed out that relative paths starting .. fell over.

Switched to using \filename@parse to solve this.

```
4779 \def\@hyper@linkfile file:#1\#2#3#4{%  
4780 %file url,link string, name, original uri  
4781 \filename@parse{\#1}%  
4782 \ifx\filename@ext\relax  
4783 \edef\filename@ext{\XR@ext}%  
4784 \fi  
4785 \def\use@file{\filename@area\filename@base.\filename@ext}%  
4786 \Hy@ifStringEndsWith\filename@ext\XR@ext{%  
4787 \hyper@linkfile{\#2}{\use@file}{\#3}%  
4788 }{%  
4789 \ifx\@baseurl\@empty  
4790 \hyper@linkurl{\#2}{%  
4791 #4\ifx\#3\\\else\hyper@hash#3\fi  
4792 }%  
4793 \else
```

```

4794 \hyper@linkurl{#2}{\use@file\ifx\\#3\\else\hyper@hash#3\fi}%
4795 \fi
4796 }%
4797 }

4798 \def\Hy@IfStringEndsWith#1#2{%
4799 \begingroup
4800 \edef\x{#1}%
4801 \@onelevel@sanitize\x
4802 \edef\x{.x$}%
4803 \edef\y{#2}%
4804 \@onelevel@sanitize\y
4805 \edef\y{.y$}%
4806 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
4807 \endgroup
4808 \ifx\relax##2\relax
4809 \expandafter\ltx@secondoftwo
4810 \else
4811 \expandafter\ltx@firstoftwo
4812 \fi
4813 }%
4814 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
4815 }

4816 \def\Hy@StringLocalhost{localhost}
4817 \@onelevel@sanitize\Hy@StringLocalhost
4818 \def\Hy@CleanupFile#1{%
4819 \edef#1{#1}%
4820 \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
4821 }
4822 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
4823 \begingroup
4824 \toks@{\endgroup}%
4825 \def\x{#1}%
4826 \ifx\x\@empty
4827 \def\x{#2}%
4828 \ifx\x\@empty
4829 \toks@{\endgroup\def#5{/#3}}%
4830 \else
4831 \@onelevel@sanitize\x
4832 \ifx\x\Hy@StringLocalhost
4833 \toks@{\endgroup\def#5{/#3}}%
4834 \fi
4835 \fi
4836 \fi
4837 \the\toks@
4838 }

```

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.

```

4839 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
4840 \long\def\hyper@@anchor#1\relax#2#3\relax{%
4841 \ifx\\#1\\%

```

```

4842 #2\Hy@Warning{Ignoring empty anchor}%
4843 \else
4844 \def\anchor@spot{#2#3}%
4845 \let\put@me@back\@empty
4846 \ifx\relax#2\relax
4847 \else
4848 \ifHy@nesting
4849 \else
4850 \ifcat a\noexpand#2\relax
4851 \else
4852 \ifcat 0\noexpand#2 \relax
4853 \else
4854 % \typeout{Anchor start is not alphanumeric %
4855 % on input line\the\inputlineno%
4856 % }%
4857 \let\anchor@spot\@empty
4858 \def\put@me@back{#2#3}%
4859 \fi
4860 \fi
4861 \fi
4862 \fi
4863 \ifHy@activeanchor
4864 \anchor@spot
4865 \else
4866 \hyper@anchor{#1}%
4867 \fi
4868 \expandafter\put@me@back
4869 \fi
4870 \let\anchor@spot\@empty
4871 }
4872 \def\anchor@spot{}

```

## 18 Compatibility with the *LT<sub>ε</sub>X2html* package

Map our macro names on to Nikos', so that documents prepared for that system will work without change.

Note, however, that the whole complicated structure for segmenting documents is not supported; it is assumed that the user will load `html.sty` first, and then `hyperref.sty`, so that the definitions in `html.sty` take effect, and are then overridden in a few circumstances by this package.

```

4873 \let\htmladding\hyperimage
4874 \def\htmladdnormallink#1#2{\href{#2}{#1}}
4875 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
4876 \def\htmlref#1#2{% anchor text, label
4877 \label@hyperref[{#2}]{#1}%
4878 }

```

This is really too much. The *LT<sub>ε</sub>X2html* package defines its own `\hyperref` command, with a different syntax. Was this always here? Its weird, anyway. We interpret it in the 'printed' way, since we are about fidelity to the page.

```

4879 \def\@latextohtmlX{%
4880 \let\hhyperref\hyperref
4881 \def\hyperref##1##2##3##4{% anchor text for HTML
4882 % text to print before label in print
4883 % label

```

```

4884          % post-label text in print
4885    ##2\ref{##4}##3%
4886  }%
4887 }

```

## 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.

```

4888 \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
4889 \def\HyField@NewFlag#1#2{%
4890   \lowercase{\HyField@NewOption{#2}}%
4891   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
4892 }

```

```

\HyField@NewFlagOnly
4893 \def\HyField@NewFlagOnly#1#2{%
4894   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
4895 }

```

```

\HyField@NewOption #1: option name
4896 \def\HyField@NewOption#1{%
4897   \expandafter\newif\csname ifFld@#1\endcsname
4898   \define@key{Field}{#1}[true]{%
4899     \lowercase{\Field@boolkey{##1}}{#1}%
4900   }%
4901 }

```

\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
4902 \def\HyField@NewBitsetFlag#1#2#3#4{%
4903   \begingroup
4904     \count@=#4\relax
4905     \advance\count@\m@ne
4906     \def\x##1{%
4907       \endgroup
4908       \expandafter\def\csname HyField@#3@#1\endcsname{##1}%

```

```

4909 \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
4910 \expandafter\edef\csname HyField@#3@##1\endcsname{%
4911 (\number#4) #2%
4912 }%
4913 \else
4914 \expandafter\edef\csname HyField@#3@##1\endcsname{%
4915 \csname HyField@#3@##1\endcsname
4916 /#2%
4917 }%
4918 \fi
4919 }%
4920 \expandafter\x\expandafter{\the\count@}%
4921 }

```

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

```

4922 \def\HyField@UseFlag#1#2{%
4923 \lowercase{\HyField@@UseFlag{#2}}{#1}%
4924 }

```

\HyField@@UseFlag

```

4925 \def\HyField@@UseFlag#1#2{%
4926 \bitsetSetValue{HyField@#2}{%
4927 \csname HyField@#2@#1\endcsname
4928 }{%
4929 \csname ifFld@#1\endcsname 1\else 0\fi
4930 }%
4931 }

```

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

```

4932 \def\HyField@SetFlag#1#2{%
4933 \lowercase{\HyField@@SetFlag{#2}}{#1}%
4934 }

```

\HyField@@SetFlag

```

4935 \def\HyField@@SetFlag#1#2{%
4936 \bitsetSetValue{HyField@#2}{%
4937 \csname HyField@#2@#1\endcsname
4938 }{1}%
4939 }

```

\HyField@PrintFlags

```

4940 \def\HyField@PrintFlags#1#2{%
4941 \ifHy@verbose
4942 \begingroup
4943 \let\Hy@temp\empty
4944 \let\MessageBreak\relax
4945 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
4946 \bitsetGetSetBitList{HyField@#1}\do{%
4947 \edef\Hy@temp{%
4948 \Hy@temp
4949 \csname HyField@#1@\x\endcsname\MessageBreak
4950 }%
4951 }%
4952 \edef\x{\endgroup
4953 \noexpand\Hy@Info{%
4954 Field flags: %

```

```

4955     \expandafter\ifx\@car#1\@nil S\else/\fi
4956     #1 %
4957     \bitsetGetDec{HyField@#1} %
4958     (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
4959     \Hy@temp
4960     for #2%
4961     }%
4962     }\x
4963     \fi
4964 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

4965 \HyField@NewFlag{Ff}{ReadOnly}{1}
4966 \HyField@NewFlag{Ff}{Required}{2}
4967 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

4968 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
4969 \HyField@NewFlag{Ff}{Radio}{16}
4970 \HyField@NewFlag{Ff}{Pushbutton}{17}
4971 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

4972 \HyField@NewFlag{Ff}{Multiline}{13}
4973 \HyField@NewFlag{Ff}{Password}{14}
4974 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
4975 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
4976 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
4977 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
4978 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

4979 \HyField@NewFlag{Ff}{Combo}{18}
4980 \HyField@NewFlag{Ff}{Edit}{19}
4981 \HyField@NewFlag{Ff}{Sort}{20}
4982 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
4983 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
4984 \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.

```

4985 \newif\ifFld@popdown
4986 \define@key{Field}{popdown}[true]{%
4987   \lowercase{\Field@boolkey{#1}}{popdown}%
4988 }

```

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.

```

4989 \HyField@NewFlag{F}{Invisible}{1}
4990 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
4991 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
4992 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2

```

```

4993 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
4994 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
4995 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
4996 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
4997 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

4998 \ifHy@pdfa
4999 \def\HyField@PDFAFflagWarning#1#2{%
5000   \Hy@Warning{%
5001     PDF/A: Annotation flag '#1' must\MessageBreak
5002     be set to '#2'%
5003   }%
5004 }%
5005 \Fld@invisiblefalse
5006 \def\Fld@invisibletrue{%
5007   \HyField@PDFAFflagWarning{invisible}{false}%
5008 }%
5009 \Fld@hiddenfalse
5010 \def\Fld@hiddentrue{%
5011   \HyField@PDFAFflagWarning{hidden}{false}%
5012 }%
5013 \Fld@printtrue
5014 \def\Fld@printfalse{%
5015   \HyField@PDFAFflagWarning{print}{true}%
5016 }%
5017 \Fld@nozoomtrue
5018 \def\Fld@nozoomfalse{%
5019   \HyField@PDFAFflagWarning{nozoom}{true}%
5020 }%
5021 \Fld@norotatetrue
5022 \def\Fld@norotatefalse{%
5023   \HyField@PDFAFflagWarning{norotate}{true}%
5024 }%
5025 \Fld@noviewfalse
5026 \def\Fld@noviewtrue{%
5027   \HyField@PDFAFflagWarning{noview}{false}%
5028 }%
5029 \fi

```

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

```

5030 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5031 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5032 \HyField@NewFlag{Submit}{GetMethod}{4}
5033 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5034 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5035 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
5036 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5037 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5038 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5039 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5040 \HyField@NewFlag{Submit}{ExclFKey}{12}
5041 \HyField@NewFlag{Submit}{EmbedForm}{14}

5042 \define@key{Field}{export}{%
5043   \lowercase{\def\Hy@temp{#1}}%
5044   \@ifundefined{Fld@export@Hy@temp}{%
5045     \@onelevel@sanitize\Hy@temp
5046     \Hy@Error{%
5047       Unknown export format '\Hy@temp'\MessageBreak

```



```

5048     Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
5049   }\@ehc
5050 }{%
5051   \let\Fld@export\Hy@temp
5052 }%
5053 }
5054 \def\Fld@export{fdf}
5055 \@namedef{Fld@export@fdf}{0}%
5056 \@namedef{Fld@export@html}{1}%
5057 \@namedef{Fld@export@xfdf}{2}%
5058 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

5059 \def\HyField@FlagsSubmit{%
5060   \bitsetReset{HyField@Submit}%
5061   \ifcase\@nameuse{Fld@export@\Fld@export} %
5062     % FDF
5063     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5064     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5065     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5066     \HyField@UseFlag{Submit}{IncludeAnnotations}%
5067     \HyField@UseFlag{Submit}{CanonicalFormat}%
5068     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5069     \HyField@UseFlag{Submit}{ExclFKey}%
5070     \HyField@UseFlag{Submit}{EmbedForm}%
5071   \or % HTML
5072     \HyField@SetFlag{Submit}{ExportFormat}%
5073     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5074     \HyField@UseFlag{Submit}{GetMethod}%
5075     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5076     \HyField@UseFlag{Submit}{CanonicalFormat}%
5077   \or % XFDF
5078     \HyField@SetFlag{Submit}{XFDF}%
5079     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5080     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5081     \HyField@UseFlag{Submit}{CanonicalFormat}%
5082   \or % PDF
5083     \HyField@SetFlag{Submit}{SubmitPDF}%
5084     \HyField@UseFlag{Submit}{GetMethod}%
5085   \fi
5086   \HyField@PrintFlags{Submit}{submit button field}%
5087   \bitsetIsEmpty{HyField@Submit}{%
5088     \def\Fld@submitflags{%
5089     }{%
5090     \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}}%
5091   }%
5092 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5093 \def\HyField@FlagsAnnot#1{%
5094   \bitsetReset{HyField@F}%
5095   \HyField@UseFlag{F}{Invisible}%

```

```

5096 \HyField@UseFlag{F}{Hidden}%
5097 \HyField@UseFlag{F}{Print}%
5098 \HyField@UseFlag{F}{NoZoom}%
5099 \HyField@UseFlag{F}{NoRotate}%
5100 \HyField@UseFlag{F}{NoView}%
5101 \HyField@UseFlag{F}{Locked}%
5102 \HyField@UseFlag{F}{ToggleNoView}%
5103 \HyField@UseFlag{F}{LockedContents}%
5104 \HyField@PrintFlags{F}{#1}%
5105 \bitsetIsEmpty{HyField@F}{%
5106   \def\Fld@annotflags{%
5107   }{%
5108     \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}}%
5109   }%
5110 }

```

#### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5111 \def\HyField@FlagsPushButton{%
5112   \HyField@FlagsAnnot{push button field}%
5113   \bitsetReset{HyField@Ff}%
5114   \HyField@UseFlag{Ff}{ReadOnly}%
5115   \HyField@UseFlag{Ff}{Required}%
5116   \HyField@UseFlag{Ff}{NoExport}%
5117   \HyField@SetFlag{Ff}{PushButton}%
5118   \HyField@PrintFlags{Ff}{push button field}%
5119   \bitsetIsEmpty{HyField@Ff}{%
5120     \def\Fld@flags{%
5121     }{%
5122       \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5123     }%
5124   }

```

#### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

5125 \def\HyField@FlagsCheckBox{%
5126   \HyField@FlagsAnnot{check box field}%
5127   \bitsetReset{HyField@Ff}%
5128   \HyField@UseFlag{Ff}{ReadOnly}%
5129   \HyField@UseFlag{Ff}{Required}%
5130   \HyField@UseFlag{Ff}{NoExport}%
5131   \HyField@PrintFlags{Ff}{check box field}%
5132   \bitsetIsEmpty{HyField@Ff}{%
5133     \def\Fld@flags{%
5134     }{%
5135       \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5136     }%
5137   }

```

#### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

5138 \def\HyField@FlagsRadioButton{%
5139   \HyField@FlagsAnnot{radio button field}%

```

```

5140 \bitsetReset{HyField@Ff}%
5141 \HyField@UseFlag{Ff}{ReadOnly}%
5142 \HyField@UseFlag{Ff}{Required}%
5143 \HyField@UseFlag{Ff}{NoExport}%
5144 \HyField@UseFlag{Ff}{NoToggleToOff}%
5145 \HyField@SetFlag{Ff}{Radio}%
5146 \HyField@UseFlag{Ff}{RadiosInUnison}%
5147 \HyField@PrintFlags{Ff}{radio button field}%
5148 \bitsetIsEmpty{HyField@Ff}{%
5149   \def\Fld@flags{%
5150   }{%
5151   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5152 }%
5153 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

5154 \def\HyField@FlagsText{%
5155   \HyField@FlagsAnnot{text field}%
5156   \bitsetReset{HyField@Ff}%
5157   \HyField@UseFlag{Ff}{ReadOnly}%
5158   \HyField@UseFlag{Ff}{Required}%
5159   \HyField@UseFlag{Ff}{NoExport}%
5160   \HyField@UseFlag{Ff}{Multiline}%
5161   \HyField@UseFlag{Ff}{Password}%
5162   \HyField@UseFlag{Ff}{FileSelect}%
5163   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5164   \HyField@UseFlag{Ff}{DoNotScroll}%
5165   \ifFld@comb
5166     \ifcase0\ifFld@multiline
5167       \else\ifFld@password
5168       \else\ifFld@fileselect
5169       \else 1\fi\fi\fi\relax
5170     \Hy@Error{%
5171       Field option ‘comb’ cannot used together with\MessageBreak
5172       ‘multiline’, ‘password’, or ‘fileselect’%
5173     }\@ehc
5174   \else
5175     \HyField@UseFlag{Ff}{Comb}%
5176   \fi
5177 \fi
5178 \HyField@UseFlag{Ff}{RichText}%
5179 \HyField@PrintFlags{Ff}{text field}%
5180 \bitsetIsEmpty{HyField@Ff}{%
5181   \def\Fld@flags{%
5182   }{%
5183   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5184 }%
5185 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5186 \def\HyField@FlagsChoice{%
5187   \HyField@FlagsAnnot{choice field}%

```

```

5188 \bitsetReset{HyField@Ff}%
5189 \HyField@UseFlag{Ff}{ReadOnly}%
5190 \HyField@UseFlag{Ff}{Required}%
5191 \HyField@UseFlag{Ff}{NoExport}%
5192 \HyField@UseFlag{Ff}{Combo}%
5193 \ifFld@combo
5194   \HyField@UseFlag{Ff}{Edit}%
5195 \fi
5196 \HyField@UseFlag{Ff}{Sort}%
5197 \HyField@UseFlag{Ff}{MultiSelect}%
5198 \ifFld@combo
5199   \ifFld@edit
5200     \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5201   \fi
5202 \fi
5203 \HyField@UseFlag{Ff}{CommitOnSelChange}%
5204 \HyField@PrintFlags{Ff}{choice field}%
5205 \bitsetIsEmpty{HyField@Ff}{%
5206   \def\Fld@flags{%
5207 }{%
5208   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5209 }%
5210 }

```

## 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.

```

5211 \def\HyField@PDFChoices#1{%
5212   \begingroup
5213   \gdef\Fld@choices{%
5214     \def\HyTmp@Optlist{%
5215       \let\HyTmp@Optitem\relax
5216       \count@=0 %
5217       \kv@parse{#1}{%
5218         \Hy@pdfstringdef\kv@key\kv@key
5219         \ifx\kv@value\relax
5220           \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
5221             \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
5222           \else
5223             \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5224           \fi
5225         \else
5226           \Hy@pdfstringdef\kv@value\kv@value
5227           \xdef\Fld@choices{\Fld@choices[(\kv@value)(\kv@key)]}%
5228         \fi
5229       \edef\HyTmp@Optlist{%
5230         \HyTmp@Optlist
5231         \HyTmp@Optitem{\the\count@}{\kv@key}0%
5232       }%
5233       \advance\count@ by 1 %
5234       \@gobbletwo
5235     }%
5236     \xdef\Fld@choices{/Opt[\Fld@choices]}%
5237   \ifFld@multiselect
5238     \HyField@@PDFChoices{DV}\Fld@default

```

```

5239 \HyField@@PDFChoices{V}\Fld@value
5240 \else
5241 \ifx\Fld@default\relax
5242 \else
5243 \pdfstringdef\Hy@gtemp\Fld@default
5244 \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5245 \fi
5246 \ifx\Fld@value\relax
5247 \else
5248 \pdfstringdef\Hy@gtemp\Fld@value
5249 \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5250 \fi
5251 \fi
5252 \endgroup
5253 }

```

\HyField@@PDFChoices

```

5254 \def\HyField@@PDFChoices#1#2{%
5255 \ifx#2\relax
5256 \else
5257 \count@=0 %
5258 \def\HyTmp@optitem##1##2##3{%
5259 \def\HyTmp@key{##2}%
5260 \ifx\HyTmp@key\Hy@gtemp
5261 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5262 \HyTmp@optlist
5263 \HyTmp@optitem{##1}{##2}1%
5264 }%
5265 \let\HyTmp@found=Y%
5266 \else
5267 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5268 \HyTmp@optlist
5269 \HyTmp@optitem{##1}{##2}##3%
5270 }%
5271 \fi
5272 }%
5273 \expandafter\comma@parse\expandafter{#2}{%
5274 \pdfstringdef\Hy@gtemp\comma@entry
5275 \let\HyTmp@found=N %
5276 \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5277 \HyTmp@optlist
5278 \ifx\HyTmp@found Y%
5279 \advance\count@ by 1 %
5280 \else
5281 \@onelevel@sanitize\comma@entry
5282 \PackageWarning{hyperref}{%
5283 \string\ChoiceBox: Ignoring value '\comma@entry',%
5284 \MessageBreak
5285 it cannot be found in the choices%
5286 }%
5287 \fi
5288 \@gobble
5289 }%
5290 \def\HyTmp@optitem##1##2##3{%
5291 \ifnum##3=1 %
5292 (##2)%
5293 \fi

```

```

5294 }%
5295 \ifcase\count@
5296 \or
5297   \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5298 \else
5299   \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
5300 \ifx#1V%
5301   \def\HyTmp@optitem##1##2##3{%
5302     \ifnum##3=1 %
5303       \@firstofone{ ##1}%
5304     \fi
5305   }%
5306 \edef\HyTmp@optlist{\HyTmp@optlist}%
5307 \xdef\Fld@choices{%
5308   \Fld@choices
5309   /I[\expandafter\@firstofone\HyTmp@optlist]%
5310 }%
5311 \fi
5312 \fi
5313 \fi
5314 }

```

## 19.3 Forms

\HyField@SetKeys

```

5315 \def\HyField@SetKeys{%
5316   \kvsetkeys{Field}%
5317 }

5318 \newif\ifFld@checked
5319 \newif\ifFld@disabled
5320 \Fld@checkedfalse
5321 \Fld@disabledfalse
5322 \newcount\Fld@menulength
5323 \newdimen\Fld@Width
5324 \newdimen\Fld@charsize
5325 \Fld@charsize=10\p@
5326 \def\Fld@maxlen{0}
5327 \def\Fld@align{0}
5328 \def\Fld@color{0 0 0 rg}
5329 \def\Fld@bcolor{1 1 1}
5330 \def\Fld@bordercolor{1 0 0}
5331 \def\Fld@bordersep{1\p@}
5332 \def\Fld@borderwidth{1}
5333 \def\Fld@borderstyle{S}
5334 \def\Fld@cbsymbol{4}
5335 \def\Fld@radiosymbol{H}
5336 \def\Fld@rotation{0}
5337 \def\Fld@Form{\ifnextchar[{\@Form}{\@Form[]}}
5338 \def\endForm{\@endForm}
5339 \newif\ifForm@html
5340 \Form@htmlfalse
5341 \def\Fld@Form@boolkey#1#2{%
5342   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5343 }
5344 \define@key{Form}{action}{%
5345   \hyper@normalise\Hy@DefFormAction{#1}%

```

```

5346 }
5347 \def\Hy@DefFormAction{\def\Form@action}
5348 \def\enc@html{html}
5349 \define@key{Form}{encoding}{%
5350   \def\Hy@tempa{#1}%
5351   \ifx\Hy@tempa\enc@html
5352     \Form@htmltrue
5353     \def\Fld@export{html}%
5354   \else
5355     \Hy@Warning{%
5356       Form 'encoding' key with \MessageBreak
5357       unknown value '#1'%
5358     }%
5359     \Form@htmlfalse
5360   \fi
5361 }
5362 \define@key{Form}{method}{%
5363   \lowercase{\def\Hy@temp{#1}}%
5364   \@ifundefined{Form@method@\Hy@temp}{%
5365     \@onelevel@sanitize\Hy@temp
5366     \Hy@Error{%
5367       Unknown method '\Hy@temp'.\MessageBreak
5368       Known values are 'post' and 'get'%
5369     } \@ehc
5370   }{%
5371     \let\Form@method\Hy@temp
5372     \ifcase\@nameuse{Form@method@\Hy@temp} %
5373       \Fld@getmethodfalse
5374     \else
5375       \Fld@getmethodtrue
5376     \fi
5377   }%
5378 }
5379 \def\Form@method{}
5380 \@namedef{Form@method@post}{0}
5381 \@namedef{Form@method@get}{1}
5382 \def\Fld@boolkey#1#2{%
5383   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5384 }
5385 \ifHy@texht
5386   \newtoks\Field@toks
5387   \Field@toks={ }%
5388   \def\Field@addtoks#1#2{%
5389     \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
5390     \@processme
5391   }%
5392 \else
5393   \def\Hy@WarnHTMLFieldOption#1{%
5394     \Hy@Warning{%
5395       HTML field option '#1'\MessageBreak
5396       is ignored%
5397     }%
5398   }%
5399 \fi
5400 \def\Fld@checkequals#1=#2=#3\\{%
5401   \def\@currDisplay{#1}%
5402   \ifx\#2\\%

```

```

5403 \def\@currValue{#1}%
5404 \else
5405 \def\@currValue{#2}%
5406 \fi
5407 }
5408 \define@key{Field}{loc}{%
5409 \def\Fld@loc{#1}%
5410 }
5411 \define@key{Field}{checked}[true]{%
5412 \lowercase{\Field@boolkey{#1}}{checked}%
5413 }
5414 \define@key{Field}{disabled}[true]{%
5415 \lowercase{\Field@boolkey{#1}}{disabled}%
5416 }
5417 \ifHy@texht
5418 \define@key{Field}{accesskey}{%
5419 \Field@addtoks{accesskey}{#1}%
5420 }%
5421 \define@key{Field}{tabkey}{%
5422 \Field@addtoks{tabkey}{#1}%
5423 }%
5424 \else
5425 \define@key{Field}{accesskey}{%
5426 \Hy@WarnHTMLFieldOption{accesskey}%
5427 }%
5428 \define@key{Field}{tabkey}{%
5429 \Hy@WarnHTMLFieldOption{tabkey}%
5430 }%
5431 \fi
5432 \define@key{Field}{name}{%
5433 \def\Fld@name{#1}%
5434 }
5435 \define@key{Field}{width}{%
5436 \def\Fld@width{#1}%
5437 \Field@Width#1\setbox0=\hbox{m}%
5438 }
5439 \define@key{Field}{maxlen}{%
5440 \def\Fld@maxlen{#1}%
5441 }
5442 \define@key{Field}{menulength}{%
5443 \Fld@menulength=#1\relax
5444 }
5445 \define@key{Field}{height}{%
5446 \def\Fld@height{#1}%
5447 }
5448 \define@key{Field}{charsize}{%
5449 \Fld@charsize#1%
5450 }
5451 \define@key{Field}{borderwidth}{%
5452 \def\Fld@borderwidth{#1}%
5453 }
5454 \define@key{Field}{borderstyle}{%
5455 \def\Fld@borderstyle{#1}%
5456 }
5457 \define@key{Field}{bordersep}{%
5458 \def\Fld@bordersep{#1}%
5459 }

```



```

5460 \define@key{Field}{default}{%
5461   \def\Fld@default{#1}%
5462 }
5463 \define@key{Field}{align}{%
5464   \def\Fld@align{#1}%
5465 }
5466 \define@key{Field}{value}{%
5467   \def\Fld@value{#1}%
5468 }
5469 \define@key{Field}{checkboxsymbol}{%
5470   \Fld@DingDef\Fld@cbsymbol{#1}%
5471 }
5472 \define@key{Field}{radiosymbol}{%
5473   \Fld@DingDef\Fld@radiosymbol{#1}%
5474 }
5475 \def\Fld@DingDef#1#2{%
5476   \def\Fld@temp{}%
5477   \Fld@@DingDef#2\ding{}\@nil
5478   \let#1\Fld@temp
5479 }
5480 \def\Fld@@DingDef#1\ding#2#3\@nil{%
5481   \expandafter\def\expandafter\Fld@temp\expandafter{%
5482     \Fld@temp
5483     #1%
5484   }%
5485   \ifx\\#3\\%
5486     \expandafter\@gobble
5487   \else
5488     \begingroup
5489     \lccode'0=#2\relax
5490     \lowercase{\endgroup
5491       \expandafter\def\expandafter\Fld@temp\expandafter{%
5492         \Fld@temp
5493         0%
5494       }%
5495     }%
5496     \expandafter\@firstofone
5497   \fi
5498   {%
5499     \Fld@@DingDef#3\@nil
5500   }%
5501 }
5502 \define@key{Field}{rotation}{%
5503   \def\Fld@rotation{#1}%
5504 }
5505 \define@key{Field}{backgroundcolor}{%
5506   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
5507 }
5508 \define@key{Field}{bordercolor}{%
5509   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
5510 }
5511 \define@key{Field}{color}{%
5512   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
5513 }
5514 \def\Fld@onclick@code{}
5515 \def\Fld@format@code{}

```

```

5516 \def\Fld@validate@code{}
5517 \def\Fld@calculate@code{}
5518 \def\Fld@keystroke@code{}
5519 \def\Fld@onfocus@code{}
5520 \def\Fld@onblur@code{}
5521 \def\Fld@onmousedown@code{}
5522 \def\Fld@onmouseup@code{}
5523 \def\Fld@onenter@code{}
5524 \def\Fld@onexit@code{}
5525 \def\Hy@temp#1{%
5526   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
5527 }
5528 \def\Hy@@temp#1#2{%
5529   \ifHy@pdfa
5530     \define@key{Field}{#2}{%
5531       \Hy@Error{%
5532         PDF/A: Additional action ‘#2’ is prohibited%
5533       }\@ehc
5534     }%
5535   \else
5536     \define@key{Field}{#2}{%
5537       \def#1{##1}%
5538     }%
5539   \fi
5540 }
5541 \Hy@temp{keystroke}
5542 \Hy@temp{format}
5543 \Hy@temp{validate}
5544 \Hy@temp{calculate}
5545 \Hy@temp{onfocus}
5546 \Hy@temp{onblur}
5547 \Hy@temp{onenter}
5548 \Hy@temp{onexit}
5549 \ifHy@texht
5550   \def\Hy@temp#1{%
5551     \define@key{Field}{#1}{%
5552       \Field@addtoks{#1}{##1}%
5553     }%
5554   }%
5555 \else
5556   \def\Hy@temp#1{%
5557     \define@key{Field}{#1}{%
5558       \Hy@WarnHTMLFieldOption{#1}%
5559     }%
5560   }%
5561 \fi
5562 \Hy@temp{ondblclick}
5563 \Hy@temp{onmousedown}
5564 \Hy@temp{onmouseup}
5565 \Hy@temp{onmouseover}
5566 \Hy@temp{onmousemove}
5567 \Hy@temp{onmouseout}
5568 \Hy@temp{onkeydown}
5569 \Hy@temp{onkeyup}
5570 \Hy@temp{onselect}
5571 \Hy@temp{onchange}
5572 \Hy@temp{onkeypress}

```

```

5573 \ifHy@texht
5574   \define@key{Field}{onclick}{%
5575     \Field@addtoks{onclick}{#1}%
5576   }%
5577 \else
5578   \ifHy@pdfa
5579     \define@key{Field}{onclick}{%
5580       \Hy@Error{%
5581         PDF/A: Action 'onclick' is prohibited%
5582       }\@ehc
5583     }%
5584   \else
5585     \define@key{Field}{onclick}{%
5586       \def\Fld@onclick@code{#1}%
5587     }%
5588   \fi
5589 \fi

5590 \DeclareRobustCommand\TextField{%
5591   \@ifnextchar[{\@TextField}{\@TextField[]}%
5592 }
5593 \DeclareRobustCommand\ChoiceMenu{%
5594   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
5595 }
5596 \DeclareRobustCommand\CheckBox{%
5597   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
5598 }
5599 \DeclareRobustCommand\PushButton{%
5600   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
5601 }
5602 \DeclareRobustCommand\Gauge{%
5603   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
5604 }
5605 \DeclareRobustCommand\Submit{%
5606   \@ifnextchar[{\@Submit}{\@Submit[]}%
5607 }
5608 \DeclareRobustCommand\Reset{%
5609   \@ifnextchar[{\@Reset}{\@Reset[]}%
5610 }
5611 \def\LayoutTextField#1#2{% label, field
5612   #1 #2%
5613 }
5614 \def\LayoutChoiceField#1#2{% label, field
5615   #1 #2%
5616 }
5617 \def\LayoutCheckField#1#2{% label, field
5618   #1 #2%
5619 }
5620 \def\LayoutPushButtonField#1{% button
5621   #1%
5622 }
5623 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5624 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5625 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5626 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5627 \def\MakeButtonField#1{%
5628   \sbox0{%
5629     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%

```

```

5630 }%
5631 \@tempdima\ht0 %
5632 \advance\@tempdima by \Fld@borderwidth bp %
5633 \advance\@tempdima by \Fld@borderwidth bp %
5634 \ht0\@tempdima
5635 \@tempdima\dp0 %
5636 \advance\@tempdima by \Fld@borderwidth bp %
5637 \advance\@tempdima by \Fld@borderwidth bp %
5638 \dp0\@tempdima
5639 \box0\relax
5640 }
5641 \def\DefaultHeightofSubmit{14pt}
5642 \def\DefaultWidthofSubmit{2cm}
5643 \def\DefaultHeightofReset{14pt}
5644 \def\DefaultWidthofReset{2cm}
5645 \def\DefaultHeightofCheckBox{\baselineskip}
5646 \def\DefaultWidthofCheckBox{\baselineskip}
5647 \def\DefaultHeightofChoiceMenu{\baselineskip}
5648 \def\DefaultWidthofChoiceMenu{\baselineskip}
5649 \def\DefaultHeightofText{\baselineskip}
5650 \def\DefaultHeightofTextMultiline{4\baselineskip}
5651 \def\DefaultWidthofText{3cm}
5652 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
5653 \def\DefaultOptionsofReset{print,name=Reset,noexport}
5654 \def\DefaultOptionsofPushButton{print}
5655 \def\DefaultOptionsofCheckBox{print}
5656 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

5657 \def\DefaultOptionsofListBox{print}
5658 \def\DefaultOptionsofComboBox{print,edit,sort}
5659 \def\DefaultOptionsofPopdownBox{print}
5660 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

5661 \ifHy@figures
5662 \Hy@Info{Hyper figures ON}%
5663 \else
5664 \Hy@Info{Hyper figures OFF}%
5665 \fi
5666 \ifHy@nesting
5667 \Hy@Info{Link nesting ON}%
5668 \else
5669 \Hy@Info{Link nesting OFF}%
5670 \fi
5671 \ifHy@hyperindex
5672 \Hy@Info{Hyper index ON}%
5673 \else
5674 \Hy@Info{Hyper index OFF}%
5675 \fi
5676 \ifHy@backref
5677 \Hy@Info{backreferencing ON}%
5678 \else
5679 \Hy@Info{backreferencing OFF}%
5680 \fi
5681 \ifHy@colorlinks

```

```

5682 \Hy@Info{Link coloring ON}%
5683 \else
5684 \Hy@Info{Link coloring OFF}%
5685 \fi
5686 \ifHy@ocgcolorlinks
5687 \Hy@Info{Link coloring with OCG ON}%
5688 \else
5689 \Hy@Info{Link coloring with OCG OFF}%
5690 \fi
5691 \ifHy@pdfa
5692 \Hy@Info{PDF/A mode ON}%
5693 \else
5694 \Hy@Info{PDF/A mode OFF}%
5695 \fi

```

## 21 Low-level utility macros

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

```

5696 \edef\hyper@hash{\string#}
5697 \edef\hyper@tilde{\string~}
5698 \edef\hyper@quote{\string"}

```

Support \label before \begin{document}.

```

5699 \def\@currentHref{Doc-Start}
5700 \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.

```

5701 \Hy@AtBeginDocument{%
5702 \Hy@pdfstringtrue
5703 \PDF@SetupDoc
5704 \let\PDF@SetupDoc\@empty
5705 \Hy@DisableOption{pdfpagescrop}%
5706 \Hy@DisableOption{pdfpagemode}%
5707 \Hy@DisableOption{pdfnonfullscreenpagemode}%
5708 \Hy@DisableOption{pdfdirection}%
5709 \Hy@DisableOption{pdfviewarea}%
5710 \Hy@DisableOption{pdfviewclip}%
5711 \Hy@DisableOption{pdfprintarea}%
5712 \Hy@DisableOption{pdfprintclip}%
5713 \Hy@DisableOption{pdfprintscaling}%
5714 \Hy@DisableOption{pdfduplex}%
5715 \Hy@DisableOption{pdfpicktraybypdfsize}%
5716 \Hy@DisableOption{pdfprintpagerange}%
5717 \Hy@DisableOption{pdfnumcopies}%
5718 \Hy@DisableOption{pdfstartview}%
5719 \Hy@DisableOption{pdfstartpage}%
5720 \Hy@DisableOption{pdftoolbar}%
5721 \Hy@DisableOption{pdfmenubar}%
5722 \Hy@DisableOption{pdfwindowui}%
5723 \Hy@DisableOption{pdfitwindow}%
5724 \Hy@DisableOption{pdfcenterwindow}%
5725 \Hy@DisableOption{pdfdisplaydoctitle}%
5726 \Hy@DisableOption{pdfpagelayout}%
5727 \Hy@DisableOption{pdflang}%
5728 \Hy@DisableOption{baseurl}%
5729 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
5730 \Hy@pdfstringfalse

```



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:

```

5773 <*nohyperref>
5774 \RequirePackage{letltxmacro}[2008/06/13]
5775 \let\hyper@@anchor\@gobble
5776 \def\hyper@link#1#2#3{#3}%
5777 \let\hyper@anchorstart\@gobble
5778 \let\hyper@anchorend\@empty
5779 \let\hyper@linkstart\@gobbletwo
5780 \let\hyper@linkend\@empty
5781 \def\hyper@linkurl#1#2{#1}%
5782 \def\hyper@linkfile#1#2#3{#1}%
5783 \def\hyper@link@{#1}#2#3{#3}%
5784 \let\PDF@SetupDoc\@empty
5785 \let\PDF@FinishDoc\@empty
5786 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

5787 \def\Acrobatmenu#1#2{\leavevmode#2}
5788 \let\pdfstringdefDisableCommands\@gobbletwo
5789 \let\texorpdfstring\@firstoftwo
5790 \let\pdfbookmark\@undefined
5791 \newcommand\pdfbookmark[3]{}{}
5792 \let\phantomsection\@empty
5793 \let\hypersetup\@gobble
5794 \let\hyperbaseurl\@gobble
5795 \newcommand*{\href}[3]{}{#3}
5796 \let\hyperdef\@gobbletwo
5797 \let\hyperlink\@gobble
5798 \let\hypertarget\@gobble
5799 \def\hyperref{%
5800   \ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
5801 }
5802 \long\def\@gobbleopt[#1]{}
5803 \let\hyperpage\@empty

```

Ignore star from referencing macros:

```

5804 \LetLtxMacro\NoHy@OrgRef\ref
5805 \DeclareRobustCommand*{\ref}{%
5806   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
5807 }
5808 \LetLtxMacro\NoHy@OrgPageRef\pageref
5809 \DeclareRobustCommand*{\pageref}{%
5810   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
5811 }
5812 </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}

```

5813 <*package>

```

5814 \Hy@AtBeginDocument{%

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

Write some stuff into the aux file so if the next run is done without hyperref, then \contentsline and \newlabel are defined to cope with the extra arguments.

```

5815 \if@filesw
5816 \ifHy@typexml
5817 \immediate\closeout\@mainaux
5818 \immediate\openout\@mainaux\jobname.aux\relax
5819 \immediate\write\@auxout{<relaxxml>\relax}%
5820 \fi
5821 \immediate\write\@auxout{%
5822 \string\providecommand\string\HyperFirstAtBeginDocument{%
5823 \string\AtBeginDocument}^^J%
5824 \string\HyperFirstAtBeginDocument{%
5825 \string\ifx\string\hyper@anchor\string\@undefined^^J%
5826 \string\global\string\let\string\oldcontentsline\string\contentsline^^J%
5827 \string\gdef\string\contentsline%
5828 \string#1\string#2\string#3\string#4{%
5829 \string\oldcontentsline%
5830 {\string#1}{\string#2}{\string#3}}^^J%
5831 \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
5832 \string\gdef\string\newlabel\string#1\string#2{%
5833 \string\newlabelxx{\string#1}\string#2}^^J%
5834 \string\gdef\string\newlabelxx%
5835 \string#1\string#2\string#3\string#4\string#5\string#6{%
5836 \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.

```

5837 \string\AtEndDocument{%
5838 \string\ifx\string\hyper@anchor\string\@undefined^^J%
5839 \string\let\string\contentsline\string\oldcontentsline^^J%
5840 \string\let\string\newlabel\string\oldnewlabel^^J%
5841 \string\fi%
5842 }^^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.

```

5843 \string\fi%
5844 }^^J%
5845 \string\global\string\let\string\hyper@last\relax^^J%
5846 \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
5847 }%
5848 \fi
5849 \def\HyperFirstAtBeginDocument#1{#1}%

```

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

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

```

5850 \ifx\hyper@last\@undefined
5851 \def\@starttoc#1{%
5852 \begingroup
5853 \makeatletter
5854 \IfFileExists{\jobname.#1}{%
5855 \Hy@WarningNoLine{%

```



```

5856      old #1 file detected, not used; run LaTeX again%
5857    }%
5858  }{}%
5859  \if@filesw
5860    \expandafter\newwrite\csname tf@#1\endcsname
5861    \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
5862    \fi
5863    \@nobreakfalse
5864  \endgroup
5865 }%
5866 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
5867 \fi
5868 }

```

## 25 Title strings

If options `pdftitle` and `pdfauthor` are not used, these informations for the pdf information dictionary can be extracted by the `nd`

```

5869 \ifHy@usetitle
5870 \let\HyOrg@title\title
5871 \let\HyOrg@author\author
5872 \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
5873 \def\Hy@scanopttitle[#1]{%
5874   \gdef\Hy@title{#1}%
5875   \HyOrg@title{#1}%
5876 }%
5877 \def\Hy@scantitle#1{%
5878   \gdef\Hy@title{#1}%
5879   \HyOrg@title{#1}%
5880 }%
5881 \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
5882 \def\Hy@scanoptauthor[#1]{%
5883   \gdef\Hy@author{#1}%
5884   \HyOrg@author{#1}%
5885 }%
5886 \def\Hy@scanauthor#1{%
5887   \gdef\Hy@author{#1}%
5888   \HyOrg@author{#1}%
5889 }%

```

The case, that `or` is given before `hyperref` is loaded, is much more complicate, because LaTeX initializes the macros `title` and `author` with LaTeX error and warning messages.

```

5890 \begingroup
5891 \def\process@me#1\@nil#2{%
5892 \expandafter\let\expandafter\x\csname @#2\endcsname
5893 \edef\y{\expandafter\strip@prefix\meaning\x}%
5894 \def\c##1##2\@nil{%
5895 \ifx\\##1\\%
5896 \else
5897 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
5898 \expandafter{\x}%
5899 \fi
5900 }%
5901 \expandafter\c\y\relax#1\@nil
5902 }%
5903 \expandafter\process@me\string\@latex@\@nil{title}%

```

```

5904 \expandafter\process@me\string\@latex@\@nil{author}%
5905 \endgroup
5906 \fi
5907 \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.

```

5908 \def\Hy@UseMaketitleString#1{%
5909 \ltx@ifundefined{Hy@#1}{}{}%
5910 \begingroup
5911 \let\Hy@saved@hook\pdfstringdefPreHook
5912 \pdfstringdefDisableCommands{%
5913 \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
5914 \let\newline\\%
5915 }%
5916 \expandafter\ifx\csname @pdf#1\endcsname\@empty
5917 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
5918 \csname Hy@#1\endcsname\@empty
5919 }%
5920 \fi
5921 \global\let\pdfstringdefPreHook\Hy@saved@hook
5922 \endgroup
5923 }%
5924 }
5925 \def\Hy@newline@title#1{ #1}
5926 \def\Hy@newline@author#1{, #1}
5927 \def\Hy@UseMaketitleInfos{%
5928 \Hy@UseMaketitleString{title}%
5929 \Hy@UseMaketitleString{author}%
5930 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

5931 \RequirePackage{atbegshi}[2007/09/09]
5932 \def\Hy@EveryPageHook{}
5933 \def\Hy@EveryPageBoxHook{}
5934 \def\Hy@FirstPageHook{}
5935 \AtBeginShipout{%
5936 \Hy@EveryPageHook
5937 \ifx\Hy@EveryPageBoxHook\@empty
5938 \else
5939 \setbox\AtBeginShipoutBox=\vbox{%
5940 \offinterlineskip
5941 \Hy@EveryPageBoxHook

```

```

5942 \box\AtBeginShipoutBox
5943 }%
5944 \fi
5945 }
5946 \AtBeginShipoutFirst{%
5947 \Hy@FirstPageHook
5948 }
5949 \g@addto@macro\Hy@FirstPageHook{%
5950 \PDF@FinishDoc
5951 \gdef\PDF@FinishDoc{}}%
5952 }

```

## 27.1 PDF /PageLabels

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

```

5953 \ifHy@pagelabels
5954 \begingroup\expandafter\expandafter\expandafter\endgroup
5955 \expandafter\ifx\csname thepage\endcsname\relax
5956 \Hy@pagelabelsfalse
5957 \Hy@WarningNoLine{%
5958 Option 'pdflabels' is turned off\MessageBreak
5959 because \string\thepage\space is undefined%
5960 }%
5961 \csname fi\endcsname
5962 \csname iffalse\expandafter\endcsname
5963 \fi

```

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

```

5964 \def\thispdfpagelabel#1{%
5965 \gdef\HyPL@thisLabel{#1}%
5966 }%
5967 \global\let\HyPL@thisLabel\relax

```

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

```

5968 \def\HyPL@Labels{}%

```

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

```

5969 \newcount\Hy@abspage
5970 \Hy@abspage=0 %

```

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

```

5971 \def\HyPL@LastType{init}%
5972 \def\HyPL@LastNumber{0}%
5973 \def\HyPL@LastPrefix{}%

```

Definitions for the PDF names of the  $\LaTeX$  pendants.

```

5974 \def\HyPL@arabic{D}%
5975 \def\HyPL@Roman{R}%
5976 \def\HyPL@roman{r}%
5977 \def\HyPL@Alph{A}%
5978 \def\HyPL@alph{a}%

```

`\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.

```

5979 \def\HyPL@EveryPage{%
5980 \begingroup

```

```

5981 \ifx\HyPL@thisLabel\relax
5982 \let\HyPL@page\thepage
5983 \else
5984 \let\HyPL@page\HyPL@thisLabel
5985 \global\let\HyPL@thisLabel\relax
5986 \fi
5987 \let\HyPL@Type\relax
5988 \ifnum\the\c@page>0 %
5989 \expandafter\HyPL@CheckThePage\HyPL@page\@nil
5990 \fi
5991 \let\Hy@temp Y%
5992 \ifx\HyPL@Type\HyPL@LastType
5993 \else
5994 \let\Hy@temp N%
5995 \fi
5996 \ifx\HyPL@Type\relax
5997 \pdfstringdef\HyPL@Prefix{\HyPL@page}%
5998 \else
5999 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6000 \fi
6001 \ifx\HyPL@Prefix\HyPL@LastPrefix
6002 \else
6003 \let\Hy@temp N%
6004 \fi
6005 \if Y\Hy@temp
6006 \advance\c@page by -1 %
6007 \ifnum\HyPL@LastNumber=\the\c@page\relax
6008 \else
6009 \let\Hy@temp N%
6010 \fi
6011 \Hy@StepCount\c@page
6012 \fi
6013 \if N\Hy@temp
6014 \ifx\HyPL@Type\relax
6015 \HyPL@storePageLabel{/P(\HyPL@Prefix)}%
6016 \else
6017 \HyPL@storePageLabel{%
6018 \ifx\HyPL@Prefix\@empty
6019 \else
6020 /P(\HyPL@Prefix)%
6021 \fi
6022 /S/\csname HyPL\HyPL@Type\endcsname
6023 \ifnum\the\c@page=1 %
6024 \else
6025 \space/St \the\c@page
6026 \fi
6027 }%
6028 \fi
6029 \fi
6030 \xdef\HyPL@LastNumber{\the\c@page}%
6031 \global\let\HyPL@LastType\HyPL@Type
6032 \global\let\HyPL@LastPrefix\HyPL@Prefix
6033 \endgroup
6034 \Hy@GlobalStepCount\Hy@abspage
6035 }%

```

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

```

6036 \def\HyPL@CheckThePage#1\@nil{%
6037 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6038 }%

```

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

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

```

6039 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6040 \def\Hy@tempa{#4}%
6041 \def\Hy@tempb{\csname\endcsname\c@page}%
6042 \ifx\Hy@tempa\Hy@tempb
6043 \expandafter\ifx\csname HyPL#3\endcsname\relax
6044 \else
6045 \def\HyPL@Type{#3}%
6046 \def\HyPL@Prefix{#2}%
6047 \fi
6048 \else
6049 \begingroup
6050 \let\Hy@next\endgroup
6051 \let\HyPL@found\@undefined
6052 \def\arabic{\HyPL@Format{arabic}}%
6053 \def\Roman{\HyPL@Format{Roman}}%
6054 \def\roman{\HyPL@Format{roman}}%
6055 \def\Alph{\HyPL@Format{Alph}}%
6056 \def\alph{\HyPL@Format{alph}}%
6057 \protected@edef\Hy@temp{#1}%
6058 \ifx\HyPL@found\relax
6059 \toks@\expandafter{\Hy@temp}%
6060 \edef\Hy@next{\endgroup
6061 \noexpand\HyPL@@@CheckThePage\the\toks@
6062 \noexpand\HyPL@found\relax\noexpand\@nil
6063 }%
6064 \fi
6065 \Hy@next
6066 \fi
6067 }%

```

`\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`.

```

6068 \def\HyPL@Format#1#2{%
6069 \ifx\HyPL@found\@undefined
6070 \expandafter\ifx\csname c@#2\endcsname\c@page
6071 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6072 \else
6073 \expandafter\noexpand\csname#1\endcsname{#2}%
6074 \fi
6075 \else
6076 \expandafter\noexpand\csname#1\endcsname{#2}%
6077 \fi
6078 }%

```

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

```

6079 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6080   \def\Hy@tempa{#3}%
6081   \def\Hy@tempb{\HyPL@found\relax}%
6082   \ifx\Hy@tempa\Hy@tempb
6083     \def\HyPL@Type{#2}%
6084     \def\HyPL@Prefix{#1}%
6085   \fi
6086 }%

```

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

```

6087 \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`.

```

6088 \def\HyPL@Useless{0<</S/D>>}%
6089 \@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.

```

6090 \def\HyPL@SetPageLabels{%
6091   \@onelevel@sanitize\HyPL@Labels
6092   \ifx\HyPL@Labels\empty
6093     \else
6094       \ifx\HyPL@Labels\HyPL@Useless
6095       \else
6096         \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6097       \fi
6098     \fi
6099 }%

```

```

6100 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6101 \fi

```

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

```

6102 \Hy@DisableOption{pdfpagelabels}
6103 </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`

```

6104 <pdfTeX>\let\Hy@PutCatalog\pdfcatalog

```

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.

```

6105 <*vTeX>
6106 \providecommand*\XR@ext{-pdf}
6107 \edef\Hy@VTeXversion{%
6108   \ifx\VTeXversion\undefined
6109     \z@
6110   \else
6111     \ifx\VTeXversion\relax

```

```

6112 \z@
6113 \else
6114 \VTeXversion
6115 \fi
6116 \fi
6117 }
6118 \begingroup
6119 \ifnum\Hy@VTeXversion<660 %
6120 \gdef\Hy@PutCatalog#1{%
6121 \Hy@WarningNoLine{%
6122 VTeX 6.59g or above required for pdfpagelabels%
6123 }%
6124 }%
6125 \else
6126 \gdef\Hy@PutCatalog#1{%
6127 \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6128 }%
6129 \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6130 \ifx\#2\%
6131 \else
6132 \immediate\special{!pdfpagelabels #2}%
6133 \fi
6134 }%
6135 \fi
6136 \endgroup
6137 </vtex>
6138 <*pdfTeX | vtex>

```

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

```

6139 \ifHy@pagelabels
6140 \def\HyPL@StorePageLabel#1{%
6141 \toks@\expandafter{\HyPL@Labels}%
6142 \xdef\HyPL@Labels{%
6143 \the\toks@
6144 \the\Hy@abspage<<#1>>%
6145 }%
6146 }%

```

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.

```

6147 \RequirePackage{atveryend}[2009/12/07]%
6148 \AtVeryEndDocument{%
6149 \HyPL@SetPageLabels
6150 }%
6151 \fi
6152 </pdfTeX | vtex>

```

### 27.1.2 xetex

```

6153 <*xetex>
6154 \HyPsd@LoadUnicode
6155 \Hy@unicodetrue
6156 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6157 \else
6158 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto

```

```

6159 \fi
6160 \HyPsd@LoadStringEnc
6161 \define@key{Hyp}{unicode}[true]{%
6162   \Hy@boolkey{unicode}{#1}%
6163   \ifHy@unicode
6164   \else
6165     \Hy@Warning{%
6166       XeTeX driver only supports 'unicode=true'.\MessageBreak
6167       Ignoring option setting 'unicode=false'%
6168     }%
6169   \Hy@unicodetrue
6170 \fi
6171 }
6172 \define@key{Hyp}{pdfencoding}{%
6173   \edef\HyPsd@temp{#1}%
6174   \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6175     \let\HyPsd@pdfencoding\HyPsd@temp
6176   \else
6177     \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6178       \let\HyPsd@pdfencoding\HyPsd@temp
6179     \else
6180       \Hy@Warning{%
6181         XeTeX driver only supports\MessageBreak
6182         'pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6183         setting 'pdfencoding=\HyPsd@temp'%
6184       }%
6185     \fi
6186   \fi
6187 }
6188 \let\HyXeTeX@CheckUnicode\relax
6189 \xetex

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6190 \pdfmarkbase
6191 \begingroup
6192 \ifundefined{headerps@out}{%
6193   \toks@{\expandafter{\Hy@FirstPageHook}%
6194   \xdef\Hy@FirstPageHook{%
6195     \noexpand\headerps@out{%
6196       systemdict /pdfmark known%
6197       {%
6198         userdict /?pdfmark systemdict /exec get put%
6199       }{%
6200         userdict /?pdfmark systemdict /pop get put %
6201         userdict /pdfmark systemdict /cleartomark get put%
6202       }%
6203       ifelse%
6204     }%
6205     \the\toks@
6206   }%
6207 }%
6208 \endgroup
6209 \pdfmarkbase

```

\Hy@PutCatalog

```

6210 \dvipdfm|xetex\def\Hy@PutCatalog#1{\@pdfm@mark{docview << #1 >>}}
6211 \pdfmarkbase
6212 \def\Hy@PutCatalog#1{%

```



```

6213 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
6214 }
6215 \pdfmarkbase>

6216 \ifHy@pagelabels
6217 \ifHy@pagelabels

```

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

```

6218 \def\HyPL@StorePageLabel#1{%
6219 \if@filesw
6220 \begingroup
6221 \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6222 \immediate\write\@mainaux{%
6223 \string\HyPL@Entry{\Hy@tempa}%
6224 }%
6225 \endgroup
6226 \fi
6227 }%

```

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.

```

6228 \Hy@AtBeginDocument{%
6229 \if@filesw
6230 \immediate\write\@mainaux{%
6231 \string\providecommand\string*\string\HyPL@Entry[1]{}%
6232 }%
6233 \fi
6234 \ifx\HyPL@Labels\empty
6235 \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6236 \else
6237 \HyPL@SetPageLabels
6238 \fi
6239 \let\HyPL@Entry\@gobble
6240 }%

```

`\HyPL@Entry`

```

6241 \def\HyPL@Entry#1{%
6242 \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6243 \HyPL@Labels
6244 #1%
6245 }%
6246 }%

6247 \fi
6248 \pdfmarkbase | dvipdfm | xetex>

6249 \ifHy@pagelabels
6250 \MaybeStopEarly

```

## 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  $\LaTeX$  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

```

6251 \def\Hy@CounterExists#1{%
6252   \begingroup\expandafter\expandafter\expandafter\endgroup
6253   \expandafter\ifx\csname c@#1\endcsname\relax
6254     \expandafter\@gobble
6255   \else
6256     \begingroup\expandafter\expandafter\expandafter\endgroup
6257     \expandafter\ifx\csname the#1\endcsname\relax
6258       \expandafter\expandafter\expandafter\@gobble
6259     \else
6260       \expandafter\expandafter\expandafter\@firstofone
6261     \fi
6262   \fi
6263 }
6264 \Hy@CounterExists{section}{%
6265   \newcommand\theHequation{\theHsection.\arabic{equation}}%
6266 }
6267 \Hy@CounterExists{part}{%
6268   \newcommand\theHpart{\arabic{part}}%
6269 }
6270 \ltx@ifundefined{thechapter}{%
6271   \newcommand\theHsection   {\arabic{section}}%
6272   \newcommand\theHfigure    {\arabic{figure}}%
6273   \newcommand\theHtable     {\arabic{table}}%
6274 }{%
6275   \newcommand\theHchapter   {\arabic{chapter}}%
6276   \newcommand\theHfigure    {\theHchapter.\arabic{figure}}%
6277   \newcommand\theHtable     {\theHchapter.\arabic{table}}%
6278   \newcommand\theHsection   {\theHchapter.\arabic{section}}%
6279 }
6280 \newcommand\theHsubsection  {\theHsection.\arabic{subsection}}
6281 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6282 \newcommand\theHparagraph   {\theHsubsubsection.\arabic{paragraph}}
6283 \newcommand\theHsubparagraph{\theHparagraph.\arabic{subparagraph}}
6284 \newcommand\theHtheorem     {\theHsection.\arabic{theorem}}
6285 \newcommand\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.

```

6286 \let\H@item\item
6287 \newcounter{Item}
6288 \def\theHItem{\arabic{Item}}
6289 \def\item{%
6290   \@hyper@itemfalse
6291   \if@nmbrrlist\@hyper@itemtrue\fi
6292   \H@item

```

```

6293 }
6294 \newcommand\theHenumi {\theHItem}
6295 \newcommand\theHenumii {\theHItem}
6296 \newcommand\theHenumiii {\theHItem}
6297 \newcommand\theHenumiv {\theHItem}
6298 \newcommand\theHHfootnote {\arabic{Hfootnote}}
6299 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
6300 \let\theHHmpfootnote\theHHfootnote

```

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.

```

6301 \let\H@refstepcounter\refstepcounter
6302 \edef\name@of@eq{equation}%
6303 \edef\name@of@slide{slide}%

```

We do not want the handler for `\refstepcounter` to cut in during the processing of `\item` (we handle that separately), so we provide a bypass conditional.

```

6304 \newif\if@hyper@item
6305 \newif\if@skiphyperref
6306 \@hyper@itemfalse
6307 \@skiphyperreffalse
6308 \def\refstepcounter#1{%
6309   \ifHy@pdfstring
6310   \else
6311     \H@refstepcounter{#1}%
6312     \edef\This@name{#1}%
6313     \ifx\This@name\name@of@slide
6314     \else
6315       \if@skiphyperref
6316       \else
6317         \if@hyper@item
6318         \stepcounter{Item}%
6319         \hyper@refstepcounter{Item}%
6320         \@hyper@itemfalse
6321       \else
6322         \hyper@refstepcounter{#1}%
6323       \fi
6324     \fi
6325   \fi
6326 \fi
6327 }
6328 \let\Hy@saved@refstepcounter\refstepcounter

```

AMST<sub>EX</sub> processes all equations twice; we want to make sure that the hyper stuff is not executed twice, so we use the AMS `\ifmeasuring@`, initialized if AMS math is not used.

```

6329 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

6330 \def\hyper@refstepcounter#1{%
6331   \edef\This@name{#1}%
6332   \ifx\This@name\name@of@eq
6333   \@ifundefined{theHequation}{%
6334     \make@stripped@name{\theequation}%
6335     \let\theHequation\newname
6336   }{}%

```

```

6337 \fi
6338 \@ifundefined{theH#1}{%
6339   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}}%
6340 }{}%
6341 \hyper@makecurrent{#1}%
6342 \ifmeasuring@
6343 \else
6344   \Hy@raisedlink{%
6345     \hyper@anchorstart{\@currentHref}\hyper@anchorend
6346   }%
6347 \fi
6348 }

```

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.

```

6349 \begingroup\expandafter\expandafter\expandafter\endgroup
6350 \expandafter\ifx\csname chapter\endcsname\relax
6351   \def\Hy@chapterstring{section}%
6352 \else
6353   \def\Hy@chapterstring{chapter}%
6354 \fi
6355 \def\Hy@appendixstring{appendix}
6356 \def\Hy@chapapp{\Hy@chapterstring}
6357 \let\HyOrg@appendix\appendix
6358 \def\appendix{%
6359   \ltx@IfUndefined{chapter}%
6360   {\gdef\theHsection{\Alph{section}}}%
6361   {\gdef\theHchapter{\Alph{chapter}}}%
6362   \xdef\Hy@chapapp{\Hy@appendixstring}%
6363   \HyOrg@appendix
6364 }

```

\Hy@Test@alph

```

6365 \def\Hy@Test@alph#1{%
6366   \ifcase#1\or
6367     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6368     k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
6369     u\or v\or w\or x\or y\or z%
6370   \else
6371     \@ctrerr
6372   \fi
6373 }

```

\Hy@Test@Alph

```

6374 \def\Hy@Test@Alph#1{%
6375   \ifcase#1\or
6376     A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6377     K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6378     U\or V\or W\or X\or Y\or Z%
6379   \else
6380     \@ctrerr
6381   \fi
6382 }

```

`\hyper@makecurrent` Because of Babel mucking around, nullify `\textlatin` when making names. And `\@number` because of babel's `lrbabel.def`.

```

6383 \def\hyper@makecurrent#1{%
6384   \begingroup
6385   \edef\Hy@param{#1}%
6386   \ifx\Hy@param\Hy@chapterstring
6387     \let\Hy@param\Hy@chapapp
6388   \fi
6389   \ifHy@hypertextnames
6390     \let\@number\@firstofone
6391     \def\@fnsymbol##1{fnsymbol\number##1}%
6392     \ifx\@alph\Hy@Test@alph
6393       \else
6394         \def\@alph{alph\number}%
6395       \fi
6396       \ifx\@Alph\Hy@Test@Alph
6397         \else
6398           \def\@Alph{Alph\number}%
6399         \fi
6400       \ifHy@naturalnames
6401         \let\textlatin\@firstofone
6402         \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
6403       \else
6404         \xdef\HyperGlobalCurrentHref{%
6405           \csname
6406             the%
6407             \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
6408             #1%
6409           \endcsname
6410         }%
6411       \fi
6412       \xdef\HyperGlobalCurrentHref{%
6413         \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
6414       }%
6415     \else
6416       \Hy@GlobalStepCount\Hy@linkcounter
6417       \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
6418     \fi
6419   \endgroup
6420   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6421   \ifHy@localanchorname
6422     \let\@currentHref\HyperLocalCurrentHref
6423   \else
6424     \global\let\@currentHref\HyperGlobalCurrentHref
6425   \fi
6426 }
```

`\Hy@MakeCurrentHref`

```

6427 \def\Hy@MakeCurrentHref#1{%
6428   \edef\HyperLocalCurrentHref{#1}%
6429   \@onelevel@sanitize\HyperLocalCurrentHref
6430   \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
6431   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6432   \ifHy@localanchorname
6433     \let\@currentHref\HyperLocalCurrentHref
6434   \else
6435     \global\let\@currentHref\HyperGlobalCurrentHref

```

```

6436 \fi
6437 }

```

`\Hy@MakeCurrentHrefAuto`

```

6438 \def\Hy@MakeCurrentHrefAuto#1{%
6439 \Hy@GlobalStepCount\Hy@linkcounter
6440 \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
6441 }

```

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

```

6442 \def\@currentHlabel{\@currentHref}

6443 \@ifpackageloaded{fancyvrb}{%
6444 \ifpackagelater{fancyvrb}{1998/05/20}{}%
6445 \def\FV@StepLineNo{%
6446 \FV@SetLineNo
6447 \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
6448 \FV@StepLineNo
6449 }%
6450 }%
6451 }{}

```

## 29 Package lastpage support

Package lastpage directly writes the `\newlabel` command to the aux file. Because package hyperref requires additional arguments, the internal command `\lastpage@putlabel` is redefined. The patch is deferred by `\AtBeginDocument`, because it is possible that package lastpage is loaded after package hyperref. The same algorithm (options `hypertextnames` and `plainpages`) is used to get the page anchor name as in `\Hy@EveryPageAnchor` (see sec. 38). The link will not work if option `pageanchor` is set to false.

`\lastpage@putlabel`

```

6452 \Hy@AtBeginDocument{%
6453 \@ifclassloaded{revtex4}{%
6454 \namedef{ver@lastpage.sty}{1994/06/25}%
6455 }{}%
6456 \@ifpackageloaded{lastpage}{%
6457 \ifHy@pageanchor
6458 \else
6459 \Hy@WarningNoLine{%
6460 The \string\pageref{LastPage} link doesn't work\MessageBreak
6461 with disabled option 'pageanchor'%
6462 }%
6463 \fi
6464 \def\lastpage@putlabel{%
6465 \addtocounter{page}{-1}%
6466 \if@filesn
6467 \begingroup
6468 \let\@number\@firstofone
6469 \ifHy@pageanchor
6470 \ifHy@hypertextnames
6471 \ifHy@plainpages
6472 \def\Hy@temp{\arabic{page}}%
6473 \else

```

```

6474         \Hy@unicodedefalse
6475         \pdfstringdef\Hy@temp{\thepage}%
6476     \fi
6477 \else
6478     \def\Hy@temp{\the\Hy@pagecounter}%
6479 \fi
6480 \fi
6481 \immediate\write\@auxout{%
6482     \string\newlabel
6483     {LastPage}{\thepage}{\thepage}%
6484     \ifHy@pageanchor page.\Hy@temp\fi}{}}%
6485 }%
6486 \endgroup
6487 \fi
6488 \addtocounter{page}{1}%
6489 }%
6490 \@ifclassloaded{revtex4}{%
6491     \begingroup
6492     \toks@{\expandafter{\lastpage@putlabel}%
6493     \edef\x{\endgroup
6494         \def\noexpand\lastpage@putlabel{%
6495             \noexpand\stepcounter{page}%
6496             \the\toks@
6497             \noexpand\addtocounter{page}\noexpand\m@ne
6498         }%
6499     }%
6500     \x
6501     }{}%
6502 }{}%
6503 }
6504 \end{package}
6505 \check
6506 \checkpackage{lastpage}[1994/06/25]
6507 \checkcommand\def\lastpage@putlabel{%
6508     \addtocounter{page}{-1}%
6509     \immediate\write\@auxout{%
6510         \string\newlabel{LastPage}{\thepage}{\thepage}%
6511     }%
6512     \addtocounter{page}{1}%
6513 }
6514 \end{check}
6515 \end{package}

```

## 30 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.

```

6516 \def\hypergetref#1{\getrefbykeydefault{#1}{\{??\}}
6517 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

## 31 Package titlesec and titletoc support

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

Package titlesec support:

```

6518 \ifpackageloaded{titlesec}{%
6519   \def\ttl@Hy@steplink#1{%
6520     \Hy@MakeCurrentHrefAuto{#1*}%
6521     \edef\ttl@Hy@saveanchor{%
6522       \noexpand\Hy@raisedlink{%
6523         \noexpand\hyper@anchorstart{\@currentHref}%
6524         \noexpand\hyper@anchorend
6525         \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
6526         \noexpand\ttl@Hy@PatchSaveWrite
6527       }%
6528     }%
6529   }%
6530   \def\ttl@Hy@PatchSaveWrite{%
6531     \begingroup
6532     \toks@{\expandafter{\ttl@savewrite}%
6533     \edef\x{\endgroup
6534       \def\noexpand\ttl@savewrite{%
6535         \let\noexpand\@currentHref
6536         \noexpand\ttl@Hy@SavedCurrentHref
6537         \the\toks@
6538       }%
6539     }%
6540     \x
6541   }%
6542   \def\ttl@Hy@refstepcounter#1{%
6543     \let\ttl@b\Hy@raisedlink
6544     \def\Hy@raisedlink##1{%
6545       \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
6546     }%
6547     \refstepcounter{#1}%
6548     \let\Hy@raisedlink\ttl@b
6549   }%
6550 }{}

```

Package titletoc support:

```

6551 \@ifpackageloaded{titletoc}{%
6552   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
6553 }{}

```

## 32 Package varioref support

Package nameref uses five arguments for the ref system. Fix provided by Felix Neubauer (felix.neubauer@gmx.net).

```

6554 \def\Hy@varioref@undefined{???}{??}{-}{-}}
6555 \@ifpackageloaded{varioref}{%
6556   \def\vref@pagenum#1#2{%
6557     \@ifundefined{r@#2}{%
6558       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
6559     }{}%
6560     \edef#1{\getpagerefnumber{#2}}%
6561   }%
6562 }{}

```

Package varioref redefines \refstepcounter, thus it needs fixing, if the package is loaded *after* hyperref.



```

6563 \def\Hy@varioref@refstepcounter#1{%
6564   \stepcounter{#1}%
6565   \protected@edef\@currentlabel{%
6566     \csname p@#1\expandafter\endcsname\csname the#1\endcsname
6567   }%
6568 }
6569 \AtBeginDocument{%
6570   \ifx\refstepcounter\Hy@varioref@refstepcounter
6571     \let\H@refstepcounter\refstepcounter
6572     \let\refstepcounter\Hy@saved@refstepcounter
6573   \fi
6574 }

```

### 33 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

```

6575 \ifpackageloaded{longtable}{%
6576   \begingroup
6577   \def\y{\LT@array}%
6578   \@ifundefined{scr@LT@array}{%
6579     \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
6580   }{\def\y{\scr@LT@array}}%
6581   \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
6582     \expandafter\endgroup
6583     \expandafter\def\y[##1]##2{%
6584       \H@refstepcounter{#1}%
6585       \hyper@makecurrent{table}%
6586       \let\Hy@LT@currentHref\@currentHref
6587       #2\@sharp####4%
6588     }%
6589   }%
6590   \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil

```

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

```

6591 \begingroup
6592 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
6593   \endgroup
6594   \def\LT@start{%
6595     #1%
6596     \ifvoid\LT@foot#2\fi
6597     \let\@currentHref\Hy@LT@currentHref
6598     \Hy@raisedlink{%
6599       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6600     }%
6601     #3%
6602   }%
6603 }%
6604 \expandafter\x\LT@start\@nil
6605 }{}

```

## 34 Equations

We want to make the whole equation a target anchor. Overload equation, temporarily reverting to original `\refstepcounter`. If, however, it is in AMS math, we do not do anything, as the tag mechanism is used there (see section 41). 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.

```

6606 \let\new@refstepcounter\refstepcounter
6607 \let\H@equation\equation
6608 \let\H@endequation\endequation

6609 \@ifpackageloaded{amsmath}{%
6610   \long\def\Hy@temp{%
6611     \incr@eqnum
6612     \mathdisplay@push
6613     \st@rredfalse \global\@eqnswtrue
6614     \mathdisplay{equation}%
6615   }%
6616   \ifx\Hy@temp\equation
6617     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
6618       \csname iftrue\endcsname
6619   \else
6620     \long\def\equation{%
6621       \mathdisplay@push
6622       \st@rredfalse \global\@eqnswtrue
6623       \mathdisplay{equation}%
6624       \incr@eqnum
6625     }%
6626   \fi
6627 \fi
6628 }{%
6629 \def\equation{%
6630   \let\refstepcounter\H@refstepcounter
6631   \H@equation
6632   \@ifundefined{theHequation}{%
6633     \make@stripped@name{\theequation}%
6634     \let\theHequation\newname
6635   }{%
6636     \hyper@makecurrent{equation}%
6637     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
6638     \let\refstepcounter\new@refstepcounter
6639   }%
6640 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
6641 }
```

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.

```

6642 \newif\if@eqnstar
6643 \@eqnstarfalse
6644 \let\H@eqnarray\eqnarray
6645 \let\H@endeqnarray\endeqnarray
6646 \def\eqnarray{%
6647   \let\Hy@reserved@a\relax
6648   \def\@currentHref{}%
```

```

6649 \H@eqnarray
6650 \if@eqnstar
6651 \else
6652 \ifx\\ \@currentHref\\ %
6653 \else
6654 \ifundefined{theHequation}{%
6655 \make@stripped@name{\theequation}%
6656 \let\theHequation\newname
6657 }{%
6658 \hyper@makecurrent{equation}%
6659 \hyper@anchorstart{\@currentHref}{\hyper@anchorend
6660 \fi
6661 \fi
6662 }
6663 \def\endeqnarray{%
6664 \H@endeqnarray
6665 }

```

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.

```

6666 \@namedef{eqnarray*}{%
6667 \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
6668 }
6669 \@namedef{endeqnarray*}{%
6670 \nonumber\endeqnarray\@eqnstarfalse
6671 }

```

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

```

6672 \ltx@ifundefined{subeqnarray}{%
6673 \let\H@subeqnarray\subeqnarray
6674 \let\H@endsubeqnarray\endsubeqnarray
6675 \def\subeqnarray{%
6676 \let\Hy@reserved@a\relax
6677 \H@subeqnarray
6678 \ifundefined{theHequation}{%
6679 \make@stripped@name{\theequation}%
6680 \let\theHequation\newname
6681 }{%
6682 \hyper@makecurrent{equation}%
6683 \hyper@anchorstart{\@currentHref}{\hyper@anchorend
6684 }%
6685 \def\endsubeqnarray{%
6686 \H@endsubeqnarray
6687 }%
6688 \newcommand\theHsubequation{\theHequation\alph{subequation}}%
6689 }

```

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

```

6690 \def\make@stripped@name#1{%
6691 \begingroup
6692 \escapechar\m@ne
6693 \global\let\newname\@empty
6694 \protected@edef\Hy@tempa{#1}%
6695 \edef\@tempb{%
6696 \noexpand\@tfor\noexpand\Hy@tempa:=%
6697 \expandafter\strip@prefix\meaning\Hy@tempa
6698 }%
6699 \@tempb\do{%

```

```

6700 \if{\Hy@tempa\else
6701 \if}\Hy@tempa\else
6702 \xdef\newname{\newname\Hy@tempa}%
6703 \fi
6704 \fi
6705 }%
6706 \endgroup
6707 }

```

Support for amsmath's subequations:

```

6708 \begingroup\expandafter\expandafter\expandafter\endgroup
6709 \expandafter\ifx\csname subequations\endcsname\relax
6710 \else
6711 \let\HyOrg@subequations\subequations
6712 \def\subequations{%
6713 \stepcounter{equation}%
6714 \protected@edef\theHparentequation{%
6715 \ifundefined{theHequation}\theequation\theHequation
6716 }%
6717 \addtocounter{equation}{-1}%
6718 \HyOrg@subequations
6719 \def\theHequation{\theHparentequation\alph{equation}}%
6720 \ignorespaces
6721 }%
6722 \fi

```

Support for package amsthm (Daniel Müllner):

```

6723 \@ifpackageloaded{amsthm}{%
6724 \def\@thm#1#2#3{%
6725 \ifhmode
6726 \unskip\unskip\par
6727 \fi
6728 \normalfont
6729 \trivlist
6730 \let\thmheadnl\relax
6731 \let\thm@swap\@gobble
6732 \thm@notefont{\fontseries\mddefault\upshape}%
6733 \thm@headpunct{.}% add period after heading
6734 \thm@headsep 5\p@ plus\p@ minus\p@\relax
6735 \thm@space@setup
6736 #1% style overrides
6737 \@topsep \thm@preskip % used by thm head
6738 \@topsepadd \thm@postskip % used by \@endparentv
6739 \def\dth@counter{#2}%
6740 \ifx\@empty\dth@counter
6741 \def\@tempa{%
6742 \@oparg{\@begintheorem{#3}{}}{}%
6743 }%
6744 \else
6745 \H@refstepcounter{#2}%
6746 \hyper@makecurrent{#2}%
6747 \let\Hy@dth@currentHref\@currentHref
6748 \def\@tempa{%
6749 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
6750 }%
6751 \fi
6752 \@tempa
6753 }%

```

```

6754 \dth@everypar={%
6755 \@minipagefalse
6756 \global\@newlistfalse
6757 \@noparitemfalse
6758 \if@inlabel
6759 \global\@inlabelfalse
6760 \begingroup
6761 \setbox\z@\lastbox
6762 \ifvoid\z@
6763 \kern-\itemindent
6764 \fi
6765 \endgroup
6766 \ifx\@empty\dth@counter
6767 \else
6768 \Hy@raisedlink{%
6769 \hyper@anchorstart{%
6770 \ltx@ifundefined{Hy@dth@currentHref}%
6771 \@currentHref\Hy@dth@currentHref
6772 }\hyper@anchorend
6773 }%
6774 \fi
6775 \unhbox\@labels
6776 \fi
6777 \if@nobreak
6778 \@nobreakfalse \clubpenalty\@M
6779 \else
6780 \clubpenalty\@clubpenalty \everypar{}%
6781 \fi
6782 }%
6783 }{}

```

## 35 Footnotes

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

Tabularx causes footnote problems, disable the linking if that is loaded.

```

6784 \ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
6785 \ifHy@hyperfootnotes
6786 \newcounter{Hfootnote}%
6787 \let\H@@footnotetext\@footnotetext
6788 \let\H@@footnotemark\@footnotemark
6789 \def\@xfootnotenext[#1]{%
6790 \begingroup
6791 \csname c@\@mpfn\endcsname #1\relax
6792 \unrestored@protected@xdef\@thefnmark{\thempfn}%
6793 \endgroup
6794 \ifx\@footnotetext\@mpfootnotetext
6795 \expandafter\H@@mpfootnotetext
6796 \else
6797 \expandafter\H@@footnotetext
6798 \fi
6799 }%
6800 \def\@xfootnotemark[#1]{%
6801 \begingroup

```

```

6802 \c@footnote #1\relax
6803 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
6804 \endgroup
6805 \H@@footnotemark
6806 }%
6807 \let\H@@mpfootnotetext\@mpfootnotetext
6808 \long\def\@mpfootnotetext#1{%
6809 \H@@mpfootnotetext{%
6810 \ifHy@nesting
6811 \expandafter\hyper@@@anchor\expandafter{%
6812 \Hy@footnote@currentHref
6813 }{#1}%
6814 \else
6815 \Hy@raisedlink{%
6816 \expandafter\hyper@@@anchor\expandafter{%
6817 \Hy@footnote@currentHref
6818 }{\relax}%
6819 }#1%
6820 \fi
6821 }%
6822 }%
6823 \long\def\@footnotetext#1{%
6824 \H@@@footnotetext{%
6825 \ifHy@nesting
6826 \expandafter\hyper@@@anchor\expandafter{%
6827 \Hy@footnote@currentHref
6828 }{#1}%
6829 \else
6830 \Hy@raisedlink{%
6831 \expandafter\hyper@@@anchor\expandafter{%
6832 \Hy@footnote@currentHref
6833 }{\relax}%
6834 }%
6835 \let\@currentHref\Hy@footnote@currentHref
6836 \let\@currentlabelname\@empty
6837 #1%
6838 \fi
6839 }%
6840 }%

```

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.

```

6841 \def\@footnotemark{%
6842 \leavevmode
6843 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
6844 \stepcounter{Hfootnote}%
6845 \global\let\Hy@saved@currentHref\@currentHref
6846 \hyper@makecurrent{Hfootnote}%
6847 \global\let\Hy@footnote@currentHref\@currentHref
6848 \global\let\@currentHref\Hy@saved@currentHref
6849 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
6850 \@makefnmark
6851 \hyper@linkend
6852 \ifhmode\spacefactor\@x@sf\fi
6853 \relax
6854 }%

```

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

```

6855 \ifpackageloaded{longtable}{%
6856   \CheckCommand*{\LT@p@ftntext}[1]{%
6857     \edef\@tempa{%
6858       \the\LT@p@ftn
6859       \noexpand\footnotetext[\the\c@footnote]%
6860     }%
6861     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
6862   }%
6863 \long\def\LT@p@ftntext#1{%
6864   \edef\@tempa{%
6865     \the\LT@p@ftn
6866     \begingroup
6867     \noexpand\c@footnote=\the\c@footnote\relax
6868     \noexpand\protected@xdef
6869       \noexpand\@thefnmark{\noexpand\thempfn}%
6870     \noexpand\protected@xdef\noexpand\@thefnmark{%
6871       \noexpand\thempfn
6872     }%
6873     \expandafter\noexpand\expandafter\Hy@LT@footnotetext
6874     \expandafter{%
6875       \Hy@footnote@currentHref
6876     }%
6877   }%
6878   \global\LT@p@ftn\expandafter{%
6879     \@tempa{#1}%
6880   \endgroup
6881   }%
6882 }%
6883 \long\def\Hy@LT@footnotetext#1#2{%
6884   \H@@@footnotetext{%
6885     \ifHy@nesting
6886       \hyper@@anchor{#1}{#2}%
6887     \else
6888       \Hy@raisedlink{%
6889         \hyper@@anchor{#1}{\relax}%
6890       }%
6891       \def\@currentHref{#1}%
6892       \let\@currentlabelname\@empty
6893       #2%
6894     \fi
6895   }%
6896 }%
6897 }{}%
```

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

```

6898 \ifpackageloaded{fancyvrb}{%
6899   \def\V@@@footnotetext{%
6900     \insert\footins\bgroup
6901     \csname reset@font\endcsname
6902     \footnotesize
6903     \interlinepenalty\interfootnotelinepenalty
6904     \splittopskip\footnotesep
6905     \splitmaxdepth\dp\strutbox
```

```

6906 \floatingpenalty \@MM
6907 \hsize\columnwidth
6908 \@parboxrestore
6909 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
6910 \@makefnmark{}%
6911 \rule{\z@}{\footnotesep}%
6912 \bgroup
6913 \aftergroup\V@@@footnotetext
6914 \Hy@raisedlink{%
6915   \expandafter\hyper@@anchor\expandafter{%
6916     \Hy@footnote@currentHref
6917   }\relax}%
6918 }%
6919 \let\@currentHref\Hy@footnote@currentHref
6920 \let\@currentlabelname\@empty
6921 \ignorespaces
6922 }%
6923 }{}%

```

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

```

6924 \def\Hy@temp#1{%
6925   \begingroup
6926   \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
6927   \endgroup
6928   \@footnotemark
6929 }%
6930 \ifx\Hy@temp\footref
6931   \def\footref#1{%
6932     \begingroup
6933     \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
6934     \endgroup
6935     \H@@@footnotemark
6936   }%
6937 \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.

```

6938 \let\HyOrg@maketitle\maketitle
6939 \def\maketitle{%
6940   \let\Hy@saved@footnotemark\@footnotemark
6941   \let\Hy@saved@footnotetext\@footnotetext
6942   \let\@footnotemark\H@@@footnotemark
6943   \let\@footnotetext\H@@@footnotetext
6944   \@ifnextchar[\Hy@maketitle@optarg{% ]
6945     \HyOrg@maketitle
6946     \Hy@maketitle@end
6947   }%
6948 }%
6949 \def\Hy@maketitle@optarg[#1]{%
6950   \HyOrg@maketitle[#1]%
6951   \Hy@maketitle@end
6952 }%
6953 \def\Hy@maketitle@end{%
6954   \ifx\@footnotemark\H@@@footnotemark
6955     \let\@footnotemark\Hy@saved@footnotemark
6956   \fi
6957   \ifx\@footnotetext\H@@@footnotetext

```



```

6958 \let\@footnotetext\Hy@saved@footnotetext
6959 \fi
6960 }%

```

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

```

6961 \def\realfootnote{%
6962 \ifnextchar[\@xfootnote{%
6963 \stepcounter{\@mpfn}%
6964 \protected@xdef\@thefnmark{\thempfn}%
6965 \H@@@footnotemark\H@@@footnotetext
6966 }%
6967 }%

6968 \fi
6969 \Hy@DisableOption{hyperfootnotes}

6970 </package>
6971 <*check>
6972 \checklatex
6973 \checkcommand\def\@xfootnotenext[#1]{%
6974 \begingroup
6975 \csname c@\@mpfn\endcsname #1\relax
6976 \unrestored@protected@xdef\@thefnmark{\thempfn}%
6977 \endgroup
6978 \@footnotetext
6979 }
6980 \checkcommand\def\@xfootnotemark[#1]{%
6981 \begingroup
6982 \c@footnote #1\relax
6983 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
6984 \endgroup
6985 \@footnotemark
6986 }
6987 \checkcommand\def\@footnotemark{%
6988 \leavevmode
6989 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
6990 \@makefnmark
6991 \ifhmode\spacefactor\@x@sf\fi
6992 \relax
6993 }
6994 </check>
6995 <*package>

```

## 36 Float captions

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

```

6996 \def\caption{%
6997 \ifx\@capytype\@undefined
6998 \latex@error{\noexpand\caption outside float}\@ehd
6999 \expandafter\@gobble
7000 \else
7001 \H@refstepcounter\@capytype
7002 \let\Hy@tempa\@caption
7003 \ifundefined{float@caption}{%
7004 }{%
7005 \expandafter\ifx\csname @float@c@\@capytype\endcsname

```

```

7006             \float@caption
7007     \let\Hy@tempa\Hy@float@caption
7008     \fi
7009   }%
7010   \expandafter\@firstofone
7011 \fi
7012 {\@dblarg{\Hy@tempa\@captype}}%
7013 }
7014 \long\def\@caption#1[#2]#3{%
7015   \expandafter\ifx\csname if@capstart\expandafter\endcsname
7016     \csname iftrue\endcsname
7017     \global\let\@currentHref\hc@currentHref
7018   \else
7019     \hyper@makecurrent{\@captype}%
7020   \fi
7021   \@ifundefined{NR@gettitle}{%
7022     \def\@currentlabelname{#2}%
7023   }{%
7024     \NR@gettitle{#2}%
7025   }%
7026   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7027     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7028   }%
7029   \begingroup
7030     \@parboxrestore
7031     \if@minipage
7032       \setminipage
7033     \fi
7034     \normalsize
7035     \expandafter\ifx\csname if@capstart\expandafter\endcsname
7036       \csname iftrue\endcsname
7037       \global\@capstartfalse
7038       \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7039     \else
7040       \@makecaption{\csname fnum@#1\endcsname}{%
7041         \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7042     \ifHy@nesting
7043       \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7044     \else
7045       \Hy@raisedlink{%
7046         \expandafter\hyper@@anchor\expandafter{%
7047           \@currentHref
7048         }\relax}%
7049       }%
7050       #3%
7051     \fi
7052   }%
7053 \fi
7054 \par
7055 \endgroup
7056 }

```

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.

```

7057 \let\Hy@float@caption\@caption
7058 \@ifpackageloaded{float}{%

```

```

7059 \def\Hy@float@caption{%
7060   \ifx\Hy@float@currentHref\@undefined
7061     \hyper@makecurrent{\@captive}%
7062     \global\let\Hy@float@currentHref\@currentHref
7063   \else
7064     \let\@currentHref\Hy@float@currentHref
7065   \fi
7066   \float@caption
7067 }%
7068 \let\HyOrg@float@makebox\float@makebox
7069 \renewcommand{\float@makebox}[1]{%
7070   \HyOrg@float@makebox{%
7071     #1\relax
7072     \ifx\Hy@float@currentHref\@undefined
7073       \else
7074         \expandafter\hyper@@anchor\expandafter{%
7075           \Hy@float@currentHref
7076         }\relax}%
7077     \global\let\Hy@float@currentHref\@undefined
7078   \fi
7079 }%
7080 }%
7081 }{}

7082 \</package>
7083 \< *check>
7084 \checklatex[1999/06/01 - 2000/06/01]
7085 \checkcommand\def\caption{%
7086   \ifx\@captive\@undefined
7087     \@latex@error{\noexpand\caption outside float}\@ehd
7088     \expandafter\@gobble
7089   \else
7090     \refstepcounter\@captive
7091     \expandafter\@firstofone
7092   \fi
7093   {\@dblarg{\@caption\@captive}}%
7094 }
7095 \checkcommand\long\def\@caption#1[#2]#3{%
7096   \par
7097   \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7098     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7099   }%
7100   \begingroup
7101     \@parboxrestore
7102     \if@minipage
7103       \@setminipage
7104     \fi
7105     \normalsize
7106     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7107   \endgroup
7108 }
7109 \</check>
7110 \< *package>

```

## 37 Bibliographic references

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

However, lets make an attempt to get *natbib* right, because thats a powerful, important package. Patrick Daly (daly@linmpi.mpg.de) has provided hooks for us, so all we need to do is activate them.

```

7111 \def\hyper@natlinkstart#1{%
7112   \Hy@backout{#1}%
7113   \hyper@linkstart{cite}{cite.#1}%
7114   \def\hyper@nat@current{#1}%
7115 }
7116 \def\hyper@natlinkend{%
7117   \hyper@linkend
7118 }
7119 \def\hyper@natlinkbreak#1#2{%
7120   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7121 }
7122 \def\hyper@natanchorstart#1{%
7123   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7124 }
7125 \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.

```

7126 \ltx@ifundefined{NAT@parse}{%
7127   \providecommand*\@extra@binfo{}%
7128   \providecommand*\@extra@b@citeb{}%
7129   \def\bibcite#1#2{%
7130     \@newl@bel{b}{#1\@extra@binfo}{%
7131       \hyper@link{cite}{cite.#1\@extra@b@citeb}{#2}%
7132     }%
7133   }%
7134   \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.”.

```

7135 \let\Hy@bibcite\bibcite
7136 \begingroup
7137   \ifundefined{bbl@cite@choice}{}{%
7138     \g@addto@macro\bbl@cite@choice{%
7139       \let\bibcite\Hy@bibcite
7140     }%
7141   }%
7142 \endgroup

```

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

```

7143 \providecommand*\@BIBLABEL{\@biblabel}%
7144 \def\@lbibitem[#1]#2{%
7145   \@skiphyperreftrue
7146   \H@item[%
7147     \ifx\Hy@raisedlink\@empty

```

```

7148 \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7149 \@BIBLABEL{#1}%
7150 \hyper@anchorend
7151 \else
7152 \Hy@raisedlink{%
7153 \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7154 }%
7155 \@BIBLABEL{#1}%
7156 \fi
7157 \hfill
7158 ]%
7159 \@skiphyperreffalse
7160 \if@filesw
7161 \begingroup
7162 \let\protect\noexpand
7163 \immediate\write\@auxout{%
7164 \string\bibcite{#2}{#1}%
7165 }%
7166 \endgroup
7167 \fi
7168 \ignorespaces
7169 }%

```

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

```

7170 \def\@bibitem#1{%
7171 \@skiphyperrefftrue\H@item\@skiphyperreffalse
7172 \Hy@raisedlink{%
7173 \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7174 }%
7175 \if@filesw
7176 \begingroup
7177 \let\protect\noexpand
7178 \immediate\write\@auxout{%
7179 \string\bibcite{#1}{\the\value{\@listctr}}%
7180 }%
7181 \endgroup
7182 \fi
7183 \ignorespaces
7184 }%
7185 }{}

7186 </package>
7187 <*check>
7188 \checklatex
7189 \checkcommand\def\@lbibitem[#1]#2{%
7190 \item[\@biblabel{#1}\hfill]%
7191 \if@filesw
7192 {%
7193 \let\protect\noexpand
7194 \immediate\write\@auxout{%
7195 \string\bibcite{#2}{#1}%
7196 }%
7197 }%
7198 \fi
7199 \ignorespaces
7200 }
7201 \checkcommand\def\@bibitem#1{%

```

```

7202 \item
7203 \if@filesw
7204 \immediate\write\@auxout{%
7205 \string\bibcite{#1}{\the\value{\@listctr}}}%
7206 }%
7207 \fi
7208 \ignorespaces
7209 }
7210 \</check>
7211 \<*package>

```

Revtex (bless its little heart) takes over \bibcite and looks at the result to measure something. Make this a hypertext link and it goes ape. Therefore, make an anodyne result first, call its business, then go back to the real thing.

```

7212 \@ifclassloaded{revtex}{%
7213 \Hy@Info{*** compatibility with revtex **** }%
7214 \def\revtex@checking#1#2{%
7215 \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
7216 \expandafter\def\csname b@#1\endcsname{#2}%
7217 \@SetMaxRnhefLabel{#1}%
7218 \expandafter\let\csname b@#1\endcsname\T@temp
7219 }%

```

Tanmoy provided this replacement for CITEX. Lord knows what it does. For chapterbib added: extra@b@citeb

```

7220 \@ifundefined{@CITE}{\def@CITE{\@cite}}{%
7221 \providecommand*{\@extra@b@citeb}{}%
7222 \def\CITEX[#1]#2{%
7223 \let\@citea\@empty
7224 \leavevmode
7225 \unskip
7226 $\sim$%
7227 \scriptstyle
7228 \@CITE{%
7229 \@for\@citeb:=#2\do{%
7230 \@citea
7231 \def\@citea{,\penalty\@m\ }%
7232 \edef\@citeb{\expandafter\@firstofone\@citeb}%
7233 \if@filesw
7234 \immediate\write\@auxout{\string\citation{\@citeb}}%
7235 \fi
7236 \@ifundefined{b@\@citeb\extra@b@citeb}{%
7237 \mbox{\reset@font\bfseries ?}%
7238 \G@refundefinedtrue
7239 \@latex@warning{%
7240 Citation '\@citeb' on page \thepage \space undefined%
7241 }%
7242 }{%
7243 {\csname b@\@citeb\extra@b@citeb\endcsname}%
7244 }%
7245 }%
7246 }{#1}%
7247 }$%
7248 }%

```

No, life is too short. I am not going to understand the Rextex \@collapse macro, I shall just restore the original behaviour of \@citex; sigh. This is SO vile.

```

7249 \def\citex[#1]#2{%

```

```

7250 \let\@citea\@empty
7251 \@cite{%
7252   \@for\@citeb:=#2\do{%
7253     \@citea
7254     \def\@citea{,\penalty\@m\ }%
7255     \edef\@citeb{\expandafter\@firstofone\@citeb}%
7256     \if@filesw
7257       \immediate\write\@auxout{\string\citation{\@citeb}}%
7258     \fi
7259     \ifundefined{b@\@citeb\@extra@b@citeb}{%
7260       \mbox{\reset@font\bfseries ?}%
7261       \G@refundefinedtrue
7262       \@latex@warning{%
7263         Citation '\@citeb' on page \thepage \space undefined%
7264       }%
7265     }{%
7266       \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
7267     }%
7268   }%
7269 }{#1}%
7270 }%
7271 }{}

```

### 37.1 Package harvard

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

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

```

7272 \ifpackageloaded{harvard}{%
7273   \Hy@AtBeginDocument{%
7274     \Hy@Info{*** compatibility with harvard **** }%
7275     \Hy@raiselinksfalse
7276     \def\harvardcite#1#2#3#4{%
7277       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{}{cite.#1}{#2}}%
7278       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{}{cite.#1}{#3}}%
7279       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{}{cite.#1}{#4}}%
7280       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7281     }%
7282     \def\HAR@citetoaux#1{%
7283       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7284       \ifHy@backref
7285         \ifx\@empty\@currentlabel
7286           \else
7287             \@bsphack
7288             \if@filesw
7289               \protected@write\@auxout{}{%
7290                 \string\@writefile{brf}{%
7291                   \string\backcite{#1}{%
7292                     {\thepage}{\@currentlabel}{\@currentHref}%
7293                   }%
7294                 }%
7295               }%
7296             \fi

```

```

7297     \@esphack
7298     \fi
7299   \fi
7300 }%
7301 \def\harvarditem{%
7302   \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7303 }%
7304 \def\@harvarditem[#1]#2#3#4#5\par{%
7305   \item[]%
7306   \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7307   \if@filesw
7308     \begingroup
7309     \def\protect##1{\string ##1\space}%
7310     \ifthenelse{\equal{#1}{\null}}{%
7311       {\def\next{{#4}{#2}{#2}{#3}}}%
7312       {\def\next{{#4}{#2}{#1}{#3}}}%
7313     \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7314   \endgroup
7315   \fi
7316   \protect\hspace*{-\labelwidth}%
7317   \protect\hspace*{-\labelsep}%
7318   \ignorespaces
7319   #5%
7320   \ifHy@backref
7321     \newblock
7322     \backref{\csname br@#4\endcsname}%
7323   \fi
7324   \par
7325 }%

```

\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:

```

7326 \long\def\HAR@checkcitations#1#2#3#4{%
7327   \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#2}}%
7328   \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7329     \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#3}}%
7330     \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7331       \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#4}}%
7332       \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7333         \else
7334           \@tempwattrue
7335         \fi
7336       \else
7337         \@tempwattrue
7338       \fi
7339     \else
7340       \@tempwattrue
7341     \fi
7342   }%
7343 }%
7344 }{}

```

## 37.2 Package chicago

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



```

7345 \@ifpackageloaded{chicago}{%
\citeN
7346 \def\citeN{%
7347 \def\@citesep{-1000}%
7348 \def\@cite##1##2{##1}%
7349 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}}%
7350 \@citedata@opt
7351 }%

\shortciteN
7352 \def\shortciteN{%
7353 \def\@citesep{-1000}%
7354 \def\@cite##1##2{##1}%
7355 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}}%
7356 \@citedata@opt
7357 }%

\@citedata@opt
7358 \def\@citedata@opt{%
7359 \let\@cite@opt\@empty
7360 \@ifnextchar [{%
7361 \@tempwattrue
7362 \@citedatax@opt
7363 }{%
7364 \@tempwafalse
7365 \@citedatax[]%
7366 }%
7367 }%

\@citedatax@opt
7368 \def\@citedatax@opt[#1]{%
7369 \def\@cite@opt{, #1}%
7370 \@citedatax[{#1}]%
7371 }%

7372 }{}

```

## 38 Page numbers

The last page should not contain a /Dur key, because there is no page after the last page. Therefore at the last page there should be a command `\hypersetup{pdfpageduration={}}`. This can be set with `\AtEndDocument`, but it can be too late, if the last page is already finished, or too early, if lots of float pages will follow. Therefore currently nothing is done by `hyperref`.

This where we supply a destination for each page.

```

7373 \def\Hy@EveryPageAnchor{%
7374 \Hy@DistillerDestFix
7375 \ifHy@pageanchor
7376 \ifHy@hypertextnames
7377 \ifHy@plainpages
7378 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7379 \else
7380 \begingroup
7381 \let\@number\@firstofone

```

```

7382     \Hy@unicodedefalse
7383     \pdfstringdef\@the@H@page{\thepage}%
7384     \endgroup
7385     \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7386     \fi
7387   \else
7388     \Hy@GlobalStepCount\Hy@pagecounter
7389     \def\Hy@TempPageAnchor{%
7390       \hyper@@anchor{page.\the\Hy@pagecounter}%
7391     }%
7392     \fi
7393     \vbox to 0pt{%
7394       \kern\voffset
7395       \kern\topmargin
7396       \kern-1bp\relax
7397       \hbox to 0pt{%
7398         \kern\hoffset
7399         \kern\ifodd\value{page}%
7400           \oddsidemargin
7401         \else
7402           \evensidemargin
7403         \fi
7404         \kern-1bp\relax
7405         \Hy@TempPageAnchor\relax
7406       \hss
7407     }%
7408     \vss
7409   }%
7410 \fi
7411 }
7412 \g@addto@macro\Hy@EveryPageBoxHook{%
7413   \Hy@EveryPageAnchor
7414 }

```

## 39 Table of contents

TV Raman noticed that people who add arbitrary material into the TOC generate a bad or null link. We avoid that by checking if the current destination is empty. But if ‘the most recent destination’ is not what you expect, you will be in trouble.

```

7415 \def\addcontentsline#1#2#3{% toc extension, type, tag
7416   \begingroup
7417   \let\label\@gobble
7418   \ifx\@currentHref\@empty
7419     \Hy@Warning{%
7420       No destination for bookmark of \string\addcontentsline,%
7421       \MessageBreak destination is added%
7422     }%
7423     \phantomsection
7424   \fi
7425   \expandafter\ifx\csname toplevel@#2\endcsname\relax
7426     \begingroup
7427     \def\Hy@tempa{#1}%
7428     \ifx\Hy@tempa\Hy@bookmarkstype
7429       \Hy@WarningNoLine{%
7430         bookmark level for unknown #2 defaults to 0%
7431       }%

```

```

7432     \else
7433         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7434     \fi
7435 \endgroup
7436 \expandafter\gdef\csname toclevel@#2\endcsname{0}%
7437 \fi
7438 \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
7439 \Hy@writebookmark{\csname the#2\endcsname}%
7440     {#3}%
7441     {\@currentHref}%
7442     {\Hy@toclevel}%
7443     {#1}%
7444 \ifHy@verbose
7445     \begingroup
7446         \def\Hy@tempa{#3}%
7447         \@onelevel@sanitize\Hy@tempa
7448         \let\temp@online\on@line
7449         \let\on@line\@empty
7450         \Hy@Info{%
7451             bookmark\temp@online:\MessageBreak
7452             thecounter {\csname the#2\endcsname}\MessageBreak
7453             text {\Hy@tempa}\MessageBreak
7454             reference {\@currentHref}\MessageBreak
7455             toclevel {\Hy@toclevel}\MessageBreak
7456             type {#1}%
7457         }%
7458     \endgroup
7459 \fi
7460 \addtocontents{#1}{%
7461     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
7462 }%
7463 \endgroup
7464 }
7465 \def\contentsline#1#2#3#4{%
7466     \ifx\\#4\\%
7467         \csname l@#1\endcsname{#2}{#3}%
7468     \else
7469         \ifcase\Hy@linktoc % none
7470             \csname l@#1\endcsname{#2}{#3}%
7471         \or % section
7472             \csname l@#1\endcsname{%
7473                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7474             }{#3}%
7475         \or % page
7476             \csname l@#1\endcsname{{#2}}{%
7477                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7478             }%
7479         \else % all
7480             \csname l@#1\endcsname{%
7481                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7482             }{%
7483                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7484             }%
7485         \fi
7486     \fi
7487 }
7488 \end{package}

```

```

7489 <*check>
7490 \checklatex
7491 \checkcommand\def\addcontentsline#1#2#3{%
7492   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}}%
7493 }
7494 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
7495 </check>
7496 <*package>

```

## 40 New counters

The whole theorem business makes up new counters on the fly; we are going to intercept this. Sigh. Do it at the level where new counters are defined.

```

7497 \let\H@definecounter\@definecounter
7498 \def\@definecounter#1{%
7499   \H@definecounter{#1}%
7500   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
7501 }

```

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.

```

7502 \let\H@newctr\@newctr
7503 \def\@newctr#1[#2]{%
7504   \H@newctr#1[{#2}]%
7505   \expandafter\def\csname theH#1\endcsname{%
7506     \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
7507   }%
7508 }

```

## 41 AMS $\text{\LaTeX}$ compatibility

Oh, no, they don't use anything as simple as `\refstepcounter` in the AMS! We need to intercept some low-level operations of theirs. Damned if we are going to try and work out what they get up to. Just stick a label of 'AMS' on the front, and use the label *they* worked out. If that produces something invalid, I give up. They'll change all the code again anyway, I expect (SR).

Version 6.77p uses a patch by Ross Moore.

```

7509 \ifpackageloaded{amsmath}{%
7510   \def\Hy@make@anchor{%
7511     \Hy@MakeCurrentHrefAuto{AMS}%
7512     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7513   }%
7514   \def\Hy@make@df@tag@@#1{%
7515     \gdef\df@tag{%
7516       \maketag@@@{\Hy@make@anchor#1}%
7517       \def\@currentlabel{#1}%
7518     }%
7519   }%
7520   \def\Hy@make@df@tag@@@#1{%
7521     \gdef\df@tag{%
7522       \tagform@{\Hy@make@anchor#1}%
7523       \toks@{\xp{\p@equation{#1}}}%
7524       \edef\@currentlabel{\the\toks@}%
7525     }%
7526   }%

```

```

7527 \let\HyOrg@make@df@tag@@\make@df@tag@@
7528 \let\HyOrg@make@df@tag@@@ \make@df@tag@@@
7529 \let\make@df@tag@@\Hy@make@df@tag@@
7530 \let\make@df@tag@@@ \Hy@make@df@tag@@@
7531 }{}

```

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

```

7532 \ifpackagewith{hyperref}{pdfTeX}{%
7533   \let\H@seteqlabel\@seteqlabel
7534   \def\@seteqlabel#1{%
7535     \H@seteqlabel{#1}%
7536     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
7537     \Hy@raisedlink{%
7538       \hyper@anchorstart{\@currentHref}\hyper@anchorend
7539     }%
7540   }%
7541 }{}

```

This code I simply cannot remember what I was trying to achieve. The final result seems to do nothing anyway.

```

\let\H@tagform@\tagform@
\def\tagform@#1{%
  \maketag@@@{\hyper@@anchor{\@currentHref}%
    {(\ignorespaces#1\unskip)}}%
}
\def\eqref#1{\textup{\H@tagform@{\ref{#1}}}}

```

## 41.1 \@addtoreset and \numberwithin patches

\@addtoreset puts a counter to the reset list of another counter. After a reset the counter starts again with perhaps already used values. Therefore the hyperref version of the counter print command \theHcounter is redefined in order to add the parent counter.

```

7542 \let\HyOrg@addtoreset\@addtoreset
7543 \def\@addtoreset#1#2{%
7544   \HyOrg@addtoreset{#1}{#2}%
7545   \expandafter\xdef\csname theH#1\endcsname{%
7546     \expandafter\noexpand
7547     \csname the\@ifundefined{theH#2}{H#2}\endcsname
7548     .\noexpand\the\noexpand\value{#1}%
7549   }%
7550 }

```

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

```

7551 </package>
7552 <*check>
7553 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
7554 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
7555   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
7556     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
7557       \@addtoreset{#2}{#3}%
7558       \exp\xdef\csname the#2\endcsname{%
7559         \exp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7560       }%
7561     }%
7562   }%

```

```

7563 }%
7564 </check>
7565 <*package>
7566 \ifpackageloaded{amsmath}{%
7567   \ifpackagelater{amsmath}{1999/12/14}{%
7568     \renewcommand*{\numberwithin}{3}[\arabic]{%
7569       \ifundefined{c@#2}{\@nocounterr{#2}}{%
7570         \ifundefined{c@#3}{\@nocnterr{#3}}{%
7571           \HyOrg@addtoreset{#2}{#3}%
7572           \@xp\xdef\csname the#2\endcsname{%
7573             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7574           }%
7575           \@xp\xdef\csname theH#2\endcsname{%
7576             \@xp\@nx
7577             \csname the\ifundefined{theH#3}{H#3}\endcsname
7578             .\@nx#1{#2}%
7579           }%
7580         }%
7581       }%
7582     }%
7583   }{%
7584     \Hy@WarningNoLine{%
7585       \string\numberwithin\space of package ‘amsmath’ %
7586       only fixed\MessageBreak
7587       for version 2000/06/06 v2.12 or newer%
7588     }%
7589   }%
7590 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

7591 \ifHy@figures
7592   \let\Hy@Gin@setfile\Gin@setfile
7593   \def\Gin@setfile#1#2#3{%
7594     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
7595   }%
7596 \fi
7597 \Hy@DisableOption{hyperfigures}

```

## 43 hyperindex entries

Internal command names are prefixed with \HyInd@.

Hyper-indexing works crudely, by forcing code onto the end of the index entry with the | feature; this puts a hyperlink around the printed page numbers. It will not proceed if the author has already used the | specifier for something like boldening entries. That would make Makeindex fail (cannot have two | specifiers). The solution is for the author to use generic coding, and put in the requisite \hyperpage in his/her own macros along with the boldness.

This section is poor stuff; it’s open to all sorts of abuse. Sensible large projects will design their own indexing macros any bypass this.

```

7598 \ifHy@hyperindex
7599   \def\HyInd@ParenLeft{()}%
7600   \def\HyInd@ParenRight{)}%

```

```

7601 \def\hyperindexformat#1#2{%
7602   \let\HyOrg@hyperpage\hyperpage
7603   \let\hyperpage\@firstofone
7604   #1{\HyOrg@hyperpage{#2}}}%
7605   \let\hyperpage\HyOrg@hyperpage
7606 }%
7607 \Hy@nextfalse
7608 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
7609 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
7610 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
7611 \begingroup
7612   \lccode'\|=\expandafter'\HyInd@EncapChar\relax
7613   \lccode'\|/\='\\relax
7614 \lowercase{\endgroup
7615   \ifHy@next
7616     \let\HyInd@org@wrindex\@wrindex
7617     \def\@wrindex#1#2{\HyInd@\@wrindex{#1}#2||\}%
7618     \def\HyInd@\@wrindex#1#2|#3|#4\{\%
7619       \ifx\|#3\%
7620         \HyInd@org@wrindex{#1}{#2|hyperpage}%
7621       \else
7622         \HyInd@@@wrindex{#1}{#2}#3\%
7623       \fi
7624     }%
7625     \def\HyInd@@@wrindex#1#2#3#4\{\%
7626     \def\Hy@temp@A{#3}%
7627     \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7628       \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7629       \relax
7630       \HyInd@org@wrindex{#1}{%
7631         #2|hyperindexformat{/#3#4}%
7632       }%
7633     \else
7634       \ifx\|#4\%
7635         \ifx\Hy@temp@A\HyInd@ParenRight
7636           \HyInd@org@wrindex{#1}{#2|#3}%
7637         \else
7638           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
7639         \fi
7640       \else
7641         \HyInd@org@wrindex{#1}{%
7642           #2|#3hyperindexformat{/#4}%
7643         }%
7644       \fi
7645     \fi
7646   }%
7647 \else
7648   \def\@wrindex#1{\@wrindex#1||\}%
7649   \def\@wrindex#1|#2|#3\{\%
7650   \if@filesw
7651     \ifx\|#2\%
7652       \protected@write\@indexfile{}{%
7653         \string\indexentry{#1|hyperpage}{\thepage}%
7654       }%
7655     \else
7656       \HyInd@@@wrindex{#1}#2\%
7657     \fi

```

```

7658 \fi
7659 \endgroup
7660 \@esphack
7661 }%
7662 \def\HyInd@@@wrindex#1#2#3\{\{%
7663 \def\Hy@temp@A{#2}%
7664 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7665 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7666 \relax
7667 \protected@write\@indexfile{\{\{%
7668 \string\indexentry{\%
7669 #1|hyperindexformat{/#2#3}%
7670 }\{thepage}%
7671 }%
7672 \else
7673 \ifx\#3\{\%
7674 \ifx\Hy@temp@A\HyInd@ParenRight
7675 \protected@write\@indexfile{\{\{%
7676 \string\indexentry{#1|#2}\{thepage}%
7677 }%
7678 \else
7679 \protected@write\@indexfile{\{\{%
7680 \string\indexentry{#1|#2hyperpage}\{thepage}%
7681 }%
7682 \fi
7683 \else
7684 \protected@write\@indexfile{\{\{%
7685 \string\indexentry{\%
7686 #1|#2hyperindexformat{/#3}%
7687 }\{thepage}%
7688 }%
7689 \fi
7690 \fi
7691 }%
7692 \fi
7693 }%
7694 \fi
7695 \Hy@DisableOption{hyperindex}
7696 \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.

```

7697 \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.

```

7698 \def\hyperpage#1{\%
7699 \HyInd@hyperpage#1\nohyperpage{\}\@nil
7700 }
7701 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{\%
7702 \HyInd@@@hyperpage{#1}%
7703 #2%
7704 \def\Hy@temp{#3}%
7705 \ifx\Hy@temp\@empty
7706 \else
7707 \Hy@ReturnAfterFi{\%
7708 \HyInd@hyperpage#3\@nil

```



```

7709 }%
7710 \fi
7711 }
7712 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
7713 \def\@hyperpage#1--#2--#3\{%
7714 \ifx\#2\%
7715 \commahyperpage{#1}%
7716 \else
7717 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
7718 \fi
7719 }
7720 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
7721 \def\@commahyperpage#1, #2,#3\{%
7722 \ifx\#2\%
7723 \HyInd@pagelink{#1}%
7724 \else
7725 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
7726 \fi
7727 }

```

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

```

7728 \def\HyInd@pagelink#1{%
7729 \begingroup
7730 \toks@={}%
7731 \HyInd@removespaces#1 \@nil
7732 \endgroup
7733 }
7734 \def\HyInd@removespaces#1 #2\@nil{%
7735 \toks@=\expandafter{\the\toks@#1}%
7736 \ifx\#2\%
7737 \edef\x{\the\toks@}%
7738 \ifx\x\@empty
7739 \else
7740 \hyperlink{page.\the\toks@}{\the\toks@}%
7741 \fi
7742 \else
7743 \Hy@ReturnAfterFi{%
7744 \HyInd@removespaces#2\@nil
7745 }%
7746 \fi
7747 }

```

## 44 Compatibility with foiltex

```

7748 \@ifclassloaded{foils}{%
7749 \providecommand*\ext@table{lot}%
7750 \providecommand*\ext@figure{lof}%
7751 }{}

```

## 45 Compatibility with seminar slide package

This requires seminar.bg2, version 1.6 or later. Contributions by Denis Girou (denis.girou@idris.fr).

```

7752 \@ifclassloaded{seminar}{%
7753 \Hy@seminarslides true\newcommand\theHslide{\arabic{slide}}}%

```

```

7754 }{%
7755   \Hy@seminarslidesfalse
7756 }
7757 \@ifpackageloaded{slidesec}{%
7758   \newcommand\theHslidesection  {\arabic{slidesection}}%
7759   \newcommand\theHslidesubsection{%
7760     \theHslidesection.\arabic{slidesubsection}%
7761   }%
7762   \def\slide@heading[#1]#2{%
7763     \H@refstepcounter{slidesection}%
7764     \@addtoreset{slidesubsection}{slidesection}%
7765     \addtocontents{los}{%
7766       \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
7767       {\@SCTR}{\slideheading.\theslidesection}%
7768     }%
7769     \def\Hy@tempa{#2}%
7770     \ifx\Hy@tempa\@empty
7771     \else
7772       {%
7773         \edef\@currentlabel{%
7774           \csname p@slidesection\endcsname\theslidesection
7775         }%
7776         \makeslideheading{#2}%
7777       }%
7778     \fi
7779     \gdef\theslideheading{#1}%
7780     \gdef\theslidesubheading{}%
7781     \ifHy@bookmarksnumbered
7782       \def\Hy@slidetitle{\theslidesection\space #1}%
7783     \else
7784       \def\Hy@slidetitle{#1}%
7785     \fi
7786     \ifHy@hypertexnames
7787       \ifHy@naturalnames
7788         \hyper@@anchor{slideheading.\theslidesection}{\relax}%
7789         \Hy@writebookmark
7790           {\theslidesection}%
7791           {\Hy@slidetitle}%
7792           {slideheading.\theslidesection}%
7793           {1}%
7794           {toc}%
7795       \else
7796         \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
7797         \Hy@writebookmark
7798           {\theslidesection}%
7799           {\Hy@slidetitle}%
7800           {slideheading.\theHslidesection}%
7801           {1}%
7802           {toc}%
7803       \fi
7804     \else
7805       \Hy@GlobalStepCount\Hy@linkcounter
7806       \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
7807       \Hy@writebookmark
7808         {\theslidesection}%
7809         {\Hy@slidetitle}%
7810         {slideheading.\the\Hy@linkcounter}%

```

```

7811 {1}%
7812 {toc}%
7813 \fi
7814 }%
7815 \def\slide@subheading[#1]#2{%
7816 \H@refstepcounter{slidesubsection}%
7817 \addtocontents{los}{%
7818 \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
7819 {\@SCTR}{slideheading.\theslidesubsection}%
7820 }%
7821 \def\Hy@tempa{#2}%
7822 \ifx\Hy@tempa\@empty
7823 \else
7824 {%
7825 \edef\@currentlabel{%
7826 \csname p@slidesubsection\endcsname\theslidesubsection
7827 }%
7828 \makeslidesubheading{#2}%
7829 }%
7830 \fi
7831 \gdef\theslidesubheading{#1}%
7832 \ifHy@bookmarksnumbered
7833 \def\Hy@slidetitle{\theslidesubsection\space #1}%
7834 \else
7835 \def\Hy@slidetitle{#1}%
7836 \fi
7837 \ifHy@hypertextnames
7838 \ifHy@naturalnames
7839 \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
7840 \Hy@writebookmark
7841 {\theslidesubsection}%
7842 {\Hy@slidetitle}%
7843 {slideheading.\theslidesubsection}%
7844 {2}%
7845 {toc}%
7846 \else
7847 \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
7848 \Hy@writebookmark
7849 {\theslidesubsection}%
7850 {\Hy@slidetitle}%
7851 {slideheading.\theHslidesubsection}%
7852 {2}%
7853 {toc}%
7854 \fi
7855 \else
7856 \Hy@GlobalStepCount\Hy@linkcounter
7857 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
7858 \Hy@writebookmark
7859 {\theslidesubsection}%
7860 {\Hy@slidetitle}%
7861 {slideheading.\the\Hy@linkcounter}%
7862 {1}%
7863 {toc}%
7864 \fi
7865 }%
7866 \providecommand*{\listslidenam}{List of Slides}%
7867 \def\listofslides{%

```

```

7868 \section*{%
7869 \listslidenam
7870 \@mkboth{%
7871 \expandafter\MakeUppercase\listslidenam
7872 }{%
7873 \expandafter\MakeUppercase\listslidenam
7874 }%
7875 }%
7876 \def\l@slide##1##2##3##4{%
7877 \slide@undottedcline{%
7878 \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
7879 }{%
7880 }%
7881 \let\l@subslide\l@slide
7882 \@startlos
7883 }%
7884 \def\slide@contents{%
7885 \def\l@slide##1##2##3##4{%
7886 \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
7887 }%
7888 \let\l@subslide\@gobblefour
7889 \@startlos
7890 }%
7891 \def\Slide@contents{%
7892 \def\l@slide##1##2##3##4{%
7893 \ifcase\lslide@flag
7894 \message{##1 ** \the\c@slidesection}%
7895 \ifnum##1>\c@slidesection
7896 \def\lslide@flag{1}%
7897 {%
7898 \large
7899 \slide@ccline{%
7900 \slidenumberline{$\rightarrow\bullet$}%
7901 {\hyperlink{##4}{##2}}}%
7902 }{##3}%
7903 }%
7904 \else
7905 {%
7906 \large
7907 \slide@ccline{%
7908 \slidenumberline{$\surd\;\bullet$}%
7909 {\hyperlink{##4}{##2}}}%
7910 }{##3}%
7911 }%
7912 \fi
7913 \or
7914 \def\lslide@flag{2}%
7915 {%
7916 \large
7917 \slide@ccline{%
7918 \slidenumberline{$\bullet$}%
7919 {\hyperlink{##4}{##2}}}%
7920 }{##3}%
7921 }%
7922 \or
7923 {%
7924 \large

```

```

7925 \slide@cline{%
7926 \slidenumberline{$\bullet$}%
7927 {\hyperlink{##4}{##2}}}%
7928 }{##3}%
7929 }%
7930 \fi
7931 }%
7932 \def\l@subslide##1##2##3##4{%
7933 \ifnum\lslide@flag=1 %
7934 \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}}%
7935 \fi
7936 }%
7937 \def\lslide@flag{0}%
7938 \@startlos
7939 }%
7940 }{}

```

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.)

```

7941 \ifHy@texht
7942 \expandafter\endinput
7943 \fi
7944 \let\real@setref\@setref
7945 \def\@setref#1#2#3{% csname, extract group, refname
7946 \ifx#1\relax
7947 \protect\G@refundefinedtrue
7948 \nfss@text{\reset@font\bfseries ??}%
7949 \@latex@warning{%
7950 Reference ‘#3’ on page \thepage \space undefined%
7951 }%
7952 \else
7953 \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
7954 \fi
7955 }

```

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

```

7956 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
7957 \begingroup
7958 \toks0={\hyper@@link{#5}{#4}}%
7959 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
7960 \edef\x{\endgroup
7961 \the\toks0 {\the\toks1 }}%
7962 }%
7963 \x
7964 }
7965 \def\@pagesetref#1#2#3{% csname, extract macro, ref
7966 \ifx#1\relax
7967 \protect\G@refundefinedtrue
7968 \nfss@text{\reset@font\bfseries ??}%
7969 \@latex@warning{%
7970 Reference ‘#3’ on page \thepage \space undefined%
7971 }%
7972 \else
7973 \protect\hyper@@link
7974 {\expandafter\@fifthoffive#1}%
7975 {page.\expandafter\@secondoffive#1}%

```

```

7976     {\expandafter\@secondoffive#1}%
7977   \fi
7978 }

7979 </package>
7980 <*check>
7981 \checklatex
7982 \checkcommand\def\@setref#1#2#3{%
7983   \ifx#1\relax
7984     \protect\G@refundefinedtrue
7985     \nfss@text{\reset@font\bfseries ??}%
7986     \@latex@warning{%
7987       Reference '#3' on page \thepage\space undefined%
7988     }%
7989   \else
7990     \expandafter#2#1\null
7991   \fi
7992 }
7993 </check>
7994 <*package>

```

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

```

7995 \def\HyRef@StarSetRef#1{%
7996   \begingroup
7997   \Hy@safe@activetrue
7998   \edef\x{#1}%
7999   \@onelevel@sanitize\x
8000   \edef\x{\endgroup
8001     \noexpand\HyRef@@StarSetRef
8002     \expandafter\noexpand\csname r@\x\endcsname{\x}%
8003   }%
8004   \x
8005 }
8006 \def\HyRef@@StarSetRef#1#2#3{%
8007   \ifx#1\@undefined
8008     \let#1\relax
8009   \fi
8010   \real@setref#1#3{#2}%
8011 }
8012 \def\@refstar#1{%
8013   \HyRef@StarSetRef{#1}\@firstoffive
8014 }
8015 \def\@pagerefstar#1{%
8016   \HyRef@StarSetRef{#1}\@secondoffive
8017 }
8018 \def\@namerefstar#1{%
8019   \HyRef@StarSetRef{#1}\@thirdoffive
8020 }
8021 \Hy@AtBeginDocument{%
8022   \@ifpackageloaded{varioref}{%
8023     \def\@Refstar#1{%
8024       \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8025     }%
8026     \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8027       \MakeUppercase#1%
8028     }%
8029     \DeclareRobustCommand*\{Ref}{%

```

```

8030 \@ifstar\@Refstar\HyRef@Ref
8031 }%
8032 \def\HyRef@Ref#1{%
8033 \hyperref[#1]{\Ref*{#1}}%
8034 }%
8035 \def\vr@f#1{%
8036 \leavevmode\unskip\vref@space
8037 \hyperref[#1]{%
8038 \Ref*{#1}%
8039 \let\vref@space\nobreakspace
8040 \@vpageref\unskip}{#1}%
8041 }%
8042 }%
8043 \def\vr@f#1{%
8044 \leavevmode\unskip\vref@space
8045 \begingroup
8046 \let\T@pageref\@pagerefstar
8047 \hyperref[#1]{%
8048 \ref*{#1}%
8049 \vpageref\unskip}{#1}%
8050 }%
8051 \endgroup
8052 }%
8053 }{}%
8054 }
8055 \DeclareRobustCommand*\autopageref{%
8056 \@ifstar{%
8057 \HyRef@autopagerefname\pageref*%
8058 }\HyRef@autopageref
8059 }
8060 \def\HyRef@autopageref#1{%
8061 \hyperref[#1]{\HyRef@autopagerefname\pageref*{#1}}%
8062 }
8063 \def\HyRef@autopagerefname{%
8064 \ltx@ifundefined{pageautorefname}{%
8065 \ltx@ifundefined{pagename}{%
8066 \Hy@Warning{No autoref name for 'page'}%
8067 }{%
8068 \pagename\nobreakspace
8069 }%
8070 }{}%
8071 \pageautorefname\nobreakspace
8072 }%
8073 }
8074 \DeclareRobustCommand*\autoref{%
8075 \@ifstar{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@@link}%
8076 }
8077 \def\HyRef@autoref#1#2{%
8078 \begingroup
8079 \Hy@safe@activetrue
8080 \expandafter\HyRef@autosetref\csize r@#2\endcsname{#2}{#1}%
8081 \endgroup
8082 }
8083 \def\HyRef@autosetref#1#2#3{% link command, csize, refname
8084 \HyRef@ShowKeysRef{#2}%
8085 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8086 \edef\HyRef@thisref{%

```

```

8087 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8088 }%
8089 \expandafter\HyRef@testreftype\HyRef@thisref.\\%
8090 \Hy@safe@activesfalse
8091 #3{%
8092 \expandafter\@fifthoffive#1\@empty\@empty\@empty
8093 }{%
8094 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8095 }{%
8096 \HyRef@currentHtag
8097 \expandafter\@firstoffive#1\@empty\@empty\@empty
8098 \null
8099 }%
8100 \else
8101 \protect\G@refundefinedtrue
8102 \nfss@text{\reset@font\bfseries ??}%
8103 \@latex@warning{%
8104 Reference '#2' on page \thepage\space undefined%
8105 }%
8106 \fi
8107 }
8108 \def\HyRef@testreftype#1.#2\\{%
8109 \ltx@ifundefined{#1autorefname}{%
8110 \ltx@ifundefined{#1name}{%
8111 \HyRef@StripStar#1\*\@nil{#1}%
8112 \ltx@ifundefined{\HyRef@name autorefname}{%
8113 \ltx@ifundefined{\HyRef@name name}{%
8114 \def\HyRef@currentHtag{%
8115 \Hy@Warning{No autoref name for '#1'}%
8116 }{%
8117 \edef\HyRef@currentHtag{%
8118 \expandafter\noexpand\csname\HyRef@name name\endcsname
8119 \noexpand~%
8120 }%
8121 }%
8122 }{%
8123 \edef\HyRef@currentHtag{%
8124 \expandafter\noexpand
8125 \csname\HyRef@name autorefname\endcsname
8126 \noexpand~%
8127 }%
8128 }%
8129 }{%
8130 \edef\HyRef@currentHtag{%
8131 \expandafter\noexpand\csname#1name\endcsname
8132 \noexpand~%
8133 }%
8134 }%
8135 }{%
8136 \edef\HyRef@currentHtag{%
8137 \expandafter\noexpand\csname#1autorefname\endcsname
8138 \noexpand~%
8139 }%
8140 }%
8141 }
8142 \def\HyRef@StripStar#1*\#2\@nil#3{%
8143 \def\HyRef@name{#2}%

```



```

8144 \ifx\HyRef@name\HyRef@CaseStar
8145 \def\HyRef@name{#1}%
8146 \else
8147 \def\HyRef@name{#3}%
8148 \fi
8149 }
8150 \def\HyRef@CaseStar{*\\}
8151 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8152 \let\HyRef@ShowKeysRef\@gobble
8153 \def\HyRef@ShowKeysInit{%
8154 \begingroup\expandafter\expandafter\expandafter\endgroup
8155 \expandafter\ifx\csname SK@@label\endcsname\relax
8156 \else
8157 \ifx\SK@ref\@empty
8158 \else
8159 \def\HyRef@ShowKeysRef{%
8160 \SK@\SK@\@ref
8161 }%
8162 \fi
8163 \fi
8164 }
8165 \@ifpackageloaded{showkeys}{%
8166 \HyRef@ShowKeysInit
8167 }{%
8168 \Hy@AtBeginDocument{%
8169 \@ifpackageloaded{showkeys}{%
8170 \HyRef@ShowKeysInit
8171 }{}%
8172 }%
8173 }

```

Defaults for the names that \autoref uses.

```

8174 \providecommand*\AMSautorefname{\equationautorefname}
8175 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8176 \providecommand*\Itemautorefname{\itemautorefname}
8177 \providecommand*\itemautorefname{item}
8178 \providecommand*\equationautorefname{Equation}
8179 \providecommand*\footnoteautorefname{footnote}
8180 \providecommand*\itemautorefname{item}
8181 \providecommand*\figureautorefname{Figure}
8182 \providecommand*\tableautorefname{Table}
8183 \providecommand*\partautorefname{Part}
8184 \providecommand*\appendixautorefname{Appendix}
8185 \providecommand*\chapterautorefname{chapter}
8186 \providecommand*\sectionautorefname{section}
8187 \providecommand*\subsectionautorefname{subsection}
8188 \providecommand*\subsubsectionautorefname{subsubsection}
8189 \providecommand*\paragraphautorefname{paragraph}
8190 \providecommand*\subparagraphautorefname{subparagraph}
8191 \providecommand*\FancyVerbLineautorefname{line}
8192 \providecommand*\theoremautorefname{Theorem}
8193 \providecommand*\pageautorefname{page}
8194 \</package>

```

## 46 Configuration files

### 46.1 PS/PDF strings

Some drivers write PS or PDF strings. These strings are delimited by parentheses, therefore a lonely unmatched parenthesis must be avoided to avoid PS or PDF syntax errors. Also the backslash character itself has to be protected.

`\Hy@pstringdef` Therefore such strings should be passed through `\Hy@pstringdef`. The first argument holds a macro for the result, the second argument is the string that needs protecting. Since version 1.30.0 pdfTeX offers `\pdfescapestring`.

```
8195 <*pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>
8196 \RequirePackage{pdfTeXcmds}[2009/04/10]
8197 \begingroup\expandafter\expandafter\expandafter\endgroup
8198 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8199 \begingroup
8200 \catcode'\|=0 %
8201 \@makeother\|%
8202 |@firstofone{|endgroup
8203 |def|Hy@pstringdef#1#2{%
8204 |begingroup
8205 |edef~{|string~}%
8206 |xdef|Hy@gtemp{#2}%
8207 |endgroup
8208 |let#1|Hy@gtemp
8209 |@onelevel@sanitize#1%
8210 |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8211 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8212 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8213 }%
8214 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8215 #1%
8216 |ifx|\#2\|%%
8217 |else
8218 \\\%
8219 |Hy@ReturnAfterFi{%
8220 |Hy@ExchangeBackslash#2|@nil
8221 }%
8222 |fi
8223 }%
8224 }%
8225 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8226 #1%
8227 \ifx\#2\|%%
8228 \else
8229 \@backslashchar(%
8230 \Hy@ReturnAfterFi{%
8231 \Hy@ExchangeLeftParenthesis#2\@nil
8232 }%
8233 \fi
8234 }%
8235 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8236 #1%
8237 \ifx\#2\|%%
8238 \else
8239 \@backslashchar)%
8240 \Hy@ReturnAfterFi{%
```

```

8241      \Hy@ExchangeRightParenthesis#2\@nil
8242    }%
8243  \fi
8244 }%
8245 \else
8246 \def\Hy@pstringdef#1#2{%
8247   \begingroup
8248     \edef~{\string~}%
8249     \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8250   \endgroup
8251   \let#1\Hy@gtemp
8252 }%
8253 \fi
8254 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 46.2 pdfTeX

```

8255 <*pdfTeX>
8256 \providecommand*{\XR@ext}{pdf}
8257 \Hy@setbreaklinks{true}
8258 \def\HyPat@ObjRef{%
8259   [0-9]*[1-9][0-9]* 0 R%
8260 }

```

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`

```

8261 \let\Hy@pdfminorversion\relax
8262 \begingroup\expandafter\expandafter\expandafter\endgroup
8263 \expandafter\ifx\csname pdfminorversion\endcsname\relax
8264   \begingroup\expandafter\expandafter\expandafter\endgroup
8265   \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
8266     \else
8267       \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8268     \fi
8269   \else
8270     \def\Hy@pdfminorversion{\pdfminorversion}%
8271   \fi
8272 \@ifundefined{Hy@pdfminorversion}{%
8273   \PackageInfo{hyperref}{%
8274     PDF version is not set, because pdfTeX is too old (<1.10a)%
8275   }%
8276 }{%
8277   \ifHy@ocgcolorlinks
8278     \ifnum\Hy@pdfminorversion<5 %
8279       \kvsetkeys{Hyp}{pdfversion=1.5}%
8280     \fi
8281   \fi
8282   \ifHy@setpdfversion
8283     \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
8284   \else
8285     \Hy@pdfminorversion=\Hy@pdfversion\relax
8286   \fi

```

```

8287 \PackageInfo{hyperref}{%
8288 \expandafter\string\Hy@pdfminorversion
8289 :=\number\Hy@pdfversion\space
8290 }%
8291 \fi
8292 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
8293 }
8294 \Hy@DisableOption{pdfversion}%

8295 \ifHy@ocgcolorlinks
8296 \immediate\pdfobj{%
8297 <<%
8298 /Type/OCG%
8299 /Name(View)%
8300 /Usage<<%
8301 /Print<<%
8302 /PrintState/OFF%
8303 >>%
8304 /View<<%
8305 /ViewState/ON%
8306 >>%
8307 >>%
8308 >>%
8309 }%
8310 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
8311 \immediate\pdfobj{%
8312 <<%
8313 /Type/OCG%
8314 /Name(Print)%
8315 /Usage<<%
8316 /Print<<%
8317 /PrintState/ON%
8318 >>%
8319 /View<<%
8320 /ViewState/OFF%
8321 >>%
8322 >>%
8323 >>%
8324 }%
8325 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
8326 \immediate\pdfobj{%
8327 [%
8328 \OBJ@OCG@view\space\OBJ@OCG@print
8329 ]%
8330 }%
8331 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
8332 \pdfcatalog{%
8333 /OCProperties<<%
8334 /OCGs \OBJ@OCGs
8335 /D<<%
8336 /OFF[\OBJ@OCG@print]%
8337 /AS[%
8338 <<%
8339 /Event/View%
8340 /OCGs \OBJ@OCGs
8341 /Category[/View]%
8342 >>%
8343 <<%

```

```

8344         /Event/Print%
8345         /OCGs \OBJ@OCGs
8346         /Category[/Print]%
8347     >>%
8348     <<%
8349         /Event/Export%
8350         /OCGs \OBJ@OCGs
8351         /Category[/Print]%
8352     >>%
8353     ]%
8354     >>%
8355     >>%
8356     }%
8357     \beginngroup
8358     \edef\x{\endgroup
8359     \pdfpageresources{%
8360         /Properties<<%
8361         /OCView \OBJ@OCG@view
8362         /OCPrint \OBJ@OCG@print
8363     >>%
8364     }%
8365     }%
8366     \x
8367     \Hy@AtBeginDocument{%
8368     \def\Hy@colorlink#1{%
8369     \beginngroup
8370     \ifHy@ocgcolorlinks
8371     \def\Hy@ocgcolor{#1}%
8372     \setbox0=\hbox\bgroup\color@beginngroup
8373     \else
8374     \HyColor@UseColor#1%
8375     \fi
8376     }%
8377     \def\Hy@endcolorlink{%
8378     \ifHy@ocgcolorlinks
8379     \color@endgroup\egroup
8380     \mbox{%
8381     \pdfliteral page{/OC/OCPrint BDC}%
8382     \rlap{\copy0}%
8383     \pdfliteral page{EMC/OC/OCView BDC}%
8384     \beginngroup
8385     \expandafter\HyColor@UseColor\Hy@ocgcolor
8386     \box0 %
8387     \endgroup
8388     \pdfliteral page{EMC}%
8389     }%
8390     \fi
8391     \endgroup
8392     }%
8393     }%
8394     \else
8395     \Hy@DisableOption{ocgcolorlinks}%
8396     \fi

```

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

```

8397 \def\setpdfinkmargin#1{\pdfinkmargin#1}
8398 \ifx\pdfstartlink\@undefined% less than version 14
8399 \let\pdfstartlink\pdfannotlink

```

```

8400 \let\pdfinkmargin\@tempdima
8401 \let\pdfxform\pdfform
8402 \let\pdflastxform\pdflastform
8403 \let\pdfrefxform\pdfrefform
8404 \else
8405 \pdfinkmargin1pt %
8406 \fi

```

First set up the default linking

```
8407 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```

8408 \def\new@pdfink#1{%
8409 \ifhmode
8410 \savesf\spacefactor
8411 \fi
8412 \Hy@SaveLastskip
8413 \Hy@VerboseAnchor{#1}%
8414 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8415 \Hy@DestName\Hy@pstringDest\@pdfview
8416 \Hy@RestoreLastskip
8417 \ifhmode
8418 \spacefactor\@savesf
8419 \fi
8420 }
8421 \let\pdf@endanchor\@empty

```

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

```

8422 \def\Hy@DestName#1#2{%
8423 \pdfdest name{#1}#2\relax
8424 }

```

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.

```

8425 \providecommand*\@pdfborder{0 0 1}
8426 \providecommand*\@pdfborderstyle{}
8427 \def\Hy@undefinedname{UNDEFINED}
8428 \def\find@pdfink#1#2{%
8429 \leavevmode
8430 \protected@edef\Hy@testname{#2}%
8431 \ifx\Hy@testname\@empty
8432 \Hy@Warning{%
8433 Empty destination name,\MessageBreak
8434 using '\Hy@undefinedname'%
8435 }%
8436 \let\Hy@testname\Hy@undefinedname
8437 \else
8438 \Hy@pstringdef\Hy@testname{%
8439 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8440 }%
8441 \fi
8442 \Hy@StartlinkName{%
8443 \ifHy@pdfa /F 4\fi
8444 \Hy@setpdfborder
8445 \ifx\@pdfhighlight\@empty

```

```

8446 \else
8447 /H\@pdfhighlight
8448 \fi
8449 \ifx\CurrentBorderColor\relax
8450 \else
8451 /C[\CurrentBorderColor]%
8452 \fi
8453 }\Hy@testname
8454 \expandafter\Hy@colorlink\csname @#1color\endcsname
8455 }
8456 \def\Hy@StartlinkName#1#2{%
8457 \pdfstartlink attr{#1}goto name{#2}\relax
8458 }
8459 \def\close@pdfink{%
8460 \Hy@endcolorlink
8461 \Hy@VerboseLinkStop
8462 \pdfendlink
8463 }
8464 \def\hyper@anchor#1{%
8465 \new@pdfink{#1}\anchor@spot\pdf@endanchor
8466 }
8467 \def\hyper@anchorstart#1{%
8468 \new@pdfink{#1}%
8469 \Hy@activeanchortrue
8470 }
8471 \def\hyper@anchorend{%
8472 \pdf@endanchor
8473 \Hy@activeanchorfalse
8474 }
8475 \def\hyper@linkstart#1#2{%
8476 \Hy@VerboseLinkStart{#1}{#2}%
8477 \ltx@ifundefined{@#1bordercolor}{%
8478 \let\CurrentBorderColor\relax
8479 }{%
8480 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8481 }%
8482 \find@pdfink{#1}{#2}%
8483 }
8484 \def\hyper@linkend{\close@pdfink}
8485 \def\hyper@link#1#2#3{%
8486 \Hy@VerboseLinkStart{#1}{#2}%
8487 \ltx@ifundefined{@#1bordercolor}{%
8488 \let\CurrentBorderColor\relax
8489 }{%
8490 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8491 }%
8492 \find@pdfink{#1}{#2}#3%
8493 \close@pdfink
8494 }
8495 \let\CurrentBorderColor\@linkbordercolor
8496 \def\hyper@linkurl#1#2{%
8497 \begingroup
8498 \Hy@pstringdef\Hy@pstringURI{#2}%
8499 \hyper@chars
8500 \leavevmode
8501 \pdfstartlink
8502 attr{%

```

```

8503 \Hy@setpdfborder
8504 \ifx\@pdfhighlight\@empty
8505 \else
8506 /H\@pdfhighlight
8507 \fi
8508 \ifx\@urlbordercolor\relax
8509 \else
8510 /C[\@urlbordercolor]%
8511 \fi
8512 }%
8513 user{%
8514 /Subtype/Link%
8515 \ifHy@pdfa /F 4\fi
8516 /A<<%
8517 /Type/Action%
8518 /S/URI%
8519 /URI(\Hy@pstringURI)%
8520 \ifHy@href@ismap
8521 /IsMap true%
8522 \fi
8523 \Hy@href@nextactionraw
8524 >>%
8525 }%
8526 \relax
8527 \Hy@colorlink\@urlcolor#1%
8528 \close@pdflink
8529 \endgroup
8530 }
8531 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
8532 \begingroup
8533 \def\Hy@pstringF{#2}%
8534 \Hy@CleanupFile\Hy@pstringF
8535 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
8536 \Hy@pstringdef\Hy@pstringD{#3}%
8537 \Hy@MakeRemoteAction
8538 \leavevmode
8539 \pdfstartlink
8540 attr{%
8541 \Hy@setpdfborder
8542 \ifx\@pdfhighlight\@empty
8543 \else
8544 /H\@pdfhighlight
8545 \fi
8546 \ifx\@filebordercolor\relax
8547 \else
8548 /C[\@filebordercolor]%
8549 \fi
8550 }%
8551 user {%
8552 /Subtype/Link%
8553 \ifHy@pdfa /F 4\fi
8554 /A<<%
8555 /F(\Hy@pstringF)%
8556 /S/GoToR%
8557 \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}

8558      \ifx\#3\%
8559      /D[\Hy@href@page\@pdfremotestartview]%
8560      \else
8561      /D[\Hy@pstringD)%
8562      \fi
8563      \Hy@href@nextactionraw
8564      >>%
8565      }%
8566      \relax
8567      \Hy@colorlink\@filecolor#1%
8568      \close@pdflink
8569      \endgroup
8570 }
8571 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
8572 \begingroup
8573   \Hy@pstringdef\Hy@pstringF{#1}%
8574   \Hy@pstringdef\Hy@pstringP{#3}%
8575   \leavevmode
8576   \pdfstartlink
8577   attr{%
8578     \Hy@setpdfborder
8579     \ifx\@pdfhighlight\@empty
8580     \else
8581     /H\@pdfhighlight
8582     \fi
8583     \ifx\@runbordercolor\relax
8584     \else
8585     /C[\@runbordercolor]%
8586     \fi
8587   }%
8588   user {%
8589     /Subtype/Link%
8590     \ifHy@pdfa /F 4\fi
8591     /A<<%
8592     /F(\Hy@pstringF)%
8593     /S/Launch%
8594     \Hy@SetNewWindow
8595     \ifx\#3\%
8596     \else
8597     /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8598     \fi
8599     \Hy@href@nextactionraw
8600     >>%
8601     }%
8602     \relax
8603     \Hy@colorlink\@runcolor#2%
8604     \close@pdflink
8605   \endgroup
8606 }

```

\@pdfproducer

```
8607 \ifx\@pdfproducer\relax
8608 \beginngroup\expandafter\expandafter\expandafter\endgroup
8609 \expandafter\ifx\csname luatexversion\endcsname\relax
8610 \def\@pdfproducer{pdfTeX}%
8611 \ifx\eTeXversion\@undefined
8612 \else
8613 \ifx\eTeXversion\relax
8614 \else
8615 \ifnum\eTeXversion>0 %
8616 \def\@pdfproducer{pdfTeX}%
8617 \fi
8618 \fi
8619 \fi
8620 \ifx\pdfTeXversion\@undefined
8621 \else
8622 \ifnum\pdfTeXversion<100 %
8623 \edef\@pdfproducer{%
8624 \@pdfproducer
8625 \the\pdfTeXversion.\pdfTeXrevision
8626 }%
8627 \else
8628 \ifnum\pdfTeXversion<130 %
8629 \edef\@pdfproducer{%
8630 \@pdfproducer-%
8631 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
8632 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
8633 \pdfTeXrevision
8634 }%
8635 \else
8636 \ifnum\pdfTeXversion<140 %
8637 \else
8638 \def\@pdfproducer{pdfTeX}%
8639 \fi
8640 \edef\@pdfproducer{%
8641 \@pdfproducer-%
8642 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
8643 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
8644 \pdfTeXrevision
8645 }%
8646 \fi
8647 \fi
8648 \fi
8649 \else
8650 \beginngroup
8651 \count@=\luatexversion
8652 \divide\count@ by 100 %
8653 \edef\x{\the\count@}%
8654 \count@=-\x\relax
8655 \multiply\count@ by 100 %
8656 \advance\count@ by \luatexversion
8657 \edef\x{\endgroup
8658 \def\noexpand\@pdfproducer{%
8659 LuaTeX-\x.\the\count@.\luatexrevision
8660 }%
8661 }%
8662 \x
```

8663 \fi  
8664 \fi

\PDF@SetupDox

```
8665 \def\PDF@SetupDoc{%
8666   \ifx\@pdfpagescrop\@empty
8667   \else
8668     \edef\process@me{%
8669       \pdfpagesattr={%
8670         /CropBox[\@pdfpagescrop]%
8671         \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
8672         \else
8673           ^^J\the\pdfpagesattr
8674         \fi
8675       }%
8676     }%
8677     \process@me
8678   \fi
8679   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8680   \pdfcatalog{%
8681     /PageMode/\@pdfpagemode
8682     \ifx\@baseurl\@empty
8683     \else
8684       /URI<</Base(\Hy@pstringB)>>%
8685     \fi
8686   }%
8687   \ifx\@pdfstartpage\@empty
8688   \else
8689     \ifx\@pdfstartview\@empty
8690     \else
8691       openaction goto page\@pdfstartpage{\@pdfstartview}%
8692     \fi
8693   \fi
8694   \edef\Hy@temp{%
8695     \ifHy@toolbar\else /HideToolbar true\fi
8696     \ifHy@menubar\else /HideMenubar true\fi
8697     \ifHy>windowui\else /HideWindowUI true\fi
8698     \ifHy@fitwindow /FitWindow true\fi
8699     \ifHy@centerwindow /CenterWindow true\fi
8700     \ifHy@displaydoctitle /DisplayDocTitle true\fi
8701     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8702     \Hy@UseNameKey{Direction}\@pdfdirection
8703     \Hy@UseNameKey{ViewArea}\@pdfviewarea
8704     \Hy@UseNameKey{ViewClip}\@pdfviewclip
8705     \Hy@UseNameKey{PrintArea}\@pdfprintarea
8706     \Hy@UseNameKey{PrintClip}\@pdfprintclip
8707     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8708     \Hy@UseNameKey{Duplex}\@pdfduplex
8709     \ifx\@pdfpicktraybypdfsize\@empty
8710     \else
8711       /PickTrayByPDFSize \@pdfpicktraybypdfsize
8712     \fi
8713     \ifx\@pdfprintpagerange\@empty
8714     \else
8715       /PrintPageRange\@pdfprintpagerange}%
8716   \fi
8717   \ifx\@pdfnumcopies\@empty
```

```

8718 \else
8719 /NumCopies \@pdfnumcopies
8720 \fi
8721 }%
8722 \pdfcatalog{%
8723 \ifx\Hy@temp\@empty
8724 \else
8725 /ViewerPreferences<<\Hy@temp>>%
8726 \fi
8727 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8728 \ifx\@pdflang\@empty
8729 \else
8730 /Lang(\@pdflang)%
8731 \fi
8732 }%
8733 }

```

\PDF@FinishDoc

```

8734 \def\PDF@FinishDoc{%
8735 \Hy@UseMaketitleInfos
8736 \HyInfo@GenerateAddons
8737 \pdfinfo{%
8738 /Author(\@pdfauthor)%
8739 /Title(\@pdftitle)%
8740 /Subject(\@pdfsubject)%
8741 /Creator(\@pdfcreator)%
8742 \ifx\@pdfcreationdate\@empty
8743 \else
8744 /CreationDate(\@pdfcreationdate)%
8745 \fi
8746 \ifx\@pdfmoddate\@empty
8747 \else
8748 /ModDate(\@pdfmoddate)%
8749 \fi
8750 \ifx\@pdfproducer\relax
8751 \else
8752 /Producer(\@pdfproducer)%
8753 \fi
8754 /Keywords(\@pdfkeywords)%
8755 \ifx\@pdftrapped\@empty
8756 \else
8757 /Trapped/\@pdftrapped
8758 \fi
8759 \HyInfo@Addons
8760 }%
8761 \Hy@DisableOption{pdfauthor}%
8762 \Hy@DisableOption{pdftitle}%
8763 \Hy@DisableOption{pdfsubject}%
8764 \Hy@DisableOption{pdfcreator}%
8765 \Hy@DisableOption{pdfcreationdate}%
8766 \Hy@DisableOption{pdfmoddate}%
8767 \Hy@DisableOption{pdfproducer}%
8768 \Hy@DisableOption{pdfkeywords}%
8769 \Hy@DisableOption{pdftrapped}%
8770 \Hy@DisableOption{pdfinfo}%
8771 }

```

\hyper@pagetransition \@pdfpagetransition is initialized with \relax. So it indicates, if option pdfpagetransi-

tion is used. First previous /Trans entries are removed. If a new /Trans key exists, it is appended to \pdfpageattr.

```

8772 \def\hyper@pagetransition{%
8773   \ifx\@pdfpagetransition\relax
8774   \else
8775     \expandafter\Hy@RemoveTransPageAttr
8776     \the\pdfpageattr^^J/Trans{>>\END
8777     \ifx\@pdfpagetransition\@empty
8778     \else
8779       \edef\@processme{%
8780         \global\pdfpageattr{%
8781           \the\pdfpageattr
8782           ^^J/Trans << /S /\@pdfpagetransition\space >>%
8783         }%
8784       }%
8785       \@processme
8786     \fi
8787   \fi
8788 }

```

**\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.

```

8789 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
8790   \ifx\#2\%
8791     \global\pdfpageattr{#1}%
8792   \else
8793     \Hy@RemoveTransPageAttr#1#4\END
8794   \fi
8795 }

```

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

```

8796 \def\hyper@pageduration{%
8797   \ifx\@pdfpageduration\relax
8798   \else
8799     \expandafter
8800     \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{ } \END
8801     \ifx\@pdfpageduration\@empty
8802     \else
8803       \edef\@processme{%
8804         \global\pdfpageattr{%
8805           \the\pdfpageattr
8806           ^^J/Dur \@pdfpageduration\space
8807         }%
8808       }%
8809       \@processme
8810     \fi
8811   \fi
8812 }

```

**\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.

```

8813 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
8814   \ifx\#2\%
8815     \global\pdfpageattr{#1}%
8816   \else
8817     \Hy@RemoveDurPageAttr#1#4\END
8818   \fi
8819 }

```

`\hyper@pagehidden` The boolean value of the key `/Hid` is stored in switch `\ifHy@pdfpagehidden`. First previous `/Hid` entries are removed, then the new one is appended, if the value is true (the PDF default is false).

```

8820 \def\hyper@pagehidden{%
8821   \ifHy@useHidKey
8822     \expandafter
8823     \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
8824   \ifHy@pdfpagehidden
8825     \edef\@processme{%
8826       \global\pdfpageattr{%
8827         \the\pdfpageattr
8828         ^^J/Hid true % SPACE
8829       }%
8830     }%
8831     \@processme
8832   \fi
8833 \fi
8834 }

```

`\Hy@RemoveHidPageAttr` Macro `\Hy@RemoveHidPageAttr` removes a `/Hid` entry from `\pdfpageattr`. It is called with the end marker `^^J/Hid{} \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 `/Hid` object or the end marker.

```

8835 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
8836   \ifx\#2\%
8837     \global\pdfpageattr{#1}%
8838   \else
8839     \Hy@RemoveHidPageAttr#1#4\END
8840   \fi
8841 }

```

```

8842 \g@addto@macro\Hy@EveryPageHook{%
8843   \hyper@pagetransition
8844   \hyper@pageduration
8845   \hyper@pagehidden
8846 }

```

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

```

8847 \</pdfTeX>
8848 \<*pdfTeX | xetex>
8849 \Hy@AtBeginDocument{%
8850   \ifHy@setpagesize
8851     \expandafter\@firstofone
8852   \else
8853     \expandafter\@gobble
8854   \fi
8855 }%
8856 \@ifclassloaded{seminar}{%

```

```

8857 <*pdftex>
8858     \setlength{\pdfhorigin}{1truein}%
8859     \setlength{\pdfvorigin}{1truein}%
8860 </pdftex>
8861 \ifportrait
8862     \ifdim\paperwidth=\z@
8863     \else
8864         \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
8865     \fi
8866     \ifdim\paperheight=\z@
8867     \else
8868         \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
8869     \fi
8870 \else
8871     \ifdim\paperheight=\z@
8872     \else
8873         \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
8874     \fi
8875     \ifdim\paperwidth=\z@
8876     \else
8877         \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
8878     \fi
8879 \fi
8880 }{%
8881 \ltx@ifundefined{stockwidth}{%
8882     \ifdim\paperwidth>\z@
8883         \setlength{\pdfpagewidth}{\paperwidth}%
8884     \fi
8885     \ifdim\paperheight>\z@
8886         \setlength{\pdfpageheight}{\paperheight}%
8887     \fi
8888 }{%
8889     \ifdim\stockwidth>\z@
8890         \setlength{\pdfpagewidth}{\stockwidth}%
8891     \fi
8892     \ifdim\stockheight>\z@
8893         \setlength{\pdfpageheight}{\stockheight}%
8894     \fi
8895 }%
8896 }%
8897 }%
8898 \Hy@DisableOption{setpagesize}%
8899 }
8900 </pdftex | xetex>
8901 <*pdftex>
8902 \def\Acrobatmenu#1#2{%
8903 \Hy@Acrobatmenu{#1}{#2}{%
8904 \pdfstartlink
8905 attr{%
8906 \Hy@setpdfborder
8907 \ifx\@pdfhighlight\@empty
8908 \else
8909 /H\@pdfhighlight
8910 \fi
8911 \ifx\@menubordercolor\relax
8912 \else
8913 /C[\@menubordercolor]%

```

```

8914     \fi
8915   }%
8916   user{%
8917     /Subtype/Link%
8918     \ifHy@pdfa /F 4\fi
8919     /A<<%
8920     /S/Named%
8921     /N/#1%
8922     \Hy@href@nextactionraw
8923     >>%
8924   }%
8925   \relax
8926   \Hy@colorlink\@menucolor#2%
8927   \close@pdflink
8928 }%
8929 }

```

#### 46.2.1 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`.

```

8930 \def\Hy@FixNotFirstPage{%
8931   \gdef\Hy@FixNotFirstPage{%
8932     \setbox\AtBeginShipoutBox=\hbox{%
8933       \copy\AtBeginShipoutBox
8934     }%
8935   }%
8936 }
8937 \AtBeginShipout{\Hy@FixNotFirstPage}
8938 \</pdfTeX>

```

### 46.3 hypertex

The HyperTeX specification (this is borrowed from an article by Arthur Smith) says that conformant viewers/translators must recognize the following set of `\special` commands:

**href:** `html:<a href = "href_string">`

**name:** `html:<a name = "name_string">`

**end:** `html:</a>`

**image:** `html:<img src = "href_string">`

**base\_name:** `html:<base href = "href_string">`

The *href*, *name* and *end* commands are used to do the basic hypertext operations of establishing links between sections of documents. The *image* command is intended (as with current html viewers) to place an image of arbitrary graphical format on the page in the current location. The *base\_name* command is be used to communicate to the *dvi* viewer the full (URL) location of the current document so that files specified by relative URL's may be retrieved correctly.



The *href* and *name* commands must be paired with an *end* command later in the T<sub>E</sub>X file — the T<sub>E</sub>X 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.

```

8939 \*hypertext
8940 \providecommand*\XR@ext{}\dvi
8941 \def\PDF@FinishDoc{}
8942 \def\PDF@SetupDoc{%
8943   \ifx\@baseurl\@empty
8944     \else
8945       \special{html:<base href="\@baseurl">}%
8946     \fi
8947 }
8948 \def\hyper@anchor#1{%
8949   \Hy@SaveLastskip
8950   \Hy@VerboseAnchor{#1}%
8951   \begingroup
8952     \let\protect=\string
8953     \hyper@chars
8954     \special{html:<a name=%
8955       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8956   \endgroup
8957   \Hy@Activeanchortrue
8958   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8959   \special{html:</a>}%
8960   \Hy@Activeanchorfalse
8961   \Hy@RestoreLastskip
8962 }
8963 \def\hyper@anchorstart#1{%
8964   \Hy@SaveLastskip
8965   \Hy@VerboseAnchor{#1}%
8966   \begingroup
8967     \hyper@chars
8968     \special{html:<a name=%
8969       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8970   \endgroup
8971   \Hy@Activeanchortrue
8972 }
8973 \def\hyper@anchorend{%
8974   \special{html:</a>}%
8975   \Hy@Activeanchorfalse
8976   \Hy@RestoreLastskip
8977 }
8978 \def\@urltype{url}
8979 \def\hyper@linkstart#1#2{%
8980   \Hy@VerboseLinkStart{#1}{#2}%
8981   \expandafter\Hy@colorlink\csname @#1color\endcsname
8982   \def\Hy@tempa{#1}%
8983   \ifx\Hy@tempa\@urltype

```

```

8984 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
8985 \else
8986 \begingroup
8987 \hyper@chars
8988 \special{html:<a href=%
8989 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
8990 \endgroup
8991 \fi
8992 }
8993 \def\hyper@linkend{%
8994 \special{html:</a>}%
8995 \Hy@endcolorlink
8996 }
8997 \def\hyper@linkfile#1#2#3{%
8998 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\\#3\fi}%
8999 }
9000 \def\hyper@linkurl#1#2{%

```

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

```

9001 \leavevmode
9002 \ifHy@raiselinks
9003 \Hy@SaveSpaceFactor
9004 \Hy@SaveSavedSpaceFactor
9005 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9006 \Hy@RestoreSavedSpaceFactor
9007 \@linkdim\dp\@tempboxa
9008 \lower\@linkdim\hbox{%
9009 \hyper@chars
9010 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9011 }%
9012 \Hy@colorlink\@urlcolor
9013 \Hy@RestoreSpaceFactor
9014 #1%
9015 \Hy@SaveSpaceFactor
9016 \@linkdim\ht\@tempboxa

```

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

```

9017 \advance\@linkdim by -6.5\p@
9018 \raise\@linkdim\hbox{\special{html:</a>}}%
9019 \Hy@endcolorlink
9020 \Hy@RestoreSpaceFactor
9021 \else
9022 \begingroup
9023 \hyper@chars
9024 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9025 \Hy@colorlink\@urlcolor#1%
9026 \special{html:</a>}%
9027 \Hy@endcolorlink
9028 \endgroup
9029 \fi
9030 }

```

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

```

9031 \def\hyper@link#1#2#3{%
9032 \Hy@VerboseLinkStart{#1}{#2}%

```

```

9033 \hyper@linkurl{#3}{\#HyperDestNameFilter{#2}}%
9034 }

9035 \def\hyper@image#1#2{%
9036 \begingroup
9037 \hyper@chars
9038 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9039 \endgroup
9040 }
9041 </hypertex>
9042 <*dviwindo>

```

## 46.4 dviwindo

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

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

```

9043 \providecommand*\XR@ext}{dvi}
9044 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9045 \def\hyper@anchor#1{%
9046 \Hy@SaveLastskip
9047 \Hy@VerboseAnchor{#1}%
9048 \begingroup
9049 \let\protect=\string
9050 \special{mark: #1}%
9051 \endgroup
9052 \Hy@activeanchortrue
9053 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9054 \Hy@activeanchorfalse
9055 \Hy@RestoreLastskip
9056 }
9057 \def\hyper@anchorstart#1{%
9058 \Hy@SaveLastskip
9059 \Hy@VerboseAnchor{#1}%
9060 \special{mark: #1}%
9061 \Hy@activeanchortrue
9062 }
9063 \def\hyper@anchorend{%
9064 \Hy@activeanchorfalse
9065 \Hy@RestoreLastskip
9066 }
9067 \def\hyper@linkstart#1#2{%
9068 \Hy@VerboseLinkStart{#1}{#2}%
9069 \expandafter\Hy@colorlink\csname @#1color\endcsname
9070 \special{button: %
9071 10000000 %
9072 \number\baselineskip\space
9073 #2%
9074 }%
9075 }

```

```

9076 \def\hyper@linkend{%
9077   \Hy@endcolorlink
9078 }
9079 \def\hyper@link#1#2#3{%
9080   \Hy@VerboseLinkStart{#1}{#2}%
9081   \leavevmode
9082   \ifHy@raiselinks
9083     \Hy@SaveSpaceFactor
9084     \Hy@SaveSavedSpaceFactor
9085     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9086     \Hy@RestoreSavedSpaceFactor
9087     \@linkdim\dp\@tempboxa
9088     \lower\@linkdim\hbox{%
9089       \special{button: %
9090         \number\wd\@tempboxa\space
9091         \number\ht\@tempboxa\space
9092         #2%
9093       }%
9094       \expandafter\Hy@colorlink\csname @#1color\endcsname
9095       \Hy@RestoreSpaceFactor
9096       #3%
9097       \Hy@SaveSpaceFactor
9098       \Hy@endcolorlink
9099     }%
9100     \@linkdim\ht\@tempboxa
9101     \advance\@linkdim by -6.5\p@
9102     \raise\@linkdim\hbox{}%
9103     \Hy@RestoreSpaceFactor
9104   \else
9105     \special{button: %
9106       \number\wd\@tempboxa\space
9107       \number\ht\@tempboxa\space
9108       #2%
9109     }%
9110     \expandafter\Hy@colorlink\csname @#1color\endcsname
9111     #3%
9112     \Hy@endcolorlink
9113   \fi
9114 }
9115 \def\hyper@linkurl#1#2{%
9116   \begingroup
9117   \hyper@chars
9118   \leavevmode
9119   \ifHy@raiselinks
9120     \Hy@SaveSpaceFactor
9121     \Hy@SaveSavedSpaceFactor
9122     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9123     \Hy@RestoreSavedSpaceFactor
9124     \@linkdim\dp\@tempboxa
9125     \lower\@linkdim\hbox{%
9126       \special{button: %
9127         \number\wd\@tempboxa\space
9128         \number\ht\@tempboxa\space
9129         launch: \wwwbrowser\space
9130         #2%
9131       }%
9132       \Hy@colorlink\@urlcolor

```

```

9133     \Hy@RestoreSpaceFactor
9134     #1%
9135     \Hy@SaveSpaceFactor
9136     \Hy@endcolorlink
9137 }%
9138 \@linkdim\ht\@tempboxa
9139 \advance\@linkdim by -6.5\p@
9140 \raise\@linkdim\hbox{}%
9141 \Hy@RestoreSpaceFactor
9142 \else
9143 \special{button: %
9144 \number\wd\@tempboxa\space
9145 \number\ht\@tempboxa\space
9146 launch: \wwwbrowser\space
9147 #2%
9148 }%
9149 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9150 \fi
9151 \endgroup
9152 }
9153 \def\hyper@linkfile#1#2#3{%
9154 \begingroup
9155 \hyper@chars
9156 \leavevmode
9157 \ifHy@raiselinks
9158 \Hy@SaveSpaceFactor
9159 \Hy@SaveSavedSpaceFactor
9160 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9161 \Hy@RestoreSavedSpaceFactor
9162 \@linkdim\dp\@tempboxa
9163 \lower\@linkdim\hbox{%
9164 \special{button: %
9165 \number\wd\@tempboxa\space
9166 \number\ht\@tempboxa\space
9167 #3,%
9168 file: #2%
9169 }%
9170 \Hy@colorlink\@filecolor
9171 \Hy@RestoreSpaceFactor
9172 #1%
9173 \Hy@SaveSpaceFactor
9174 \Hy@endcolorlink
9175 }%
9176 \@linkdim\ht\@tempboxa
9177 \advance\@linkdim by -6.5\p@
9178 \raise\@linkdim\hbox{}%
9179 \Hy@RestoreSpaceFactor
9180 \else
9181 \special{button: %
9182 \number\wd\@tempboxa\space
9183 \number\ht\@tempboxa\space
9184 #3,%
9185 file: #2%
9186 }%
9187 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
9188 \fi
9189 \endgroup

```

```

9190 }
9191 \ifx\@pdfproducer\relax
9192 \def\@pdfproducer{dviwindo + Distiller}%
9193 \fi
9194 \HyInfo@AddonUnsupportedtrue
9195 \def\PDF@FinishDoc{%
9196 \Hy@UseMaketitleInfos
9197 \HyInfo@TrappedUnsupported
9198 \special{PDF: Keywords \@pdfkeywords}%
9199 \special{PDF: Title \@pdftitle}%
9200 \special{PDF: Creator \@pdfcreator}%
9201 \ifx\@pdfcreationdate\@empty
9202 \else
9203 \special{PDF: CreationDate \@pdfcreationdate}%
9204 \fi
9205 \ifx\@pdfmoddate\@empty
9206 \else
9207 \special{PDF: ModDate \@pdfmoddate}%
9208 \fi
9209 \special{PDF: Author \@pdfauthor}%
9210 \ifx\@pdfproducer\relax
9211 \else
9212 \special{PDF: Producer \@pdfproducer}%
9213 \fi
9214 \special{PDF: Subject \@pdfsubject}%
9215 \Hy@DisableOption{pdfauthor}%
9216 \Hy@DisableOption{pdftitle}%
9217 \Hy@DisableOption{pdfsubject}%
9218 \Hy@DisableOption{pdfcreator}%
9219 \Hy@DisableOption{pdfcreationdate}%
9220 \Hy@DisableOption{pdfmoddate}%
9221 \Hy@DisableOption{pdfproducer}%
9222 \Hy@DisableOption{pdfkeywords}%
9223 \Hy@DisableOption{pdftrapped}%
9224 \Hy@DisableOption{pdfinfo}%
9225 }
9226 \def\PDF@SetupDoc{%
9227 \ifx\@baseurl\@empty
9228 \else
9229 \special{PDF: Base \@baseurl}%
9230 \fi
9231 \ifx\@pdfpagescrop\@empty\else
9232 \special{PDF: BBox \@pdfpagescrop}%
9233 \fi
9234 \def\Hy@temp{%
9235 \ifx\@pdfstartpage\@empty
9236 \else
9237 \ifx\@pdfstartview\@empty
9238 \else
9239 \edef\Hy@temp{%
9240 ,Page=\@pdfstartpage
9241 ,View=\@pdfstartview
9242 }%
9243 \fi
9244 \fi
9245 \edef\Hy@temp{%
9246 \noexpand\pdfmark{%

```

```

9247 pdfmark=/DOCVIEW,%
9248 PageMode=/\@pdfpagemode
9249 \Hy@temp
9250 }%
9251 }%
9252 \Hy@temp
9253 \ifx\@pdfpagescrop\@empty
9254 \else
9255 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9256 \fi
9257 \edef\Hy@temp{%
9258 \ifHy@toolbar\else /HideToolbar true\fi
9259 \ifHy@menubar\else /HideMenubar true\fi
9260 \ifHy@windowui\else /HideWindowUI true\fi
9261 \ifHy@fitwindow /FitWindow true\fi
9262 \ifHy@centerwindow /CenterWindow true\fi
9263 \ifHy@displaydoctitle /DisplayDocTitle true\fi
9264 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfmonfullscreenpagemode
9265 \Hy@UseNameKey{Direction}\@pdfdirection
9266 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9267 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9268 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9269 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9270 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9271 \Hy@UseNameKey{Duplex}\@pdfduplex
9272 \ifx\@pdfpicktraybypdfsize\@empty
9273 \else
9274 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9275 \fi
9276 \ifx\@pdfprintpagerange\@empty
9277 \else
9278 /PrintPageRange[\@pdfprintpagerange]%
9279 \fi
9280 \ifx\@pdfnumcopies\@empty
9281 \else
9282 /NumCopies \@pdfnumcopies
9283 \fi
9284 }%
9285 \pdfmark{pdfmark=/PUT,%
9286 Raw={%
9287 \string{Catalog\string}<<%
9288 \ifx\Hy@temp\@empty
9289 \else
9290 /ViewerPreferences<<\Hy@temp>>%
9291 \fi
9292 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9293 \ifx\@pdflang\@empty
9294 \else
9295 /Lang(\@pdflang)%
9296 \fi
9297 >>%
9298 }%
9299 }%
9300 }
9301 </dviwindo>
9302 < *dvipdfm | xetex>

```

## 46.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```
9303 \providecommand*{\XR@ext}{pdf}
9304 \Hy@setbreaklinks{true}
9305 \def\HyPat@ObjRef{%
9306   @[\ ]+%
9307 }
9308 \newsavebox{\pdfm@box}
9309 \def\@pdfm@mark#1{\special{pdf:#1}}
9310 \def\@pdfm@dest#1{%
9311   \Hy@SaveLastskip
9312   \Hy@VerboseAnchor{#1}%
9313   \begingroup
9314     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9315     \def\x{XYZ}%
9316     \ifx\x\@pdfview
9317       \def\x{XYZ @xpos @ypos null}%
9318     \else
9319       \def\x{FitH}%
9320       \ifx\x\@pdfview
9321         \def\x{FitH @ypos}%
9322       \else
9323         \def\x{FitBH}%
9324         \ifx\x\@pdfview
9325           \def\x{FitBH @ypos}%
9326         \else
9327           \def\x{FitV}%
9328           \ifx\x\@pdfview
9329             \def\x{FitV @xpos}%
9330           \else
9331             \def\x{FitBV}%
9332             \ifx\x\@pdfview
9333               \def\x{FitBV @xpos}%
9334             \else
9335               \def\x{Fit}%
9336               \ifx\x\@pdfview
9337                 \let\x\@pdfview
9338               \else
9339                 \def\x{FitB}%
9340                 \ifx\x\@pdfview
9341                   \let\x\@pdfview
9342                 \else
9343                   \def\x{FitR}%
9344                   \ifx\x\@pdfview
9345                     \Hy@Warning{'pdfview=FitR' is not supported}%
9346                     \def\x{XYZ @xpos @ypos null}%
9347                   \else
9348                     \@onelevel@sanitize\@pdfview
9349                     \Hy@Warning{%
9350                       Unknown value '\@pdfview' for pdfview%
9351                     }%
9352                     \def\x{XYZ @xpos @ypos null}%
9353                   \fi
9354                 \fi
9355               \fi
9356             \fi
```



```

9357      \fi
9358      \fi
9359      \fi
9360      \fi
9361      \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9362 \endgroup
9363 \Hy@RestoreLastskip
9364 }
9365 \providecommand*\@pdfview{XYZ}
9366 \providecommand*\@pdfborder{0 0 1}
9367 \providecommand*\@pdfborderstyle{}
9368 \def\hyper@anchor#1{%
9369   \@pdfm@dest{#1}%
9370 }
9371 \def\hyper@anchorstart#1{%
9372   \Hy@activeanchortrue
9373   \@pdfm@dest{#1}%
9374 }
9375 \def\hyper@anchorend{%
9376   \Hy@activeanchorfalse
9377 }
9378 \newcounter{Hy@AnnotLevel}
9379 \ifHy@ocgcolorlinks
9380   \def\OBJ@OCG@view{@OCG@view}%
9381   \@pdfm@mark{%
9382     obj \OBJ@OCG@view <<%
9383       /Type/OCG%
9384       /Name(View)%
9385       /Usage<<%
9386       /Print<<%
9387       /PrintState/OFF%
9388       >>%
9389       /View<<%
9390       /ViewState/ON%
9391       >>%
9392       >>%
9393       >>%
9394   }%
9395   \@pdfm@mark{close \OBJ@OCG@view}%
9396   \def\OBJ@OCG@print{@OCG@print}%
9397   \@pdfm@mark{%
9398     obj \OBJ@OCG@print <<%
9399       /Type/OCG%
9400       /Name(Print)%
9401       /Usage<<%
9402       /Print<<%
9403       /PrintState/ON%
9404       >>%
9405       /View<<%
9406       /ViewState/OFF%
9407       >>%
9408       >>%
9409       >>%
9410   }%
9411   \@pdfm@mark{close \OBJ@OCG@print}%
9412   \def\OBJ@OCGs{@OCGs}%
9413   \@pdfm@mark{%

```

```

9414 obj \OBJ@OCGs [%
9415   \OBJ@OCG@view\space\OBJ@OCG@print
9416   ]%
9417 }%
9418 \@pdfm@mark{close \OBJ@OCGs}%
9419 \@pdfm@mark{%
9420   put @catalog <<%
9421     /OCProperties<<%
9422     /OCGs \OBJ@OCGs
9423     /D<<%
9424     /OFF[\OBJ@OCG@print]%
9425     /AS[%
9426       <<%
9427         /Event/View%
9428         /OCGs \OBJ@OCGs
9429         /Category[/View]%
9430       >>%
9431       <<%
9432         /Event/Print%
9433         /OCGs \OBJ@OCGs
9434         /Category[/Print]%
9435       >>%
9436       <<%
9437         /Event/Export%
9438         /OCGs \OBJ@OCGs
9439         /Category[/Print]%
9440       >>%
9441     ]%
9442   >>%
9443   >>%
9444   >>%
9445 }%
9446 \AtBeginShipout{%
9447   \setbox\AtBeginShipoutBox=\hbox{%
9448     \copy\AtBeginShipoutBox
9449     \@pdfm@mark{%
9450       put @resources <<%
9451         /Properties<<%
9452         /OCView \OBJ@OCG@view
9453         /OCPrint \OBJ@OCG@print
9454       >>%
9455       >>%
9456     }%
9457   }%
9458 }%
9459 \Hy@AtBeginDocument{%
9460   \def\Hy@colorlink#1{%
9461     \begingroup
9462     \ifHy@ocgcolorlinks
9463       \def\Hy@ocgcolor{#1}%
9464       \setbox0=\hbox\bgroup\color@begingroup
9465     \else
9466       \HyColor@UseColor#1%
9467     \fi
9468   }%
9469   \def\Hy@endcolorlink{%
9470     \ifHy@ocgcolorlinks

```

```

9471 \color@endgroup\egroup
9472 \mbox{%
9473 \@pdfm@mark{content /OC/OCPrint BDC}%
9474 \rlap{\copy0}%
9475 \@pdfm@mark{content EMC/OC/OCView BDC}%
9476 \begingroup
9477 \expandafter\HyColor@UseColor\Hy@ocgcolor
9478 \box0 %
9479 \endgroup
9480 \@pdfm@mark{content EMC}%
9481 }%
9482 \fi
9483 \endgroup
9484 }%
9485 }%
9486 \else
9487 \Hy@DisableOption{ocgcolorlinks}%
9488 \fi

9489 \def\Hy@BeginAnnot#1{%
9490 \stepcounter{Hy@AnnotLevel}%
9491 \ifnum\value{Hy@AnnotLevel}=\@ne
9492 #1%
9493 \fi
9494 }

9495 \def\Hy@endAnnot{%
9496 \ifnum\value{Hy@AnnotLevel}=\@ne
9497 \Hy@endcolorlink
9498 \@pdfm@mark{eann}%
9499 \fi
9500 \addtocounter{Hy@AnnotLevel}\m@ne
9501 }

9502 \def\Hy@undefinedname{UNDEFINED}
9503 \def\hyper@linkstart#1#2{%
9504 \Hy@VerboseLinkStart{#1}{#2}%
9505 \Hy@BeginAnnot{%
9506 \protected@edef\Hy@testname{#2}%
9507 \ifx\Hy@testname\@empty
9508 \Hy@Warning{%
9509 Empty destination name,\MessageBreak
9510 using '\Hy@undefinedname'%
9511 }%
9512 \let\Hy@testname\Hy@undefinedname
9513 \else
9514 \Hy@pstringdef\Hy@testname{%
9515 \expandafter\HyperDestNameFilter\expandafter{%
9516 \Hy@testname
9517 }%
9518 }%
9519 \fi
9520 \@pdfm@mark{%
9521 bann<<%
9522 /Type/Annot%
9523 /Subtype/Link%
9524 \ifHy@pdfa /F 4\fi
9525 \Hy@setpdfborder
9526 \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9527 \else

```

```

9528      /C[\csname @#1bordercolor\endcsname]%
9529      \fi
9530      /A<<%
9531      /S/GoTo%
9532      /D(\Hy@testname)%
9533      \Hy@href@nextactionraw
9534      >>%
9535      >>%
9536      }%
9537      \expandafter\Hy@colorlink\csname @#1color\endcsname
9538      }%
9539      }
9540      \def\hyper@linkend{\Hy@EndAnnot}%
9541      \def\hyper@link#1#2#3{%
9542      \hyper@linkstart{#1}{#2}#3\hyper@linkend
9543      }
9544      \def\hyper@linkfile#1#2#3{%
9545      \leavevmode
9546      \Hy@BeginAnnot{%
9547      \def\Hy@pstringF{#2}%
9548      \Hy@CleanupFile\Hy@pstringF
9549      \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9550      \Hy@pstringdef\Hy@pstringD{#3}%
9551      \Hy@MakeRemoteAction
9552      \@pdfm@mark{%
9553      bann<<%
9554      /Type/Annot%
9555      /Subtype/Link%
9556      \ifHy@pdfa /F 4\fi
9557      \Hy@setpdfborder
9558      \ifx\@filebordercolor\relax
9559      \else
9560      /C[\@filebordercolor]%
9561      \fi
9562      /A<<%
9563      /S/GoToR%
9564      /F(\Hy@pstringF)%
9565      /D%
9566      \ifx\@#3\@%
9567      [\Hy@href@page\@pdfremotestartview]%
9568      \else
9569      (\Hy@pstringD)%
9570      \fi
9571      \Hy@SetNewWindow
9572      \Hy@href@nextactionraw
9573      >>%
9574      >>%
9575      }%
9576      \Hy@colorlink\@filecolor
9577      }%
9578      #1%
9579      \Hy@EndAnnot
9580      }
9581      \def\hyper@linkurl#1#2{%
9582      \leavevmode
9583      \Hy@BeginAnnot{%
9584      \Hy@pstringdef\Hy@pstringURI{#2}%

```

```

9585 \pdfmark{
9586   bann<<
9587   /Type/Annot
9588   /Subtype/Link
9589   \ifHy@pdfa /F 4\fi
9590   \Hy@setpdfborder
9591   \ifx\@urlbordercolor\relax
9592   \else
9593     /C[\@urlbordercolor]
9594   \fi
9595   /A<<
9596   /S/URI
9597   /URI(\Hy@pstringURI)
9598   \ifHy@href@ismap
9599     /IsMap true
9600   \fi
9601   \Hy@href@nextactionraw
9602   >>
9603 >>
9604 }
9605 \Hy@colorlink\@urlcolor
9606 }
9607 #1
9608 \Hy@endAnnot
9609 }
9610 \def\Acrobatmenu#1#2{
9611 \Hy@Acrobatmenu{#1}{#2}{
9612 \Hy@BeginAnnot{
9613 \pdfmark{
9614   bann<<
9615   /Type/Annot
9616   /Subtype/Link
9617   \ifHy@pdfa /F 4\fi
9618   /A<<
9619   /S/Named
9620   /N/#1
9621   \Hy@href@nextactionraw
9622   >>
9623   \Hy@setpdfborder
9624   \ifx\@menubordercolor\relax
9625   \relax
9626   /C[\@menubordercolor]
9627   \fi
9628   >>
9629   }
9630   \Hy@colorlink\@menucolor
9631   }
9632   #2
9633   \Hy@endAnnot
9634   }
9635 }
9636 \ifx\@pdfproducer\relax
9637 \def\@pdfproducer{dvipdfm}

```

Detect XeTeX. However, but xdvipdfmx will overwrite it in the final PDF file.

```

9638 \begingroup\expandafter\expandafter\expandafter\endgroup
9639 \expandafter\ifx\csname XeTeXversion\endcsname\relax
9640 \else

```

```

9641 \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
9642 \fi
9643 \fi
9644 \def\PDF@FinishDoc{%
9645 \Hy@UseMaketitleInfos
9646 \HyInfo@GenerateAddons
9647 \@pdfm@mark{%
9648 docinfo<<%
9649 /Title(\@pdftitle)%
9650 /Subject(\@pdfsubject)%
9651 /Creator(\@pdfcreator)%
9652 \ifx\@pdfcreationdate\@empty
9653 \else
9654 /CreationDate(\@pdfcreationdate)%
9655 \fi
9656 \ifx\@pdfmoddate\@empty
9657 \else
9658 /ModDate(\@pdfmoddate)%
9659 \fi
9660 /Author(\@pdfauthor)%
9661 \ifx\@pdfproducer\relax
9662 \else
9663 /Producer(\@pdfproducer)%
9664 \fi
9665 /Keywords(\@pdfkeywords)%
9666 \ifx\@pdftrapped\@empty
9667 \else
9668 /Trapped/\@pdftrapped
9669 \fi
9670 \HyInfo@Addons
9671 >>%
9672 }%
9673 \Hy@DisableOption{pdfauthor}%
9674 \Hy@DisableOption{pdftitle}%
9675 \Hy@DisableOption{pdfsubject}%
9676 \Hy@DisableOption{pdfcreator}%
9677 \Hy@DisableOption{pdfcreationdate}%
9678 \Hy@DisableOption{pdfmoddate}%
9679 \Hy@DisableOption{pdfproducer}%
9680 \Hy@DisableOption{pdfkeywords}%
9681 \Hy@DisableOption{pdftrapped}%
9682 \Hy@DisableOption{pdfinfo}%
9683 }

9684 \def\PDF@SetupDoc{%
9685 \edef\Hy@temp{%
9686 \ifHy@toolbar\else /HideToolbar true\fi
9687 \ifHy@menubar\else /HideMenubar true\fi
9688 \ifHy>windowui\else /HideWindowUI true\fi
9689 \ifHy@fitwindow /FitWindow true\fi
9690 \ifHy@centerwindow /CenterWindow true\fi
9691 \ifHy@displaydoctitle /DisplayDocTitle true\fi
9692 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9693 \Hy@UseNameKey{Direction}\@pdfdirection
9694 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9695 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9696 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9697 \Hy@UseNameKey{PrintClip}\@pdfprintclip

```

```

9698 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9699 \Hy@UseNameKey{Duplex}\@pdfduplex
9700 \ifx\@pdfpicktraybypdfsize\@empty
9701 \else
9702   /PickTrayByPDFSize \@pdfpicktraybypdfsize
9703 \fi
9704 \ifx\@pdfprintpagerange\@empty
9705 \else
9706   /PrintPageRange[\@pdfprintpagerange]%
9707 \fi
9708 \ifx\@pdfnumcopies\@empty
9709 \else
9710   /NumCopies \@pdfnumcopies
9711 \fi
9712 }%
9713 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9714 \@pdfm@mark{%
9715   docview<<%
9716     \ifx\@pdfstartpage\@empty
9717     \else
9718       \ifx\@pdfstartview\@empty
9719       \else
9720         /OpenAction[@page\@pdfstartpage\@pdfstartview]%
9721       \fi
9722     \fi
9723     \ifx\@baseurl\@empty
9724     \else
9725       /URI<</Base(\Hy@pstringB)>>%
9726     \fi
9727     /PageMode/\@pdfpagemode
9728     \ifx\Hy@temp\@empty
9729     \else
9730       /ViewerPreferences<<\Hy@temp>>%
9731     \fi
9732     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9733     \ifx\@pdflang\@empty
9734     \else
9735       /Lang(\@pdflang)%
9736     \fi
9737   >>%
9738 }%
9739 \ifx\@pdfpagescrop\@empty
9740 \else
9741   \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
9742 \fi
9743 }
9744 </dvi pdfm | xetex>

```

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

```

9745 <*dvi pdfm>
9746 \AtBeginShipoutFirst{%
9747   \ifHy@setpagesize
9748   \begingroup
9749     \@ifundefined{stockwidth}{%
9750       \ifdim\paperwidth>\z@
9751       \ifdim\paperheight>\z@
9752         \special{papersize=\the\paperwidth,\the\paperheight}%

```

```

9753     \fi
9754     \fi
9755   }{%
9756     \ifdim\stockwidth>\z@
9757     \ifdim\stockheight>\z@
9758       \special{papersize=\the\stockwidth,\the\stockheight}%
9759     \fi
9760     \fi
9761   }%
9762 \endgroup
9763 \fi
9764 \Hy@DisableOption{setpagesize}%
9765 }
9766 \</dvipdfm>

```

## 46.6 VTeX typesetting system

Provided by MicroPress, May 1998. They require VTeX version 6.02 or newer; see <http://www.micropress-inc.com/> for details.

```

9767 \< *vtexhtml>
9768 \providecommand*{\XR@ext}{htm}
9769 \RequirePackage{vtexhtml}
9770 \newif\if@Localurl
9771 \def\PDF@FinishDoc{}
9772 \def\PDF@SetupDoc{%
9773   \ifx\@baseurl\@empty
9774     \else
9775       \special{!direct <base href="\@baseurl">}%
9776   \fi
9777 }
9778 \def\@urltype{url}
9779 \def\hyper@link#1#2#3{%
9780   \Hy@VerboseLinkStart{#1}{#2}%
9781   \leavevmode
9782   \special{!direct <a href=%
9783     \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
9784   #3%
9785   \special{!direct </a>}%
9786 }
9787 \def\hyper@linkurl#1#2{%
9788   \begingroup
9789     \hyper@chars
9790     \leavevmode
9791     \MathBSuppress=1\relax
9792     \special{!direct <a href=%
9793       \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
9794     #1%
9795     \MathBSuppress=0\relax
9796     \special{!direct </a>}%
9797   \endgroup
9798 }
9799 \def\hyper@linkfile#1#2#3{%
9800   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\\#3\fi}%
9801 }
9802 \def\hyper@linkstart#1#2{%
9803   \Hy@VerboseLinkStart{#1}{#2}%
9804   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype

```



```

9805 \@Localurltrue
9806 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
9807 \else
9808 \@Localurlfalse
9809 \begingroup
9810 \hyper@chars
9811 \special{!aref \HyperDestNameFilter{#2}}%
9812 \endgroup
9813 \fi
9814 }
9815 \def\hyper@linkend{%
9816 \if@Localurl
9817 \special{!endaref}%
9818 \else
9819 \special{!direct </a>}%
9820 \fi
9821 }
9822 \def\hyper@anchorstart#1{%
9823 \Hy@SaveLastskip
9824 \Hy@VerboseAnchor{#1}%
9825 \begingroup
9826 \hyper@chars
9827 \special{!aname #1}%
9828 \special{!direct <a name=%
9829 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9830 \endgroup
9831 \Hy@Activeanchortrue
9832 }
9833 \def\hyper@anchorend{%
9834 \special{!direct </a>}%
9835 \Hy@Activeanchorfalse
9836 \Hy@RestoreLastskip
9837 }
9838 \def\hyper@anchor#1{%
9839 \Hy@SaveLastskip
9840 \Hy@VerboseAnchor{#1}%
9841 \begingroup
9842 \let\protect=\string
9843 \hyper@chars
9844 \leavevmode
9845 \special{!aname #1}%
9846 \special{!direct <a name=%
9847 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9848 \endgroup
9849 \Hy@Activeanchortrue
9850 \bgroup\anchor@spot\egroup
9851 \special{!direct </a>}%
9852 \Hy@Activeanchorfalse
9853 \Hy@RestoreLastskip
9854 }
9855 \def\@Form[#1]{%
9856 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
9857 }
9858 \def\@endForm{}
9859 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9860 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
9861 }

```

```

9862 \def\@TextField[#1]#2{% parameters, label
9863   \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
9864 }
9865 \def\@CheckBox[#1]#2{% parameters, label
9866   \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
9867 }
9868 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9869   \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
9870 }
9871 \def\@PushButton[#1]#2{% parameters, label
9872   \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
9873 }
9874 \def\@Reset[#1]#2{%
9875   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
9876 }
9877 \def\@Submit[#1]#2{%
9878   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
9879 }
9880 \</vtexhtml>
9881 \<*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.

```

9882 \ifx\mediaheight\@undefined
9883 \else
9884   \ifx\mediaheight\relax
9885     \else
9886       \ifHy@setpagesize
9887         \providecommand*\VTeXInitMediaSize{%
9888           \ltx@ifundefined{stockwidth}{%
9889             \ifdim\paperheight>0pt %
9890               \setlength\mediaheight\paperheight
9891             \fi
9892             \ifdim\paperheight>0pt %
9893               \setlength\mediawidth\paperwidth
9894             \fi
9895           }{%
9896             \ifdim\stockheight>0pt %
9897               \setlength\mediaheight\stockheight
9898             \fi
9899             \ifdim\stockwidth>0pt %
9900               \setlength\mediawidth\stockwidth
9901             \fi
9902           }%
9903         }%
9904         \Hy@AtBeginDocument{\VTeXInitMediaSize}%
9905       \fi
9906       \Hy@DisableOption{setpagesize}%
9907     \fi
9908 \fi

```

Older versions of VTeX require xyz in lower case.

```

9909 \providecommand*\@pdfview{xyz}
9910 \providecommand*\@pdfborder{0 0 1}
9911 \providecommand*\@pdfborderstyle{}
9912 \let\CurrentBorderColor\@linkbordercolor
9913 \def\hyper@anchor#1{%

```

```

9914 \Hy@SaveLastskip
9915 \Hy@VerboseAnchor{#1}%
9916 \begingroup
9917 \let\protect=\string
9918 \hyper@chars
9919 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
9920 \endgroup
9921 \Hy@activeanchortrue
9922 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9923 \Hy@activeanchorfalse
9924 \Hy@RestoreLastskip
9925 }
9926 \def\hyper@anchorstart#1{%
9927 \Hy@SaveLastskip
9928 \Hy@VerboseAnchor{#1}%
9929 \begingroup
9930 \hyper@chars
9931 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
9932 \endgroup
9933 \Hy@activeanchortrue
9934 }
9935 \def\hyper@anchorend{%
9936 \Hy@activeanchorfalse
9937 \Hy@RestoreLastskip
9938 }
9939 \def\@urltype{url}
9940 \def\Hy@undefinedname{UNDEFINED}
9941 \def\hyper@linkstart#1#2{%
9942 \Hy@VerboseLinkStart{#1}{#2}%
9943 \Hy@pstringdef\Hy@pstringURI{#2}%
9944 \expandafter\Hy@colorlink\csname @#1color\endcsname
9945 \ltx@ifundefined{@#1bordercolor}{%
9946 \let\CurrentBorderColor\relax
9947 }{%
9948 \edef\CurrentBorderColor{%
9949 \csname @#1bordercolor\endcsname
9950 }%
9951 }%
9952 \def\Hy@tempa{#1}%
9953 \ifx\Hy@tempa\@urltype
9954 \special{!%
9955 aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
9956 \ifHy@href@ismap
9957 /IsMap true%
9958 \fi
9959 \Hy@href@nextactionraw
9960 >.%
9961 a=<%
9962 \ifHy@pdfa /F 4\fi
9963 \Hy@setpdfborder
9964 \ifx\CurrentBorderColor\relax
9965 \else
9966 /C [\CurrentBorderColor]%
9967 \fi
9968 >%
9969 }%
9970 \else

```

```

9971 \protected@edef\Hy@testname{#2}%
9972 \ifx\Hy@testname\@empty
9973   \Hy@Warning{%
9974     Empty destination name,\MessageBreak
9975     using '\Hy@undefinedname'%
9976   }%
9977   \let\Hy@testname\Hy@undefinedname
9978 \fi
9979 \special{!%
9980   aref \expandafter\HyperDestNameFilter
9981   \expandafter{\Hy@testname};%
9982   a=<%
9983   \ifHy@pdfa /F 4\fi
9984   \Hy@setpdfborder
9985   \ifx\CurrentBorderColor\relax
9986   \else
9987     /C [\CurrentBorderColor]%
9988   \fi
9989   >%
9990   }%
9991 \fi
9992 }
9993 \def\hyper@linkend{%
9994   \special{!endaref}%
9995   \Hy@endcolorlink
9996 }
9997 \def\hyper@linkfile#1#2#3{%
9998   \leavevmode
9999   \def\Hy@pstringF{#2}%
10000 \Hy@CleanupFile\Hy@pstringF
10001 \special{!%
10002   aref <%
10003   \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
10004   f=\Hy@pstringF>#3;%
10005   a=<%
10006   \ifHy@pdfa /F 4\fi
10007   \Hy@setpdfborder
10008   \ifx\@filebordercolor\relax
10009   \else
10010     /C [\@filebordercolor]%
10011   \fi
10012   >%
10013   }%
10014   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
10015   \special{!endaref}%
10016 }
10017 \def\hyper@linkurl#1#2{%
10018   \begingroup
10019   \Hy@pstringdef\Hy@pstringURI{#2}%
10020   \hyper@chars
10021   \leavevmode
10022   \special{!%
10023     aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10024     \ifHy@href@ismap
10025       /IsMap true%
10026     \fi
10027     \Hy@href@nextactionraw

```

```

10028     >,%
10029     a=<%
10030     \ifHy@pdfa /F 4\fi
10031     \Hy@setpdfborder
10032     \ifx\@urlbordercolor\relax
10033     \else
10034     /C [\@urlbordercolor]%
10035     \fi
10036     >%
10037     }%
10038     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
10039     \special{!endaref}%
10040     \endgroup
10041 }
10042 \def\hyper@link#1#2#3{%
10043   \Hy@VerboseLinkStart{#1}{#2}%
10044   \ltx@ifundefined{@#1bordercolor}{%
10045     \let\CurrentBorderColor\relax
10046   }{%
10047     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10048   }%
10049   \leavevmode
10050   \protected@edef\Hy@testname{#2}%
10051   \ifx\Hy@testname\@empty
10052     \Hy@Warning{%
10053       Empty destination name,\MessageBreak
10054       using '\Hy@undefinedname'%
10055     }%
10056     \let\Hy@testname\Hy@undefinedname
10057   \fi
10058   \special{!%
10059     aref \expandafter\HyperDestNameFilter
10060     \expandafter{\Hy@testname};%
10061     a=<%
10062     \ifHy@pdfa /F 4\fi
10063     \Hy@setpdfborder
10064     \ifx\CurrentBorderColor\relax
10065     \else
10066     /C [\CurrentBorderColor]%
10067     \fi
10068     >%
10069     }%
10070     \expandafter
10071     \Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
10072     \special{!endaref}%
10073 }
10074 \def\hyper@image#1#2{%
10075   \hyper@linkurl{#2}{#1}%
10076 }
10077 \def\@hyper@launch run:#1\#2#3{%
10078   \Hy@pstringdef\Hy@pstringF{#1}%
10079   \Hy@pstringdef\Hy@pstringP{#3}%
10080   \leavevmode
10081   \special{!aref %
10082     <u=%
10083     /Type/Action%
10084     /S/Launch%

```

```

10085 /F(\Hy@pstringF)%
10086 \Hy@SetNewWindow
10087 \ifx\#3\%
10088 \else
10089 /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10090 \fi
10091 \Hy@href@nextactionraw
10092 >;%
10093 a=<%
10094 \ifHy@pdfa /F 4\fi
10095 \Hy@setpdfborder
10096 \ifx\@runbordercolor\relax
10097 \else
10098 /C[\@runbordercolor]%
10099 \fi
10100 >%
10101 }%
10102 \Hy@colorlink\@runcolor#2\Hy@endcolorlink
10103 \special{!endaref}%
10104 }
10105 \def\Acrobatmenu#1#2{%
10106 \Hy@Acrobatmenu{#1}{#2}{%
10107 \special{!%
10108 aref <u=/S /Named /N /#1>;%
10109 a=<%
10110 \ifHy@pdfa /F 4\fi
10111 \Hy@setpdfborder
10112 \ifx\@menubordercolor\relax
10113 \else
10114 /C[\@menubordercolor]%
10115 \fi
10116 >%
10117 }%
10118 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
10119 \special{!endaref}%
10120 }%
10121 }

```

The following code (transition effects) is made by Alex Kostin.

The code below makes sense for  $\text{\TeX}$  7.02 or later.

Please never use `\@ifundefined{VTeXversion}{...}{...}` globally.

```

10122 \ifnum\Hy@VTeXversion<702 %
10123 \else
10124 \def\hyper@pagetransition{%
10125 \ifx\@pdfpagetransition\relax
10126 \else
10127 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

10128 \else
10129 \hvtex@parse@trans\@pdfpagetransition
10130 \fi
10131 \fi
10132 }%

```

I have to write an “honest” parser to convert raw PDF code into  $\text{\TeX}$  `\special`.  
(AVK)

Syntax of  $\text{\texttt{VTX}} \backslash \text{\texttt{special}}\{\text{\texttt{!trans}} \langle \text{\texttt{transition\_effect}} \rangle\}$ :

```

<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:

```

10133 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10134 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10135 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10136 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10137 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10138 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10139 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10140 \def\hvtex@param@dimension{/Dm}%
10141 \def\hvtex@param@direction{/Di}%
10142 \def\hvtex@param@duration{/D}%
10143 \def\hvtex@param@motion{/M}%

```

Tokenizer:

```

10144 \def\hvtex@gettoken{%
10145   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10146 }%

```

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

```

10147 \def\hvtex@gettoken@#1 #2\@nil{%
10148   \edef\hvtex@token{#1}%
10149   \edef\hvtex@buffer{#2}%
10150 }%
10151 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

10152 \let\hvtex@trans@code\@empty
10153 \let\hvtex@param@dimension\@empty
10154 \let\hvtex@param@direction\@empty
10155 \let\hvtex@param@duration\@empty
10156 \let\hvtex@param@motion\@empty
10157 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10158 \hvtex@gettoken
10159 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10160   \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

10161     \else
10162     \hvtex@gettoken
10163     \fi
10164 \fi
10165 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

10166 \hvtex@trans@params
10167 }%

```

Reentrant macro to parse optional parameters.

```

10168 \def\hvtex@trans@params{%
10169 \ifx\hvtex@buffer\@empty
10170 \else
10171 \hvtex@gettoken
10172 \let\hvtex@trans@par\hvtex@token
10173 \ifx\hvtex@buffer\@empty
10174 \else
10175 \hvtex@gettoken
10176 \ifx\hvtex@trans@par\hvtex@par@duration

```

/D is the effect duration in seconds.  $\text{\TeX}$  special takes it in milliseconds.

```

10177 \let\hvtex@param@duration\hvtex@token
10178 \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

10179 \expandafter\edef\expandafter\hvtex@param@motion
10180 \expandafter{\expandafter\@gobble\hvtex@token}%
10181 \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

10182 \expandafter\edef\expandafter\hvtex@param@dimension
10183 \expandafter{\expandafter\@gobble\hvtex@token}%
10184 \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).

```

10185 \let\hvtex@param@direction\hvtex@token
10186 \fi\fi\fi
10187 \fi
10188 \fi
10189 \ifx\hvtex@buffer\@empty
10190 \let\next\hvtex@produce@trans
10191 \else
10192 \let\next\hvtex@trans@params
10193 \fi
10194 \next
10195 }%

```

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

```

10196 \def\hvtex@produce@trans{%
10197 \let\vtex@trans@special\@empty
10198 \if S\hvtex@trans@code
10199 \edef\vtex@trans@special{\hvtex@trans@code
10200 \hvtex@param@dimension\hvtex@param@motion}%
10201 \else\if B\hvtex@trans@code
10202 \edef\vtex@trans@special{%
10203 \hvtex@trans@code\hvtex@param@dimension

```



```

10204 }%
10205 \else\if X\hvtex@trans@code
10206 \edef\vtex@trans@special{%
10207 \hvtex@trans@code\hvtex@param@motion
10208 }%
10209 \else\if W\hvtex@trans@code
10210 \edef\vtex@trans@special{%
10211 \hvtex@trans@code\hvtex@param@direction
10212 }%
10213 \else\if D\hvtex@trans@code
10214 \let\vtex@trans@special\hvtex@trans@code
10215 \else\if R\hvtex@trans@code
10216 \let\vtex@trans@special\hvtex@trans@code
10217 \else\if G\hvtex@trans@code
10218 \edef\vtex@trans@special{%
10219 \hvtex@trans@code\hvtex@param@direction
10220 }%
10221 \fi\fi\fi\fi\fi\fi
10222 \ifx\vtex@trans@special\@empty
10223 \else
10224 \ifx\hvtex@param@duration\@empty
10225 \else
10226 \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10227 \multiply\dimen@\@m
10228 \edef\vtex@trans@special{%
10229 \vtex@trans@special,\strip@pt\dimen@
10230 }%
10231 \fi

```

And all the mess is just for this.

```

10232 \special{!trans \vtex@trans@special}%
10233 \fi
10234 }%
10235 \def\hyper@pageduration{%
10236 \ifx\@pdfpageduration\relax
10237 \else
10238 \ifx\@pdfpageduration\@empty
10239 \special{!duration-}%
10240 \else
10241 \special{!duration \@pdfpageduration}%
10242 \fi
10243 \fi
10244 }%
10245 \def\hyper@pagehidden{%
10246 \ifHy@useHidKey
10247 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
10248 \fi
10249 }%
10250 \g@addto@macro\Hy@EveryPageBoxHook{%
10251 \hyper@pagetransition
10252 \hyper@pageduration
10253 \hyper@pagehidden
10254 }%
10255 \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

```

10256 \ifx\@pdfproducer\relax
10257 \def\@pdfproducer{VTeX}%
10258 \ifnum\Hy@VTeXversion>\z@
10259 \count@\VTeXversion
10260 \divide\count@ 100 %
10261 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10262 \multiply\count@ -100 %
10263 \advance\count@\VTeXversion
10264 \edef\@pdfproducer{%
10265 \@pdfproducer
10266 .\ifnum\count@<10 0\fi\the\count@
10267 \ifx\VTeXOS\@undefined\else
10268 \ifnum\VTeXOS>0 %
10269 \ifnum\VTeXOS<6 %
10270 \space(%
10271 \ifcase\VTeXOS
10272 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10273 \fi
10274 )%
10275 \fi
10276 \fi
10277 \fi
10278 ,\space
10279 \ifnum\OpMode=\@one PDF\else PS\fi
10280 \space backend%
10281 \ifx\gexmode\@undefined\else
10282 \ifnum\gexmode>\z@\space with GeX\fi
10283 \fi
10284 }%
10285 \fi
10286 \fi

```

Current `!pdfinfo` key syntax:

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

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

```

10287 \def\PDF@SetupDoc{%
10288 \ifx\@pdfpagescrop\@empty
10289 \else

```

```

10290 \special{!pdinfo b=<\@pdfpagescrop>}%
10291 \fi
10292 \ifx\@pdfstartpage\@empty
10293 \else
10294 \ifx\@pdfstartview\@empty
10295 \else
10296 \special{!onopen Page\@pdfstartpage}%
10297 \fi
10298 \fi
10299 \special{!pdinfo p=</\@pdfpagemode>}%
10300 \ifx\@baseurl\@empty
10301 \else
10302 \special{!pdinfo u=<<</Base (\@baseurl)>>>}%
10303 \fi
10304 \special{!pdinfo v=<<<%
10305 \ifHy@toolbar\else /HideToolbar true\fi
10306 \ifHy@menubar\else /HideMenubar true\fi
10307 \ifHy>windowui\else /HideWindowUI true\fi
10308 \ifHy@fitwindow /FitWindow true\fi
10309 \ifHy@centerwindow /CenterWindow true\fi
10310 \ifHy@displaydoctitle /DisplayDocTitle true\fi
10311 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10312 \Hy@UseNameKey{Direction}\@pdfdirection
10313 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10314 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10315 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10316 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10317 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10318 \Hy@UseNameKey{Duplex}\@pdfduplex
10319 \ifx\@pdfpicktraybypdfsize\@empty
10320 \else
10321 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10322 \fi
10323 \ifx\@pdfprintpagerange\@empty
10324 \else
10325 /PrintPageRange[\@pdfprintpagerange]%
10326 \fi
10327 \ifx\@pdfnumcopies\@empty
10328 \else
10329 /NumCopies \@pdfnumcopies
10330 \fi
10331 >>>}%
10332 \ifx\@pdfpagelayout\@empty
10333 \else
10334 \special{!pdinfo l=</\@pdfpagelayout\space>}%
10335 \fi
10336 }%
10337 \HyInfo@AddonUnsupportedtrue
10338 \def\PDF@FinishDoc{%
10339 \Hy@UseMaketitleInfos
10340 \HyInfo@TrappedUnsupported
10341 \special{!pdinfo a=<\@pdfauthor>}%
10342 \special{!pdinfo t=<\@pdftitle>}%
10343 \special{!pdinfo s=<\@pdfsubject>}%
10344 \special{!pdinfo c=<\@pdfcreator>}%
10345 \ifx\@pdfproducer\relax
10346 \else

```

```

10347 \special{!pdfinfo r=<\@pdfproducer>}%
10348 \fi
10349 \special{!pdfinfo k=<\@pdfkeywords>}%
10350 \Hy@DisableOption{pdfauthor}%
10351 \Hy@DisableOption{pdftitle}%
10352 \Hy@DisableOption{pdfsubject}%
10353 \Hy@DisableOption{pdfcreator}%
10354 \Hy@DisableOption{pdfcreationdate}%
10355 \Hy@DisableOption{pdfmoddate}%
10356 \Hy@DisableOption{pdfproducer}%
10357 \Hy@DisableOption{pdfkeywords}%
10358 \Hy@DisableOption{pdftrapped}%
10359 \Hy@DisableOption{pdfinfo}%
10360 }
10361 </vtex>

```

## 46.7 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.

```

10362 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10363 <package>\providecommand*{\Hy@DistillerDestFix}{%
10364 <*pdfmark | dviwindo>
10365 \def\Hy@DistillerDestFix{%
10366 \begingroup
10367 \let\x\literalps@out

```

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

```

10368 \ifnum \@ifundefined{OpMode}{0}{%
10369 \ifundefined{gexmode}{0}{%
10370 \ifnum\gexmode>0 \OpMode\else 0\fi
10371 }>1 %
10372 \def\x##1{%
10373 \immediate\special{!##1}%
10374 }%
10375 \fi
10376 \x{%
10377 /product where{%
10378 pop %
10379 product(Distiller)search{%
10380 pop pop pop %
10381 version(.)search{%
10382 exch pop exch pop%
10383 (3011)eq{%
10384 gsave %
10385 newpath 0 0 moveto closepath clip%
10386 /Courier findfont 10 scalefont setfont %
10387 72 72 moveto(.).show %
10388 grestore%

```

```

10389         }if%
10390         }{pop}ifelse%
10391         }{pop}ifelse%
10392     }if%
10393 }%
10394 \endgroup
10395 }
10396 </pdfmark | dviwindo>

```

## 46.8 Direct pdfmark support

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

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

and the correct definitions of the following PostScript procedures:

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

```

10397 <*pdfmark>
10398 \Hy@breaklinks@unsupported
10399 \def\HyPat@ObjRef{%
10400   \{[~{]}+\}%
10401 }
10402 \def\hyper@anchor#1{%
10403   \Hy@SaveLastskip
10404   \Hy@VerboseAnchor{#1}%
10405   \begingroup
10406     \pdfmark[\anchor@spot]{%
10407       pdfmark=/DEST,%
10408       linktype=anchor,%
10409       View=/\@pdfview \@pdfviewparams,%
10410       DestAnchor={#1}%
10411     }%
10412   \endgroup
10413   \Hy@RestoreLastskip
10414 }
10415 \ltx@ifundefined{hyper@anchorstart}{\endinput}
10416 \def\hyper@anchorstart#1{%
10417   \Hy@SaveLastskip
10418   \Hy@VerboseAnchor{#1}%
10419   \literalps@out{H.S}%
10420   \Hy@AllowHyphens
10421   \xdef\hyper@currentanchor{#1}%
10422   \Hy@activeanchortrue
10423 }
10424 \def\hyper@anchorend{%
10425   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10426   \pdfmark{%
10427     pdfmark=/DEST,%
10428     linktype=anchor,%
10429     View=/\@pdfview \@pdfviewparams,%

```

```

10430   DestAnchor=\hyper@currentanchor,%
10431 }%
10432 \Hy@activeanchorfalse
10433 \Hy@RestoreLastskip
10434 }
10435 \def\hyper@linkstart#1#2{%
10436   \Hy@VerboseLinkStart{#1}{#2}%
10437   \ifHy@breaklinks
10438   \else
10439     \leavevmode
10440     \Hy@SaveSpaceFactor
10441     \hbox\bgroup
10442     \Hy@RestoreSpaceFactor
10443   \fi
10444   \expandafter\Hy@colorlink\csname @#1color\endcsname
10445   \literalps@out{H.S}%
10446   \Hy@AllowHyphens
10447   \xdef\hyper@currentanchor{#2}%
10448   \gdef\hyper@currentlinktype{#1}%
10449 }
10450 \def\hyper@linkend{%
10451   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10452   \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
10453     \let\Hy@tempcolor\relax
10454   }{%
10455     \edef\Hy@tempcolor{%
10456       \csname @\hyper@currentlinktype bordercolor\endcsname
10457     }%
10458   }%
10459   \pdfmark{%
10460     pdfmark=/ANN,%
10461     linktype=link,%
10462     Subtype=/Link,%
10463     PDFAFlags=4,%
10464     Dest=\hyper@currentanchor,%
10465     AcroHighlight=\@pdfhighlight,%
10466     Border=\@pdfborder,%
10467     BorderStyle=\@pdfborderstyle,%
10468     Color=\Hy@tempcolor,%
10469     Raw=H.B%
10470   }%
10471   \Hy@endcolorlink
10472   \ifHy@breaklinks
10473   \else
10474     \Hy@SaveSpaceFactor
10475     \egroup
10476     \Hy@RestoreSpaceFactor
10477   \fi
10478 }

```

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.

```

10479 \begingroup
10480   \catcode'P=12 %
10481   \catcode'T=12 %
10482   \lowercase{\endgroup
10483   \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%

```

```

10484 }
10485 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

\hyper@pagetransition

```

10486 \def\hyper@pagetransition{%
10487   \ifx\@pdfpagetransition\relax
10488   \else
10489     \ifx\@pdfpagetransition\@empty
10490     % 1. Does an old entry have to be deleted?
10491     % 2. If 1=yes, how to delete?
10492     \else
10493       \pdfmark{%
10494         pdfmark=/PUT,%
10495         Raw={%
10496           \string{ThisPage\string}%
10497           <</Trans << /S /\@pdfpagetransition\space >> >>%
10498         }%
10499       }%
10500     \fi
10501   \fi
10502 }

```

\hyper@pageduration

```

10503 \def\hyper@pageduration{%
10504   \ifx\@pdfpageduration\relax
10505   \else
10506     \ifx\@pdfpageduration\@empty
10507     % 1. Does an old entry have to be deleted?
10508     % 2. If 1=yes, how to delete?
10509     \else
10510       \pdfmark{%
10511         pdfmark=/PUT,%
10512         Raw={%
10513           \string{ThisPage\string}%
10514           <</Dur \@pdfpageduration>>%
10515         }%
10516       }%
10517     \fi
10518   \fi
10519 }

```

\hyper@pagehidden

```

10520 \def\hyper@pagehidden{%
10521   \ifHy@useHidKey
10522   \pdfmark{%
10523     pdfmark=/PUT,%
10524     Raw={%
10525       \string{ThisPage\string}%
10526       <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
10527     }%
10528   }%
10529 \fi
10530 }

10531 \g@addto@macro\Hy@EveryPageBoxHook{%
10532   \hyper@pagetransition
10533   \hyper@pageduration

```

```

10534 \hyper@pagehidden
10535 }

10536 \def\hyper@image#1#2{%
10537 \hyper@linkurl{#2}{#1}%
10538 }

10539 \def\Hy@undefinedname{UNDEFINED}
10540 \def\hyper@link#1#2#3{%
10541 \Hy@VerboseLinkStart{#1}{#2}%
10542 \ltx@ifundefined{@#1bordercolor}{%
10543 \let\Hy@tempcolor\relax
10544 }{%
10545 \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
10546 }%
10547 \begingroup
10548 \protected@edef\Hy@testname{#2}%
10549 \ifx\Hy@testname\@empty
10550 \Hy@Warning{%
10551 Empty destination name,\MessageBreak
10552 using '\Hy@undefinedname'%
10553 }%
10554 \let\Hy@testname\Hy@undefinedname
10555 \fi
10556 \pdfmark[{#3}]{%
10557 Color=\Hy@tempcolor,%
10558 linktype={#1},%
10559 AcroHighlight=\@pdfhighlight,%
10560 Border=\@pdfborder,%
10561 BorderStyle=\@pdfborderstyle,%
10562 pdfmark=/ANN,%
10563 Subtype=/Link,%
10564 PDFAFlags=4,%
10565 Dest=\Hy@testname
10566 }%
10567 \endgroup
10568 }

10569 \newtoks\pdf@docset
10570 \def\PDF@FinishDoc{%
10571 \Hy@UseMaketitleInfos
10572 \Hy@Info@GenerateAddons
10573 \let\Hy@temp\@empty
10574 \ifx\@pdfcreationdate\@empty
10575 \else
10576 \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
10577 \fi
10578 \ifx\@pdfmoddate\@empty
10579 \else
10580 \expandafter\def\expandafter\Hy@temp\expandafter{%
10581 \Hy@temp
10582 ModDate=\@pdfmoddate,%
10583 }%
10584 \fi
10585 \ifx\@pdfproducer\relax
10586 \else
10587 \expandafter\def\expandafter\Hy@temp\expandafter{%
10588 \Hy@temp
10589 Producer=\@pdfproducer,%
10590 }%

```



```

10591 \fi
10592 \expandafter
10593 \pdfmark\expandafter{%
10594   \Hy@temp
10595   pdfmark=/DOCINFO,%
10596   Title=\@pdftitle,%
10597   Subject=\@pdfsubject,%
10598   Creator=\@pdfcreator,%
10599   Author=\@pdfauthor,%
10600   Keywords=\@pdfkeywords,%
10601   Trapped=\@pdftrapped
10602 }%
10603 \ifx\HyInfo@Addons\@empty
10604 \else
10605   \pdfmark{%
10606     pdfmark=/DOCINFO,%
10607     Raw={\HyInfo@Addons}%
10608   }%
10609 \fi
10610 \Hy@DisableOption{pdfauthor}%
10611 \Hy@DisableOption{pdftitle}%
10612 \Hy@DisableOption{pdfsubject}%
10613 \Hy@DisableOption{pdfcreator}%
10614 \Hy@DisableOption{pdfcreationdate}%
10615 \Hy@DisableOption{pdfmoddate}%
10616 \Hy@DisableOption{pdfproducer}%
10617 \Hy@DisableOption{pdfkeywords}%
10618 \Hy@DisableOption{pdftrapped}%
10619 \Hy@DisableOption{pdfinfo}%
10620 }
10621 \def\PDF@SetupDoc{%
10622   \def\Hy@temp{%
10623     \ifx\@pdfstartpage\@empty
10624     \else
10625       \ifx\@pdfstartview\@empty
10626       \else
10627         \edef\Hy@temp{%
10628           ,Page=\@pdfstartpage
10629           ,View=\@pdfstartview
10630         }%
10631       \fi
10632     \fi
10633   \edef\Hy@temp{%
10634     \noexpand\pdfmark{%
10635       pdfmark=/DOCVIEW,%
10636       PageMode=\/@pdfpagemode
10637     }\Hy@temp
10638   }%
10639 }%
10640 \Hy@temp
10641 \ifx\@pdfpagescrop\@empty
10642 \else
10643   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
10644 \fi
10645 \edef\Hy@temp{%
10646   \ifHy@toolbar\else /HideToolbar true\fi
10647   \ifHy@menubar\else /HideMenubar true\fi

```

```

10648 \ifHy>windowui\else /HideWindowUI true\fi
10649 \ifHy@fitwindow /FitWindow true\fi
10650 \ifHy@centerwindow /CenterWindow true\fi
10651 \ifHy@displaydoctitle /DisplayDocTitle true\fi
10652 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10653 \Hy@UseNameKey{Direction}\@pdfdirection
10654 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10655 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10656 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10657 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10658 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10659 \Hy@UseNameKey{Duplex}\@pdfduplex
10660 \ifx\@pdfpicktraybypdfsize\@empty
10661 \else
10662 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10663 \fi
10664 \ifx\@pdfprintpagerange\@empty
10665 \else
10666 /PrintPageRange[\@pdfprintpagerange]%
10667 \fi
10668 \ifx\@pdfnumcopies\@empty
10669 \else
10670 /NumCopies \@pdfnumcopies
10671 \fi
10672 }%
10673 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10674 \pdfmark{%
10675 pdfmark=/PUT,%
10676 Raw={%
10677 \string{Catalog\string}<<%
10678 \ifx\Hy@temp\@empty
10679 \else
10680 /ViewerPreferences<<\Hy@temp>>%
10681 \fi
10682 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10683 \ifx\@pdflang\@empty
10684 \else
10685 /Lang(\@pdflang)%
10686 \fi
10687 \ifx\@baseurl\@empty
10688 \else
10689 /URI<</Base(\Hy@pstringB)>>%
10690 \fi
10691 >>%
10692 }%
10693 }%
10694 }
10695 \pdfmark>
10696 \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.

```

10697 \newif\ifHy@pdfmarkerror
10698 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}

```

```

10699 \def\pdfmark@[#1]#2{%
10700   \Hy@pdfmarkerrorfalse
10701   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
10702   \@processme
10703   \let\pdf@type\relax
10704   \kvsetkeys{PDF}{#2}%
10705   \ifHy@pdfmarkerror
10706   \else
10707     \ifx\pdf@type\relax
10708       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
10709       \ifx\#1\%
10710       \else
10711         \pdf@rect{#1}%
10712       \fi
10713     \else
10714       \ifx\#1\%
10715         \literalps@out{%
10716           [\the\pdf@toks\space\pdf@type\space pdfmark%
10717           ]%
10718         \else
10719           \ltx@ifundefined{@\pdf@linktype color}{%
10720             \Hy@colorlink\@linkcolor
10721           }{%
10722             \expandafter\Hy@colorlink
10723               \csname @\pdf@linktype color\endcsname
10724           }%
10725           \pdf@rect{#1}%
10726           \literalps@out{%
10727             [\the\pdf@toks\space\pdf@type\space pdfmark%
10728             ]%
10729           \Hy@endcolorlink
10730         \fi
10731       \fi
10732     \fi
10733 }

```

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

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

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

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

```

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

```

```

10734 \newsavebox{\pdf@box}
10735 \providecommand*{\Hy@setouterhbox}{\sbox}
10736 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
10737 \def\Hy@DEST{/DEST}
10738 \def\pdf@rect#1{%
10739   \begingroup
10740   \chardef\x=1 %
10741   \def\Hy@temp{#1}%
10742   \ifx\Hy@temp\ltx@empty
10743     \chardef\x=0 %
10744   \else

```

```

10745 \def\y{\anchor@spot}%
10746 \ifx\Hy@temp\y
10747 \def\y{\relax}%
10748 \ifx\anchor@spot\y
10749 \chardef\x=0 %
10750 \fi
10751 \fi
10752 \fi
10753 \expandafter\endgroup
10754 \ifcase\x
10755 \literalps@out{H.S}%
10756 \literalps@out{H.R}%
10757 \else
10758 \leavevmode
10759 \Hy@SaveSpaceFactor
10760 \ifHy@breaklinks
10761 \Hy@setouterhbox\pdf@box{%
10762 \Hy@RestoreSpaceFactor
10763 \Hy@AllowHyphens#1%
10764 \Hy@SaveSpaceFactor
10765 }%
10766 \else
10767 \sbox\pdf@box{%
10768 \Hy@RestoreSpaceFactor
10769 #1%
10770 \Hy@SaveSpaceFactor
10771 }%
10772 \fi
10773 \dimen@\ht\pdf@box
10774 \ifdim\dp\pdf@box=\z@
10775 \literalps@out{H.S}%
10776 \else
10777 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
10778 \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...).

```

10779 \ifHy@breaklinks
10780 \expandafter\Hy@breaklinksunhbox
10781 \else
10782 \expandafter\box
10783 \fi
10784 \pdf@box

```

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

10785 \ifdim\dimen@=\z@
10786 \literalps@out{H.R}%
10787 \else
10788 \raise\dimen@\hbox{\literalps@out{H.R}}%
10789 \fi
10790 \Hy@RestoreSpaceFactor
10791 \fi
10792 \ifx\pdf@type\Hy@DEST
10793 \else

```

```

10794 \pdf@addtoksx{H.B}%
10795 \fi
10796 }

```

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.

```

10797 \newtoks\pdf@toks
10798 \newtoks\pdf@defaulttoks
10799 \pdf@defaulttoks={}
10800 \def\pdf@addtoks#1#2{%
10801 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
10802 \@processme
10803 }
10804 \def\pdf@addtoksx#1{%
10805 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
10806 \@processme
10807 }
10808 \def\PDFdefaults#1{%
10809 \pdf@defaulttoks={#1}%
10810 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

10811 % what is the type of pdfmark?
10812 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
10813 % what is the link type?
10814 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
10815 \def\pdf@linktype{link}
10816 % parameter is a stream of PDF
10817 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
10818 % parameter is a name
10819 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
10820 % parameter is a array
10821 \define@key{PDF}{Border}{%
10822 \edef\Hy@temp{#1}%
10823 \ifx\Hy@temp\@empty
10824 \else
10825 \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
10826 \fi
10827 }
10828 \let\Hy@BorderArrayPatch\@empty
10829 % parameter is a dictionary
10830 \define@key{PDF}{BorderStyle}{%
10831 \edef\Hy@temp{#1}%
10832 \ifx\Hy@temp\@empty
10833 \else
10834 \pdf@addtoks{<<#1>>}{BS}%
10835 \fi
10836 }
10837 % parameter is a array
10838 \define@key{PDF}{Color}{%
10839 \ifx\relax#1\relax
10840 \else
10841 \pdf@addtoks{[#1]}{Color}% hash-ok
10842 \fi
10843 }
10844 % parameter is a string
10845 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
10846 % parameter is a integer

```

```

10847 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
10848 % parameter is a array
10849 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
10850 % parameter is a string
10851 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
10852 % parameter is a string or file
10853 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
10854 % parameter is a destination
10855 \define@key{PDF}{Dest}{%
10856   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
10857   \ifx\Hy@pstringDest\@empty
10858     \Hy@pdfmarkerrortrue
10859     \Hy@Warning{Destination with empty name ignored}%
10860   \else
10861     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
10862   \fi
10863 }
10864 \define@key{PDF}{DestAnchor}{%
10865   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
10866   \ifx\Hy@pstringDest\@empty
10867     \Hy@pdfmarkerrortrue
10868     \Hy@Warning{Destination with empty name ignored}%
10869   \else
10870     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
10871   \fi
10872 }
10873 % parameter is a string
10874 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
10875 % parameter is a string
10876 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
10877 % parameter is a int
10878 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
10879 \define@key{PDF}{PDFAFlags}{%
10880   \ifHy@pdfa
10881     \pdf@addtoks{#1}{F}%
10882   \fi
10883 }
10884 % parameter is a name
10885 \define@key{PDF}{AcroHighlight}{%
10886   \begingroup
10887     \edef\x{#1}%
10888     \expandafter\endgroup\ifx\x\@empty
10889     \else
10890       \pdf@addtoks{#1}{H}%
10891     \fi
10892 }
10893 % parameter is a string
10894 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
10895 % parameter is a string
10896 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
10897 % parameter is a string
10898 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
10899 % parameter is a string
10900 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
10901 % parameter is a Boolean
10902 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
10903 % parameter is a integer or name

```

```

10904 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
10905 % parameter is a name
10906 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
10907 % parameter is a string
10908 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
10909 % parameter is a array
10910 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
10911 % parameter is a integer
10912 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
10913 % parameter is a name
10914 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
10915 % parameter is a string
10916 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
10917 % parameter is a string
10918 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
10919 % parameter is a string
10920 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
10921 % parameter is an array
10922 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
10923 % parameter is a string
10924 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

10925 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
10926 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
10927 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
10928 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
10929 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
10930 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
10931 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
10932 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
10933 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
10934 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
10935 \define@key{PDF}{Trapped}{%
10936   \edef\Hy@temp{#1}%
10937   \ifx\Hy@temp\empty
10938     \else
10939       \pdf@addtoks{/#1}{Trapped}%
10940   \fi
10941 }
10942
10943 </pdfmarkbase>
10944 <*pdfmark>
10945 \def\Acrobatmenu#1#2{%
10946   \Hy@Acrobatmenu{#1}{#2}%
10947   \pdfmark[{#2}] {%
10948     linktype=menu,%
10949     pdfmark=/ANN,%
10950     AcroHighlight=\@pdfhighlight,%
10951     Border=\@pdfborder,%
10952     BorderStyle=\@pdfborderstyle,%
10953     Action={<< /Subtype /Named /N /#1 >>},%
10954     Subtype=/Link,%
10955     PDFAFlags=4%
10956   }%
10957 }%
10958 }

```

And now for some useful examples:

```
10959 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
10960 \def\PDFNextPage@[#1]#2{%
10961   \pdfmark[{#2}]{%
10962     #1,%
10963     Border=\@pdfborder,%
10964     BorderStyle=\@pdfborderstyle,%
10965     Color=.2 .1 .5,%
10966     pdfmark=/ANN,%
10967     Subtype=/Link,%
10968     PDFAFlags=4,%
10969     Page=/Next%
10970   }%
10971 }
10972 \def\PDFPreviousPage{%
10973   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
10974 }
10975 \def\PDFPreviousPage@[#1]#2{%
10976   \pdfmark[{#2}]{%
10977     #1,%
10978     Border=\@pdfborder,%
10979     BorderStyle=\@pdfborderstyle,%
10980     Color=.4 .4 .1,%
10981     pdfmark=/ANN,%
10982     Subtype=/Link,%
10983     PDFAFlags=4,%
10984     Page=/Prev%
10985   }%
10986 }
10987 \def\PDFOpen#1{%
10988   \pdfmark{#1,pdfmark=/DOCVIEW}%
10989 }
```

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

```
10990 \def\hyper@linkurl#1#2{%
10991   \begingroup
10992     \Hy@pstringdef\Hy@pstringURI{#2}%
10993     \hyper@chars
10994     \leavevmode
10995     \pdfmark[{#1}]{%
10996       pdfmark=/ANN,%
10997       linktype=url,%
10998       AcroHighlight=\@pdfhighlight,%
10999       Border=\@pdfborder,%
11000       BorderStyle=\@pdfborderstyle,%
11001       Color=\@urlbordercolor,%
11002       Action={<<%
11003         /Subtype/URI%
11004         /URI(\Hy@pstringURI)%
11005         \ifHy@href@ismap
11006           /IsMap true%
11007         \fi
11008       >>},%
11009       Subtype=/Link,%
11010       PDFAFlags=4%
11011     }%
11012   \endgroup
11013 }
```



```

11014 \def\hyper@linkfile#1#2#3{%
11015   \begingroup
11016     \def\Hy@pstringF{#2}%
11017     \Hy@CleanupFile\Hy@pstringF
11018     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11019     \Hy@pstringdef\Hy@pstringD{#3}%
11020     \Hy@MakeRemoteAction
11021     \leavevmode
11022     \pdfmark[{#1}]{%
11023       pdfmark=/ANN,%
11024       Subtype=/Link,%
11025       PDFAFlags=4,%
11026       AcroHighlight=\@pdfhighlight,%
11027       Border=\@pdfborder,%
11028       BorderStyle=\@pdfborderstyle,%
11029       linktype=file,%
11030       Color=\@filebordercolor,%
11031       Action={%
11032         <<%
11033           /S/GoToR%
11034           \Hy@SetNewWindow
11035           /F(\Hy@pstringF)%
11036           /D%
11037           \ifx\#3\%
11038             [\Hy@href@page\@pdfremotestartview]%
11039           \else
11040             (\Hy@pstringD)cvn%
11041           \fi
11042           \Hy@href@nextactionraw
11043         >>%
11044       }%
11045     }%
11046   \endgroup
11047 }
11048 \def\@hyper@launch run:#1\#2#3{%
11049   \begingroup
11050     \Hy@pstringdef\Hy@pstringF{#1}%
11051     \Hy@pstringdef\Hy@pstringP{#3}%
11052     \leavevmode
11053     \pdfmark[{#2}]{%
11054       pdfmark=/ANN,%
11055       Subtype=/Link,%
11056       PDFAFlags=4,%
11057       AcroHighlight=\@pdfhighlight,%
11058       Border=\@pdfborder,%
11059       BorderStyle=\@pdfborderstyle,%
11060       linktype=run,%
11061       Color=\@runbordercolor,%
11062       Action={%
11063         <<%
11064           /S/Launch%
11065           \Hy@SetNewWindow
11066           /F(\Hy@pstringF)%
11067           \ifx\#3\%
11068             \else
11069             /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11070           \fi

```

```

11071      \Hy@href@nextactionraw
11072      >>%
11073    }%
11074  }%
11075 \endgroup
11076 }
11077 </pdfmark>

```

Unfortunately, some parts of the pdfmark PostScript code depend on vagaries of the dvi driver. We isolate here all the problems.

## 46.9 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.

```

11078 < *dvips>
11079 \providecommand*{\XR@ext}{pdf}
11080 \def\Hy@raisedlink{}
11081 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
11082 \def\headerps@out#1{\special{! #1}}%
11083 \input{pdfmark.def}%
11084 \ifx\@pdfproducer\relax
11085   \def\@pdfproducer{dvips + Distiller}%
11086 \fi
11087 \providecommand*\@pdfborder{0 0 1}
11088 \providecommand*\@pdfborderstyle{}
11089 \providecommand*\@pdfview{XYZ}
11090 \providecommand*\@pdfviewparams{ H.V}
11091 \def\Hy@BorderArrayPatch{BorderArrayPatch}
11092 \g@addto@macro\Hy@FirstPageHook{%
11093   \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.

```

11094   /DvipsToPDF{72.27 mul Resolution div} def%
11095   /PDFToDvips{72.27 div Resolution mul} def%
11096   /BPToDvips{72 div Resolution mul}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.

```

11097   /BorderArrayPatch{%
11098     [exch{%
11099       dup dup type/integertype eq exch type/realtype eq or%
11100       {BPToDvips}if%

```

```

11101    }forall}%
11102    }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.

```

11103    /HyperBorder {1 PDFToDvips} def%
11104    /H.V {pdf@hoff pdf@voff null} def%
11105    /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

```

11106    /H.S {%
11107        currentpoint %
11108        HyperBorder add /pdf@lly exch def %
11109        dup DvipsToPDF 72 add /pdf@hoff exch def %
11110        HyperBorder sub /pdf@llx exch def%
11111    } 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`

```

11112    /H.L {%
11113        2 sub dup%
11114        /HyperBasePt exch def %
11115        PDFToDvips /HyperBaseDvips exch def %
11116        currentpoint %
11117        HyperBaseDvips sub /pdf@ury exch def%
11118        /pdf@urx exch def%
11119    } def%
11120    /H.A {%
11121        H.L %
11122    % |pdf@voff| = the distance from the top of the page to a point
11123    % |\baselineskip| above the current point in PDF coordinates
11124        currentpoint exch pop %
11125        vsize 72 sub exch DvipsToPDF %
11126        HyperBasePt sub % baseline skip
11127        sub /pdf@voff exch def%
11128    } def%
11129    /H.R {%
11130        currentpoint %
11131        HyperBorder sub /pdf@ury exch def %
11132        HyperBorder add /pdf@urx exch def %
11133    % |pdf@voff| = the distance from the top of the page to the current point, in
11134    % PDF coordinates
11135        currentpoint exch pop vsize 72 sub %
11136        exch DvipsToPDF sub /pdf@voff exch def%
11137    } def%
11138    }%
11139    }
11140    \AtBeginShipoutFirst{%
11141        \ifHy@setpagesize
11142            \begingroup
11143            \@ifundefined{stockwidth}{%
11144                \ifdim\paperwidth>\z@

```

```

11145     \ifdim\paperheight>\z@
11146     \special{papersize=\the\paperwidth,\the\paperheight}%
11147     \fi
11148     \fi
11149   }{%
11150     \ifdim\stockwidth>\z@
11151     \ifdim\stockheight>\z@
11152     \special{papersize=\the\stockwidth,\the\stockheight}%
11153     \fi
11154     \fi
11155   }%
11156 \endgroup
11157 \fi
11158 \Hy@DisableOption{setpagesize}%
11159 }
11160 </dvips>

```

## 46.10 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.

```

11161 <*vtexpdfmark>
11162 \providecommand*{\XR@ext}{pdf}
11163 \def\Hy@raisedlink{}
11164 \def\literalps@out#1{\special{pS:#1}}%
11165 \def\headerps@out#1{\immediate\special{pS:#1}}%
11166 \input{pdfmark.def}%
11167 \ifx\@pdfproducer\relax
11168   \ifnum\OpMode=\@ne
11169     \def\@pdfproducer{VTeX}%
11170   \else
11171     \def\@pdfproducer{VTeX + Distiller}%
11172   \fi
11173 \fi
11174 \providecommand*\@pdfborder{0 0 1}
11175 \providecommand*\@pdfborderstyle{}
11176 \providecommand*\@pdfview{XYZ}
11177 \providecommand*\@pdfviewparams{ H.V}
11178 \g@addto@macro\Hy@FirstPageHook{%
11179   \headerps@out{%
11180     /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.

```

11181   /HyperBorder {1} def%
11182   /H.V {pdf@hoff pdf@voff null} def%
11183   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11184   /H.S {%
11185     currentpoint %
11186     HyperBorder sub%

```

```

11187 /pdf@lly exch def %
11188 dup 72 add /pdf@hoff exch def %
11189 HyperBorder sub%
11190 /pdf@llx exch def%
11191 } def%

```

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

```

11192 /H.L {%
11193 2 sub%
11194 /HyperBasePt exch def %
11195 currentpoint %
11196 HyperBasePt add HyperBorder add%
11197 /pdf@ury exch def %
11198 HyperBorder add%
11199 /pdf@urx exch def%
11200 } def%
11201 /H.A {%
11202 H.L %
11203 currentpoint exch pop %
11204 vsize 72 sub exch %
11205 HyperBasePt add add%
11206 /pdf@voff exch def%
11207 } def%

```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11208 /H.R {%
11209 currentpoint %
11210 HyperBorder add%
11211 /pdf@ury exch def %
11212 HyperBorder add%
11213 /pdf@urx exch def %
11214 currentpoint exch pop vsize 72 sub add%
11215 /pdf@voff exch def%
11216 } def%
11217 }%
11218 }
11219 </vtxpdfmark>

```

## 46.11 Textures

```

11220 <*textures>
11221 \providecommand*{\XR@ext}{pdf}

```

At the suggestion of Jacques Distler ([distler@golem.ph.utexas.edu](mailto:distler@golem.ph.utexas.edu)), try to derive a suitable driver for Textures. This was initially a copy of dvips, with some guesses about Textures behaviour. Ross Moore ([ross@maths.mq.edu.au](mailto:ross@maths.mq.edu.au)) has added modifications for better compatibility, and to support use of pdfmark.

Start by defining a macro that expands to the end-of-line character. This will be used to format the appearance of PostScript code, to enhance readability, and avoid excessively long lines which might otherwise become broken to bad places.

`\Hy@ps@CR` The macro `\Hy@ps@CR` contains the end-of-line character.

```

11222 \begingroup
11223 \obeylines %
11224 \gdef\Hy@ps@CR{\noexpand
11225 }%
11226 \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`.

```
11227 \def\literalps@out#1{%
11228   \special{postscript 0 0 transform}%
11229   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11230 }%
11231 %
```

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.

```
11232 \def\headerps@out#1{%
11233   \special{%
11234     prepostscript TeXdict begin\Hy@ps@CR
11235       #1\Hy@ps@CR
11236     end%
11237   }%
11238 }%
11239 %
```

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.

```
11240 \g@addto@macro\Hy@FirstPageHook{%
11241   \headerps@out{%
11242     /betterpdfmark {%
11243       systemdict begin %
11244         dup /BP eq%
11245         {cleartomark gsave nulldevice []}%
11246         {dup /EP eq%
11247           {cleartomark cleartomark grestore}%
11248           {cleartomark}%
11249         }ifelse%
11250       }ifelse %
11251     end%
11252   }def\Hy@ps@CR
11253   ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11254 }% end of \headerps@out
11255 }% end of \AtBeginShipoutFirst
11256 %
11257 \input{pdfmark.def}%
11258 %
11259 \ifx\@pdfproducer\relax
11260   \def\@pdfproducer{Textures + Distiller}%
11261 \fi
11262 \providecommand*\@pdfborder{0 0 1}
11263 \providecommand*\@pdfborderstyle{}
11264 \providecommand*\@pdfview{XYZ}
11265 \providecommand*\@pdfviewparams{ H.V}
11266 %
```

These are called at the start and end of unboxed links; their job is to leave available PS variables called pdf@llx pdf@lly pdf@urx pdf@ury, which are the coordinates of the bounding rectangle of the link, and pdf@hoff pdf@voff which are the PDF page offsets. The Rect pair are called at the LL and UR corners of a box known to  $\TeX$ .

```
11267 \Hy@AtBeginDocument{%
11268   \headerps@out{%
```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```
11269   /vsize {\Hy@pageheight} def%
11270   /DvipsToPDF {} def%
11271   /PDFToDvips {} def%
11272   /BPToDvips {} def%
11273   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11274   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11275   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11276   /H.S {%
11277     currentpoint %
11278     HyperBorder add /pdf@lly exch def %
11279     dup DvipsToPDF 72 add /pdf@hoff exch def %
11280     HyperBorder sub /pdf@llx exch def%
11281   } def\Hy@ps@CR
11282   /H.L {%
11283     2 sub %
11284     PDFToDvips /HyperBase exch def %
11285     currentpoint %
11286     HyperBase sub /pdf@ury exch def%
11287     /pdf@urx exch def%
11288   } def\Hy@ps@CR
11289   /H.A {%
11290     H.L %
11291     currentpoint exch pop %
11292     vsize 72 sub exch DvipsToPDF %
11293     HyperBase sub % baseline skip
11294     sub /pdf@voff exch def%
11295   } def\Hy@ps@CR
11296   /H.R {%
11297     currentpoint %
11298     HyperBorder sub /pdf@ury exch def %
11299     HyperBorder add /pdf@urx exch def %
11300     currentpoint exch pop vsize 72 sub %
11301     exch DvipsToPDF sub /pdf@voff exch def%
11302   } def\Hy@ps@CR
11303 }%
11304 }

11305 \Hy@AtBeginDocument{%
11306   \ifHy@colorlinks
11307     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11308   \fi
11309 }
```

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.

```
11310 \expandafter\let\expandafter\keepPDF@SetupDoc
11311 \csname PDF@SetupDoc\endcsname
11312 \def\PDF@SetupDoc{%
11313   \ifx\@baseurl\@empty
```

```

11314 \else
11315   \special{html:<base href="\@baseurl">}%
11316 \fi
11317 \keepPDF@SetupDoc
11318 }
11319 \def\hyper@anchor#1{%
11320   \Hy@SaveLastskip
11321   \Hy@VerboseAnchor{#1}%
11322   \begingroup
11323     \let\protect=\string
11324     \special{html:<a name=%
11325       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11326   \endgroup
11327   \Hy@activeanchortrue
11328   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11329   \special{html:</a>}%
11330   \Hy@activeanchorfalse
11331   \Hy@RestoreLastskip
11332 }
11333 \def\hyper@anchorstart#1{%
11334   \Hy@SaveLastskip
11335   \Hy@VerboseAnchor{#1}%
11336   \begingroup
11337     \hyper@chars
11338     \special{html:<a name=%
11339       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11340   \endgroup
11341   \Hy@activeanchortrue
11342 }
11343 \def\hyper@anchorend{%
11344   \special{html:</a>}%
11345   \Hy@activeanchorfalse
11346   \Hy@RestoreLastskip
11347 }
11348 \def\@urlltype{url}
11349 \def\hyper@linkstart#1#2{%
11350   \Hy@VerboseLinkStart{#1}{#2}%
11351   \expandafter\Hy@colorlink\csname @#1color\endcsname
11352   \def\Hy@tempa{#1}%
11353   \ifx\Hy@tempa\@urlltype
11354     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11355   \else
11356     \begingroup
11357       \hyper@chars
11358       \special{%
11359         html:<a href=%
11360           \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>
11361         }%
11362     \endgroup
11363   \fi
11364 }
11365 \def\hyper@linkend{%
11366   \special{html:</a>}%
11367   \Hy@endcolorlink
11368 }
11369 \def\hyper@linkfile#1#2#3{%
11370   \hyper@linkurl{#1}{%

```



```

11371 \Hy@linkfileprefix#2\ifx\|#3\\\else\##3\fi
11372 }%
11373 }
11374 \def\hyper@linkurl#1#2{%
11375 \leavevmode
11376 \ifHy@raiselinks
11377 \Hy@SaveSpaceFactor
11378 \Hy@SaveSavedSpaceFactor
11379 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11380 \Hy@RestoreSavedSpaceFactor
11381 \@linkdim\dp\@tempboxa
11382 \lower\@linkdim\hbox{%
11383 \hyper@chars
11384 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11385 }%
11386 \Hy@colorlink\@urlcolor
11387 \Hy@RestoreSpaceFactor
11388 #1%
11389 \Hy@SaveSpaceFactor
11390 \@linkdim\ht\@tempboxa
11391 \advance\@linkdim by -6.5\p@
11392 \raise\@linkdim\hbox{\special{html:</a>}}%
11393 \Hy@endcolorlink
11394 \Hy@RestoreSpaceFactor
11395 \else
11396 \begingroup
11397 \hyper@chars
11398 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11399 \Hy@colorlink\@urlcolor#1%
11400 \special{html:</a>}%
11401 \Hy@endcolorlink
11402 \endgroup
11403 \fi
11404 }

```

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

```

11405 \def\hyper@link#1#2#3{%
11406 \Hy@VerboseLinkStart{#1}{#2}%
11407 \hyper@linkurl{#3}{\#HyperDestNameFilter{#2}}%
11408 }
11409 \def\hyper@image#1#2{%
11410 \begingroup
11411 \hyper@chars
11412 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11413 \endgroup
11414 }
11415 </textures>

```

## 46.12 dvipsone

```

11416 % \subsection{dvipsone driver}
11417 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11418 % |\special| commands.
11419 <*dvipsone>
11420 \providecommand*{\XR@ext}{pdf}
11421 \def\Hy@raisedlink{}
11422 \providecommand*\@pdfborder{0 0 1}
11423 \providecommand*\@pdfborderstyle{}

```

```

11424 \def\literalps@out#1{\special{ps:#1}}%
11425 \def\headerps@out#1{\special{headertext=#1}}%
11426 \input{pdfmark.def}%
11427 \ifx\@pdfproducer\relax
11428   \def\@pdfproducer{dvipsone + Distiller}%
11429 \fi
11430 \HyInfo@AddonUnsupportedtrue
11431 \def\PDF@FinishDoc{%
11432   \Hy@UseMaketitleInfos
11433   \HyInfo@TrappedUnsupported
11434   \special{PDF: Keywords \@pdfkeywords}%
11435   \special{PDF: Title \@pdftitle}%
11436   \special{PDF: Creator \@pdfcreator}%
11437   \ifx\@pdfcreationdate\@empty
11438     \else
11439     \special{PDF: CreationDate \@pdfcreationdate}%
11440   \fi
11441   \ifx\@pdfmoddate\@empty
11442     \else
11443     \special{PDF: ModDate \@pdfmoddate}%
11444   \fi
11445   \special{PDF: Author \@pdfauthor}%
11446   \ifx\@pdfproducer\relax
11447     \else
11448     \special{PDF: Producer \@pdfproducer}%
11449   \fi
11450   \special{PDF: Subject \@pdfsubject}%
11451   \Hy@DisableOption{pdfauthor}%
11452   \Hy@DisableOption{pdftitle}%
11453   \Hy@DisableOption{pdfsubject}%
11454   \Hy@DisableOption{pdfcreator}%
11455   \Hy@DisableOption{pdfcreationdate}%
11456   \Hy@DisableOption{pdfmoddate}%
11457   \Hy@DisableOption{pdfproducer}%
11458   \Hy@DisableOption{pdfkeywords}%
11459   \Hy@DisableOption{pdftrapped}%
11460   \Hy@DisableOption{pdfinfo}%
11461 }
11462 \def\PDF@SetupDoc{%
11463   \def\Hy@temp{}%
11464   \ifx\@pdfstartpage\@empty
11465     \else
11466     \ifx\@pdfstartview\@empty
11467       \else
11468       \edef\Hy@temp{%
11469         ,Page=\@pdfstartpage
11470         ,View=\@pdfstartview
11471       }%
11472     \fi
11473   \fi
11474   \edef\Hy@temp{%
11475     \noexpand\pdfmark{%
11476       pdfmark=/DOCVIEW,%
11477       PageMode=/\@pdfpagemode
11478     }\Hy@temp
11479   }%
11480 }%

```

```

11481 \Hy@temp
11482 \ifx\@pdfpagescrop\@empty
11483 \else
11484 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11485 \fi
11486 \edef\Hy@temp{%
11487 \ifHy@toolbar\else /HideToolbar true\fi
11488 \ifHy@menubar\else /HideMenubar true\fi
11489 \ifHy>windowui\else /HideWindowUI true\fi
11490 \ifHy@fitwindow /FitWindow true\fi
11491 \ifHy@centerwindow /CenterWindow true\fi
11492 \ifHy@displaydoctitle /DisplayDocTitle true\fi
11493 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11494 \Hy@UseNameKey{Direction}\@pdfdirection
11495 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11496 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11497 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11498 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11499 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11500 \Hy@UseNameKey{Duplex}\@pdfduplex
11501 \ifx\@pdfpicktraybypdfsize\@empty
11502 \else
11503 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11504 \fi
11505 \ifx\@pdfprintpagerange\@empty
11506 \else
11507 /PrintPageRange[\@pdfprintpagerange]%
11508 \fi
11509 \ifx\@pdfnumcopies\@empty
11510 \else
11511 /NumCopies \@pdfnumcopies
11512 \fi
11513 }%
11514 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11515 \pdfmark{%
11516 pdfmark=/PUT,%
11517 Raw={%
11518 \string{Catalog}\string}<<%
11519 \ifx\Hy@temp\@empty
11520 \else
11521 /ViewerPreferences<<\Hy@temp>>%
11522 \fi
11523 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11524 \ifx\@pdflang\@empty
11525 \else
11526 /Lang(\@pdflang)%
11527 \fi
11528 \ifx\@baseurl\@empty
11529 \else
11530 /URI<</Base(\Hy@pstringB)>>%
11531 \fi
11532 >>%
11533 }%
11534 }%
11535 }
11536 \providecommand*\@pdfview{XYZ}
11537 \providecommand*\@pdfviewparams{ %

```

```

11538 gsave revscl currentpoint grestore %
11539 72 add exch pop null exch null%
11540 }
11541 \def\Hy@BorderArrayPatch{BorderArrayPatch}

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called pdf@llx pdf@lly pdf@urx pdf@ury, which are the coordinates of the bounding rectangle of the link, and pdf@hoff pdf@voff which are the PDF page offsets. These latter are currently not used in the dvipsone setup. The Rect pair are called at the LL and UR corners of a box known to T<sub>E</sub>X.

```

11542 \g@addto@macro\Hy@FirstPageHook{%
11543 \headerps@out{%

```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

11544 /DvipsToPDF { 65781 div } def%
11545 /PDFToDvips { 65781 mul } def%
11546 /BPToDvips{65781 mul}def%
11547 /HyperBorder { 1 PDFToDvips } def%
11548 /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.

```

11549 /BorderArrayPatch{%
11550 [exch{%
11551 dup dup type/integertype eq exch type/realtype eq or%
11552 {BPToDvips}if%
11553 }forall]%
11554 }def%
11555 /H.S {%
11556 currentpoint %
11557 HyperBorder add /pdf@lly exch def %
11558 dup DvipsToPDF 72 add /pdf@hoff exch def %
11559 HyperBorder sub /pdf@llx exch def%
11560 } def%
11561 /H.L {%
11562 2 sub %
11563 PDFToDvips /HyperBase exch def %
11564 currentpoint %
11565 HyperBase sub /pdf@ury exch def%
11566 /pdf@urx exch def%
11567 } def%
11568 /H.A {%
11569 H.L %
11570 currentpoint exch pop %
11571 HyperBase sub % baseline skip
11572 DvipsToPDF /pdf@voff exch def%
11573 } def%
11574 /H.R {%
11575 currentpoint %
11576 HyperBorder sub /pdf@ury exch def %
11577 HyperBorder add /pdf@urx exch def %
11578 currentpoint exch pop DvipsToPDF /pdf@voff exch def%
11579 } def%
11580 }%
11581 }
11582 \</dvipsone>

```

## 46.13 TeX4ht

```

11583 <*tex4ht>
11584 \providecommand*{\XR@ext}{html}
11585 \def\Hy@raisedlink{}
11586 \@ifpackageloaded{tex4ht}{%
11587   \Hy@InfoNoLine{tex4ht is already loaded}%
11588 }{%
11589   \RequirePackage[htex4ht]{tex4ht}%
11590 }
11591 \hyperlinkfileprefix{}
11592 \def\PDF@FinishDoc{}
11593 \def\PDF@SetupDoc{%
11594   \ifx\@baseurl\@empty
11595   \else
11596     \special{t4ht=<base href="\@baseurl">}%
11597   \fi
11598 }
11599 \def\hyper@anchor#1{%
11600   \Hy@SaveLastskip
11601   \Hy@VerboseAnchor{#1}%
11602   \begingroup
11603     \let\protect=\string
11604     \special{t4ht=<a name=%
11605       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11606   \endgroup
11607   \Hy@activeanchortrue
11608   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11609   \special{t4ht=</a>}%
11610   \Hy@activeanchorfalse
11611   \Hy@RestoreLastskip
11612 }
11613 \def\hyper@anchorstart#1{%
11614   \Hy@SaveLastskip
11615   \Hy@VerboseAnchor{#1}%
11616   \begingroup
11617     \hyper@chars\special{t4ht=<a name=%
11618       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11619   \endgroup
11620   \Hy@activeanchortrue
11621 }
11622 \def\hyper@anchorend{%
11623   \special{t4ht=</a>}%
11624   \Hy@activeanchorfalse
11625   \Hy@RestoreLastskip
11626 }
11627 \def\@urltype{url}
11628 \def\hyper@linkstart#1#2{%
11629   \Hy@VerboseLinkStart{#1}{#2}%
11630   \expandafter\Hy@colorlink\csname @#1color\endcsname
11631   \def\Hy@tempa{#1}%
11632   \ifx\Hy@tempa\@urltype
11633     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
11634   \else
11635     \begingroup
11636       \hyper@chars
11637       \special{t4ht=<a href=%
11638         \hyper@quote\# \HyperDestNameFilter{#2}\hyper@quote>}%
11639     \endgroup

```

```

11640 \fi
11641 }
11642 \def\hyper@linkend{%
11643 \special{t4ht=</a>}%
11644 \Hy@endcolorlink
11645 }
11646 \def\hyper@linkfile#1#2#3{%
11647 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
11648 }
11649 \def\hyper@linkurl#1#2{%
11650 \leavevmode
11651 \ifHy@raiselinks
11652 \Hy@SaveSpaceFactor
11653 \Hy@SaveSavedSpaceFactor
11654 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11655 \Hy@RestoreSavedSpaceFactor
11656 \@linkdim\dp\@tempboxa
11657 \lower\@linkdim\hbox{%
11658 \begingroup
11659 \hyper@chars
11660 \special{%
11661 t4ht=<a href=\hyper@quote#2\hyper@quote>%
11662 }%
11663 \endgroup
11664 }%
11665 \Hy@colorlink\@urlcolor
11666 \Hy@RestoreSpaceFactor
11667 #1%
11668 \Hy@SaveSpaceFactor
11669 \Hy@endcolorlink
11670 \@linkdim\ht\@tempboxa
11671 \advance\@linkdim by -6.5\p@
11672 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
11673 \Hy@RestoreSpaceFactor
11674 \else
11675 \begingroup
11676 \hyper@chars
11677 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
11678 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
11679 \special{t4ht=</a>}%
11680 \endgroup
11681 \fi
11682 }

```

Poor implementation of \hyper@link without considering #1.

```

11683 \def\hyper@link#1#2#3{%
11684 \Hy@VerboseLinkStart{#1}{#2}%
11685 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
11686 }
11687 \def\hyper@image#1#2{%
11688 \begingroup
11689 \hyper@chars
11690 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
11691 \endgroup
11692 }
11693 \let\autoref\ref
11694 \ifx \rEfLiNK \UnDef
11695 \def\rEfLiNK #1#2{#2}%

```

```

11696 \fi
11697 \def\backref#1{}

Fix for tex4ht.
11698 \AtBeginDocument{%
11699 \expandafter\let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
11700 \expandafter\def\csname Make:Label\endcsname#1#2{%
11701 \ifhmode
11702 \Hy@SaveSpaceFactor
11703 \else
11704 \global\Hy@SavedSpaceFactor=1000 %
11705 \fi
11706 \Hy@OrgMakeLabel{#1}{%
11707 \Hy@RestoreSpaceFactor
11708 #2%
11709 \Hy@SaveSpaceFactor
11710 }%
11711 \Hy@RestoreSpaceFactor
11712 }%
11713 }
11714 </tex4ht>
11715 <*tex4htcfg>
11716 \IfFileExists{\jobname.cfg}{\endinput}{}
11717 \Preamble{html}
11718 \begin{document}%
11719 \EndPreamble
11720 \def\TeX{\TeX}
11721 \def\OMEGA{\Omega}
11722 \def\LaTeX{\LaTeX}
11723 \def\LaTeXe{\LaTeX2e}
11724 \def\TeXe{\TeX}
11725 \def\MF{Metafont}
11726 \def\MP{MetaPost}
11727 </tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

11728 <*pdfmark>
11729 \long\def\@Form[#1]{%
11730 \g@addto@macro\Hy@FirstPageHook{%
11731 \headerps@out{%
11732 [%
11733 /_objdef{pdfDocEncoding}%
11734 /type/dict%
11735 /OBJ pdfmark%
11736 [%
11737 {pdfDocEncoding}%
11738 <<%
11739 /Type/Encoding%
11740 /Differences[%
11741 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
11742 /tilde %
11743 39/quotesingle %
11744 96/grave %
11745 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
11746 /fraction/guilsingleft/guilsingright/minus/perthousand%

```

11747 /quotedblbase/quotedblleft/quotedblright/quoteleft%  
11748 /quoteright/quotesingbase/trademark/fi/fl/Lslash/OE/Scaron%  
11749 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %  
11750 164/currency %  
11751 166/brokenbar %  
11752 168/dieresis/copyright/ordfeminine %  
11753 172/logicalnot/.notdef/registered/macron/degree/plusminus%  
11754 /twosuperior/threesuperior/acute/mu %  
11755 183/periodcentered/cedilla/onesuperior/ordmasculine %  
11756 188/onequarter/onehalf/threequarters %  
11757 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%  
11758 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%  
11759 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%  
11760 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%  
11761 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%  
11762 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%  
11763 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%  
11764 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%  
11765 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%  
11766 /ucircumflex/udieresis/yacute/thorn/ydieresis%  
11767 ]%  
11768 >>%  
11769 /PUT pdfmark%  
11770 [%  
11771 /\_\_objdef{ZaDb}%  
11772 /type/dict%  
11773 /OBJ pdfmark%  
11774 [%  
11775 {ZaDb}%  
11776 <<%  
11777 /Type/Font%  
11778 /Subtype/Type1%  
11779 /Name/ZaDb%  
11780 /BaseFont/ZapfDingbats%  
11781 >>%  
11782 /PUT pdfmark%  
11783 [%  
11784 /\_\_objdef{Helv}%  
11785 /type/dict%  
11786 /OBJ pdfmark%  
11787 [%  
11788 {Helv}%  
11789 <<%  
11790 /Type/Font%  
11791 /Subtype/Type1%  
11792 /Name/Helv%  
11793 /BaseFont/Helvetica%  
11794 /Encoding{pdfDocEncoding}%  
11795 >>%  
11796 /PUT pdfmark%  
11797 [%  
11798 /\_\_objdef{aform}%  
11799 /type/dict%  
11800 /OBJ pdfmark%  
11801 [%  
11802 /\_\_objdef{afields}%  
11803 /type/array%



```

11804 /OBJ pdfmark%
11805 {%
11806 [%
11807   /BBox[0 0 100 100]%
11808   /_objdef{Check}%
11809 /BP pdfmark %
11810 1 0 0 setrgbcolor%
11811 /ZapfDingbats 80 selectfont %
11812 20 20 moveto%
11813 (4)show%
11814 [/EP pdfmark%
11815 [%
11816   /BBox[0 0 100 100]%
11817   /_objdef{Cross}%
11818 /BP pdfmark %
11819 1 0 0 setrgbcolor%
11820 /ZapfDingbats 80 selectfont %
11821 20 20 moveto%
11822 (8)show%
11823 [/EP pdfmark%
11824 [%
11825   /BBox[0 0 250 100]%
11826   /_objdef{Submit}%
11827 /BP pdfmark %
11828 0.6 setgray %
11829 0 0 250 100 rectfill %
11830 1 setgray %
11831 2 2 moveto %
11832 2 98 lineto %
11833 248 98 lineto %
11834 246 96 lineto %
11835 4 96 lineto %
11836 4 4 lineto %
11837 fill %
11838 0.34 setgray %
11839 248 98 moveto %
11840 248 2 lineto %
11841 2 2 lineto %
11842 4 4 lineto %
11843 246 4 lineto %
11844 246 96 lineto %
11845 fill%
11846 /Helvetica 76 selectfont %
11847 0 setgray %
11848 8 22.5 moveto%
11849 (Submit)show%
11850 [/EP pdfmark%
11851 [%
11852   /BBox[0 0 250 100]%
11853   /_objdef{SubmitP}%
11854 /BP pdfmark %
11855 0.6 setgray %
11856 0 0 250 100 rectfill %
11857 0.34 setgray %
11858 2 2 moveto %
11859 2 98 lineto %
11860 248 98 lineto %

```

```

11861 246 96 lineto %
11862 4 96 lineto %
11863 4 4 lineto %
11864 fill %
11865 1 setgray %
11866 248 98 moveto %
11867 248 2 lineto %
11868 2 2 lineto %
11869 4 4 lineto %
11870 246 4 lineto %
11871 246 96 lineto %
11872 fill%
11873 /Helvetica 76 selectfont %
11874 0 setgray %
11875 10 20.5 moveto%
11876 (Submit)show%
11877 [/EP pdfmark%
11878 } ?pdfmark%
11879 [%
11880 {aform}%
11881 <<%
11882 /Fields{afields}%
11883 /DR<<%
11884 /Font<<%
11885 /ZaDb{ZaDb}%
11886 /Helv{Helv}%
11887 >>%
11888 >>%
11889 /DA(/Helv 10 Tf 0 g)%
11890 /CO{corder}%
11891 \ifHy@pdfa
11892 \else
11893 /NeedAppearances true%
11894 \fi
11895 >>%
11896 /PUT pdfmark%
11897 [%
11898 {Catalog}%
11899 <<%
11900 /AcroForm{aform}%
11901 >>%
11902 /PUT pdfmark%
11903 [%
11904 /__objdef{corder}%
11905 /type/array%
11906 /OBJ pdfmark% dps
11907 }}%
11908 \kvsetkeys{Form}{#1}%
11909 }
11910 \def\@endForm{}
11911 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
11912 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
11913 }
11914 \def\@TextField[#1]#2{% parameters, label
11915 \def\Fld@name{#2}%
11916 \def\Fld@default{}%
11917 \let\Fld@value\@empty

```

```

11918 \def\Fld@width{\DefaultWidthofText}%
11919 \def\Fld@height{%
11920   \ifFld@multiline
11921     \DefaultHeightofTextMultiline
11922   \else
11923     \DefaultHeightofText
11924   \fi
11925 }%
11926 \begingroup
11927   \expandafter\HyField@SetKeys\expandafter{%
11928     \DefaultOptionsofText,#1%
11929   }%
11930   \HyField@FlagsText
11931   \ifFld@hidden\def\Fld@width{1sp}\fi
11932   \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
11933   \LayoutTextField{#2}{%
11934     \Hy@escapeform\PDFForm@Text
11935     \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
11936       pdfmark=/ANN,Raw={\PDFForm@Text}%
11937     }%
11938   }%
11939 \endgroup
11940 }
11941 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
11942   \def\Fld@name{#2}%
11943   \let\Fld@default\relax
11944   \let\Fld@value\relax
11945   \def\Fld@width{\DefaultWidthofChoiceMenu}%
11946   \def\Fld@height{\DefaultHeightofChoiceMenu}%
11947   \begingroup
11948     \Fld@menulength=0 %
11949     \@tempdima\z@
11950     \@for\@curropt:=#3\do{%
11951       \expandafter\Fld@checkequals\@curropt==\\%
11952       \Hy@StepCount\Fld@menulength
11953       \settowidth{\@tempdimb}{\@currDisplay}%
11954       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
11955     }%
11956     \advance\@tempdima by 15\p@
11957     \begingroup
11958       \HyField@SetKeys{#1}%
11959     \edef\x{\endgroup
11960       \noexpand\expandafter
11961       \noexpand\HyField@SetKeys
11962       \noexpand\expandafter{%
11963         \expandafter\noexpand\curname DefaultOptionsof%
11964         \ifFld@radio
11965           Radio%
11966         \else
11967           \ifFld@combo
11968             \ifFld@popdown
11969               PopdownBox%
11970             \else
11971               ComboBox%
11972             \fi
11973           \else
11974             ListBox%

```

```

11975         \fi
11976     \fi
11977     \endcsname
11978 }%
11979 }\x
11980 \HyField@SetKeys{#1}%
11981 \ifFld@hidden\def\Fld@width{1sp}\fi
11982 \ifx\Fld@value\relax
11983     \let\Fld@value\Fld@default
11984 \fi
11985 \LayoutChoiceField{#2}{%
11986     \ifFld@radio
11987         \HyField@FlagsRadioButton
11988         \@@Radio{#3}%
11989     \else
11990         \begingroup
11991         \HyField@FlagsChoice
11992         \ifdim\Fld@width<\@tempdima
11993             \ifdim\@tempdima<1cm\@tempdima1cm\fi
11994             \edef\Fld@width{\the\@tempdima}%
11995         \fi
11996         \ifFld@combo
11997         \else
11998             \@tempdima=\the\Fld@menulength\Fld@charsize
11999             \advance\@tempdima by \Fld@borderwidth bp %
12000             \advance\@tempdima by \Fld@borderwidth bp %
12001             \edef\Fld@height{\the\@tempdima}%
12002         \fi
12003         \@@ListBox{#3}%
12004     \endgroup
12005 \fi
12006 }%
12007 \endgroup
12008 }
12009 \def\@@Radio#1{%
12010     \Fld@listcount=0 %
12011     \@for\@curropt=#1\do{%
12012         \expandafter\Fld@checkequals\@curropt==\%
12013         \Hy@StepCount\Fld@listcount
12014         \@currDisplay\space
12015         \Hy@escapeform\PDFForm@Radio
12016         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12017             pdfmark=/ANN,%
12018             Raw={%
12019                 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12020             }%
12021         } % deliberate space between radio buttons
12022     }%
12023 }
12024 \newcount\Fld@listcount
12025 \def\@@ListBox#1{%
12026     \HyField@PDFChoices{#1}%
12027     \Hy@escapeform\PDFForm@List
12028     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12029         pdfmark=/ANN,Raw={\PDFForm@List}%
12030     }%
12031 }

```

```

12032 \def\@PushButton[#1]#2{% parameters, label
12033 \def\Fld@name{#2}%
12034 \begingroup
12035 \expandafter\HyField@SetKeys\expandafter{%
12036 \DefaultOptionsofPushButton,#1%
12037 }%
12038 \ifHy@pdfa
12039 \Hy@Error{%
12040 PDF/A: Push button with JavaScript is prohibited%
12041 }\@ehc
12042 \LayoutPushButtonField{%
12043 \leavevmode
12044 \MakeButtonField{#2}%
12045 }%
12046 \else
12047 \HyField@FlagsPushButton
12048 \ifFld@hidden\def\Fld@width{1sp}\fi
12049 \LayoutPushButtonField{%
12050 \leavevmode
12051 \Hy@escapeform\PDFForm@Push
12052 \pdfmark[\MakeButtonField{#2}]{%
12053 pdfmark=/ANN,Raw={\PDFForm@Push}%
12054 }%
12055 }%
12056 \fi
12057 \endgroup
12058 }
12059 \def\@Submit[#1]#2{%
12060 \def\Fld@width{\DefaultWidthofSubmit}%
12061 \def\Fld@height{\DefaultHeightofSubmit}%
12062 \begingroup
12063 \expandafter\HyField@SetKeys\expandafter{%
12064 \DefaultOptionsofSubmit,#1%
12065 }%
12066 \HyField@FlagsPushButton
12067 \HyField@FlagsSubmit
12068 \ifFld@hidden\def\Fld@width{1sp}\fi
12069 \Hy@escapeform\PDFForm@Submit
12070 \pdfmark[\MakeButtonField{#2}]{%
12071 pdfmark=/ANN,%
12072 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
12073 }%
12074 \endgroup
12075 }
12076 \def\@Reset[#1]#2{%
12077 \def\Fld@width{\DefaultWidthofReset}%
12078 \def\Fld@height{\DefaultHeightofReset}%
12079 \begingroup
12080 \expandafter\HyField@SetKeys\expandafter{%
12081 \DefaultOptionsofReset,#1%
12082 }%
12083 \leavevmode
12084 \ifHy@pdfa
12085 \Hy@Error{%
12086 PDF/A: Reset action is prohibited%
12087 }\@ehc
12088 \MakeButtonField{#2}%

```

```

12089 \else
12090 \HyField@FlagsPushButton
12091 \ifFld@hidden\def\Fld@width{1sp}\fi
12092 \Hy@escapeform\PDFForm@Reset
12093 \pdfmark[\MakeButtonField{#2}]{%
12094 pdfmark=/ANN,Raw={\PDFForm@Reset}%
12095 }%
12096 \fi
12097 \endgroup
12098 }%
12099 \def\@CheckBox[#1]#2{% parameters, label
12100 \def\Fld@name{#2}%
12101 \def\Fld@default{0}%
12102 \begingroup
12103 \def\Fld@width{\DefaultWidthofCheckBox}%
12104 \def\Fld@height{\DefaultHeightofCheckBox}%
12105 \expandafter\HyField@SetKeys\expandafter{%
12106 \DefaultOptionsofCheckBox,#1%
12107 }%
12108 \HyField@FlagsCheckBox
12109 \ifFld@hidden\def\Fld@width{1sp}\fi
12110 \LayoutCheckField{#2}{%
12111 \Hy@escapeform\PDFForm@Check
12112 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12113 pdfmark=/ANN,Raw={\PDFForm@Check}%
12114 }%
12115 }%
12116 \endgroup
12117 }
12118 \pdfmark

```

## 47.2 HyperTeX

```

12119 \hypertex
12120 \def\@Form[#1]{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12121 \def\@endForm{}
12122 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12123 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12124 }
12125 \def\@TextField[#1]#2{% parameters, label
12126 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12127 }
12128 \def\@CheckBox[#1]#2{% parameters, label
12129 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12130 }
12131 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12132 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12133 }
12134 \def\@PushButton[#1]#2{% parameters, label
12135 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12136 }
12137 \def\@Reset[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12138 \def\@Submit[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12139 \hypertex

```

## 47.3 TeX4ht

```

12140 \tex4ht
12141 \def\@Form[#1]{%

```

```

12142 \kvsetkeys{Form}{#1}%
12143 \HCode{<form action="\Form@action" method="\Form@method">}%
12144 }
12145 \def\@endForm{\HCode{</form>}}
12146 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12147 \Hy@Message{Sorry, TeX4ht does not support gauges}%
12148 }
12149 \def\@TextField[#1]#2{% parameters, label
12150 \let\Hy@reserved@a\@empty
12151 \def\Fld@name{#2}%
12152 \def\Fld@default{}%
12153 \bgroup
12154 \Field@toks={ }%
12155 \kvsetkeys{Field}{#1}%
12156 \HCode{<label for="\Fld@name">#2</label>}%
12157 \ifFld@password
12158 \@@PasswordField
12159 \else
12160 \@@TextField
12161 \fi
12162 \egroup
12163 }
12164 \def\@@PasswordField{%
12165 \HCode{%
12166 <input type="password" %
12167 id="\Fld@name" %
12168 name="\Fld@name" %
12169 \ifFld@hidden type="hidden" \fi
12170 value="\Fld@default" %
12171 \the\Field@toks
12172 >%
12173 }%
12174 }
12175 \def\@@TextField{%
12176 \ifFld@multiline
12177 \HCode{<textarea %
12178 \ifFld@readonly readonly \fi
12179 id="\Fld@name" %
12180 name="\Fld@name" %
12181 \ifFld@hidden type="hidden" \fi
12182 \the\Field@toks>%
12183 }%
12184 \Fld@default
12185 \HCode{</textarea>}%
12186 \else
12187 \HCode{<input type="text" %
12188 \ifFld@readonly readonly \fi
12189 id="\Fld@name" %
12190 name="\Fld@name" %
12191 \ifFld@hidden type="hidden" \fi
12192 value="\Fld@default" %
12193 \the\Field@toks>%
12194 }%
12195 \fi
12196 }
12197 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12198 \def\Fld@name{#2}%

```

```

12199 \def\Fld@default{ }%
12200 \let\Hy@reserved@a\relax
12201 \begingroup
12202 \expandafter\Fld@findlength#3\\%
12203 \Field@toks={ }%
12204 \kvsetkeys{Field}{#1}%
12205 #2%
12206 \ifFld@radio
12207 \expandafter\@@Radio#3\\%
12208 \else
12209 \expandafter\@@Menu#3\\%
12210 \fi
12211 \endgroup
12212 }
12213 \def\Fld@findlength#1\\{%
12214 \Fld@menulength=0 %
12215 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12216 }
12217 \def\@@Menu#1\\{%
12218 \HCode{<select size="\the\Fld@menulength" %
12219 name="\Fld@name" %
12220 \the\Field@toks>%
12221 }%
12222 \@for\@curropt:=#1\do{%
12223 \expandafter\Fld@checkequals\@curropt==\\%
12224 \HCode{<option %
12225 \ifx\@curropt\Fld@default selected \fi
12226 value="\@currValue">\@currDisplay</option>%
12227 }%
12228 }%
12229 \HCode{</select>}%
12230 }
12231 \def\@@Radio#1\\{%
12232 \@for\@curropt:=#1\do{%
12233 \expandafter\Fld@checkequals\@curropt==\\%
12234 \HCode{<input type="radio" %
12235 \ifx\@curropt\Fld@default checked \fi
12236 name="\Fld@name" %
12237 value="\@currValue" %
12238 \the\Field@toks>%
12239 }%
12240 \@currDisplay
12241 }%
12242 }
12243 \def\@PushButton[#1]#2{% parameters, label
12244 \def\Fld@name{#2}%
12245 \bgroup
12246 \Field@toks={ }%
12247 \kvsetkeys{Field}{#1}%
12248 \HCode{<input type="button" %
12249 name="\Fld@name" %
12250 value="#2" %
12251 \the\Field@toks>%
12252 }%
12253 \HCode{</button>}%
12254 \egroup
12255 }

```



```

12256 \def\@Submit[#1]#2{%
12257   \HCode{<button type="submit">#2</button>}%
12258 }
12259 \def\@Reset[#1]#2{%
12260   \HCode{<button type="reset">#2</button>}%
12261 }
12262 \def\@CheckBox[#1]#2{% parameters, label
12263   \let\Hy@reserved@a\@empty
12264   \def\Fld@name{#2}%
12265   \def\Fld@default{0}%
12266   \bgroup
12267     \Field@toks={ }%
12268     \kvsetkeys{Field}{#1}%
12269     \HCode{<input type="checkbox" %
12270       \ifFld@checked checked \fi
12271       \ifFld@disabled disabled \fi
12272       \ifFld@readonly readonly \fi
12273       name="\Fld@name" %
12274       \ifFld@hidden type="hidden" \fi
12275       value="\Fld@default" %
12276       \the\Field@toks>%
12277     #2%
12278   }%
12279   \egroup
12280 }
12281 \</tex4ht>

```

## 47.4 pdfTeX

```

12282 \<*pdftex>
12283 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12284   \Hy@Message{Sorry, pdftex does not support FORM gauges}%
12285 }
12286 \def\MakeFieldObject#1#2{\sbox0{#1}%
12287   \immediate\pdfxform0 %
12288   \expandafter\edef\csname #2Object\endcsname{%
12289     \the\pdfastxform\space 0 R%
12290   }%
12291   \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}%
12292 }%
12293 \def\HyField@afields{}
12294 \begingroup\expandafter\expandafter\expandafter\endgroup
12295 \expandafter\ifx\csname pdfastlink\endcsname\relax
12296   \let\HyField@AddToFields\relax
12297   \PackageInfo{hyperref}{%
12298     You need pdfTeX 1.40.0 for setting the /Fields entry.%
12299   \MessageBreak
12300   Adobe Reader/Acrobat accepts an empty /Field array,%
12301   \MessageBreak
12302   but other PDF viewers might complain%
12303   }%
12304 \else
12305   \def\HyField@AuxAddToFields#1{%
12306     \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%
12307     \Hy@AtBeginDocument{%
12308       \if@filesw
12309         \immediate\write\@mainaux{%
12310           \string\providecommand\string\HyField@AuxAddToFields[1]{}%

```

```

12311 }%
12312 \fi
12313 \let\HyField@AfterAuxOpen\@firstofone
12314 \def\HyField@AuxAddToFields#1{%
12315   \xdef\HyField@afields{%
12316     \ifx\HyField@afields\@empty
12317       \else
12318         \HyField@afields
12319       \space
12320     \fi
12321     #1 0 R%
12322   }%
12323 }%
12324 }%
12325 \def\HyField@AddToFields{%
12326   \expandafter\HyField@@AddToFields\expandafter{%
12327     \the\pdfastlink
12328   }%
12329 }%
12330 \def\HyField@@AddToFields#1{%
12331   \HyField@AfterAuxOpen{%
12332     \if@filesw
12333       \write\@mainaux{%
12334         \string\HyField@AuxAddToFields{#1}%
12335       }%
12336     \fi
12337   }%
12338 }%
12339 \fi
12340 \def\@Form[#1]{%
12341   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12342   \kvsetkeys{Form}{#1}%
12343   \Hy@FormObjects
12344   \ifnum\pdfTeXversion>13 %
12345     \pdfrefobj\OBJ@pdfdocencoding
12346     \pdfrefobj\OBJ@ZaDb
12347     \pdfrefobj\OBJ@Helv
12348   \fi
12349   \AtVeryEndDocument{%
12350     \immediate\pdfobj{%
12351       <<%
12352         /Fields[\HyField@afields]%
12353         /DR<<%
12354           /Font<<%
12355             /ZaDb \OBJ@ZaDb\space 0 R%
12356             /Helv \OBJ@Helv\space 0 R%
12357           >>%
12358         >>%
12359         /DA(/Helv 10 Tf 0 g)%
12360         \ifHy@pdfa
12361         \else
12362           /NeedAppearances true%
12363         \fi
12364       >>%
12365     }%
12366     \edef\OBJ@acroform{\the\pdfastobj}%
12367     \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%

```

```

12368 }%
12369 \MakeFieldObject{%

Same as \ding{123} of package pifont.
12370 \begingroup
12371 \fontfamily{pzd}%
12372 \fontencoding{U}%
12373 \fontseries{m}%
12374 \fontshape{n}%
12375 \selectfont
12376 \char123 %
12377 \endgroup
12378 }{Ding}%
12379 \MakeFieldObject{%
12380 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
12381 }{Submit}%
12382 \MakeFieldObject{%
12383 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
12384 }{SubmitP}%
12385 }
12386 \def\@endForm{}
12387 \def\@TextField[#1]#2{% parameters, label
12388 \def\Fld@name{#2}%
12389 \def\Fld@default{}%
12390 \let\Fld@value\@empty
12391 \def\Fld@width{\DefaultWidthofText}%
12392 \def\Fld@height{%
12393 \ifFld@multiline
12394 \DefaultHeightofTextMultiline
12395 \else
12396 \DefaultHeightofText
12397 \fi
12398 }%
12399 \begingroup
12400 \expandafter\HyField@SetKeys\expandafter{%
12401 \DefaultOptionsofText,#1%
12402 }%
12403 \PDFForm@Name
12404 \HyField@FlagsText
12405 \ifFld@hidden\def\Fld@width{1sp}\fi
12406 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12407 \LayoutTextField{#2}{%
12408 \Hy@escapeform\PDFForm@Text
12409 \pdfstartlink user {\PDFForm@Text}\relax
12410 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
12411 \HyField@AddToFields
12412 }%
12413 \endgroup
12414 }
12415 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12416 \def\Fld@name{#2}%
12417 \let\Fld@default\relax
12418 \let\Fld@value\relax
12419 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12420 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12421 \begingroup
12422 \Fld@menulength=0 %
12423 \@tempdima\z@

```

```

12424 \@for\@curropt:=#3\do{%
12425   \expandafter\Fld@checkequals\@curropt==\\%
12426   \Hy@StepCount\Fld@menulength
12427   \settowidth{\@tempdimb}{\@currDisplay}%
12428   \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12429 }%
12430 \advance\@tempdima by 15\p@
12431 \begingroup
12432   \HyField@SetKeys{#1}%
12433 \edef\x{\endgroup
12434   \noexpand\expandafter
12435   \noexpand\HyField@SetKeys
12436   \noexpand\expandafter{%
12437     \expandafter\noexpand\csname DefaultOptionsof%
12438       \ifFld@radio
12439         Radio%
12440       \else
12441         \ifFld@combo
12442           \ifFld@popdown
12443             PopdownBox%
12444           \else
12445             ComboBox%
12446           \fi
12447         \else
12448           ListBox%
12449         \fi
12450       \fi
12451     \endcsname
12452   }%
12453 }\x
12454 \HyField@SetKeys{#1}%
12455 \PDFForm@Name
12456 \ifFld@hidden\def\Fld@width{1sp}\fi
12457 \ifx\Fld@value\relax
12458   \let\Fld@value\Fld@default
12459 \fi
12460 \LayoutChoiceField{#2}{%
12461   \ifFld@radio
12462     \HyField@FlagsRadioButton
12463     \@@Radio{#3}%
12464   \else
12465     \begingroup
12466     \HyField@FlagsChoice
12467     \ifdim\Fld@width<\@tempdima
12468       \ifdim\@tempdima<1cm\@tempdima1cm\fi
12469     \edef\Fld@width{\the\@tempdima}%
12470     \fi
12471     \ifFld@combo
12472     \else
12473       \@tempdima=\the\Fld@menulength\Fld@charsize
12474       \advance\@tempdima by \Fld@borderwidth bp %
12475       \advance\@tempdima by \Fld@borderwidth bp %
12476       \edef\Fld@height{\the\@tempdima}%
12477     \fi
12478     \@@ListBox{#3}%
12479   \endgroup
12480 \fi

```

```

12481 }%
12482 \endgroup
12483 }
12484 \def\@@Radio#1{%
12485 \Fld@listcount=0 %
12486 \@for\@curropt:=#1\do{%
12487 \expandafter\Fld@checkequals\@curropt==\%
12488 \Hy@StepCount\Fld@listcount
12489 \@currDisplay\space
12490 \leavevmode
12491 \Hy@escapeform\PDFForm@Radio
12492 \pdfstartlink user {%
12493 \PDFForm@Radio
12494 /AP<<%
12495 /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.

```

12496 /\@currValue\space \DingObject
12497 >>%
12498 >>%
12499 }%
12500 \relax
12501 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
12502 \ifnum\Fld@listcount=1 %
12503 \HyField@AddToFields
12504 \fi
12505 \space % deliberate space between radio buttons
12506 }%
12507 }
12508 \newcount\Fld@listcount
12509 \def\@@ListBox#1{%
12510 \HyField@PDFChoices{#1}%
12511 \leavevmode
12512 \Hy@escapeform\PDFForm@List
12513 \pdfstartlink user {\PDFForm@List}\relax
12514 \MakeChoiceField{\Fld@width}{\Fld@height}%
12515 \pdfendlink
12516 \HyField@AddToFields
12517 }
12518 \def\@PushButton[#1]#2{% parameters, label
12519 \def\Fld@name{#2}%
12520 \begingroup
12521 \expandafter\HyField@SetKeys\expandafter{%
12522 \DefaultOptionsofPushButton,#1%
12523 }%
12524 \PDFForm@Name
12525 \ifHy@pdfa
12526 \Hy@Error{%
12527 PDF/A: Push button with JavaScript is prohibited%
12528 }\@ehc
12529 \LayoutPushButtonField{%
12530 \leavevmode
12531 \MakeButtonField{#2}%
12532 }%
12533 \else
12534 \HyField@FlagsPushButton

```

```

12535 \ifFld@hidden\def\Fld@width{1sp}\fi
12536 \LayoutPushButtonField{%
12537 \leavevmode
12538 \Hy@escapeform\PDFForm@Push
12539 \pdfstartlink user {\PDFForm@Push}\relax
12540 \MakeButtonField{#2}%
12541 \pdfendlink
12542 \HyField@AddToFields
12543 }%
12544 \fi
12545 \endgroup
12546 }
12547 \def\@Submit[#1]#2{%
12548 \def\Fld@width{\DefaultWidthofSubmit}%
12549 \def\Fld@height{\DefaultHeightofSubmit}%
12550 \begingroup
12551 \expandafter\HyField@SetKeys\expandafter{%
12552 \DefaultOptionsofSubmit,#1%
12553 }%
12554 \HyField@FlagsPushButton
12555 \HyField@FlagsSubmit
12556 \ifFld@hidden\def\Fld@width{1sp}\fi
12557 \leavevmode
12558 \Hy@escapeform\PDFForm@Submit
12559 \pdfstartlink user {%
12560 \PDFForm@Submit
12561 /AP<</N \SubmitObject/D \SubmitPObject>>%
12562 }%
12563 \relax
12564 \MakeButtonField{#2}%
12565 \pdfendlink
12566 \HyField@AddToFields
12567 \endgroup
12568 }
12569 \def\@Reset[#1]#2{%
12570 \def\Fld@width{\DefaultWidthofReset}%
12571 \def\Fld@height{\DefaultHeightofReset}%
12572 \begingroup
12573 \expandafter\HyField@SetKeys\expandafter{%
12574 \DefaultOptionsofReset,#1%
12575 }%
12576 \leavevmode
12577 \ifHy@pdfa
12578 \Hy@Error{%
12579 PDF/A: Reset action is prohibited%
12580 }\@ehc
12581 \MakeButtonField{#2}%
12582 \else
12583 \HyField@FlagsPushButton
12584 \ifFld@hidden\def\Fld@width{1sp}\fi
12585 \Hy@escapeform\PDFForm@Reset
12586 \pdfstartlink user {\PDFForm@Reset}\relax
12587 \MakeButtonField{#2}%
12588 \pdfendlink
12589 \HyField@AddToFields
12590 \fi
12591 \endgroup

```

```

12592 }
12593 \def\@CheckBox[#1]#2{% parameters, label
12594 \def\Fld@name{#2}%
12595 \def\Fld@default{0}%
12596 \begingroup
12597 \def\Fld@width{\DefaultWidthofCheckBox}%
12598 \def\Fld@height{\DefaultHeightofCheckBox}%
12599 \expandafter\HyField@SetKeys\expandafter{%
12600 \DefaultOptionsofCheckBox,#1%
12601 }%
12602 \PDFForm@Name
12603 \HyField@FlagsCheckBox
12604 \ifFld@hidden\def\Fld@width{1sp}\fi
12605 \LayoutCheckField{#2}{%
12606 \Hy@escapeform\PDFForm@Check
12607 \pdfstartlink user {\PDFForm@Check}\relax
12608 \MakeCheckField{\Fld@width}{\Fld@height}%
12609 \pdfendlink
12610 \HyField@AddToFields
12611 }%
12612 \endgroup
12613 }
12614 \def\Hy@FormObjects{%
12615 \pdfobj {%
12616 <<%
12617 /Type/Encoding%
12618 /Differences[%
12619 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
12620 /ring/tilde %
12621 39/quotesingle %
12622 96/grave %
12623 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12624 /fraction/guilsingleft/guilsingright/minus/perthousand%
12625 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12626 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
12627 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12628 164/currency %
12629 166/brokenbar %
12630 168/dieresis/copyright/ordfeminine %
12631 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12632 /twosuperior/threesuperior/acute/mu %
12633 183/periodcentered/cedilla/onesuperior/ordmasculine %
12634 188/onequarter/onehalf/threequarters %
12635 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12636 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12637 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12638 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12639 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12640 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
12641 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12642 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
12643 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
12644 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
12645 ]%
12646 >>%
12647 }%
12648 \xdef\OBJ@pdfdocencoding{\the\pdfastobj}%

```

```

12649 \pdfobj{%
12650   <<%
12651     /Type/Font%
12652     /Subtype/Type1%
12653     /Name/ZaDb%
12654     /BaseFont/ZapfDingbats%
12655   >>%
12656 }%
12657 \xdef\OBJ@ZaDb{\the\pdfastobj}%
12658 \pdfobj{%
12659   <<%
12660     /Type/Font%
12661     /Subtype/Type1%
12662     /Name/Helv%
12663     /BaseFont/Helvetica%
12664     /Encoding \OBJ@pdfdocencoding\space 0 R%
12665   >>%
12666 }%
12667 \xdef\OBJ@Helv{\the\pdfastobj}%
12668 \global\let\Hy@FormObjects\relax
12669 }
12670 </pdfTeX>

```

## 47.5 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.

```
12671 <*dvipdfm | xetex>
```

\@Gauge

```

12672 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12673   \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
12674 }

```

\@Form

```

12675 \def\@Form[#1]{%
12676   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12677   \kvsetkeys{Form}{#1}%
12678   \Hy@FormObjects
12679   \@pdfm@mark{obj @afields []}%
12680   \@pdfm@mark{obj @corder []}%
12681   \@pdfm@mark{%
12682     obj @aform <<%
12683       /Fields @afields%
12684       /DR<<%
12685       /Font<<%
12686       /ZaDb @OBJZaDb%
12687       /Helv @OBJHelv%
12688     >>%
12689     >>%
12690     /DA(/Helv 10 Tf 0 g)%
12691     /CO @corder%
12692     \ifHy@pdfa
12693     \else
12694       /NeedAppearances true%
12695     \fi
12696     >>%

```



```

12697 }%
12698 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
12699 }

```

\@endForm

```

12700 \def\@endForm{}

```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```

12701 \def\dvipdfm@setdim{%
12702   height \the\ht\pdfm@box\space
12703   width \the\wd\pdfm@box\space
12704   depth \the\dp\pdfm@box\space
12705 }

```

\HyField@AnnotCount

```

12706 \newcount\HyField@AnnotCount
12707 \HyField@AnnotCount=\z@

```

\HyField@AdvanceAnnotCount

```

12708 \def\HyField@AdvanceAnnotCount{%
12709   \global\advance\HyField@AnnotCount\@ne
12710 }

```

\HyField@TheAnnotCount

```

12711 \def\HyField@TheAnnotCount{%
12712   \the\HyField@AnnotCount
12713 }

```

\@TextField

```

12714 \def\@TextField[#1]#2{% parameters, label
12715   \def\Fld@name{#2}%
12716   \def\Fld@default{}%
12717   \let\Fld@value\@empty
12718   \def\Fld@width{\DefaultWidthofText}%
12719   \def\Fld@height{%
12720     \ifFld@multiline
12721       \DefaultHeightofTextMultiline
12722     \else
12723       \DefaultHeightofText
12724     \fi
12725   }%
12726   \begingroup
12727     \expandafter\HyField@SetKeys\expandafter{%
12728       \DefaultOptionsofText,#1%
12729     }%
12730     \PDFForm@Name
12731     \HyField@FlagsText
12732     \ifFld@hidden\def\Fld@width{1sp}\fi
12733     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12734     \setbox\pdfm@box=\hbox{%
12735       \MakeTextField{\Fld@width}{\Fld@height}%
12736     }%
12737     \HyField@AdvanceAnnotCount
12738     \LayoutTextField{#2}{%
12739       \Hy@escapeform\PDFForm@Text
12740       \@pdfm@mark{%

```

```

12741      ann @text\HyField@TheAnnotCount\space
12742      \dvipdfm@setdim << \PDFForm@Text >>%
12743    }%
12744  }%
12745  \unhbox\pdfm@box
12746  \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
12747  % record in @afields array
12748  \endgroup
12749 }

```

#### \@ChoiceMenu

```

12750 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12751   \def\Fld@name{#2}%
12752   \let\Fld@default\relax
12753   \let\Fld@value\relax
12754   \def\Fld@width{\DefaultWidthofChoiceMenu}%
12755   \def\Fld@height{\DefaultHeightofChoiceMenu}%
12756   \begingroup
12757     \Fld@menulength=0 %
12758     \@tempdima\z@
12759     \@for\@curropt:=#3\do{%
12760       \expandafter\Fld@checkequals\@curropt==\%
12761       \Hy@StepCount\Fld@menulength
12762       \settowidth{\@tempdimb}{\@currDisplay}%
12763       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12764     }%
12765     \advance\@tempdima by 15\p@
12766     \begingroup
12767       \HyField@SetKeys{#1}%
12768     \edef\x{\endgroup
12769       \noexpand\expandafter
12770       \noexpand\HyField@SetKeys
12771       \noexpand\expandafter{%
12772         \expandafter\noexpand\csname DefaultOptionsof%
12773           \ifFld@radio
12774             Radio%
12775           \else
12776             \ifFld@combo
12777               \ifFld@popdown
12778                 PopdownBox%
12779               \else
12780                 ComboBox%
12781             \fi
12782           \else
12783             ListBox%
12784           \fi
12785         \fi
12786       \endcsname
12787     }%
12788   }\x
12789   \HyField@SetKeys{#1}%
12790   \PDFForm@Name
12791   \ifFld@hidden\def\Fld@width{1sp}\fi
12792   \ifx\Fld@value\relax
12793     \let\Fld@value\Fld@default
12794   \fi
12795   \LayoutChoiceField{#2}{%

```

```

12796 \ifFld@radio
12797 \HyField@FlagsRadioButton
12798 \@@Radio{#3}%
12799 \else
12800 \begingroup
12801 \HyField@FlagsChoice
12802 \ifdim\Fld@width<\@tempdima
12803 \ifdim\@tempdima<1cm\@tempdima1cm\fi
12804 \edef\Fld@width{\the\@tempdima}%
12805 \fi
12806 \ifFld@combo
12807 \else
12808 \@tempdima=\the\Fld@menulength\Fld@charsize
12809 \advance\@tempdima by \Fld@borderwidth bp %
12810 \advance\@tempdima by \Fld@borderwidth bp %
12811 \edef\Fld@height{\the\@tempdima}%
12812 \fi
12813 \@@ListBox{#3}%
12814 \endgroup
12815 \fi
12816 }%
12817 \endgroup
12818 }

```

\@@Radio

```

12819 \def\@@Radio#1{%
12820 \Fld@listcount=0 %
12821 \setbox\pdfm@box=\hbox{%
12822 \MakeRadioField{\Fld@width}{\Fld@height}%
12823 }%
12824 \@for\@curropt:=#1\do{%
12825 \expandafter\Fld@checkequals\@curropt==\%
12826 \Hy@StepCount\Fld@listcount
12827 \@currDisplay\space
12828 \leavevmode
12829 \Hy@escapeform\PDFForm@Radio
12830 \ifnum\Fld@listcount=1 %
12831 \HyField@AdvanceAnnotCount
12832 \fi
12833 \@pdfm@mark{%
12834 ann %
12835 \ifnum\Fld@listcount=1 %
12836 @radio\HyField@TheAnnotCount%
12837 \space
12838 \fi
12839 \dvi pdfm@setdim
12840 <<%
12841 \PDFForm@Radio
12842 /AP<</N<</\@currValue /null>>>>%
12843 >>%
12844 }%
12845 \unhcopy\pdfm@box\space% deliberate space between radio buttons
12846 \ifnum\Fld@listcount=1 %
12847 \@pdfm@mark{%
12848 put @afields @radio\HyField@TheAnnotCount
12849 }%
12850 \fi

```

```

12851 }%
12852 }

\Fld@listcount
12853 \newcount\Fld@listcount

@@@Listbox
12854 \def\@@Listbox#1{%
12855   \HyField@PDFChoices{#1}%
12856   \setbox\pdfm@box=\hbox{%
12857     \MakeChoiceField{\Fld@width}{\Fld@height}%
12858   }%
12859   \leavevmode
12860   \Hy@escapeform\PDFForm@List
12861   \HyField@AdvanceAnnotCount
12862   \@pdfm@mark{%
12863     ann @list\HyField@TheAnnotCount\space
12864     \dvipdfm@setdim
12865     <<\PDFForm@List>>%
12866   }%
12867   \unhbox\pdfm@box
12868   \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
12869 }

\@PushButton
12870 \def\@PushButton[#1]#2{% parameters, label
12871   \def\Fld@name{#2}%
12872   \begingroup
12873     \expandafter\HyField@SetKeys\expandafter{%
12874       \DefaultOptionsofPushButton,#1%
12875     }%
12876     \PDFForm@Name
12877     \ifHy@pdfa
12878       \Hy@Error{%
12879         PDF/A: Push button with JavaScript is prohibited%
12880       }\@ehc
12881       \LayoutPushButtonField{%
12882         \leavevmode
12883         \MakeButtonField{#2}%
12884       }%
12885     \else
12886       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
12887       \HyField@FlagsPushButton
12888       \ifFld@hidden\def\Fld@width{1sp}\fi
12889       \HyField@AdvanceAnnotCount
12890       \LayoutPushButtonField{%
12891         \leavevmode
12892         \Hy@escapeform\PDFForm@Push
12893         \@pdfm@mark{%
12894           ann @push\HyField@TheAnnotCount\space
12895           \dvipdfm@setdim
12896           <<\PDFForm@Push>>%
12897         }%
12898       }%
12899       \unhbox\pdfm@box
12900       \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
12901     \fi

```

```

12902 \endgroup
12903 }

\@Submit
12904 \def\@Submit[#1]#2{%
12905 \def\Fld@width{\DefaultWidthofSubmit}%
12906 \def\Fld@height{\DefaultHeightofSubmit}%
12907 \begingroup
12908 \expandafter\HyField@SetKeys\expandafter{%
12909 \DefaultOptionsofSubmit,#1%
12910 }%
12911 \HyField@FlagsPushButton
12912 \HyField@FlagsSubmit
12913 \ifFld@hidden\def\Fld@width{1sp}\fi
12914 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
12915 \leavevmode
12916 \Hy@escapeform\PDFForm@Submit
12917 \HyField@AdvanceAnnotCount
12918 \@pdfm@mark{%
12919 ann @submit\HyField@TheAnnotCount\space
12920 \dvipdfm@setdim
12921 <<\PDFForm@Submit>>%
12922 }%
12923 \unhbox\pdfm@box%
12924 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
12925 \endgroup
12926 }

\@Reset
12927 \def\@Reset[#1]#2{%
12928 \def\Fld@width{\DefaultWidthofReset}%
12929 \def\Fld@height{\DefaultHeightofReset}%
12930 \begingroup
12931 \expandafter\HyField@SetKeys\expandafter{%
12932 \DefaultOptionsofReset,#1%
12933 }%
12934 \leavevmode
12935 \ifHy@pdfa
12936 \Hy@Error{%
12937 PDF/A: Reset action is prohibited%
12938 }\@ehc
12939 \MakeButtonField{#2}%
12940 \else
12941 \HyField@FlagsPushButton
12942 \ifFld@hidden\def\Fld@width{1sp}\fi
12943 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
12944 \Hy@escapeform\PDFForm@Reset
12945 \HyField@AdvanceAnnotCount
12946 \@pdfm@mark{%
12947 ann @reset\HyField@TheAnnotCount\space
12948 \dvipdfm@setdim
12949 <<\PDFForm@Reset>>%
12950 }%
12951 \unhbox\pdfm@box
12952 \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
12953 \fi
12954 \endgroup

```

12955 }

\@CheckBox

```
12956 \def\@CheckBox[#1]#2{% parameters, label
12957   \def\Fld@name{#2}%
12958   \def\Fld@default{0}%
12959   \begingroup
12960     \def\Fld@width{\DefaultWidthofCheckBox}%
12961     \def\Fld@height{\DefaultHeightofCheckBox}%
12962     \expandafter\HyField@SetKeys\expandafter{%
12963       \DefaultOptionsofCheckBox,#1%
12964     }%
12965     \PDFForm@Name
12966     \HyField@FlagsCheckBox
12967     \ifFld@hidden\def\Fld@width{1sp}\fi
12968     \setbox\pdfm@box=\hbox{%
12969       \MakeCheckField{\Fld@width}{\Fld@height}%
12970     }%
12971     \HyField@AdvanceAnnotCount
12972     \LayoutCheckField{#2}{%
12973       \Hy@escapeform\PDFForm@Check
12974       \@pdfm@mark{%
12975         ann @check\HyField@TheAnnotCount\space
12976         \dvipdfm@setdim
12977         <<\PDFForm@Check>>%
12978       }%
12979       \unhbox\pdfm@box
12980       \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
12981     }%
12982   \endgroup
12983 }

12984 \def\Hy@FormObjects{%
12985   \@pdfm@mark{obj @OBJpdfdocencoding%
12986     <<%
12987       /Type/Encoding%
12988       /Differences[%
12989         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
12990         39/quotesingle %
12991         96/grave %
12992         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12993         /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12994         /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
12995         /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
12996         /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12997         164/currency %
12998         166/brokenbar %
12999         168/dieresis/copyright/ordfeminine %
13000         172/logicalnot/.notdef/registered/macron/degree/plusminus%
13001         /twosuperior/threesuperior/acute/mu %
13002         183/periodcentered/cedilla/onesuperior/ordmasculine %
13003         188/onequarter/onehalf/threequarters %
13004         192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13005         /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13006         /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13007         /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13008         /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13009         /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
```

```

13010      /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13011      /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
13012      /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13013      /thorn/ydieresis%
13014      ]%
13015      >>%
13016      }%
13017      \@pdfm@mark{obj @OBJZaDb%
13018      <<%
13019      /Type/Font%
13020      /Subtype/Type1%
13021      /Name/ZaDb%
13022      /BaseFont/ZapfDingbats%
13023      >>%
13024      }%
13025      \@pdfm@mark{obj @OBJHelv%
13026      <<%
13027      /Type/Font%
13028      /Subtype/Type1%
13029      /Name/Helv%
13030      /BaseFont/Helvetica%
13031      /Encoding @OBJpdfdocencoding%
13032      >>%
13033      }%
13034      \global\let\Hy@FormObjects\relax
13035      }
13036      </dvipdfm | xetex>

```

## 47.6 Common forms part

```

13037 <*pdfm>

```

\Hy@escapestring

```

13038 \begingroup\expandafter\expandafter\expandafter\endgroup
13039 \expandafter\ifx\csname pdfescapestring\endcsname\relax
13040   \let\Hy@escapestring\@firstofone
13041   \def\Hy@escapeform#1{%
13042     \ifHy@escapeform
13043       \def\Hy@escapestring##1{%
13044         \noexpand\Hy@escapestring{\noexpand##1}%
13045       }%
13046       \edef\Hy@temp{#1}%
13047       \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13048     \def\Hy@escapestring##1{%
13049       \@ifundefined{Hy@esc@\string##1}{%
13050         ##1%
13051         \ThisShouldNotHappen
13052       }{%
13053         \csname Hy@esc@\string##1\endcsname
13054       }%
13055     }%
13056   \else
13057     \let\Hy@escapestring\@firstofone
13058   \fi
13059 }%
13060 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
13061   \ifx\#3\%

```

```

13062 \else
13063 \expandafter
13064 \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13065 \Hy@ReturnAfterFi{%
13066 \Hy@@escapeform#3\@nil
13067 }%
13068 \fi
13069 }%
13070 \else
13071 \def\Hy@escapeform#1{%
13072 \ifHy@escapeform
13073 \let\Hy@escapestring\pdfescapestring
13074 \else
13075 \let\Hy@escapestring\@firstofone
13076 \fi
13077 }%
13078 \Hy@escapeform{}%
13079 \fi

```

#### \PDFForm@Name

```

13080 \def\PDFForm@Name{%
13081 \begingroup
13082 \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
13083 \ifHy@unicode
13084 \Hy@unicodefalse
13085 \fi
13086 \fi
13087 \HyPsd@XeTeXBigCharstrue
13088 \pdfstringdef\Hy@gtemp\Fld@name
13089 \endgroup
13090 \let\Fld@name\Hy@gtemp
13091 }

```

#### \Fld@additionalactions

```

13092 \def\Fld@@additionalactions{%
K input (keystroke) format
13093 \ifx\Fld@keystroke@code\@empty
13094 \else
13095 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13096 \fi
F display format
13097 \ifx\Fld@format@code\@empty
13098 \else
13099 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13100 \fi
V validation
13101 \ifx\Fld@validate@code\@empty
13102 \else
13103 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13104 \fi
C calculation
13105 \ifx\Fld@calculate@code\@empty
13106 \else
13107 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13108 \fi

```



Fo receiving the input focus

```
13109 \ifx\Fld@onfocus@code\@empty
13110 \else
13111 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13112 \fi
```

Bl loosing the input focus (blurred)

```
13113 \ifx\Fld@onblur@code\@empty
13114 \else
13115 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13116 \fi
```

D pressing the mouse button (down)

```
13117 \ifx\Fld@onmousedown@code\@empty
13118 \else
13119 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13120 \fi
```

U releasing the mouse button (up)

```
13121 \ifx\Fld@onmouseup@code\@empty
13122 \else
13123 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13124 \fi
```

E cursor enters the annotation's active area.

```
13125 \ifx\Fld@onenter@code\@empty
13126 \else
13127 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13128 \fi
```

X cursor exits the annotation's active area.

```
13129 \ifx\Fld@onexit@code\@empty
13130 \else
13131 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13132 \fi
13133 }
13134 \def\Fld@additionalactions{%
13135 \if\Fld@@additionalactions-%
13136 \else
13137 \ifHy@pdfa
13138 \else
13139 /AA<<\Fld@@additionalactions>>%
13140 \fi
13141 \fi
13142 }
```

\PDFForm@Check

```
13143 \def\PDFForm@Check{%
13144 /Subtype/Widget%
13145 \Fld@annotflags
13146 /T(\Fld@name)%
13147 /FT/Btn%
13148 \Fld@flags
13149 /Q \Fld@align
13150 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13151 /MK<<%
13152 \ifnum\Fld@rotation=\z@
13153 \else
13154 /R \Fld@rotation
```

```

13155 \fi
13156 \ifx\Fld@bordercolor\relax
13157 \else
13158 /BC[\Fld@bordercolor]%
13159 \fi
13160 \ifx\Fld@bcolor\relax
13161 \else
13162 /BG[\Fld@bcolor]%
13163 \fi
13164 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13165 >>%
13166 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13167 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13168 /H/P%
13169 \ifFld@checked /V/Yes\else /V/Off\fi
13170 \Fld@additionalactions
13171 }

```

\PDFForm@Push

```

13172 \ifHy@pdfa
13173 \else
13174 \def\PDFForm@Push{%
13175 /Subtype/Widget%
13176 \Fld@annotflags
13177 /T(\Fld@name)%
13178 /FT/Btn%
13179 \Fld@flags
13180 /H/P%
13181 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13182 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13183 \ifx\Fld@bordercolor\relax\else 1\fi
13184 \space
13185 \else
13186 /MK<<%
13187 \ifnum\Fld@rotation=\z@
13188 \else
13189 /R \Fld@rotation
13190 \fi
13191 \ifx\Fld@bordercolor\relax
13192 \else
13193 /BC[\Fld@bordercolor]%
13194 \fi
13195 >>%
13196 \fi
13197 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13198 \Fld@additionalactions
13199 }%
13200 \fi

```

\PDFForm@List

```

13201 \def\PDFForm@List{%
13202 /Subtype/Widget%
13203 \Fld@annotflags
13204 /T(\Fld@name)%
13205 /FT/Ch%
13206 \Fld@flags
13207 /Q \Fld@align

```

```

13208 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13209 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13210     \ifx\Fld@bordercolor\relax\else 1\fi
13211     \ifx\Fld@bcolor\relax \else 1\fi
13212     \space
13213 \else
13214 /MK<<%
13215     \ifnum\Fld@rotation=\z@
13216     \else
13217         /R \Fld@rotation
13218     \fi
13219     \ifx\Fld@bordercolor\relax
13220     \else
13221         /BC[\Fld@bordercolor]%
13222     \fi
13223     \ifx\Fld@bcolor\relax
13224     \else
13225         /BG[\Fld@bcolor]%
13226     \fi
13227 >>%
13228 \fi
13229 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13230     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13231 \Fld@choices
13232 \Fld@additionalactions
13233 }

```

\PDFForm@Radio

```

13234 \def\PDFForm@Radio{%
13235 /Subtype/Widget%
13236 \Fld@annotflags
13237 /T(\Fld@name)%
13238 /FT/Btn%
13239 \Fld@flags
13240 /H/P%
13241 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13242 /MK<<%
13243     \ifnum\Fld@rotation=\z@
13244     \else
13245         /R \Fld@rotation
13246     \fi
13247     \ifx\Fld@bordercolor\relax
13248     \else
13249         /BC[\Fld@bordercolor]%
13250     \fi
13251     \ifx\Fld@bcolor\relax
13252     \else
13253         /BG[\Fld@bcolor]%
13254     \fi
13255 /CA(\Fld@radiosymbol)%
13256 >>%
13257 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13258     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13259 \ifx\@currValue\Fld@default
13260 /V/\Fld@default
13261 \else
13262 /V/Off%

```

```

13263 \fi
13264 \Fld@additionalactions
13265 }

```

#### \PDFForm@Text

```

13266 \def\PDFForm@Text{%
13267 /Subtype/Widget%
13268 \Fld@annotflags
13269 /T(\Fld@name)%
13270 /FT/Tx%
13271 \Fld@flags
13272 /Q \Fld@align
13273 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
13274 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13275     \ifx\Fld@bordercolor\relax\else 1\fi
13276     \ifx\Fld@bcolor\relax \else 1\fi
13277     \space
13278 \else
13279 /MK<<%
13280     \ifnum\Fld@rotation=\z@
13281     \else
13282     /R \Fld@rotation
13283     \fi
13284     \ifx\Fld@bordercolor\relax
13285     \else
13286     /BC[\Fld@bordercolor]%
13287     \fi
13288     \ifx\Fld@bcolor\relax
13289     \else
13290     /BG[\Fld@bcolor]%
13291     \fi
13292 >>%
13293 \fi
13294 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13295     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13296 /DV(\Hy@escapestring{\Fld@default})%
13297 /V(\Hy@escapestring{\Fld@value})%
13298 \Fld@additionalactions
13299 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
13300 }

```

#### \PDFForm@Submit

```

13301 \def\PDFForm@Submit{%
13302 /Subtype/Widget%
13303 \Fld@annotflags
13304 /T(\Fld@name)%
13305 /FT/Btn%
13306 \Fld@flags
13307 /H/P%
13308 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13309 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13310     \ifx\Fld@bordercolor\relax\else 1\fi
13311     \space
13312 \else
13313 /MK<<%
13314     \ifnum\Fld@rotation=\z@
13315     \else

```

```

13316      /R \Fld@rotation
13317      \fi
13318      \ifx\Fld@bordercolor\relax
13319      \else
13320      /BC[\Fld@bordercolor]%
13321      \fi
13322      >>%
13323      \fi
13324      /A<<%
13325      /S/SubmitForm%
13326      /F<<%
13327      /FS/URL%
13328      /F(\Hy@escapestring{\Form@action})%
13329      >>%
13330      \Fld@submitflags
13331      >>%
13332      \Fld@additionalactions
13333      }

```

\PDFForm@Reset

```

13334 \ifHy@pdfa
13335 \else
13336 \def\PDFForm@Reset{%
13337   /Subtype/Widget%
13338   \Fld@annotflags
13339   /T(\Fld@name)%
13340   /FT/Btn%
13341   \Fld@flags
13342   /H/P%
13343   /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
13344   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13345     \ifx\Fld@bordercolor\relax\else 1\fi
13346     \space
13347   \else
13348     /MK<<%
13349     \ifnum\Fld@rotation=\z@
13350     \else
13351       /R \Fld@rotation
13352       \fi
13353       \ifx\Fld@bordercolor\relax
13354       \else
13355       /BC[\Fld@bordercolor]%
13356       \fi
13357 %   /CA (Clear)
13358 %   /AC (Done)
13359   >>%
13360   \fi
13361   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13362   /A<</S/ResetForm>>%
13363   \Fld@additionalactions
13364   }%
13365 \fi

13366 </pdfform>
13367 <*package>

```

## 48 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in  $\LaTeX$  macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```
13368 \def\phantomsection{%
13369   \Hy@MakeCurrentHrefAuto{section*}%
13370   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
13371 }
13372 \</package>
```

### 48.1 Bookmarks

```
13373 \<*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.

```
13374 \def\Hy@writebookmark#1#2#3#4#5{%
13375   % section number, text, label, level, file
13376   \ifx\WriteBookmarks\relax%
13377   \else
13378     \ifnum#4>\Hy@bookmarksdepth\relax
13379     \else
13380       \@@writetorep{#1}{#2}{#3}{#4}{#5}%
13381       \fi
13382     \fi
13383 }
13384 \def\Hy@currentbookmarklevel{0}
13385 \def\Hy@numberline#1{#1 }
13386 \def\@@writetorep#1#2#3#4#5{%
13387   \begingroup
13388     \edef\Hy@tempa{#5}%
13389     \ifx\Hy@tempa\Hy@bookmarkstype
13390       \edef\Hy@level{#4}%
13391       \ifx\Hy@levelcheck Y%
13392         \@tempcnta\Hy@level\relax
13393         \advance\@tempcnta by -1 %
13394         \ifnum\Hy@currentbookmarklevel<\@tempcnta
13395           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
13396           \advance\@tempcnta by 1 %
```

```

13397 \Hy@Warning{%
13398   Difference (\the\@tempcnta) between bookmark levels is %
13399   greater \MessageBreak than one, level fixed%
13400 }%
13401 \@tempcnta\Hy@currentbookmarklevel
13402 \advance\@tempcnta by 1 %
13403 \edef\Hy@level{\the\@tempcnta}%
13404 \fi
13405 \else
13406   \global\let\Hy@levelcheck Y%
13407 \fi
13408 \global\let\Hy@currentbookmarklevel\Hy@level
13409 \@tempcnta\Hy@level\relax
13410 \expandafter\edef\csname Parent\Hy@level\endcsname{#3}%
13411 \advance\@tempcnta by -1 %
13412 \edef\Hy@tempa{#3}%
13413 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
13414 \ifx\Hy@tempa\Hy@tempb
13415   \Hy@Warning{%
13416     The anchor of a bookmark and its parent's must not%
13417     \MessageBreak be the same. Added a new anchor%
13418   }%
13419   \phantomsection
13420 \fi
13421 \ifHy@bookmarksnumbered
13422   \let\numberline\Hy@numberline
13423   \let\booknumberline\Hy@numberline
13424   \let\partnumberline\Hy@numberline
13425   \let\chapternumberline\Hy@numberline
13426 \else
13427   \let\numberline\@gobble
13428   \let\booknumberline\@gobble
13429   \let\partnumberline\@gobble
13430   \let\chapternumberline\@gobble
13431 \fi
13432 \HyPsd@XeTeXBigCharstrue
13433 \pdfstringdef\Hy@tempa{#2}%
13434 \HyPsd@SanitizeForOutFile\Hy@tempa
13435 \if@filesw
13436   \stepcounter{bookmark@seq@number}%
13437   \ifundefined{@outlinefile}{%
13438     }{%
13439       \protected@write\@outlinefile{}{%
13440         \protect\BOOKMARK
13441         [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
13442         {\Hy@tempa}{\Hy@tempb}%
13443         \@percentchar\space\thebookmark@seq@number
13444       }%
13445     }%
13446   \fi
13447 \fi
13448 \endgroup
13449 }
13450 \newcounter{bookmark@seq@number}
13451 \begingroup
13452 \lccode'='{'%
13453 \lccode'='}%

```

```

13454 \lccode'1=\z@
13455 \lccode'2=\z@
13456 \lccode'3=\z@
13457 \lccode'5=\z@
13458 \lccode'7=\z@
13459 \lccode'\#=\z@
13460 \lccode'\'=\z@
13461 \lccode'\{=\z@
13462 \lccode'\}=\z@
13463 \lowercase{%
13464 \endgroup
13465 \def\HyPsd@SanitizeForOutFile#1{%
13466   \@onelevel@sanitize\Hy@tempa
13467   \escapechar'\%
13468   \edef\Hy@tempa{%
13469     \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
13470   }%
13471   \edef\Hy@tempa{%
13472     \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
13473   }%
13474 }%
13475 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
13476   #1%
13477   \ifx\#2\\%
13478     \expandafter\ltx@gobble
13479   \else
13480     \expandafter\ltx@firstofone
13481   \fi
13482   {%
13483     \string\173%
13484     \HyPsd@SanitizeOut@BraceLeft#2\@nil
13485   }%
13486 }%
13487 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
13488   #1%
13489   \ifx\#2\\%
13490     \expandafter\ltx@gobble
13491   \else
13492     \expandafter\ltx@firstofone
13493   \fi
13494   {%
13495     \string\175%
13496     \HyPsd@SanitizeOut@BraceRight#2\@nil
13497   }%
13498 }%
13499 }

```

In the call of \BOOKMARK the braces around #4 are omitted, because it is not likely, that the level number contains ].

```

13500 \newcommand{\currentpdfbookmark}{%
13501   \pdfbookmark[\Hy@currentbookmarklevel]%
13502 }
13503 \newcommand{\subpdfbookmark}{%
13504   \@tempcnta\Hy@currentbookmarklevel
13505   \Hy@StepCount\@tempcnta
13506   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
13507 }
13508 \newcommand{\belowpdfbookmark}[2]{%

```



```

13509 \@tempcnta\Hy@currentbookmarklevel
13510 \Hy@StepCount\@tempcnta
13511 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
13512 \advance\@tempcnta by -1 %
13513 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
13514 }

```

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.

```

13515 \renewcommand\pdfbookmark[3][0]{%
13516 \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
13517 \hyper@anchorstart{#3.#1}\hyper@anchorend
13518 }
13519 \def\BOOKMARK{%
13520 \@ifnextchar[\@BOOKMARK]{\@@BOOKMARK[1][-]}%
13521 }
13522 \def\@BOOKMARK[#1]{%
13523 \@ifnextchar[\@BOOKMARK[{#1}]{\@@BOOKMARK[{#1}][-]}%
13524 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfo` macros.

#### 48.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

13525 \RequirePackage{rerunfilecheck}[2009/12/10]
13526 \def\Hy@OutlineRerunCheck{%
13527 \RerunFileCheck{\jobname.out}{%
13528 \immediate\closeout\@outlinefile
13529 }{%
13530 Rerun to get outlines right\MessageBreak
13531 or use package 'bookmark'%
13532 }%
13533 }

```

#### 48.1.2 Driver stuff

The VTEX section was written originally by VTEX, but then amended by Denis Girou ([denis.girou@idris.fr](mailto:denis.girou@idris.fr)), then by by Taco Hoekwater ([taco.hoekwater@wkap.nl](mailto:taco.hoekwater@wkap.nl)). The problem is that VTEX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping `\` and the like.

```

13534 \<vtx>
13535 \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.

```

13536 \begingroup
13537 \catcode'\'=12 %
13538 \ifnum\Hy@VTeXversion<650 %
13539 \catcode'\ "=12 %
13540 \gdef\hv@pdf@char#1#2#3{%
13541 \char
13542 \ifcase'#1#2#3 %
13543 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
13544 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%

```

```

13545 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
13546 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
13547 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
13548 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
13549 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
13550 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
13551 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
13552 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
13553 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
13554 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
13555 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
13556 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
13557 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
13558 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
13559 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
13560 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
13561 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
13562 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
13563 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
13564 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
13565 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
13566 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
13567 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
13568 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
13569 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
13570 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
13571 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
13572 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
13573 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
13574 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
13575 \fi
13576 }%
13577 \else
13578 \gdef\hv@pdf@char{\char'}%
13579 \fi
13580 \endgroup

```

\@@BOOKMARK

```

13581 \def\@@BOOKMARK[#1][#2]#3#4#5{%
13582 \expandafter\edef\csname @count@#3\endcsname{%
13583 \the\@serial@counter
13584 }%
13585 \edef\@mycount{\the\@serial@counter}%
13586 \Hy@StepCount\@serial@counter
13587 \edef\@parcount{%
13588 \expandafter\ifx\csname @count@#5\endcsname\relax
13589 0%
13590 \else
13591 \csname @count@#5\endcsname
13592 \fi
13593 }%
13594 \immediate\special{%
13595 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
13596 s=\ifx#2-c\else o\fi,t=#4%
13597 }%
13598 }%

```

# \ReadBookmarks

```

13599 \def\ReadBookmarks{%
13600   \begingroup
13601   \def\0{\hv@pdf@char 0}%
13602   \def\1{\hv@pdf@char 1}%
13603   \def\2{\hv@pdf@char 2}%
13604   \def\3{\hv@pdf@char 3}%
13605   \def\({}%
13606   \def\)}%
13607   \def\do##1{%
13608     \ifnum\catcode'##1=\active
13609       \@makeother##1%
13610     \else
13611       \ifnum\catcode'##1=6 %
13612         \@makeother##1%
13613       \fi
13614     \fi
13615   }%
13616   \dospecials
13617   \Hy@safe@activetrue
13618   \InputIfFileExists{\jobname.out}{\}{}%
13619 \endgroup
13620 \ifx\WriteBookmarks\relax
13621 \else
13622   \if@filesw
13623     \newwrite\@outlinefile
13624     \Hy@OutlineRerunCheck
13625     \immediate\openout\@outlinefile=\jobname.out\relax
13626     \ifHy@typexml
13627       \immediate\write\@outlinefile{<relaxxml>\relax}%
13628     \fi
13629   \fi
13630 \fi
13631 }

13632 </vtex>
13633 <!*vtex>
13634 \def\ReadBookmarks{%
13635   \begingroup
13636   \def\do##1{%
13637     \ifnum\catcode'##1=\active
13638       \@makeother##1%
13639     \else
13640       \ifnum\catcode'##1=6 %
13641         \@makeother##1%
13642       \fi
13643     \fi
13644   }%
13645   \dospecials
13646   \Hy@safe@activetrue
13647   \escapechar='\%
13648   \def\@@BOOKMARK[##1][##2]##3##4##5{%
13649     \calc@bm@number{##5}%
13650   }%
13651   \InputIfFileExists{\jobname.out}{\}{}%
13652   \ifx\WriteBookmarks\relax
13653     \global\let\WriteBookmarks\relax

```

```

13654 \fi
13655 \def\@@BOOKMARK[##1][##2]###3##4##5{%
13656 \def\Hy@temp{###4}%
13657 \langle*pdfTex\rangle
13658 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{###3}}%
13659 \Hy@OutlineName{\Hy@pstringName{%
13660 ###2\check@bm@number{###3}}%
13661 }{%
13662 \expandafter\strip@prefix\meaning\Hy@temp
13663 }%
13664 \ranglepdfTex\rangle
13665 \langle*pdfmark\rangle
13666 \pdfmark{%
13667 pdfmark=/OUT,%
13668 Count={###2\check@bm@number{###3}},%
13669 Dest={###3},%
13670 Title=\expandafter\strip@prefix\meaning\Hy@temp
13671 }%
13672 \ranglepdfmark\rangle
13673 \langle*dvipdfm|xetex\rangle
13674 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{###3}}%
13675 \@pdfm@mark{%
13676 outline \ifHy@DvipdfmxOutlineOpen
13677 [%
13678 \ifnum##21>\z@
13679 \else
13680 -%
13681 \fi
13682 ] %
13683 \fi
13684 ##1<<%
13685 /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
13686 /A<<%
13687 /S/GoTo%
13688 /D(\Hy@pstringName)%
13689 >>%
13690 >>%
13691 }%
13692 \rangledvipdfm|xetex\rangle
13693 }%
13694 {%
13695 \def\WriteBookmarks{0}%
13696 \InputIfFileExists{\jobname.out}{\relax}%
13697 }%
13698 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{\relax}}%
13699 \ifx\WriteBookmarks\relax
13700 \else
13701 \if@files
13702 \newwrite\@outlinefile
13703 \Hy@OutlineRerunCheck
13704 \immediate\openout\@outlinefile=\jobname.out\relax
13705 \ifHy@typexml
13706 \immediate\write\@outlinefile{<relaxxml>\relax}%
13707 \fi
13708 \fi
13709 \fi
13710 \endgroup

```

```

13711 }
13712 <*pdfTex>
13713 \def\Hy@OutlineName#1#2#3#4{%
13714 \pdfoutline goto name{#2}count#3{#4}%
13715 }
13716 </pdfTex>
13717 \def\check@bm@number#1{%
13718 \expandafter\ifx\csname B_#1\endcsname\relax
13719 0%
13720 \else
13721 \csname B_#1\endcsname
13722 \fi
13723 }
13724 \def\calc@bm@number#1{%
13725 \@tempcnta=\check@bm@number{#1}\relax
13726 \advance\@tempcnta by 1 %
13727 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
13728 }
13729 </!vtex>

13730 \ifHy@implicit
13731 \else
13732 \expandafter\endinput
13733 \fi

13734 </outlines>
13735 <*outlines | hypertex>

13736 \newlength\Hy@SectionHShift
13737 \def\Hy@SectionAnchorHref#1{%
13738 \ifx\protect\@typeset@protect
13739 \Hy@@SectionAnchor{#1}%
13740 \fi
13741 }
13742 \DeclareRobustCommand*\Hy@@SectionAnchor}[1]{%
13743 \leavevmode
13744 \hbox to 0pt{%
13745 \kern-\Hy@SectionHShift
13746 \Hy@raisedlink{%
13747 \hyper@anchorstart{#1}\hyper@anchorend
13748 }%
13749 \hss
13750 }%
13751 }
13752 \let\H@old@ssect\@ssect
13753 \def\@ssect#1#2#3#4#5{%
13754 \Hy@MakeCurrentHrefAuto{section*}%
13755 \setlength{\Hy@SectionHShift}{#1}%
13756 \begingroup
13757 \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
13758 \toks\tw@\expandafter{%
13759 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
13760 #5%
13761 }%
13762 \edef\x{\endgroup
13763 \the\toks@{\the\toks\tw@}}%
13764 }\x
13765 }
13766 \let\H@old@schapter\@schapter

```

```

13767 \def\@schapter#1{%
13768   \begingroup
13769   \let\@mkboth\@gobbletwo
13770   \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
13771   \Hy@raisedlink{%
13772     \hyper@anchorstart{\@currentHref}\hyper@anchorend
13773   }%
13774   \endgroup
13775   \H@old@schapter{#1}%
13776 }

```

If there is no chapter number (`\frontmatter` or `\backmatter`) then `\refstepcounter{chapter}` is not executed, so there will be no destination for `\ddcontentsline`. So `\@chapter` is overloaded to avoid this:

```

13777 \ltx@ifundefined{@chapter}{}{%
13778   \let\Hy@org@chapter\@chapter
13779   \def\@chapter{%
13780     \def\Hy@next{%
13781       \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
13782       \Hy@raisedlink{%
13783         \hyper@anchorstart{\@currentHref}\hyper@anchorend
13784       }%
13785     }%
13786     \ifnum\c@secnumdepth>\m@ne
13787       \ltx@ifundefined{if@mainmatter}%
13788       \iftrue{\csname if@mainmatter\endcsname}%
13789       \let\Hy@next\relax
13790     \fi
13791     \fi
13792     \Hy@next
13793     \Hy@org@chapter
13794   }%
13795 }

13796 \let\H@old@part\@part
13797 \begingroup\expandafter\expandafter\expandafter\endgroup
13798 \expandafter\ifx\csname chapter\endcsname\relax
13799   \let\Hy@secnum@part\z@
13800 \else
13801   \let\Hy@secnum@part\m@ne
13802 \fi
13803 \def\@part{%
13804   \ifnum\Hy@secnum@part>\c@secnumdepth
13805     \phantomsection
13806   \fi
13807   \H@old@part
13808 }

13809 \let\H@old@spart\@spart
13810 \def\@spart#1{%
13811   \Hy@MakeCurrentHrefAuto{part*}%
13812   \Hy@raisedlink{%
13813     \hyper@anchorstart{\@currentHref}\hyper@anchorend
13814   }%
13815   \H@old@spart{#1}%
13816 }

13817 \let\H@old@sect\@sect
13818 \def\@sect#1#2#3#4#5#6[#7]#8{%
13819   \ifnum #2>\c@secnumdepth

```

```

13820 \expandafter\@firstoftwo
13821 \else
13822 \expandafter\@secondoftwo
13823 \fi
13824 {%
13825 \Hy@MakeCurrentHrefAuto{section*}%
13826 \setlength{\Hy@SectionHShift}{#3}%
13827 \begingroup
13828 \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
13829 \toks\tw@\expandafter{%
13830 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
13831 #8%
13832 }%
13833 \edef\x{\endgroup
13834 \the\toks@\the\toks\tw@}%
13835 }\x
13836 }{%
13837 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
13838 }%
13839 }

13840 </outlines | hypertex>
13841 <*outlines>

13842 \expandafter\def\csname Parent-4\endcsname{}
13843 \expandafter\def\csname Parent-3\endcsname{}
13844 \expandafter\def\csname Parent-2\endcsname{}
13845 \expandafter\def\csname Parent-1\endcsname{}
13846 \expandafter\def\csname Parent0\endcsname{}
13847 \expandafter\def\csname Parent1\endcsname{}
13848 \expandafter\def\csname Parent2\endcsname{}
13849 \expandafter\def\csname Parent3\endcsname{}
13850 \expandafter\def\csname Parent4\endcsname{}

13851 </outlines>

```

## 49 Compatibility with koma-script classes

```
13852 <*outlines | hypertex>
```

Hard-wire in an unpleasant over-ride of komascript ‘scrbook’ class for Tobias Isenberg (Tobias.Isenberg@gmx.de). With version 6.71b the hack is also applied to ‘scrreprt’ class and is removed for koma-script versions since 2001/01/01, because Markus Kohm supports hyperref in komascript.

```

13853 \def\Hy@tempa{%
13854 \def\@addchap[##1]##2{%
13855 \typeout{##2}%
13856 \if@twoside
13857 \mkboth{##1}{}%
13858 \else
13859 \mkboth{}{##1}%
13860 \fi
13861 \addtocontents{lof}{\protect\addvspace{10\p@}}%
13862 \addtocontents{lot}{\protect\addvspace{10\p@}}%
13863 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
13864 \Hy@raisedlink{%
13865 \hyper@anchorstart{\@currentHref}\hyper@anchorend
13866 }%

```

```

13867 \if@twocolumn
13868 \topnewpage[\@makeschapterhead{##2}]%
13869 \else
13870 \@makeschapterhead{##2}%
13871 \afterheading
13872 \fi
13873 \addcontentsline{toc}{chapter}{##1}%
13874 }%
13875 }
13876 \ifclassloaded{scrbook}{%
13877 \ifclasslater{scrbook}{2001/01/01}{%
13878 \let\Hy@tempa\@empty
13879 }{}%
13880 }{%
13881 \ifclassloaded{scrreprt}{%
13882 \ifclasslater{scrreprt}{2001/01/01}{%
13883 \let\Hy@tempa\@empty
13884 }{}%
13885 }{%
13886 \let\Hy@tempa\@empty
13887 }%
13888 }%
13889 \Hy@tempa
13890 </outlines | hypertext>

```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 50.1 PD1 encoding

```

13891 <*pd1enc>
13892 \DeclareFontEncoding{PD1}{}{}

```

#### Accents

```

13893 \DeclareTextAccent{'}{PD1}{\textasciigrave}
13894 \DeclareTextAccent{'}{PD1}{\textacute}
13895 \DeclareTextAccent{`}{PD1}{\textasciicircum}
13896 \DeclareTextAccent{~}{PD1}{\texttilde}
13897 \DeclareTextAccent{"}{PD1}{\textasciidieresis}
13898 \DeclareTextAccent{r}{PD1}{\textring}
13899 \DeclareTextAccent{v}{PD1}{\textasciicaron}
13900 \DeclareTextAccent{.}{PD1}{\textdotaccent}
13901 \DeclareTextAccent{c}{PD1}{\textcedilla}
13902 \DeclareTextAccent{=}{PD1}{\textasciimacron}
13903 \DeclareTextAccent{b}{PD1}{\textmacronbelow}
13904 \DeclareTextAccent{d}{PD1}{\textdotbelow}
13905 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textasciigrave}
13906 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textacute}
13907 \DeclareTextCompositeCommand{`}{PD1}{\@empty}{\textasciicircum}
13908 \DeclareTextCompositeCommand{~}{PD1}{\@empty}{\texttilde}
13909 \DeclareTextCompositeCommand{"}{PD1}{\@empty}{\textasciidieresis}
13910 \DeclareTextCompositeCommand{r}{PD1}{\@empty}{\textring}
13911 \DeclareTextCompositeCommand{v}{PD1}{\@empty}{\textasciicaron}
13912 \DeclareTextCompositeCommand{.}{PD1}{\@empty}{\textdotaccent}
13913 \DeclareTextCompositeCommand{c}{PD1}{\@empty}{\textcedilla}
13914 \DeclareTextCompositeCommand{=}{PD1}{\@empty}{\textasciimacron}

```



```

13915 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
13916 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
13917 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textasciigrave}
13918 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
13919 \DeclareTextCompositeCommand{\^}{PD1}{\ }{\textasciicircum}
13920 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
13921 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
13922 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
13923 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
13924 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
13925 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
13926 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
13927 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
13928 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
13929 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
13930 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
13931 \DeclareTextCommand{\newtie}{PD1}[1]{%
13932 \TextSymbolUnavailable{\newtie{#1}}#1%
13933 }

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

13934 % U+0009 (CHARACTER TABULATION)
13935 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
13936 % U+000A (LINE FEED)
13937 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
13938 % U+000D (CARRIAGE RETURN)
13939 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

#### Accent glyph names

```

13940 % U+02D8 BREVE; breve
13941 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
13942 % U+02C7 CARON; caron
13943 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
13944 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
13945 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
13946 % U+02D9 DOT ABOVE; dotaccent
13947 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
13948 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
13949 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
13950 % U+02DB OGONEK; ogonek
13951 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB
13952 % U+02DA RING ABOVE; ring
13953 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA
13954 % U+02DC SMALL TILDE; ilde, *tilde
13955 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC

```

\040: U+0020 SPACE; \*space, spacehackarabic

\041: U+0021 EXCLAMATION MARK; exclam

```

13956 % U+0022 QUOTATION MARK; quotedbl
13957 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022
13958 % U+0023 NUMBER SIGN; numbersign
13959 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023
13960 % U+0024 DOLLAR SIGN; dollar
13961 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024
13962 % U+0025 PERCENT SIGN; percent
13963 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025
13964 % U+0026 AMPERSAND; ampersand
13965 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026

```

\047: U+0027 APOSTROPHE; quotesingle  
  
 13966 % U+0028 LEFT PARENTHESIS; parenleft  
 13967 \DeclareTextCommand{\textparenleft}{PD1}{\string\{ }% \050 U+0028  
 13968 % U+0029 RIGHT PARENTHESIS; parenright  
 13969 \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  
 13970 % U+002E FULL STOP; period  
 13971 \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  
 13972 % U+003C LESS-THAN SIGN; less  
 13973 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
  
 \075: U+003D EQUALS SIGN; equal  
 13974 % U+003E GREATER-THAN SIGN; greater  
 13975 \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  
 13976 % U+005C REVERSE SOLIDUS; backslash  
 13977 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 13978 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 13979 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
 13980 % U+005F LOW LINE; underscore  
 13981 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
 13982 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 13983 % U+0060 GRAVE ACCENT; grave  
 13984 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
  
 \141: U+0061 LATIN SMALL LETTER A; a  
  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 13985 % U+0069 LATIN SMALL LETTER I; i  
 13986 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
  
 \152: U+006A LATIN SMALL LETTER J; j  
  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 13987 % U+007B LEFT CURLY BRACKET; braceleft  
 13988 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 13989 % U+007C VERTICAL LINE; \*bar, verticalbar  
 13990 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 13991 % U+007D RIGHT CURLY BRACKET; braceright

13992 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
13993 % U+007E TILDE; asciitilde  
13994 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
Slot \177 (0x7F) is undefined in PDFDocEncoding.  
13995 % U+2022 BULLET; bullet  
13996 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
13997 % U+2020 DAGGER; dagger  
13998 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
13999 % U+2021 DOUBLE DAGGER; daggerdbl  
14000 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
14001 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
14002 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
14003 % U+2014 EM DASH; emdash  
14004 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
14005 % U+2013 EN DASH; endash  
14006 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
14007 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
14008 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
14009 % U+2044 FRACTION SLASH; fraction  
14010 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
14011 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
ingleft  
14012 \DeclareTextCommand{\guilsingleft}{PD1}{\210}% U+2039  
14013 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
ingright  
14014 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A  
14015 % U+2212 MINUS SIGN; minus  
14016 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
14017 % U+2030 PER MILLE SIGN; perthousand  
14018 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
14019 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
14020 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
14021 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
14022 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
14023 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
14024 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
14025 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
14026 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
14027 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
14028 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
14029 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
14030 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
14031 % U+2122 TRADE MARK SIGN; trademark  
14032 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
14033 % U+FB01 LATIN SMALL LIGATURE FI; fi  
14034 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
14035 % U+FB02 LATIN SMALL LIGATURE FL; fl  
14036 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
14037 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14038 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
14039 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
14040 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
14041 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
14042 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
14043 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
14044 \DeclareTextCompositeCommand{\Y}{PD1}{Y}{\230}% U+0178  
14045 \DeclareTextCommand{\IJ}{PD1}{\230}

14046 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 14047 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
 14048 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 14049 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
 14050 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 14051 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
 14052 % U+0153 LATIN SMALL LIGATURE OE; oe  
 14053 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
 14054 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 14055 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
 14056 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 14057 \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.  
 14058 % U+20AC EURO SIGN; \*Euro, euro  
 14059 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
 14060 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 14061 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
 14062 % U+00A2 CENT SIGN; cent  
 14063 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
 14064 % U+00A3 POUND SIGN; sterling  
 14065 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
 14066 % U+00A4 CURRENCY SIGN; currency  
 14067 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
 14068 % U+00A5 YEN SIGN; yen  
 14069 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
 14070 % U+00A6 BROKEN BAR; brokenbar  
 14071 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
 14072 % U+00A7 SECTION SIGN; section  
 14073 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
 14074 % U+00A8 DIAERESIS; dieresis  
 14075 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
 14076 % U+00A9 COPYRIGHT SIGN; copyright  
 14077 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
 14078 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 14079 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
 14080 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
 motleft  
 14081 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
 14082 % U+00AC NOT SIGN; logicalnot  
 14083 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
 14084 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
 No glyph \255 in PDFDocEncoding.  
 14085 % U+00AE REGISTERED SIGN; registered  
 14086 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
 14087 % U+00AF MACRON; \*macron, overscore  
 14088 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
 14089 % U+00B0 DEGREE SIGN; degree  
 14090 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
 14091 % U+00B1 PLUS-MINUS SIGN; plusminus  
 14092 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
 14093 % U+00B2 SUPERScript TWO; twosuperior  
 14094 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
 14095 % U+00B3 SUPERScript THREE; threesuperior  
 14096 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
 14097 % U+00B4 ACUTE ACCENT; acute  
 14098 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4

14099 % U+00B5 MICRO SIGN; mu, mul  
14100 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14101 % U+00B6 PILCROW SIGN; paragraph  
14102 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14103 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14104 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14105 % U+00B8 CEDILLA; cedilla  
14106 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14107 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14108 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
14109 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14110 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14111 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motright  
14112 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14113 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14114 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14115 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14116 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14117 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14118 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14119 % U+00BF INVERTED QUESTION MARK; questiondown  
14120 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14121 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14122 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14123 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14124 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14125 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14126 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14127 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14128 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14129 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14130 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14131 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14132 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14133 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14134 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14135 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14136 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14137 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14138 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14139 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14140 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14141 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14142 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14143 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14144 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14145 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14146 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14147 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14148 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14149 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14150 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14151 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14152 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14153 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14154 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0

14155 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14156 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14157 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14158 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14159 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14160 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14161 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14162 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14163 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14164 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14165 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14166 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14167 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14168 % U+00D7 MULTIPLICATION SIGN; multiply  
14169 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14170 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14171 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14172 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14173 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
14174 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14175 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14176 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14177 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14178 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14179 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14180 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14181 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14182 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14183 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14184 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14185 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14186 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14187 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
14188 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14189 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14190 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14191 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14192 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14193 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14194 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14195 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
14196 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14197 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
14198 % U+00E6 LATIN SMALL LETTER AE; ae  
14199 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
14200 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14201 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
14202 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14203 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350}% U+00E8  
14204 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14205 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
14206 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14207 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
14208 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14209 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
14210 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14211 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC

14212 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
14213 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14214 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14215 \DeclareTextCompositeCommand{\`}{PD1}{i}{\355}% U+00ED  
14216 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14217 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14218 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14219 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14220 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14221 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14222 % U+00F0 LATIN SMALL LETTER ETH; eth  
14223 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
14224 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14225 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
14226 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14227 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2  
14228 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
14229 \DeclareTextCompositeCommand{\`}{PD1}{o}{\363}% U+00F3  
14230 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
14231 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4  
14232 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
14233 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
14234 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
14235 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366}% U+00F6  
14236 % U+00F7 DIVISION SIGN; divide  
14237 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
14238 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
14239 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
14240 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
14241 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9  
14242 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
14243 \DeclareTextCompositeCommand{\`}{PD1}{u}{\372}% U+00FA  
14244 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
14245 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB  
14246 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
14247 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC  
14248 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
14249 \DeclareTextCompositeCommand{\`}{PD1}{y}{\375}% U+00FD  
14250 % U+00FE LATIN SMALL LETTER THORN; thorn  
14251 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
14252 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
14253 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377}% U+00FF  
14254 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

Glyphs that consist of several characters.

14255 \DeclareTextCommand{\SS}{PD1}{SS}  
14256 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

Aliases (german.sty)

14257 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}  
14258 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}  
14259 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}  
14260 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}  
14261 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}  
14262 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}  
14263 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}  
14264 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

Aliases (math names)

```

14265 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
14266 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
14267 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
14268 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
14269 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
14270 \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).

```

14271 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
14272 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
14273 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
14274 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
14275 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
14276 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
14277 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
14278 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
14279 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
14280 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
14281 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
14282 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
14283 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
14284 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
14285 </pdlenc>

```

## 50.2 PU encoding

```

14286 <*puenc>
14287 \DeclareFontEncoding{PU}{-}{-}

```

### 50.2.1 NFSS2 accents

```

14288 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
14289 \DeclareTextCommand{\'}{PU}[1]{#1\83\000}% U+0300
14290 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
14291 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
14292 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
14293 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
14294 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
14295 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
14296 % U+0304 COMBINING MACRON; macroncmb
14297 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
14298 % U+0306 COMBINING BREVE; brevecmb
14299 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
14300 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
14301 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
14302 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
14303 % U+0308 COMBINING DIAERESIS; dieresiscmb
14304 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
14305 % U+030A COMBINING RING ABOVE; ringcmb
14306 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
14307 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
14308 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
14309 % U+030C COMBINING CARON; caroncmb
14310 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
14311 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
14312 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
14313 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F

```



```

14314 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
14315 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
14316 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
14317 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
14318 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
14319 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
14320 % U+0327 COMBINING CEDILLA; cedillacmb
14321 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
14322 % U+0328 COMBINING OGONEK; ogonekcmb
14323 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
14324 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb
14325 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
14326 % U+20DD COMBINING ENCLOSING CIRCLE
14327 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

```

\@empty is an artefact of the NFSS2 machinery, it gets inserted for empty arguments and spaces.

```

14328 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}
14329 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
14330 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textasciicircum}
14331 \DeclareTextCompositeCommand{\-}{PU}{\@empty}{\texttilde}
14332 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}
14333 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
14334 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}
14335 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
14336 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
14337 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}
14338 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}
14339 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}
14340 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}
14341 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}
14342 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}
14343 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}
14344 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}
14345 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}
14346 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}

14347 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}
14348 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}
14349 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}
14350 \DeclareTextCompositeCommand{\-}{PU}{\ }{\texttilde}
14351 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}
14352 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}
14353 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
14354 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
14355 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
14356 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
14357 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
14358 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
14359 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
14360 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}
14361 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
14362 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
14363 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
14364 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
14365 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

```

Accents for capitals (see encoding TS1)

```

14366 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}

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14367 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}
14368 \DeclareTextCommand{\capitalgrave}{PU}[1]{\'{#1}}
14369 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}
14370 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}
14371 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}
14372 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}
14373 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}
14374 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}
14375 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}
14376 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}
14377 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}
14378 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}
14379 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}
14380 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

```

### 50.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

```

14381 % U+0009 (CHARACTER TABULATION)
14382 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
14383 % U+000A (LINE FEED)
14384 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
14385 % U+000D (CARRIAGE RETURN)
14386 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

\80\040: U+0020 SPACE; space, spacehackarabic
\80\041: U+0021 EXCLAMATION MARK; exclam

14387 % U+0022 QUOTATION MARK; quotedbl
14388 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022
14389 % U+0023 NUMBER SIGN; numbersign
14390 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
14391 % U+0024 DOLLAR SIGN; dollar
14392 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
14393 % U+0025 PERCENT SIGN; percent
14394 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
14395 % U+0026 AMPERSAND; ampersand
14396 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
14397 % U+0027 APOSTROPHE; quotesingle
14398 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
14399 % U+0028 LEFT PARENTHESIS; parenleft
14400 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028
14401 % U+0029 RIGHT PARENTHESIS; parenright
14402 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029
14403 % U+002A ASTERISK; asterisk
14404 \DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A (?)

\80\053: U+002B PLUS SIGN; plus
\80\054: U+002C COMMA; comma
\80\055: U+002D HYPHEN-MINUS; hyphen
\80\056: U+002E FULL STOP; period
\80\057: U+002F SOLIDUS; slash
\80\060: U+0030 DIGIT ZERO; zero

...
\80\071: U+0039 DIGIT NINE; nine
\80\072: U+003A COLON; colon
\80\073: U+003B SEMICOLON; semicolon

14405 % U+003C LESS-THAN SIGN; less
14406 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C

```

\80\075: U+003D EQUALS SIGN; equal  
 14407 % U+003E GREATER-THAN SIGN; greater  
 14408 \DeclareTextCommand{\textgreater}{PU}{>}% \80\076 U+003E  
 \80\077: U+003F QUESTION MARK; question  
 \80\100: U+0040 COMMERCIAL AT; at  
 \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  
 14409 % U+005C REVERSE SOLIDUS; backslash  
 14410 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
 \80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
 14411 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14412 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
 14413 % U+005F LOW LINE; underscore  
 14414 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
 14415 % U+0060 GRAVE ACCENT; grave  
 14416 \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  
 14417 % U+0069 LATIN SMALL LETTER I; i  
 14418 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % \80\151 U+0069  
 14419 \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  
 14420 % U+007B LEFT CURLY BRACKET; braceleft  
 14421 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
 14422 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14423 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
 14424 % U+007D RIGHT CURLY BRACKET; braceright  
 14425 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
 14426 % U+007E TILDE; asciitilde  
 14427 \DeclareTextCommand{\textasciitilde}{PU}{\80\176}% U+007E

### 50.2.3 Latin-1 Supplement: U+0080 to U+00FF

\80\240: U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace  
 14428 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 14429 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
 14430 % U+00A2 CENT SIGN; cent  
 14431 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
 14432 % U+00A3 POUND SIGN; sterling  
 14433 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
 14434 % U+00A4 CURRENCY SIGN; currency  
 14435 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
 14436 % U+00A5 YEN SIGN; yen  
 14437 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
 14438 % U+00A6 BROKEN BAR; brokenbar  
 14439 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
 14440 % U+00A7 SECTION SIGN; section  
 14441 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
 14442 % U+00A8 DIAERESIS; dieresis

14443 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
14444 % U+00A9 COPYRIGHT SIGN; copyright  
14445 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9  
14446 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14447 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
14448 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
14449 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
14450 % U+00AC NOT SIGN; logicalnot  
14451 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
14452 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
\80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
14453 % U+00AE REGISTERED SIGN; registered  
14454 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
14455 % U+00AF MACRON; \*macron, overscore  
14456 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
14457 % U+00B0 DEGREE SIGN; degree  
14458 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
14459 % U+00B1 PLUS-MINUS SIGN; plusminus  
14460 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
14461 % U+00B2 SUPERSCRIFT TWO; twosuperior  
14462 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2  
14463 % U+00B3 SUPERSCRIFT THREE; threesuperior  
14464 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3  
14465 % U+00B4 ACUTE ACCENT; acute  
14466 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
14467 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
14468 % U+00B5 MICRO SIGN; mu, mu1  
14469 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
14470 % U+00B6 PILCROW SIGN; paragraph  
14471 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
14472 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14473 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
14474 % U+00B8 CEDILLA; cedilla  
14475 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
14476 % U+00B9 SUPERSCRIFT ONE; onesuperior  
14477 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
14478 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14479 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
14480 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
14481 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
14482 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14483 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
14484 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14485 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
14486 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14487 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
14488 % U+00BF INVERTED QUESTION MARK; questiondown  
14489 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
14490 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14491 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
14492 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14493 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
14494 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14495 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
14496 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde

14497 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
14498 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14499 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
14500 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14501 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
14502 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14503 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
14504 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14505 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
14506 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14507 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
14508 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14509 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
14510 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14511 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
14512 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14513 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
14514 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14515 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
14516 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14517 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
14518 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14519 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
14520 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14521 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
14522 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14523 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
14524 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14525 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
14526 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14527 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
14528 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14529 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
14530 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14531 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
14532 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14533 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
14534 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14535 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
14536 % U+00D7 MULTIPLICATION SIGN; multiply  
14537 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
14538 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14539 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
14540 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14541 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
14542 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14543 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
14544 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14545 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
14546 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14547 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
14548 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14549 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
14550 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14551 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
14552 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14553 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF

14554 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
 14555 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
 14556 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
 14557 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
 14558 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
 14559 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
 14560 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
 14561 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
 14562 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
 14563 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
 14564 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
 14565 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
 14566 % U+00E6 LATIN SMALL LETTER AE; ae  
 14567 \DeclareTextCompositeCommand{\ae}{PU}{\80\346}% U+00E6  
 14568 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
 14569 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
 14570 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
 14571 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
 14572 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
 14573 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
 14574 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
 14575 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
 14576 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
 14577 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
 14578 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
 14579 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
 14580 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
 14581 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
 14582 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
 14583 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\355}% U+00ED  
 14584 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
 14585 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
 14586 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
 14587 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
 14588 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
 14589 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
 14590 % U+00F0 LATIN SMALL LETTER ETH; eth  
 14591 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
 14592 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
 14593 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
 14594 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
 14595 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 14596 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 14597 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 14598 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 14599 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
 14600 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 14601 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 14602 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 14603 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
 14604 % U+00F7 DIVISION SIGN; divide  
 14605 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
 14606 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 14607 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
 14608 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 14609 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 14610 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute

14611 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 14612 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 14613 \DeclareTextCompositeCommand{\~}{PU}{u}{\80\373}% U+00FB  
 14614 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 14615 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 14616 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 14617 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 14618 % U+00FE LATIN SMALL LETTER THORN; thorn  
 14619 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 14620 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 14621 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

#### 50.2.4 Latin Extended-A: U+0080 to U+017F

14622 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 14623 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
 14624 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 14625 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
 14626 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 14627 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 14628 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 14629 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 14630 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 14631 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 14632 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 14633 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 14634 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
 14635 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
 14636 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
 14637 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
 14638 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 14639 \DeclareTextCompositeCommand{\~}{PU}{C}{\81\010}% U+0108  
 14640 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 14641 \DeclareTextCompositeCommand{\~}{PU}{c}{\81\011}% U+0109  
 14642 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
 14643 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
 14644 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
 14645 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
 14646 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
 14647 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
 14648 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
 14649 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
 14650 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
 14651 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
 14652 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
 14653 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
 14654 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
 14655 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
 14656 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
 14657 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
 14658 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
 14659 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
 14660 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
 14661 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
 14662 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
 14663 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
 14664 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve

14665 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
14666 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
14667 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
14668 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
14669 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
14670 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
14671 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
14672 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
14673 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
14674 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
14675 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
14676 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
14677 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
14678 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
14679 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
14680 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
14681 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
14682 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
14683 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
14684 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
14685 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
14686 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
14687 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
14688 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
14689 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
14690 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaac-  
cent  
14691 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
14692 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
14693 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
14694 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
14695 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
14696 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
14697 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
14698 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
14699 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
14700 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
14701 \DeclareTextCommand{\texthslash}{PU}{\81\047}% U+0127  
14702 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
14703 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
14704 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
14705 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
14706 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
14707 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
14708 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
14709 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
14710 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
14711 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
14712 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
14713 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
14714 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
14715 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
14716 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
14717 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
14718 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
14719 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
14720 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F



14721 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
 14722 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
 14723 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
 14724 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 14725 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
 14726 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
 14727 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
 14728 % U+0133 LATIN SMALL LIGATURE IJ; ij  
 14729 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
 14730 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
 14731 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
 14732 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
 14733 \DeclareTextCompositeCommand{\~}{PU}{j}{\81\065}% U+0135  
 14734 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
 14735 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-  
 cent  
 14736 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
 14737 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
 14738 \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.

14739 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
 14740 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
 14741 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
 14742 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
 14743 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
 14744 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
 14745 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-  
 cent  
 14746 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
 14747 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
 14748 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
 14749 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
 14750 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
 14751 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
 14752 \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.

14753 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
 14754 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
 14755 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
 14756 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
 14757 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 14758 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
 14759 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 14760 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
 14761 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
 14762 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143  
 14763 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
 14764 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144  
 14765 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaac-  
 cent  
 14766 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
 14767 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
 14768 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146

14769 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
 14770 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
 14771 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
 14772 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
 14773 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napos-  
 trophe, quoterightn  
 14774 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
 14775 % U+014A LATIN CAPITAL LETTER ENG; Eng  
 14776 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
 14777 % U+014B LATIN SMALL LETTER ENG; eng  
 14778 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
 14779 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
 14780 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
 14781 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
 14782 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
 14783 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
 14784 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
 14785 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
 14786 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
 14787 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odbla-  
 cute, Ohungarumlaut  
 14788 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
 14789 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacute, ohun-  
 garumlaut  
 14790 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
 14791 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 14792 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
 14793 % U+0153 LATIN SMALL LIGATURE OE; oe  
 14794 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
 14795 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
 14796 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
 14797 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
 14798 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
 14799 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaac-  
 cent  
 14800 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
 14801 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
 14802 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
 14803 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
 14804 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
 14805 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
 14806 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
 14807 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
 14808 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
 14809 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
 14810 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
 14811 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
 14812 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
 14813 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
 14814 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
 14815 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
 14816 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
 14817 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
 14818 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
 14819 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 14820 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
 14821 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron

14822 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
14823 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaaccent  
14824 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
14825 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
14826 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
14827 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
14828 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
14829 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
14830 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
14831 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
14832 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
14833 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
14834 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
14835 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
14836 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
14837 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
14838 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
14839 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
14840 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
14841 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
14842 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
14843 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
14844 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
14845 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
14846 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
14847 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
14848 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
14849 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
14850 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
14851 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblacute, Uhungarumlaut  
14852 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
14853 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhungarumlaut  
14854 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
14855 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
14856 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
14857 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
14858 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
14859 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
14860 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
14861 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
14862 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
14863 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
14864 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
14865 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
14866 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
14867 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
14868 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
14869 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
14870 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
14871 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
14872 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
14873 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
14874 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
14875 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent

14876 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
 14877 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 14878 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 14879 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 14880 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 14881 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 14882 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

## 50.2.5 Latin Extended-B: U+0180 to U+024F

14883 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 14884 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 14885 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
 14886 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
 14887 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
 14888 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
 14889 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
 14890 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
 14891 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
 14892 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 14893 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 14894 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 14895 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 14896 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
 14897 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 14898 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 14899 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
 14900 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
 14901 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
 14902 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
 14903 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
 14904 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
 14905 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
 14906 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
 14907 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
 14908 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
 14909 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
 14910 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
 14911 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
 14912 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
 14913 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
 14914 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
 14915 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
 14916 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
 14917 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
 14918 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
 14919 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 14920 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 14921 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
 14922 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
 14923 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
 14924 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
 14925 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
 14926 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
 14927 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
 14928 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
 14929 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
 14930 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC

14931 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
14932 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
14933 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslashacute, Ostrokeacute  
14934 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\376}% U+01FE  
14935 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslashacute, ostrokeacute  
14936 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
14937 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
14938 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
14939 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
14940 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
14941 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
14942 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
14943 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
14944 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
14945 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
14946 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
14947 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
14948 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
14949 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
14950 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
14951 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
14952 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
14953 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
14954 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
14955 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
14956 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
14957 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
14958 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
14959 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
14960 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
14961 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
14962 % U+021E LATIN CAPITAL LETTER H WITH CARON  
14963 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
14964 % U+021F LATIN SMALL LETTER H WITH CARON  
14965 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
14966 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
14967 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
14968 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
14969 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
14970 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
14971 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
14972 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
14973 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
14974 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
14975 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
14976 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
14977 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
14978 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
14979 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
14980 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
14981 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
14982 % U+0237 LATIN SMALL LETTER DOTLESS J  
14983 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

## 50.2.6 Spacing Modifier Letters: U+02B0 to U+02FF

14984 % U+02C7 CARON; caron  
 14985 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 14986 % U+02D8 BREVE; breve  
 14987 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 14988 % U+02D9 DOT ABOVE; dotaccent  
 14989 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 14990 % U+02DA RING ABOVE; ring  
 14991 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 14992 % U+02DB OGONEK; ogonek  
 14993 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 14994 % U+02DC SMALL TILDE; ilde, \*tilde  
 14995 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 14996 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 14997 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 14998 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
 14999 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 15000 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 15001 % U+02F7 MODIFIER LETTER LOW TILDE  
 15002 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

### 50.2.7 Combining Diacritical Marks: U+0300 to U+036F

15003 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 15004 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 15005 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 15006 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 15007 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 15008 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 15009 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 15010 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
 15011 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 15012 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

### 50.2.8 Greek and Coptic: U+0370 to U+03FF

15013 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 15014 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 15015 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 15016 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 15017 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphatonos  
 15018 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386  
 15019 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
 15020 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388  
 15021 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
 15022 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389  
 15023 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
 15024 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A  
 15025 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omi-  
 cronos  
 15026 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C  
 15027 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilonontonos  
 15028 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E  
 15029 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
 15030 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F  
 15031 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; io-  
 tadiesisontonos  
 15032 \DeclareTextCompositeCommand{\'}{PU}{\textIotadiesis}{\83\220}% U+0390  
 15033 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
 15034 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391

15035 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
 15036 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
 15037 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
 15038 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
 15039 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
 15040 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
 15041 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
 15042 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
 15043 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
 15044 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
 15045 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
 15046 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
 15047 % U+0398 GREEK CAPITAL LETTER THETA; Theta  
 15048 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
 15049 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
 15050 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
 15051 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
 15052 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
 15053 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
 15054 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
 15055 % U+039C GREEK CAPITAL LETTER MU; Mu  
 15056 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
 15057 % U+039D GREEK CAPITAL LETTER NU; Nu  
 15058 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
 15059 % U+039E GREEK CAPITAL LETTER XI; Xi  
 15060 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E  
 15061 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
 15062 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
 15063 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
 15064 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
 15065 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
 15066 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
 15067 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
 15068 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
 15069 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
 15070 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
 15071 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
 15072 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5  
 15073 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
 15074 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
 15075 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
 15076 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
 15077 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
 15078 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
 15079 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
 15080 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
 15081 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
 15082 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
 15083 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
 15084 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Up-  
 silondieresis  
 15085 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
 15086 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphonos  
 15087 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}% U+03AC  
 15088 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilononon  
 15089 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
 15090 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etatonos

15091 \DeclareTextCompositeCommand{\'}{PU}{\texteta}{\83\256}% U+03AE  
15092 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotatonos  
15093 \DeclareTextCompositeCommand{\'}{PU}{\textiota}{\83\257}% U+03AF  
15094 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; up-  
silonadiesisto  
15095 \DeclareTextCompositeCommand{\"}{PU}{\textupsilonacute}{\83\260}% U+03B0  
15096 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
15097 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1  
15098 % U+03B2 GREEK SMALL LETTER BETA; beta  
15099 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
15100 % U+03B3 GREEK SMALL LETTER GAMMA; gamma  
15101 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
15102 % U+03B4 GREEK SMALL LETTER DELTA; delta  
15103 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
15104 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
15105 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
15106 % U+03B6 GREEK SMALL LETTER ZETA; zeta  
15107 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
15108 % U+03B7 GREEK SMALL LETTER ETA; eta  
15109 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
15110 % U+03B8 GREEK SMALL LETTER THETA; theta  
15111 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
15112 % U+03B9 GREEK SMALL LETTER IOTA; iota  
15113 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
15114 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
15115 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA  
15116 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
15117 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB  
15118 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
15119 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
15120 % U+03BD GREEK SMALL LETTER NU; nu  
15121 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
15122 % U+03BE GREEK SMALL LETTER XI; xi  
15123 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
15124 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
15125 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
15126 % U+03C0 GREEK SMALL LETTER PI; pi  
15127 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0  
15128 % U+03C1 GREEK SMALL LETTER RHO; rho  
15129 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
15130 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
15131 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
15132 % U+03C3 GREEK SMALL LETTER SIGMA; sigma  
15133 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3  
15134 % U+03C4 GREEK SMALL LETTER TAU; tau  
15135 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4  
15136 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon  
15137 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5  
15138 % U+03C6 GREEK SMALL LETTER PHI; phi  
15139 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6  
15140 % U+03C7 GREEK SMALL LETTER CHI; chi  
15141 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7  
15142 % U+03C8 GREEK SMALL LETTER PSI; psi  
15143 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8  
15144 % U+03C9 GREEK SMALL LETTER OMEGA; omega  
15145 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9  
15146 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iotadiesis



15147 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA  
 15148 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-  
         silondieresis  
 15149 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB  
 15150 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos  
 15151 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC  
 15152 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos  
 15153 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD  
 15154 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD  
 15155 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos  
 15156 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE  
 15157 % U+03DA GREEK LETTER STIGMA; Stigmagreek  
 15158 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA  
 15159 % U+03DB GREEK SMALL LETTER STIGMA  
 15160 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB  
 15161 % U+03DC GREEK LETTER DIGAMMA; Digammagreek  
 15162 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC  
 15163 % U+03DD GREEK SMALL LETTER DIGAMMA  
 15164 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD  
 15165 % U+03DE GREEK LETTER KOPPA; Koppagreek  
 15166 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE  
 15167 % U+03DF GREEK SMALL LETTER KOPPA  
 15168 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF  
 15169 % U+03E0 GREEK LETTER SAMPI; Sampigreek  
 15170 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0  
 15171 % U+03E1 GREEK SMALL LETTER SAMPI  
 15172 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}% U+03E1

## 50.2.9 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names.

15173 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE  
 15174 \DeclareTextCompositeCommand{'}{PU}{\CYRE}{\84\000}% U+0400  
 15175 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, \*afii10023  
 15176 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401  
 15177 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}% ???  
 15178 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, \*afii10051  
 15179 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402  
 15180 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, \*afii10052  
 15181 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% U+0403  
 15182 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, \*afii10053  
 15183 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404  
 15184 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, \*afii10054  
 15185 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
 15186 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyril-  
         lic, \*afii10055  
 15187 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
 15188 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
 15189 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
 15190 \DeclareTextCompositeCommand{"}{PU}{\CYRII}{\84\007}% U+0407  
 15191 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
 15192 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
 15193 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
 15194 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
 15195 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
 15196 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
 15197 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060

15198 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
15199 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
15200 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
15201 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
15202 \DeclareTextCompositeCommand{\'}{PU}{\CYRI}{\84\015}% U+040D  
15203 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
15204 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
15205 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
15206 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
15207 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
15208 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
15209 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
15210 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
15211 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
15212 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
15213 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
15214 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
15215 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
15216 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
15217 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
15218 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
15219 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
15220 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
15221 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
15222 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
15223 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
15224 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
15225 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
15226 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
15227 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
15228 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
15229 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
15230 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
15231 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
15232 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
15233 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
15234 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
15235 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
15236 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
15237 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
15238 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
15239 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
15240 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
15241 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
15242 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
15243 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
15244 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
15245 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
15246 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
15247 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
15248 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
15249 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
15250 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
15251 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
15252 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
15253 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
15254 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426

15255 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
15256 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
15257 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
15258 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
15259 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
15260 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
15261 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
15262 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
15263 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
15264 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
15265 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
15266 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
15267 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
15268 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
15269 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
15270 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
15271 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
15272 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
15273 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
15274 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
15275 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
15276 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
15277 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
15278 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
15279 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
15280 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
15281 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
15282 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
15283 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
15284 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
15285 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
15286 \DeclareTextCommand{\cyrz}{PU}{\84\066}% U+0436  
15287 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
15288 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
15289 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
15290 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
15291 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
15292 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
15293 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
15294 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
15295 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
15296 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
15297 \DeclareTextCommand{\cyl}{PU}{\84\073}% U+043B  
15298 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
15299 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
15300 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
15301 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
15302 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
15303 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
15304 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
15305 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
15306 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
15307 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
15308 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
15309 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
15310 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
15311 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442

15312 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
15313 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443  
15314 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
15315 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
15316 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
15317 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
15318 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
15319 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
15320 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
15321 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
15322 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
15323 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
15324 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
15325 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
15326 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
15327 \DeclareTextCommand{\cyrhdsn}{PU}{\84\112}% U+044A  
15328 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
15329 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
15330 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
15331 \DeclareTextCommand{\cyrsftsn}{PU}{\84\114}% U+044C  
15332 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
15333 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
15334 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
15335 \DeclareTextCommand{\cyryu}{PU}{\84\116}% U+044E  
15336 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
15337 \DeclareTextCommand{\cyrya}{PU}{\84\117}% U+044F  
15338 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
15339 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
15340 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
15341 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451  
15342 \DeclareTextCompositeCommand{"}{PU}{\cyre}{\84\121}% U+0451  
15343 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
15344 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
15345 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
15346 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
15347 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
15348 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
15349 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
15350 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
15351 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyril-  
lic  
15352 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
15353 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
15354 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
15355 \DeclareTextCompositeCommand{"}{PU}{\cyrii}{\84\127}% U+0457  
15356 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
15357 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
15358 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
15359 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
15360 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
15361 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
15362 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
15363 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
15364 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
15365 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
15366 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
15367 \DeclareTextCompositeCommand{\'}{PU}{\cyri}{\84\135}% U+045D

15368 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
 15369 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
 15370 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
 15371 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
 15372 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
 15373 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
 15374 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
 15375 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
 15376 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
 15377 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
 15378 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
 15379 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
 15380 \DeclareTextCommand{\cyr yat}{PU}{\84\143}% U+0463  
 15381 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
 15382 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
 15383 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
 15384 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
 15385 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
 15386 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
 15387 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
 15388 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
 15389 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittleio-  
 tifiedcyrillic  
 15390 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
 15391 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittleioti-  
 fiedcyrillic  
 15392 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
 15393 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
 15394 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
 15395 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
 15396 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
 15397 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
 cyrillic  
 15398 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
 15399 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotifiedcyril-  
 lic  
 15400 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
 15401 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
 15402 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 15403 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
 15404 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
 15405 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
 15406 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
 15407 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
 15408 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
 15409 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
 15410 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
 15411 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
 15412 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
 15413 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
 15414 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
 15415 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
 15416 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
 15417 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; Izhitsadblgravecyrillic  
 15418 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476

15419 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; izhitsadblgravecyrillic  
 15420 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
 15421 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
 15422 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
 15423 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
 15424 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
 15425 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyril-  
 lic  
 15426 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 15427 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 15428 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 15429 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlo-  
 cyrillic  
 15430 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
 15431 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlo-  
 cyrillic  
 15432 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 15433 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 15434 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 15435 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 15436 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 15437 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 15438 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 15439 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 15440 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 15441 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 15442 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
 \84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrillicmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyril-  
 licmb  
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumata-  
 cyrillicmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyril-  
 licmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
 15443 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 15444 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 15445 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 15446 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 15447 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 15448 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 15449 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 15450 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 15451 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 15452 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 15453 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 15454 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 15455 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-  
 cyrillic, \*afii10050  
 15456 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 15457 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, ghe-  
 upturncyrillic  
 15458 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491

15459 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-cyrillic  
 15460 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 15461 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 15462 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 15463 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemid-dlehookcyrillic  
 15464 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 15465 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemid-dlehookcyrillic  
 15466 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 15467 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescendercyrillic  
 15468 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 15469 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescendercyrillic  
 15470 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 15471 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescendercyrillic  
 15472 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 15473 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 15474 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescendercyrillic  
 15475 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
 15476 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 15477 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic  
 15478 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 15479 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescendercyrillic  
 15480 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 15481 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kaver-ticalstrokecyrillic  
 15482 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 15483 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kaver-ticalstrokecyrillic  
 15484 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 15485 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 15486 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
 15487 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 15488 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
 15489 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 15490 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 15491 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 15492 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 15493 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
 15494 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 15495 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
 15496 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 15497 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 15498 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 15499 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 15500 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 15501 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemid-dlehookcyrillic

15502 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
15503 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
15504 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
15505 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
15506 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
15507 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
15508 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
15509 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
15510 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
15511 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
15512 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
15513 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
15514 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
15515 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
15516 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
15517 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
15518 \DeclareTextCommand{\cyrt dsc}{PU}{\84\255}% U+04AD  
15519 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
15520 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
15521 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; usstraightcyrillic  
15522 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
15523 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
15524 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
15525 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; usstraightstrokecyrillic  
15526 \DeclareTextCommand{\cyr y hcrs}{PU}{\84\261}% U+04B1  
15527 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadesdescendercyrillic  
15528 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
15529 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
15530 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
15531 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
15532 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
15533 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
15534 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
15535 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescendercyrillic  
15536 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
15537 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
15538 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
15539 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Chev-  
verticalstrokecyrillic  
15540 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
15541 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; chev-  
verticalstrokecyrillic  
15542 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
15543 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
15544 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA



15545 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
 15546 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
 15547 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-cyrillic  
 15548 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
 15549 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic  
 15550 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
 15551 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic  
 15552 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
 15553 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
 15554 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCENDER; chedescenderabkhasiancyrillic  
 15555 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
 15556 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
 15557 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
 15558 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
 15559 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
 15560 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
 15561 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
 15562 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
 15563 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
 15564 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
 15565 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
 15566 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
 15567 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
 15568 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
 15569 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
 15570 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
 15571 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
 15572 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
 15573 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
 15574 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
 15575 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassian-cyrillic  
 15576 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
 15577 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-cyrillic  
 15578 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
 15579 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
 15580 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
 15581 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
 15582 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
 \84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
 15583 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
 15584 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
 15585 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
 15586 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
 15587 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrillic  
 15588 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% U+04D2  
 15589 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
 15590 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% U+04D3  
 15591 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
 15592 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
 15593 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic

15594 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
15595 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevacyrillic  
15596 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
15597 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevacyrillic  
15598 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
15599 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
15600 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
15601 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
15602 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
15603 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiere-  
siscyrillic  
15604 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
15605 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiere-  
siscyrillic  
15606 \DeclareTextCompositeCommand{"}{PU}{\cyrschwa}{\84\333}% U+04DB  
15607 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
siscyrillic  
15608 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% U+04DC  
15609 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieres-  
cyrillic  
15610 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% U+04DD  
15611 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieres-  
cyrillic  
15612 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% U+04DE  
15613 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresicyrillic  
15614 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% U+04DF  
15615 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
cyrillic  
15616 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
15617 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
15618 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
15619 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
15620 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% U+04E2  
15621 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
15622 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% U+04E3  
15623 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresicyrillic  
15624 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% U+04E4  
15625 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresicyrillic  
15626 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% U+04E5  
15627 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresicyril-  
lic  
15628 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
15629 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresicyrillic  
15630 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
15631 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
15632 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
15633 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
15634 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
15635 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERE-  
SIS; Obarreddieresicyrillic  
15636 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
15637 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarred-  
dieresicyrillic  
15638 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
15639 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
15640 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
15641 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS

15642 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
 15643 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 15644 \DeclareTextCompositeCommand{\=}{PU}{\CYRU}{\84\356}% U+04EE  
 15645 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 15646 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% U+04EF  
 15647 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
 15648 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
 15649 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
 15650 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
 15651 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhun-  
 garumlautcyrillic  
 15652 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2  
 15653 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhun-  
 garumlautcyrillic  
 15654 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3  
 15655 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chediere-  
 siscyrillic  
 15656 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
 15657 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieres-  
 iscyrillic  
 15658 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
 15659 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 15660 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 15661 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 15662 \DeclareTextCommand{\cyrghdsc}{PU}{\84\367}% U+04F7  
 15663 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudiere-  
 siscyrillic  
 15664 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
 15665 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudiere-  
 siscyrillic  
 15666 \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  
 15667 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 15668 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 15669 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 15670 \DeclareTextCommand{\cyrhkhk}{PU}{\84\375}% U+04FD  
 \84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE  
 \84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE

## 50.2.10 Thai: U+0E00 to U+0E7F

15671 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 15672 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

## 50.2.11 Latin Extended Additional: U+1E00 to U+1EFF

15673 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 15674 \DeclareTextCompositeCommand{.}{PU}{B}{\9036\002}% U+1E02  
 15675 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 15676 \DeclareTextCompositeCommand{.}{PU}{b}{\9036\003}% U+1E03  
 15677 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 15678 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 15679 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 15680 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 15681 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 15682 \DeclareTextCompositeCommand{.}{PU}{D}{\9036\012}% U+1E0A

15683 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
15684 \DeclareTextCompositeCommand{.}{PU}{d}{\9036\013}% U+1E0B  
15685 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
15686 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
15687 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
15688 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
15689 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
15690 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
15691 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
15692 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
15693 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
15694 \DeclareTextCompositeCommand{.}{PU}{F}{\9036\036}% U+1E1E  
15695 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
15696 \DeclareTextCompositeCommand{.}{PU}{f}{\9036\037}% U+1E1F  
15697 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
15698 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
15699 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
15700 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
15701 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
15702 \DeclareTextCompositeCommand{.}{PU}{H}{\9036\042}% U+1E22  
15703 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
15704 \DeclareTextCompositeCommand{.}{PU}{h}{\9036\043}% U+1E23  
15705 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
15706 \DeclareTextCompositeCommand{"}{PU}{H}{\9036\046}% U+1E26  
15707 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
15708 \DeclareTextCompositeCommand{"}{PU}{h}{\9036\047}% U+1E27  
15709 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
15710 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
15711 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
15712 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
15713 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
15714 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
15715 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
15716 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
15717 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
15718 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
15719 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
15720 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
15721 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
15722 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
15723 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
15724 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
15725 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
15726 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
15727 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
15728 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
15729 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
15730 \DeclareTextCompositeCommand{.}{PU}{M}{\9036\100}% U+1E40  
15731 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
15732 \DeclareTextCompositeCommand{.}{PU}{m}{\9036\101}% U+1E41  
15733 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
15734 \DeclareTextCompositeCommand{.}{PU}{N}{\9036\104}% U+1E44  
15735 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
15736 \DeclareTextCompositeCommand{.}{PU}{n}{\9036\105}% U+1E45  
15737 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
15738 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
15739 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow

15740 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
15741 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
15742 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
15743 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
15744 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
15745 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
15746 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
15747 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
15748 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
15749 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
15750 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
15751 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
15752 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
15753 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
15754 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
15755 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
15756 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
15757 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
15758 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
15759 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
15760 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
15761 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
15762 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
15763 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
15764 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
15765 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
15766 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
15767 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
15768 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
15769 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
15770 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
15771 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
15772 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
15773 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
15774 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
15775 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
15776 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
15777 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
15778 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
15779 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
15780 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
15781 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
15782 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
15783 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
15784 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
15785 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
15786 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
15787 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
15788 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
15789 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
15790 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
15791 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
15792 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
15793 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
15794 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
15795 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
15796 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F

15797 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
 15798 \DeclareTextCompositeCommand{\~}{PU}{z}{\9036\220}% U+1E90  
 15799 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
 15800 \DeclareTextCompositeCommand{\~}{PU}{z}{\9036\221}% U+1E91  
 15801 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
 15802 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
 15803 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
 15804 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
 15805 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
 15806 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
 15807 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
 15808 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
 15809 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
 15810 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
 15811 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
 15812 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
 15813 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotac-  
 cent  
 15814 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
 15815 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
 15816 \DeclareTextCompositeCommand{\-}{PU}{E}{\9036\274}% U+1EBC  
 15817 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
 15818 \DeclareTextCompositeCommand{\-}{PU}{e}{\9036\275}% U+1EBD  
 15819 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 15820 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
 15821 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 15822 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
 15823 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 15824 \DeclareTextCompositeCommand{\-}{PU}{Y}{\9036\370}% U+1EF8  
 15825 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 15826 \DeclareTextCompositeCommand{\-}{PU}{y}{\9036\371}% U+1EF9

## 50.2.12 General Punctuation: U+2000 to U+206F

15827 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
 15828 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 15829 % U+2013 EN DASH; endash  
 15830 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 15831 % U+2014 EM DASH; emdash  
 15832 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 15833 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 15834 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 15835 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 15836 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 15837 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 15838 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 15839 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 15840 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 15841 % U+201C LEFT DOUBLE QUOTATION MARK; quotedbleft  
 15842 \DeclareTextCommand{\textquotedbleft}{PU}{\9040\034}% U+201C  
 15843 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedbtright  
 15844 \DeclareTextCommand{\textquotedbtright}{PU}{\9040\035}% U+201D  
 15845 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 15846 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 15847 % U+2020 DAGGER; dagger  
 15848 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
 15849 % U+2021 DOUBLE DAGGER; daggerdbl  
 15850 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021

15851 % U+2022 BULLET; bullet  
 15852 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022  
 15853 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 15854 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 15855 % U+2030 PER MILLE SIGN; perthousand  
 15856 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 15857 % U+2031 PER TEN THOUSAND SIGN  
 15858 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 15859 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 lingleft  
 15860 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039  
 15861 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guils-  
 ingright  
 15862 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A  
 15863 % U+203B REFERENCE MARK; referencemark  
 15864 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 15865 % U+203D INTERROBANG  
 15866 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 15867 % U+2044 FRACTION SLASH; fraction  
 15868 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 15869 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 15870 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 15871 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 15872 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 15873 % U+2052 COMMERCIAL MINUS SIGN  
 15874 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

### 50.2.13 Superscripts and Subscripts: U+2070 to U+209F

15875 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 15876 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
 15877 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 15878 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
 15879 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 15880 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
 15881 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 15882 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
 15883 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 15884 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077  
 15885 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 15886 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
 15887 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 15888 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
 15889 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 15890 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
 15891 % U+207B SUPERSCRIPT MINUS  
 15892 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
 15893 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 15894 \DeclareTextCommand{\textequalssuperior}{PU}{\9040\174}  
 15895 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 15896 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
 15897 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 15898 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
 15899 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 15900 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}  
 15901 % U+2080 SUBSCRIPT ZERO; zeroinferior  
 15902 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
 15903 % U+2081 SUBSCRIPT ONE; oneinferior

15904 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
 15905 % U+2082 SUBSCRIPT TWO; twoinferior  
 15906 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
 15907 % U+2083 SUBSCRIPT THREE; threeinferior  
 15908 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}% U+2083  
 15909 % U+2084 SUBSCRIPT FOUR; fourinferior  
 15910 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
 15911 % U+2085 SUBSCRIPT FIVE; fiveinferior  
 15912 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
 15913 % U+2086 SUBSCRIPT SIX; sixinferior  
 15914 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086  
 15915 % U+2087 SUBSCRIPT SEVEN; seveninferior  
 15916 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
 15917 % U+2088 SUBSCRIPT EIGHT; eightinferior  
 15918 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
 15919 % U+2089 SUBSCRIPT NINE; nineinferior  
 15920 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
 15921 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
 15922 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
 15923 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
 15924 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

## 50.2.14 Currency Symbols: U+20A0 to U+20CF

15925 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 15926 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 15927 % U+20A4 LIRA SIGN; afii08941, \*lira  
 15928 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 15929 % U+20A6 NAIRA SIGN  
 15930 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 15931 % U+20A7 PESETA SIGN; peseta  
 15932 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 15933 % U+20A9 WON SIGN; won  
 15934 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 15935 % U+20AB DONG SIGN; dong  
 15936 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 15937 % U+20AC EURO SIGN; \*Euro, euro  
 15938 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 15939 % U+20B1 PESO SIGN  
 15940 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 15941 % U+20B2 GUARANI SIGN  
 15942 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

## 50.2.15 Letterlike Symbols: U+2100 to U+214F

15943 % U+2103 DEGREE CELSIUS; centigrade  
 15944 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 15945 % U+2116 NUMERO SIGN; \*afii61352, numero  
 15946 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 15947 % U+2117 SOUND RECORDING COPYRIGHT  
 15948 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 15949 % U+211E PRESCRIPTION TAKE; prescription  
 15950 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 15951 % U+2120 SERVICE MARK  
 15952 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 15953 % U+2122 TRADE MARK SIGN; trademark  
 15954 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 15955 % U+2126 OHM SIGN; Ohm, Omega  
 15956 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126



15957 % U+2127 INVERTED OHM SIGN  
15958 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
15959 % U+212B ANGSTROM SIGN; angstrom  
15960 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
15961 % U+212E ESTIMATED SYMBOL; estimated  
15962 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
15963 % U+2135 ALEF SYMBOL; aleph  
15964 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

## 50.2.16 Arrows: U+2190 to U+21FF

15965 % U+2190 LEFTWARDS ARROW; arrowleft  
15966 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
15967 % U+2191 UPWARDS ARROW; arrowup  
15968 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
15969 % U+2192 RIGHTWARDS ARROW; arrowright  
15970 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192  
15971 % U+2193 DOWNWARDS ARROW; arrowdown  
15972 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

## 50.2.17 Mathematical Operators: U+2200 to U+22FF

15973 % U+2212 MINUS SIGN; minus  
15974 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
15975 % U+221A SQUARE ROOT; radical  
15976 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

## 50.2.18 Miscellaneous Technical: U+2300 to U+23FF

15977 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
15978 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
15979 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
15980 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

## 50.2.19 Control Pictures: U+2400 to U+243F

15981 % U+2422 BLANK SYMBOL  
15982 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
15983 % U+2423 OPEN BOX; blank  
15984 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

## 50.2.20 Enclosed Alphanumerics: U+2460 to U+24FF

15985 % U+2460 CIRCLED DIGIT ONE; onecircle  
15986 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
15987 % U+2461 CIRCLED DIGIT TWO; twocircle  
15988 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
15989 % U+2462 CIRCLED DIGIT THREE; threecircle  
15990 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
15991 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
15992 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
15993 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
15994 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
15995 % U+2465 CIRCLED DIGIT SIX; sixcircle  
15996 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
15997 % U+2466 CIRCLED DIGIT SEVEN; sevencircle  
15998 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
15999 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
16000 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
16001 % U+2468 CIRCLED DIGIT NINE; ninecircle  
16002 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
16003 % U+2469 CIRCLED NUMBER TEN; tencircle

16004 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
16005 % U+246A CIRCLED ELEVEN; elevencircle  
16006 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
16007 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
16008 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
16009 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
16010 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
16011 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
16012 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
16013 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
16014 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
16015 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
16016 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
16017 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
16018 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
16019 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
16020 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
16021 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
16022 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
16023 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
16024 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
16025 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
16026 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
16027 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
16028 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
16029 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
16030 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
16031 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
16032 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
16033 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
16034 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
16035 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
16036 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
16037 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
16038 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
16039 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
16040 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
16041 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
16042 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
16043 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
16044 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
16045 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
16046 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
16047 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
16048 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
16049 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
16050 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
16051 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
16052 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
16053 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
16054 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
16055 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
16056 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
16057 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
16058 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
16059 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
16060 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7

16061 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
 16062 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
 16063 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
 16064 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
 16065 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
 16066 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
 16067 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
 16068 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
 16069 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
 16070 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
 16071 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
 16072 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
 16073 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
 16074 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
 16075 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
 16076 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
 16077 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
 16078 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
 16079 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
 16080 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
 16081 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
 16082 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
 16083 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 16084 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 16085 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
 16086 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 16087 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 16088 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 16089 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 16090 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 16091 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 16092 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 16093 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 16094 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 16095 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 16096 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 16097 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 16098 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 16099 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 16100 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 16101 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 16102 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 16103 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 16104 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 16105 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 16106 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 16107 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 16108 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 16109 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 16110 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 16111 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 16112 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 16113 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 16114 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 16115 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 16116 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 16117 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle

16118 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 16119 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 16120 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 16121 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 16122 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 16123 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 16124 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 16125 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 16126 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 16127 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 16128 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 16129 % U+24EA CIRCLED DIGIT ZERO  
 16130 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

### 50.2.21 Box Drawing: U+2500 to U+257F

16131 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
 16132 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6  
 16133 % U+25EF LARGE CIRCLE; largecircle  
 16134 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

### 50.2.22 Miscellaneous Symbols: U+2600 to U+26FF

16135 % U+266A EIGHTH NOTE; musicalnote  
 16136 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
 16137 % U+26AD MARRIAGE SYMBOL  
 16138 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
 16139 % U+26AE DIVORCE SYMBOL  
 16140 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

### 50.2.23 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

16141 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 16142 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6  
 16143 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
 16144 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

### 50.2.24 Alphabetic Presentation Forms: U+FB00 to U+FB4F

16145 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 16146 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 16147 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 16148 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

### 50.2.25 Miscellaneous

16149 \DeclareTextCommand{\SS}{PU}{SS}

### 50.2.26 Aliases

Aliases (german.sty)

16150 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}  
 16151 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}  
 16152 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}  
 16153 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}  
 16154 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}  
 16155 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}  
 16156 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}  
 16157 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

Aliases (math names)

16158 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}  
 16159 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}

```

16160 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
16161 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
16162 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}
16163 </puenc>

```

### 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

16164 <*pvnenc>
16165 \DeclareTextCommand{\abreve}{PU}{\81\003}
16166 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
16167 \DeclareTextCommand{\dj}{PU}{\81\021}
16168 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
16169 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
16170 \DeclareTextCommand{\ohorn}{PU}{\81\241}
16171 \DeclareTextCommand{\uhorn}{PU}{\81\260}
16172 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
16173 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
16174 \DeclareTextCommand{\DJ}{PU}{\81\020}
16175 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
16176 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
16177 \DeclareTextCommand{\OHORN}{PU}{\81\240}
16178 \DeclareTextCommand{\UHORN}{PU}{\81\257}
16179 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
16180 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
16181 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
16182 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
16183 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
16184 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
16185 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
16186 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
16187 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
16188 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
16189 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
16190 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
16191 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
16192 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}
16193 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}
16194 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}
16195 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}
16196 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}
16197 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}
16198 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}
16199 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}
16200 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}
16201 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}
16202 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}
16203 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}
16204 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}
16205 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}
16206 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}
16207 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}
16208 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}
16209 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}
16210 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}
16211 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}

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16212 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
16213 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
16214 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
16215 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
16216 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
16217 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
16218 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
16219 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
16220 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
16221 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
16222 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
16223 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
16224 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
16225 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
16226 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
16227 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
16228 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
16229 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
16230 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
16231 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
16232 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
16233 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
16234 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
16235 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
16236 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
16237 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
16238 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
16239 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
16240 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
16241 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
16242 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
16243 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
16244 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
16245 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
16246 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
16247 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
16248 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}  
16249 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}  
16250 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}  
16251 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}  
16252 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}  
16253 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}  
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16255 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}  
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16257 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}  
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16260 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}  
16261 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}  
16262 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}  
16263 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}  
16264 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}  
16265 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}  
16266 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}  
16267 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}  
16268 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}

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16269 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}
16270 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}
16271 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}
16272 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}
16273 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}
16274 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}
16275 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}
16276 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}
16277 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}
16278 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}
16279 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}
16280 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}
16281 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}
16282 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}
16283 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
16284 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
16285 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
16286 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}
16287 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
16288 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
16289 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}
16290 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
16291 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
16292 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
16293 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
16294 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}
16295 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
16296 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
16297 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
16298 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
16299 </puvnenc>

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## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

16300 <*puarenc>
16301 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afi57409;ARABIC LET-
TER HAMZA
16302 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afi57410;ARABIC LET-
TER ALEF WITH MADDA ABOVE
16303 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afi57411;ARABIC LET-
TER ALEF WITH HAMZA ABOVE
16304 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afi57412;ARABIC LET-
TER WAW WITH HAMZA ABOVE
16305 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afi57413;ARABIC LET-
TER ALEF WITH HAMZA BELOW
16306 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afi57414;ARABIC LET-
TER YEH WITH HAMZA ABOVE
16307 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afi57415;ARABIC LETTER ALEF
16308 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afi57416;ARABIC LETTER BEH
16309 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afi57417;ARABIC LETTER TEH MARBUTA
16310 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afi57418;ARABIC LETTER TEH
16311 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afi57419;ARABIC LET-
TER THEH
16312 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afi57420;ARABIC LET-
TER JEEM

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16313 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH  
16314 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH  
16315 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL  
16316 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL  
16317 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH  
16318 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN  
16319 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN  
16320 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LET-  
TER SHEEN  
16321 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD  
16322 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD  
16323 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH  
16324 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH  
16325 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN  
16326 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LET-  
TER GHAIN  
16327 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEL  
16328 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afii57441;ARABIC LETTER FEH  
16329 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF  
16330 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF  
16331 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM  
16332 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LET-  
TER MEEM  
16333 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON  
16334 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH  
16335 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afii57448;ARABIC LETTER WAW  
16336 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afii57449;ARABIC LET-  
TER ALEF MAKSURA  
16337 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afii57450;ARABIC LETTER YEH  
16338 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afii57451;ARABIC FATHATAN  
16339 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afii57452;ARABIC DAMMATAN  
16340 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN  
16341 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afii57454;ARABIC FATHA  
16342 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afii57455;ARABIC DAMMA  
16343 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA  
16344 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA  
16345 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afii57458;ARABIC SUKUN  
  
Farsi  
16346 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afii57506;ARABIC LETTER PEH  
16347 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afii57507;ARABIC LET-  
TER TCHEH  
16348 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afii57508;ARABIC LETTER JEH  
16349 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afii????;FARSI LET-  
TER KAF  
16350 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF  
16351 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afii????;FARSI LET-  
TER YEH  
  
16352 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%  
16353 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ  
  
16354 \puarenc)

## 51 End of file hycheck.tex

16355 (\*check)



```
16356 \typeout{}  
16357 \begin{document}  
16358 \end{document}  
16359 </check>
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