

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

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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 EuroT<sub>E</sub>X 1999.

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

Source code documentation:

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

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

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

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### 3 File hyccheck.tex

Many commands of  $\LaTeX$  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#{%
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\l%
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 \@ifpackagelater{ltxcmds}{2010/10/25}{%}{%
234 \long\def\ltx@LocalAppendToMacro#1#2{%
235 \global\let\LTxcmds@gtemp#1%
236 \ifx\ltx@undefined\LTxcmds@gtemp
237 \global\let\LTxcmds@gtemp\ltx@empty
238 \else
239 \ifx\relax\LTxcmds@gtemp
240 \global\let\LTxcmds@gtemp\ltx@empty
241 \fi
242 \fi
243 \begingroup
244 \toks0\expandafter{\LTxcmds@gtemp#2}%
245 \xdef\LTxcmds@gtemp{\the\toks0}%
246 \endgroup
247 \let#1\LTxcmds@gtemp
248 }%
249 }

250 \RequirePackage{ifpdf}[2006/02/20]
251 \RequirePackage{pdftexcmds}[2009/04/10]
252 \@ifpackagelater{pdftexcmds}{2010/11/04}{%}{%
253 \ltx@ifundefined{pdfdraftmode}{%
254 \let\pdf@ifdraftmode\ltx@secondoftwo
255 }{%
256 \ifpdf
257 \def\pdf@ifdraftmode{%
258 \ifnum\pdfdraftmode=\ltx@one
259 \expandafter\ltx@firstoftwo
260 \else
261 \expandafter\ltx@secondoftwo
262 \fi
263 }%
264 \else
265 \let\pdf@ifdraftmode\ltx@secondoftwo
266 \fi
267 }%
268 }

```

```

269 \RequirePackage{infwarerr}[2010/04/08]
270 \RequirePackage{keyval}[1997/11/10]
271 \RequirePackage{kvsetkeys}[2007/09/29]
272 \RequirePackage{pdfescape}[2007/11/11]
273 \RequirePackage{ifvtex}
274 \RequirePackage{ifxetex}[2006/08/21]
275 \RequirePackage{hycolor}
276 \RequirePackage{letltxmacro}[2008/06/13]
277 \def\Hy@Error{\@PackageError{hyperref}}
278 \def\Hy@Warning{\@PackageWarning{hyperref}}
279 \def\Hy@WarningNoLine{\@PackageWarningNoLine{hyperref}}
280 \def\Hy@Info{\@PackageInfo{hyperref}}
281 \def\Hy@InfoNoLine{\@PackageInfoNoLine{hyperref}}
282 \def\Hy@Message#1{%
283   \GenericWarning{%
284     (hyperref)\@spaces\@spaces\@spaces
285   }{%
286     Package hyperref Message: #1\ltx@gobble
287   }%
288 }

```

## 4.2 Version check

\Hy@VersionChecked

```

289 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

290 \def\Hy@VersionCheck#1{%
291   \begingroup
292   \ltx@ifundefined{ver@hyperref.sty}{%
293     \Hy@Error{%
294       This should not happen!\MessageBreak
295       Missing hyperref version%
296     }\@ehd
297   }{%
298     \ltx@ifundefined{ver@#1}{%
299       \Hy@Error{%
300         This should not happen!\MessageBreak
301         Missing version of '#1'%
302       }\@ehd
303     }{%
304       \def\x##1##2##3{%
305         \expandafter\expandafter\expandafter\Hy@@VersionCheck
306         \expandafter\expandafter\expandafter##2%
307         \csname ver@##3\endcsname##1##1\@nil
308       }%
309       \x{ }\y{hyperref.sty}%
310       \x{ }\z{#1}%
311       \ifx\y\z
312         \else
313           \Hy@Error{%
314             Version mismatch!\MessageBreak
315             * \y: hyperref.sty\MessageBreak
316             * \z: #1%
317           }\@ehd
318         \fi
319     }%

```

```

320 }%
321 \endgroup
322 \chardef\Hy@VersionChecked=1 %
323 }

```

\Hy@@VersionCheck

```

324 \def\Hy@@VersionCheck #1#2 #3 #4\@nil{%
325 \def#1{#2 #3}%
326 }

```

### 4.3 Checks with regular expressions

```

327 \ltx@ifundefined{pdfmatch}{%
328 \def\Hy@Match#1#2#3#4{%
329 }{%
330 \def\Hy@Match#1#2{%
331 \begingroup
332 \edef\~{\ltx@backslashchar\string~}%
333 \edef\.\{\ltx@backslashchar.}%
334 \edef\[\{\ltx@backslashchar[]}%
335 \edef\${\ltx@backslashchar$}%
336 \edef\(\{\ltx@backslashchar(}%
337 \edef\)\{\ltx@backslashchar)}%
338 \edef\|{\ltx@backslashchar|}%
339 \edef\*{\ltx@backslashchar*}%
340 \edef\+{\ltx@backslashchar+}%
341 \edef\?{\ltx@backslashchar?}%
342 \edef\{\{\ltx@backslashchar\ltx@leftbracechar}%
343 \edef\}\{\ltx@rightbracechar}%
344 \edef\\{\ltx@backslashchar\ltx@backslashchar}%
345 \let\ \ltx@space
346 \ifcase\pdfmatch{#2}{#1} %
347 \endgroup
348 \expandafter\ltx@secondoftwo
349 \or
350 \endgroup
351 \expandafter\ltx@firstoftwo
352 \else
353 \Hy@Warning{%
354 Internal error: Wrong pattern!\MessageBreak
355 --> #2 <--\MessageBreak
356 Pattern check ignored%
357 }%
358 \endgroup
359 \expandafter\ltx@firstoftwo
360 \fi
361 }%
362 \ltx@ifpackagelater{ltxcmds}{2010/09/11}{}{%
363 \begingroup
364 \lccode'0='\{\relax
365 \lowercase{\endgroup
366 \def\ltx@leftbracechar{0}%
367 }%
368 \begingroup
369 \lccode'0='\}\relax
370 \lowercase{\endgroup
371 \def\ltx@rightbracechar{0}%

```

```

372 }%
373 }%
374 }

```

## 4.4 Compatibility with format dumps

`\AfterBeginDocument` For use with pre-compiled formats, created using the `ldump` package, there needs to be 2 hooks for adding material delayed until `\begin{document}`. These are called `\AfterBeginDocument` and `\AtBeginDocument`. If `ldump` is not loaded, then a single hook suffices for normal  $\text{\LaTeX}$  processing.

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

```

375 \ifundefined{AfterBeginDocument}{%
376   \def\AfterBeginDocument{\AtBeginDocument}%
377 }{}%

```

`\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.

```

378 \def\Hy@AtBeginDocument{%
379   \ltx@LocalAppendToMacro\Hy@AtBeginDocumentHook
380 }

```

`\Hy@AtEndOfPackage`

```

381 \def\Hy@AtEndOfPackage{%
382   \ltx@LocalAppendToMacro\Hy@AtEndOfPackageHook
383 }

```

`\Hy@AtBeginDocumentHook`

```

384 \def\Hy@AtBeginDocumentHook{}

```

`\Hy@AtEndOfPackageHook`

```

385 \def\Hy@AtEndOfPackageHook{}

```

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

```

386 \AtEndOfPackage{%
387   \Hy@AtEndOfPackageHook
388   \let\Hy@AtEndOfPackageHook\@undefined
389   \AfterBeginDocument{%
390     \Hy@AtBeginDocumentHook}%
391   \let\Hy@AtBeginDocumentHook\@undefined
392 }%
393 }

```

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

```

394 \RequirePackage{kvoptions}[2009/07/21]

```

## 4.5 Switches

```

395 \newif\ifHy@typexml
396 \newif\ifHy@activeanchor
397 \newif\ifHy@backref
398 \newif\ifHy@bookmarks
399 \newif\ifHy@bookmarksnumbered

```

```

400 \newif\ifHy@bookmarksopen
401 \newif\ifHy@breaklinks
402 \newif\ifHy@centerwindow
403 \newif\ifHy@CJKbookmarks
404 \newif\ifHy@colorlinks
405 \newif\ifHy@draft
406 \let\Hy@finaltrue\Hy@draftfalse
407 \let\Hy@finalfalse\Hy@drafttrue
408 \newif\ifHy@escapeform
409 \newif\ifHy@figures
410 \newif\ifHy@fitwindow
411 \newif\ifHy@frenchlinks
412 \newif\ifHy@hyperfootnotes
413 \newif\ifHy@hyperindex
414 \newif\ifHy@hypertextnames
415 \newif\ifHy@implicit
416 \newif\ifHy@linktocpage
417 \newif\ifHy@localanchorname
418 \newif\ifHy@menubar
419 \newif\ifHy@naturalnames
420 \newif\ifHy@nesting
421 \newif\ifHy@newwindowset
422 \newif\ifHy@newwindow
423 \newif\ifHy@ocgcolorlinks
424 \newif\ifHy@pageanchor
425 \newif\ifHy@pagelabels
426 \newif\ifHy@pdfpagehidden
427 \newif\ifHy@pdfstring
428 \newif\ifHy@plainpages
429 \newif\ifHy@psize
430 \newif\ifHy@raiselinks
431 \newif\ifHy@seminarslides
432 \newif\ifHy@setpagesize
433 \newif\ifHy@texht
434 \newif\ifHy@toolbar
435 \newif\ifHy@unicode
436 \newif\ifHy@usetitle
437 \newif\ifHy@verbose
438 \newif\ifHy@windowui
439 \newif\ifHy@displaydoctitle
440 \newif\ifHy@pdfa

```

Defaults for the switches are now set.

```

441 \Hy@backreffalse
442 \Hy@bookmarksnumberedfalse
443 \Hy@bookmarksopenfalse
444 \Hy@bookmarkstrue
445 \Hy@breaklinksfalse
446 \Hy@centerwindowfalse
447 \Hy@CJKbookmarksfalse
448 \Hy@escapeformfalse
449 \Hy@figuresfalse
450 \Hy@fitwindowfalse
451 \Hy@hyperfootnotesttrue
452 \Hy@hyperindextrue
453 \Hy@hypertextnamestrue
454 \Hy@implicittrue
455 \Hy@linktocpagefalse

```



```

456 \Hy@localanchornamefalse
457 \Hy@menubartrue
458 \Hy@naturalnamesfalse
459 \Hy@nestingfalse
460 \Hy@newwindowsetfalse
461 \Hy@newwindowfalse
462 \Hy@pageanchortrue
463 \Hy@pagelabelstrue
464 \Hy@pdfpagehiddenfalse
465 \Hy@pdfstringfalse
466 \Hy@plainpagesfalse
467 \Hy@raiselinksfalse
468 \Hy@setpagesizetrue
469 \Hy@texhtfalse
470 \Hy@toolbartrue
471 \Hy@typexmlfalse
472 \Hy@unicodedefalse
473 \Hy@usetitlefalse
474 \Hy@verbosefalse
475 \Hy>windowuitrue
476 \Hy@displaydoctitlefalse
477 \Hy@pdfafalse

```

## 5 Common help macros

\Hy@StepCount

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

\Hy@GlobalStepCount

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

```

480 \newdimen\@linkdim
481 \let\Hy@driver\@empty
482 \let\MaybeStopEarly\relax
483 \newcount\Hy@linkcounter
484 \newcount\Hy@pagecounter
485 \Hy@linkcounter0
486 \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.

```

487 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
488 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

489 \let\Hy@ReturnEnd\@empty
490 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
491 \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.

```

492 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
493 \def\Hy@safe@activesfalse{\csname @safe@activesfalse\endcsname}

```

### 5.3 Coordinate transformations

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

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

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

- It cannot be used inside `\usepackage`, because LaTeX expands the options before package `hyperref` is loaded and `\hypercalcbp` is defined.
- With e-TeX extensions an expandable implementation is very easy; `\hypercalcbp` can be used everywhere and is expanded at use.
- Without e-TeX's features `\hypercalcbp` cannot be implemented expandable (practically) and have to be supported by `\hypercalcbpdef`. Limitations:
  - Works only in options that use `\hypercalcbpdef` (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 \hypercalcbp{\paperheight-\topmargin-1in
    -\headheight-\headsep}
}
```

`\hypercalcbp`

```
494 \begingroup\expandafter\expandafter\expandafter\endgroup
495 \expandafter\ifx\csname dimexpr\endcsname\relax
496   \def\hypercalcbpdef#1#2{%
497     \begingroup
498       \toks@{}%
499       \HyCal@scan#2\hypercalcbp\@nil
500     \expandafter\endgroup
501     \expandafter\def\expandafter#1\expandafter{\the\toks@}%
502   }%
503 \def\HyCal@scan#1\hypercalcbp#2\@nil{%
504   \toks@\expandafter{\the\toks@ #1}%
505   \ifx\#2\%
506     \else
507       \Hy@ReturnAfterFi{%
508         \HyCal@do#2\@nil
509       }%
510     \fi
511   }%
512 \def\HyCal@do#1#2\@nil{%
513   \ifpackageloaded{calc}{}%
514   \Hy@Warning{%
515     For calculations \string\hypercalcbp\space needs\MessageBreak
516     package calc or e-TeX%
517   }%
518 }%
519 \setlength{\dimen@}{#1}%
```

```

520 \setlength{\dimen@}{0.99626401\dimen@}%
521 \edef\x{%
522   \toks@{%
523     \the\toks@
524     \strip@pt\dimen@
525   }%
526   }\x
527   \HyCal@scan#2\@nil
528 }%
529 \else
530 \def\hypercalcbp#1{%
531   \strip@pt\dimexpr 0.99626401\dimexpr #1\relax\relax
532 }%
533 \def\hypercalcbpdef{\def}%
534 \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  $\TeX$ , because the tokens have only catcodes 10 until 12.

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

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

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

```
536 \begingroup
```

### 6.2.1 Preprocessing

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

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

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

```
537 \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.

```
538 \edef\0{\string\0}%
```

```
539 \edef\1{\string\1}%
```

```
540 \edef\2{\string\2}%
```

```
541 \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.

```
542 \ifHy@unicode
```

```
543 \edef\8{\string\8}%
```

```
544 \edef\9{\string\9}%
```

```
545 \fontencoding{PU}%
```

```
546 \HyPsd@UTFviii
```

```
547 \def\ifpdfstringunicode##1##2{##1}%
```

```
548 \else
```

```
549 \fontencoding{PD1}%
```

```
550 \def\ifpdfstringunicode##1##2{##2}%
```

```
551 \fi
```

```
552 \let\utf@viii@undeferr\HyPsd@utf@viii@undeferr
```

```
553 \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).

```
554 \let\@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).

```
555 \let\@inmathwarn\HyPsd@inmathwarn
```

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

```
556 \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.

```
557 \let\{\textbraceleft
558 \let\}\textbraceright
559 \let\\\textbackslash
560 \let\#\textnumbersign
561 \let\$\textdollar
562 \let\%\textpercent
563 \let\&\textampersand
564 % \let\~\textasciitilde
565 \let\_ \textunderscore
566 \let\P\textparagraph
567 \let\ldots\textellipsis
568 \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.

```
569 \def\\\{\pdfstringdefWarn\\}%
570 \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.

```
571 \def\TeX{\TeX}%
572 \def\LaTeX{\LaTeX}%
573 \def\LaTeXe{%
```

```

574 \LaTeX2%
575 \ifHy@unicode\textepsilon\else e\fi
576 }%
577 \def\TeX{%
578 \ifHy@unicode\textepsilon\else e\fi
579 -\TeX%
580 }%
581 \def\SliTeX{Sli\TeX}%
582 \def\MF{Metafont}%
583 \def\MP{Metapost}%

```

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

```

584 \let\fontencoding\@gobble
585 \let\fontfamily\@gobble
586 \let\fontseries\@gobble
587 \let\fontshape\@gobble
588 \let\fontsize\@gobbletwo
589 \let\selectfont\@empty
590 \let\usefont\@gobblefour
591 \let\emph\@firstofone
592 \let\textnormal\@firstofone
593 \let\textrm\@firstofone
594 \let\textsf\@firstofone
595 \let\texttt\@firstofone
596 \let\textbf\@firstofone
597 \let\textmd\@firstofone
598 \let\textit\@firstofone
599 \let\textsc\@firstofone
600 \let\textsl\@firstofone
601 \let\textup\@firstofone
602 \let\normalfont\@empty
603 \let\rmfamily\@empty
604 \let\sfamily\@empty
605 \let\ttfamily\@empty
606 \let\bfseries\@empty
607 \let\mdseries\@empty
608 \let\itshape\@empty
609 \let\scshape\@empty
610 \let\slshape\@empty
611 \let\upshape\@empty
612 \let\em\@empty
613 \let\rm\@empty
614 \let\Huge\@empty
615 \let\LARGE\@empty
616 \let\Large\@empty
617 \let\footnotesize\@empty
618 \let\huge\@empty
619 \let\large\@empty
620 \let\normalsize\@empty
621 \let\scriptsize\@empty
622 \let\small\@empty
623 \let\tiny\@empty
624 \let\mathversion\@gobble
625 \let\phantom\@gobble
626 \let\vphantom\@gobble
627 \let\hphantom\@gobble

```

### Environments.

```
628 \def\begin#1{\csname#1\endcsname}%
629 \def\end#1{\csname end#1\endcsname}%
```

### Package color.

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

### Upper- and lowercase.

```
631 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
632 \def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}%
```

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

```
633 \let\foreignlanguage\@secondoftwo
634 \let\textlatin\@firstofone
635 \ltx@ifundefined{language@group}{-}{%
636   \csname HyPsd@babel@language@group\endcsname
637 }%
638 \HyPsd@GreekPatch
639 \HyPsd@SpanishPatch
640 \HyPsd@RussianPatch
641 \HyPsd@BabelPatch
642 \let\@safe@activestrue\relax
643 \let\@safe@activesfalse\relax
```

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

```
644 \let\cyr\relax
```

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

```
645 \let\es@roman\@Roman
```

### Package german.

```
646 \let\glqq\textglqq
647 \let\grqq\textgrqq
648 \let\glq\textglq
649 \let\grq\textgrq
650 \let\flqq\textflqq
651 \let\frqq\textfrqq
652 \let\flq\textflq
653 \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}
```

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

### AMS classes.

```
655 \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.

```
656 \let\hspace\HyPsd@hspace
```

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

```
657 \let\label\@gobble
658 \let\index\@gobble
659 \let\glossary\@gobble
660 \let\href\HyPsd@href
661 \let\@mkboth\@gobbletwo
```

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

```
662 \let\ref\HyPsd@ref
663 \let\pageref\HyPsd@pageref
664 \let\nameref\HyPsd@nameref
665 \let\autoref\HyPsd@autoref
```

**Miscellaneous commands.**

```
666 \let\leavevmode\@empty
667 \let\mbox\@empty
```

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

```
668 \def\halign{\pdfstringdef\Warn\halign\@gobble}%
669 \let\ignorespaces\HyPsd@ignorespaces
670 \let\Hy@SectionAnchorHref\@gobble
```

**Patch for `cjk` bookmarks.**

```
671 \HyPsd@CJKhook
```

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

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

```
672 \Hy@pdfstringtrue
673 \pdfstringdefPreHook
```

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

```
674 \HyPsd@LetUnexpandableSpace\space
675 \HyPsd@LetUnexpandableSpace\%
676 \HyPsd@LetUnexpandableSpace~%
677 \HyPsd@LetUnexpandableSpace\nobreakspace
```



### Package xspace.

```
678 \ltx@ifundefined{@xspace}{%
679 \let\xspace\HyPsd@ITALCORR
680 }{%
681 \let\xspace\HyPsd@XSPACE
682 }%
683 \let\/\HyPsd@ITALCORR
684 \let\bgroup\/%
685 \let\egroup\/%
```

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

```
686 \let\discretionary\@gobbletwo
\@ifstar is defined in LATEX as follows:
```

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

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

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

```
687 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
688 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
689 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
690 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'args':

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

### 6.2.2 Expansion

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

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

**\csname:** First the string is expanded within a \csname and \endcsname. Then the command name is converted to characters with catcode 12 by \string and the first escape character removed by \@gobble. This method has the great *advantage* that stomach tokens that aren't allowed in PDF strings are detected by T<sub>E</sub>X and reported as errors in order to force the user to write correct things. So he gets no wrong results by forgetting the proofreading of his text. But the *disadvantage* is that old wrong code cannot be 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  $\TeX$ , 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).

```
692 \begingroup
693 \let\GenericError\@gobblefour
694 \let\GenericWarning\@gobbletwo
695 \let\GenericInfo\@gobbletwo
```

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

```
696 \ifx\nofrenchguillemets\@undefined
697 \else
698 \nofrenchguillemets
699 \fi
```

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

```
700 \let\Hy@temp\xdef
701 \let\def\HyPsd@DefCommand
702 \let\gdef\HyPsd@DefCommand
703 \let\edef\HyPsd@DefCommand
704 \let\xdef\HyPsd@DefCommand
705 \let\futurelet\HyPsd@LetCommand
706 \let\let\HyPsd@LetCommand
707 \Hy@temp#1{#2}%
708 \endgroup
```

### 6.2.3 Postprocessing

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

```
709 \ifx#1\@empty
710 \else
```

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

- $\TeX$  does not accept a space as an undelimited argument, it cancels space tokens while looking for an undelimited argument. Therefore we must protect the spaces now.
- An argument can be a single token or a group of many tokens. And within curly braces tokens aren't find by  $\TeX$ 's argument scanning process. Third curly braces as grouping characters cannot be expanded further, so they don't vanish by the

string expansion above. So these characters with catcode 1 and 2 are removed in the following and replaced by an marker for the xspace support.

- $\TeX$  silently removes the outmost pair of braces of an argument. To prevent this on unwanted places, in the following the character | is appended to the string to make an outer brace to an inner one.

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

```

711 \HyPsd@ProtectSpaces#1%
712 \let\HyPsd@String\@empty
713 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
714 \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.

```

715 \let\HyPsd@SPACEOPTI\relax
716 {%
717 \let\HyPsd@String\@empty
718 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
719 \global\let#1\HyPsd@String
720}%
721 \expandafter\HyPsd@RemoveMask\expandafter
722 |\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.

```

723 \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
724 \let\HyPsd@String\@empty
725 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
726 \global\let#1\HyPsd@String

```

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

```
727 \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.

```
728 \ifHy@unicode
729 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
730 \HyPsd@SPACEOPTI#1%
731 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
732 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
733 {\HyPsd@SPACEOPTI\80\273}#1%
734 \else
735 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
736 \expandafter\HyPsd@Subst\expandafter{%
737 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
738 \string\273}\HyPsd@SPACEOPTI\273}#1%
739 \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.

```
740 \ifHy@unicode
741 \HyPsd@StringSubst{\)}{\80\051}#1%
742 \HyPsd@Subst){\80\051}#1%
743 \let\HyPsd@empty\relax
744 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
745 {\HyPsd@empty\80\051}#1%
746 \else
747 \HyPsd@StringSubst{\)}{\051}#1%
748 \HyPsd@Subst){\051}#1%
749 \let\HyPsd@empty\relax
750 \HyPsd@StringSubst{\051}\HyPsd@empty\string\)}#1%
751 \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`.

```

752 \expandafter\HyPsd@Subst\expandafter{\}\HyPsd@empty#1%
753 \ltx@ifundefined{@xspace}{%
754 }{%
755 \let\HyPsd@xspace\relax
756 \expandafter\HyPsd@Subst\expandafter
757 {\HyPsd@XSPACE}\HyPsd@xspace#1%
758 \let\HyPsd@xspace\HyPsd@doxspace
759 }%
760 \xdef#1{#1\HyPsd@empty}%

```

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

Since newer AcrobatReader versions now show the `en-` and `emdash` in a correct way (AR7/Linux, AR8/Linux), the substitution code for them is enabled starting with version 6.781.

```

761 \HyPsd@Subst{---}\textemdash#1%
762 \HyPsd@Subst{--}\textendash#1%
763 % \HyPsd@Subst{fi}\textfi#1%
764 % \HyPsd@Subst{fl}\textfl#1%
765 \HyPsd@Subst{!'}\textexclamdown#1%
766 \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

767 \let\HyPsd@empty\@empty

```

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

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

```

768 \ifHy@unicode
769 \HyPsd@StringSubst{\textparenleft#1%
770 \HyPsd@Subst(\textparenleft#1%
771 \else
772 \HyPsd@StringSubst({\050}#1%
773 \HyPsd@Subst({\050}#1%
774 \HyPsd@StringSubst{\050}{\string\{ }#1%
775 \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.

```

776 \ifHy@unicode
777 \edef\HyPsd@SPACEOPTI{\80\040}%
778 \else

```

```

779 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
780 \fi
781 \xdef#1{#1\@empty}%
782 \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.

```

783 \endgroup
784 \begingroup
785 \ifHy@unicode
786 \HyPsd@ConvertToUnicode#1%

```

**Try conversion back to PDFDocEncoding.**

```

787 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
788 \ltx@ifundefined{StringEncodingConvertTest}{%
789 }{%
790 \EdefUnescapeString\HyPsd@temp#1%
791 \ifxetex
792 \let\HyPsd@UnescapedString\HyPsd@temp
793 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
794 {utf16be}{ascii-print}{%
795 \EdefEscapeString\HyPsd@temp\HyPsd@temp
796 \global\let#1\HyPsd@temp
797 \HyPsd@EscapeTeX#1%
798 \Hy@unicodefalse
799 }{%
800 \HyPsd@ToBigChars#1%
801 }%
802 \else
803 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
804 {utf16be}{pdfdoc}{%
805 \EdefEscapeString\HyPsd@temp\HyPsd@temp
806 \global\let#1\HyPsd@temp
807 \HyPsd@EscapeTeX#1%
808 \Hy@unicodefalse
809 }{%}%
810 \fi
811 }%
812 \fi
813 \fi
814 \HyPsd@XeTeXBigCharsfalse

```

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

```

815 \pdfstringdefPostHook#1%
816 \endgroup
817 }

```

\Hy@pdfstringdef

```

818 \def\Hy@pdfstringdef#1#2{%
819 \pdfstringdef\Hy@gtemp{#2}%
820 \let#1\Hy@gtemp
821 }

```

## 6.3 Encodings

### 6.3.1 XeTeX

```
822 \edef\Hy@temp{\catcode0=\the\catcode0\relax}
823 \catcode\z@=12 %
824 \ifxetex
825   \expandafter\@firstofone
826 \else
827   \let\HyPsd@XeTeXBigCharstrue\@empty
828   \let\HyPsd@XeTeXBigCharsfalse\@empty
829   \expandafter\@gobble
830 \fi
831 {%
832   \newif\ifHyPsd@XeTeXBigChars
833   \def\HyPsd@XeTeXBigCharsfalse{%
834     \global\let\ifHyPsd@XeTeXBigChars\iffalse
835   }%
836   \def\HyPsd@XeTeXBigCharstrue{%
837     \global\let\ifHyPsd@XeTeXBigChars\iftrue
838   }%
839   \def\HyPsd@ToBigChars#1{%
840     \ifHyPsd@XeTeXBigChars
841       \EdefEscapeHex\HyPsd@UnescapedString{%
842         \expandafter\@gobbletwo\HyPsd@UnescapedString
843       }%
844       \begingroup
845         \toks@{%
846           \escapechar=92\relax
847           \let\x\HyPsd@ToBigChar
848           \expandafter\HyPsd@ToBigChar\HyPsd@UnescapedString
849           \relax\relax\relax\relax\relax\relax\relax
850         \edef\x{%
851           \endgroup
852           \gdef\noexpand#1{\the\toks@}%
853         }%
854         \x
855       \fi
856     }%
857   \def\HyPsd@ToBigChar#1#2#3#4{%
858     \ifx\relax#1\relax
859       \let\x\relax
860     \else
861       \count@=#1#2#3#4\relax
862       \let\y\@empty
863       \lcode\z@=\count@
864       \ifnum\count@=40 % (
865         \let\y\@backslashchar
866       \else
867         \ifnum\count@=41 % )
868         \let\y\@backslashchar
869       \else
870         \ifnum\count@=92 % backslash
871         \let\y\@backslashchar
872       \else
873         \ifnum\count@=10 % newline
874         \edef\y##1{\string\n}%
875       \else
```

```

876         \ifnum\count@=13 % carriage return
877         \edef\y###1{\string\r}%
878         \fi
879     \fi
880 \fi
881 \fi
882 \fi
883 \lowercase{%
884     \toks@\expandafter{%
885         \the\expandafter\toks@
886         \y
887         ^^@%
888     }%
889 }%
890 \fi
891 \x
892 }%
893 }
894 \Hy@temp

```

### 6.3.2 Workaround for package linguex

```

895 \ifpackageloaded{linguex}{%
896     \let\HyLinguex@OrgB\b
897     \let\HyLinguex@OrgC\c
898     \let\HyLinguex@OrgD\d
899     \def\HyLinguex@Restore{%
900         \let\b\HyLinguex@OrgB
901         \let\c\HyLinguex@OrgC
902         \let\d\HyLinguex@OrgD
903     }%
904     \Hy@AtEndOfPackage{%
905         \pdfstringdefDisableCommands{%
906             \ltx@ifundefined{oldb}{-}{\let\b\oldb}%
907             \ltx@ifundefined{oldc}{-}{\let\c\oldc}%
908             \ltx@ifundefined{oldd}{-}{\let\d\oldd}%
909         }%
910     }%
911 }{%
912     \let\HyLinguex@Restore\relax
913 }%

```

### 6.3.3 PD1 encoding

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

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

```

914 \ifundefined{T@PD1}{%
915     \input{pd1enc.def}%
916     \HyLinguex@Restore
917 }{}
918 \DeclareFontFamily{PD1}{pdf}{}
919 \DeclareFontShape{PD1}{pdf}{m}{n}{<-> cmr10 }{}
920 \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`.

```

921 \def\HyPsd@InitUnicode{%
922   \ifundefined{T@PU}{%
923     \input{puenc.def}%
924     \HyLinguex@Restore
925   }{}%
926   \DeclareFontFamily{PU}{pdf}{}%
927   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
928   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
929   \let\HyPsd@InitUnicode\relax
930 }
```

## 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.

```

931 \def\texorpdfstring{%
932   \ifHy@pdfstring
933     \expandafter\@secondoftwo
934   \else
935     \expandafter\@firstoftwo
936   \fi
937 }
```

### 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`.

```

938 \@ifundefined{pdfstringdefPreHook}{%
939   \let\pdfstringdefPreHook\@empty
940 }{}
941 \@ifundefined{pdfstringdefPostHook}{%
942   \let\pdfstringdefPostHook\@gobble
943 }{}

```

`\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  $\text{\LaTeX}$  commands like `@gobble` or `@firstofone`.

```
944 \def\pdfstringdefDisableCommands{%
945   \begingroup
946   \makeatletter
947   \HyPsd@DisableCommands
948 }
```

`\HyPsd@DisableCommands`

```
949 \long\def\HyPsd@DisableCommands#1{%
950   \toks0=\expandafter{\pdfstringdefPreHook}%
951   \toks1={#1}%
952   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
953   \endgroup
954 }
```

`\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`.

```
955 \def\pdfstringdefWarn#1{%
956   \expandafter\noexpand\csname<>-string#1\endcsname
957 }
```

## 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.

```
958 \begingroup
959   \catcode0=12 %
960   \def\x{\endgroup
961     \def\HyPsd@ignorespaces{%
962       \romannumeral\expandafter'\expandafter^^@%
963       \romannumeral'^^@%
964     }%
965   }%
966   \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`.

```

967 \def\HyPsd@BabelPatch{%
968   \let\HyOrg@languageshorthands\languageshorthands
969   \let\languageshorthands\HyPsd@LanguageShorthands
970 }
971 \begingroup\expandafter\expandafter\expandafter\endgroup
972 \expandafter\ifx\csname pdf@strcmp\endcsname\relax
973   \let\HyPsd@langshort@system\@empty
974   \def\HyPsd@LanguageShorthands#1{%
975     \expandafter\ifx\csname HyPsd@langshort@#1\endcsname
976       \HyPsd@langshort@system
977     \expandafter\@gobble
978   \else
979     \expandafter\@firstofone
980   \fi
981   {%
982     \HyOrg@languageshorthands{#1}%
983   }%
984 }%
985 \else
986   \def\HyPsd@LanguageShorthands#1{%
987     \ifnum\pdf@strcmp{#1}{system}=\z@
988       \expandafter\@gobble
989     \else
990       \expandafter\@firstofone
991     \fi
992     {%
993       \HyOrg@languageshorthands{#1}%
994     }%
995   }%
996 \fi
997 \def\Hy@temp{%
998   \@ifpackageloaded{babel}{%
999     \@ifpackagelater{babel}{2008/03/16}{%
1000       \let\Hy@temp\@empty
1001     }{%
1002       \def\HyPsd@BabelPatch{%
1003         \let\HyOrg@languageshorthands\languageshorthands
1004       }%
1005     }%
1006   }{}%
1007 }
1008 \Hy@temp
1009 \expandafter\Hy@AtBeginDocument\expandafter{\Hy@temp}
1010 \newif\ifHy@next

```

Nothing to do for english.

```

1011 \ltx@ifundefined{danish@sh@"@sel}{-}{%
1012   \def\HyPsd@babel@danish{%
1013     \declare@shorthand{danish}{-}{-}%
1014     \declare@shorthand{danish}{-}{-}%
1015   }%
1016 }
1017 \ltx@ifundefined{dutch@sh@"@sel}{-}{%

```

```

1018 \def\HyPsd@babel@dutch{%
1019   \declare@shorthand{dutch}{"}{|}%
1020   \declare@shorthand{dutch}{"}~{-}%
1021 }%
1022 }
1023 \ltx@ifundefined{finnish@sh@}@sel}{|}%
1024 \def\HyPsd@babel@finnish{%
1025   \declare@shorthand{finnish}{"}{|}%
1026 }%
1027 }
1028 \ltx@ifundefined{french@sh@}@sel}{|}%
1029 \def\HyPsd@babel@frenchb{%
1030   \def\guill@spacing{ }%
1031 }%
1032 }
1033 \ltx@ifundefined{german@sh@}@sel}{|}%
1034 \def\HyPsd@babel@german{%
1035   \declare@shorthand{german}{"}{|}%
1036   \declare@shorthand{german}{"}{|}%
1037   \declare@shorthand{german}{"}~{-}%
1038 }%
1039 }
1040 \ltx@ifundefined{macedonian@sh@}@sel}{|}%
1041 \def\HyPsd@babel@macedonian{%
1042   \declare@shorthand{macedonian}{"}{|}%
1043   \declare@shorthand{macedonian}{"}~{-}%
1044 }%
1045 }{}
1046 \ltx@ifundefined{ngerman@sh@}@sel}{|}%
1047 \def\HyPsd@babel@ngerman{%
1048   \declare@shorthand{ngerman}{"}{|}%
1049   \declare@shorthand{ngerman}{"}~{-}%
1050 }%
1051 }
1052 \ltx@ifundefined{portuges@sh@}@sel}{|}%
1053 \def\HyPsd@babel@portuges{%
1054   \declare@shorthand{portuges}{"}{|}%
1055 }%
1056 }
1057 \ltx@ifundefined{russian@sh@}@sel}{|}%
1058 \def\HyPsd@babel@russian{%
1059   \declare@shorthand{russian}{"}{|}%
1060   \declare@shorthand{russian}{"}~{-}%
1061 }%
1062 }
1063 \ltx@ifundefined{slovene@sh@}@sel}{|}%
1064 \def\HyPsd@babel@slovene{%
1065   \declare@shorthand{slovene}{"}{|}%
1066 }%
1067 }

```

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

```

1068 \ltx@ifundefined{spanish@sh@}>@sel}{|}%
1069 \def\HyPsd@babel@spanish{%
1070   \declare@shorthand{spanish}{<<}{\guillemotleft}%
1071   \declare@shorthand{spanish}{>>}{\guillemotright}%
1072   \declare@shorthand{spanish}{"}=}{|}%
1073   \declare@shorthand{spanish}{"}~}{-}%

```

```

1074 \declare@shorthand{spanish}{!}{\textexclamdown}%
1075 \declare@shorthand{spanish}{?}{\textquestiondown}%
1076 }%
1077 }
1078 \ltx@ifundefined{swedish@sh@"@sel}{-}{%
1079 \def\HyPsd@babel@swedish{%
1080 \declare@shorthand{swedish}{"}{|}{}%
1081 \declare@shorthand{swedish}{~}{-}%
1082 }%
1083 }
1084 \ltx@ifundefined{ukrainian@sh@"@sel}{-}{%
1085 \def\HyPsd@babel@ukrainian{%
1086 \declare@shorthand{ukrainian}{"}{|}{}%
1087 \declare@shorthand{ukrainian}{~}{-}%
1088 }%
1089 }
1090 \ltx@ifundefined{usorbian@sh@"@sel}{-}{%
1091 \def\HyPsd@babel@usorbian{%
1092 \declare@shorthand{usorbian}{f}{f}%
1093 \declare@shorthand{usorbian}{"}{|}{}%
1094 }%
1095 }
1096 \ltx@ifundefined{greek@sh@\string~@sel}{-}{%
1097 \let\HyPsd@GreekPatch\@empty
1098 }{%
1099 \def\HyPsd@GreekPatch{%
1100 \let\greeknumeral\HyPsd@greeknumeral
1101 \let\Greeknumeral\HyPsd@Greeknumeral
1102 }%
1103 }
1104 \def\HyPsd@greeknumeral#1{%
1105 \HyPsd@GreekNum\@firstoftwo{#1}%
1106 }
1107 \def\HyPsd@Greeknumeral#1{%
1108 \HyPsd@GreekNum\@secondoftwo{#1}%
1109 }
1110 \def\HyPsd@GreekNum#1#2{%
1111 \ifHy@unicode
1112 \ifnum#2<\@ne
1113 \@arabic{#2}%
1114 \else
1115 \ifnum#2<1000000 %
1116 \HyPsd@@GreekNum#1{#2}%
1117 \else
1118 \@arabic{#2}%
1119 \fi
1120 \fi
1121 \else
1122 \@arabic{#2}%
1123 \fi
1124 }
1125 \def\HyPsd@@GreekNum#1#2{%
1126 \ifnum#2<\@m
1127 \ifnum#2<10 %
1128 \expandafter\HyPsd@GreekNumI
1129 \expandafter\@gobble\expandafter#1\number#2%
1130 \else

```

```

1131 \ifnum#2<100 %
1132 \expandafter\HyPsd@GreekNumII
1133 \expandafter\@gobble\expandafter#1\number#2%
1134 \else
1135 \expandafter\HyPsd@GreekNumIII
1136 \expandafter\@gobble\expandafter#1\number#2%
1137 \fi
1138 \fi
1139 \ifnum#2>\z@
1140 \textnumeralsigngreek
1141 \fi
1142 \else
1143 \ifnum#2<\@M
1144 \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
1145 \else
1146 \ifnum#2<100000 %
1147 \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
1148 \else
1149 \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
1150 \fi
1151 \fi
1152 \fi
1153 }
1154 \def\HyPsd@GreekNumI#1#2#3{%
1155 #1{%
1156 \ifnum#3>\z@
1157 \textnumeralsignlowergreek
1158 \fi
1159 }%
1160 \expandafter#2%
1161 \ifcase#3 %
1162 {}{}%
1163 \or\textalpha\textAlpha
1164 \or\textbeta\textBeta
1165 \or\textgamma\textGamma
1166 \or\textdelta\textDelta
1167 \or\textepsilon\textEpsilon
1168 \or\textstigmagreek\textStigmagreek
1169 \or\textzeta\textZeta
1170 \or\texteta\textEta
1171 \or\texttheta\textTheta
1172 \else
1173 {}{}%
1174 \fi
1175 }
1176 \def\HyPsd@GreekNumII#1#2#3#4{%
1177 #1{%
1178 \ifnum#3>\z@
1179 \textnumeralsignlowergreek
1180 \fi
1181 }%
1182 \expandafter#2%
1183 \ifcase#3 %
1184 {}{}%
1185 \or\textiota\textIota
1186 \or\textkappa\textKappa
1187 \or\textlambda\textLambda

```

```

1188 \or\textmu\textMu
1189 \or\textnu\textNu
1190 \or\textxi\textXi
1191 \or\textomicron\textOmicron
1192 \or\textpi\textPi
1193 \or\textkoppagreek\textKoppagreek
1194 \else
1195   {}{}%
1196 \fi
1197 \HyPsd@GreekNumI#1#2#4%
1198 }
1199 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
1200   #1{%
1201     \ifnum#3>\z@
1202       \textnumeralsignlowergreek
1203     \fi
1204   }%
1205   \expandafter#2%
1206   \ifcase#3 %
1207     {}{}%
1208   \or\extrho\textRho
1209   \or\textsigma\textSigma
1210   \or\texttau\textTau
1211   \or\textupsilon\textUpsilon
1212   \or\textphi\textPhi
1213   \or\textchi\textChi
1214   \or\textpsi\textPsi
1215   \or\textomega\textOmega
1216   \or\textsampigreek\textSampigreek
1217   \else
1218     {}{}%
1219   \fi
1220   \HyPsd@GreekNumII#1#2#4#5%
1221 }
1222 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
1223   \HyPsd@GreekNumI\@firstofone#1#2%
1224   \HyPsd@@GreekNum#1{#3#4#5}%
1225 }
1226 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
1227   \HyPsd@GreekNumII\@firstofone#1#2#3%
1228   \HyPsd@@GreekNum#1{#4#5#6}%
1229 }
1230 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
1231   \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
1232   \HyPsd@@GreekNum#1{#5#6#7}%
1233 }
1234 \def\HyPsd@SpanishPatch{%
1235   \ltx@ifundefined{es@save@dot}{%
1236     }{%
1237       \let\es@save@dot
1238     }%
1239 }

```

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

```

1240 \def\HyPsd@RussianPatch{%
1241   \ltx@ifundefined{russian@sh@"@-@}{%

```

```

1242 }{%
1243   \@namedef{russian@sh@"@-@}{-}%
1244 }%
1245 }

```

### 6.5.3 CJK patch

```

1246 \RequirePackage{intcalc}[2007/09/27]

```

\HyPsd@CJKhook

```

1247 \def\HyPsd@CJKhook{%
1248   \ltx@ifpackageloaded{CJK}{%
1249     \let\CJK@kern\relax
1250     \let\CJKkern\relax
1251     \let\CJK@CJK\relax
1252     \ifHy@CJKbookmarks
1253       \HyPsd@CJKhook@bookmarks
1254     \fi
1255     \HyPsd@CJKhook@unicode
1256   }{}%
1257 }

```

### 6.5.4 CJK bookmarks

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

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

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

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

```

1258 \begingroup
1259   \catcode"7F=\active
1260   \toks@{%
1261     \let\CJK@ignorespaces\empty
1262     \def\CJK@char#1{\@gobbletwo}%
1263     \let\CJK@charx\@gobblefour
1264     \let\CJK@punctchar\@gobblefour
1265     \def\CJK@punctcharx#1{\@gobblefour}%
1266     \catcode"7F=\active
1267     \def^^7f#1^^7f#2^^7f{%
1268       \string #1\HyPsd@DecimalToOctal{#2}%
1269     }%
1270     % ... ?
1271     \ifHy@unicode
1272       \def\Hy@cjkpu{\80}%
1273     \else
1274       \let\Hy@cjkpu\@empty
1275     \fi
1276     \HyPsd@CJKActiveChars
1277   }%
1278   \count@=127 %
1279   \@whilenum\count@<255 \do{%
1280     \advance\count@ by 1 %

```



```

1281 \lccode'\~=\count@
1282 \lowercase{%
1283 \toks@\expandafter{\the\toks@ ~}%
1284 }%
1285 }%
1286 \toks@\expandafter{\the\toks@ !}%
1287 \xdef\HyPsd@CJKhook@bookmarks{%
1288 \the\toks@
1289 }%
1290 \endgroup

```

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

```

1291 \def\HyPsd@CJKActiveChars#1{%
1292 \ifx#1!%
1293 \let\HyPsd@CJKActiveChars\relax
1294 \else
1295 \edef#1{\noexpand\Hy@cjku\string#1}%
1296 \fi
1297 \HyPsd@CJKActiveChars
1298 }

```

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

```

1299 \def\HyPsd@DecimalToOctal#1{%
1300 \ifcase #1 %
1301 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1302 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1303 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1304 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1305 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1306 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1307 \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1308 \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
1309 \or @\or A\or B\or C\or D\or E\or F\or G%
1310 \or H\or I\or J\or K\or L\or M\or N\or O%
1311 \or P\or Q\or R\or S\or T\or U\or V\or W%
1312 \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
1313 \or \140\or a\or b\or c\or d\or e\or f\or g%
1314 \or h\or i\or j\or k\or l\or m\or n\or o%
1315 \or p\or q\or r\or s\or t\or u\or v\or w%
1316 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
1317 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1318 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1319 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1320 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1321 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1322 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1323 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1324 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1325 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1326 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1327 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1328 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1329 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1330 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1331 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1332 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%

```

```

1333 \fi
1334 }

```

### 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

1335 \def\HyPsd@CJKhook@unicode{%
1336 \let\Unicode\HyPsd@CJK@Unicode
1337 \let\CJKnumber\HyPsd@CJKnumber
1338 \let\CJKdigits\HyPsd@CJKdigits
1339 }

```

\HyPsd@CJK@Unicode

```

1340 \def\HyPsd@CJK@Unicode#1#2{%
1341 \ifnum#1<256 %
1342 \HyPsd@DecimalToOctalFirst{#1}%
1343 \HyPsd@DecimalToOctalSecond{#2}%
1344 \else
1345 \933%
1346 \expandafter\expandafter\expandafter\HyPsd@HighA
1347 \intcalcDiv{#1}{4}!%
1348 \933%
1349 \ifcase\intcalcMod{#1}{4} %
1350 4\or 5\or 6\or 7%
1351 \fi
1352 \HyPsd@DecimalToOctalSecond{#2}%
1353 \fi
1354 }

1355 \def\HyPsd@HighA#1!{%
1356 \expandafter\expandafter\expandafter\HyPsd@HighB
1357 \IntCalcDiv#1!64!!%
1358 \expandafter\expandafter\expandafter\HyPsd@HighD
1359 \IntCalcMod#1!64!!%
1360 }
1361 \def\HyPsd@HighB#1!{%
1362 \expandafter\expandafter\expandafter\HyPsd@HighC
1363 \IntCalcDec#1!!%
1364 }
1365 \def\HyPsd@HighC#1!{%
1366 \IntCalcDiv#1!4!%
1367 \@backslashchar
1368 \IntCalcMod#1!4!%
1369 }
1370 \def\HyPsd@HighD#1!{%
1371 \ifcase\IntCalcDiv#1!8! %
1372 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1373 \fi
1374 \ifcase\IntCalcMod#1!8! %
1375 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1376 \fi
1377 }
1378 \def\HyPsd@DecimalToOctalFirst#1{%
1379 \9%
1380 \ifcase#1 %
1381 000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1382 \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%

```

```

1383 \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1384 \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1385 \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1386 \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1387 \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1388 \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1389 \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1390 \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1391 \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1392 \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1393 \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1394 \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1395 \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
1396 \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1397 \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1398 \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1399 \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1400 \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1401 \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1402 \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1403 \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1404 \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1405 \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1406 \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1407 \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1408 \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1409 \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1410 \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1411 \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1412 \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1413 \fi
1414 }
1415 \def\HyPsd@DecimalToOctalSecond#1{%
1416 \ifcase #1 %
1417 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1418 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1419 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1420 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1421 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1422 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1423 \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1424 \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1425 \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1426 \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1427 \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1428 \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1429 \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1430 \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1431 \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1432 \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1433 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1434 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1435 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1436 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1437 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1438 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1439 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%

```

```

1440 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1441 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1442 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1443 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1444 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1445 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1446 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1447 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1448 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1449 \fi
1450 }

1451 \def\HyPsd@CJkNumber#1{%
1452 \ifnum#1<\z@
1453 \CJK@minus
1454 \expandafter\HyPsd@@CJkNumber\expandafter{\number-\number#1}%
1455 \else
1456 \expandafter\HyPsd@@CJkNumber\expandafter{\number#1}%
1457 \fi
1458 }

1459 \def\HyPsd@@CJkNumber#1{%
1460 \ifcase#1 %
1461 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1462 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1463 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1464 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1465 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1466 \CJK@ten\CJK@nine
1467 \else
1468 \ifnum#1<10000 %
1469 \HyPsd@CJkNumberFour#1!\@empty{20}%
1470 \@empty
1471 \else
1472 \ifnum#1<100000000 %
1473 \expandafter\expandafter\expandafter\HyPsd@CJkNumberFour
1474 \IntCalcDiv#1!10000!%
1475 !}{20}%
1476 \CJK@tenthousand
1477 \expandafter\expandafter\expandafter\HyPsd@CJkNumberFour
1478 \IntCalcMod#1!10000!%
1479 !\CJK@zero{10}%
1480 \@empty
1481 \else
1482 \expandafter\HyPsd@CJkNumberLarge
1483 \number\IntCalcDiv#1!100000000!\expandafter!%
1484 \number\IntCalcMod#1!100000000!!%
1485 \fi
1486 \fi
1487 \fi
1488 }

1489 \def\HyPsd@CJkNumberLarge#1!#2!{%
1490 \HyPsd@CJkNumberFour#1!}{20}%
1491 \CJK@hundredmillion
1492 \ifnum#2=\z@
1493 \else
1494 \expandafter\expandafter\expandafter\HyPsd@CJkNumberFour
1495 \IntCalcDiv#2!10000!%
1496 !\CJK@zero{10}%

```

```

1497 \CJK@tenthousand
1498 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1499 \IntCalcMod#2!10000!%
1500 !\CJK@zero{10}%
1501 \@empty
1502 \fi
1503 }
1504 \def\HyPsd@CJKnumberFour#1!#2#3{%
1505 \ifnum#1=\z@
1506 \expandafter\@gobble
1507 \else
1508 \ifnum#1<1000 %
1509 #2%
1510 \HyPsd@CJKnumberThree#1!#{#3}%
1511 \else
1512 \HyPsd@@CJKnumber{\IntCalcDiv#1!1000!}%
1513 \CJK@thousand
1514 \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1515 \IntCalcMod#1!1000!%
1516 !\CJK@zero{10}%
1517 \fi
1518 \fi
1519 }
1520 \def\HyPsd@CJKnumberThree#1!#2#3{%
1521 \ifnum#1=\z@
1522 \else
1523 \ifnum#1<100 %
1524 #2%
1525 \HyPsd@CJKnumberTwo#1!#{#3}%
1526 \else
1527 \HyPsd@@CJKnumber{\IntCalcDiv#1!100!}%
1528 \CJK@hundred
1529 \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1530 \IntCalcMod#1!100!%
1531 !\CJK@zero{10}%
1532 \fi
1533 \fi
1534 }
1535 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1536 \ifnum#1=\z@
1537 \else
1538 \ifnum#1<#3 %
1539 #2%
1540 \HyPsd@@CJKnumber{#1}%
1541 \else
1542 \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1543 \CJK@ten
1544 \ifnum\IntCalcMod#1!10!=\z@
1545 \else
1546 \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1547 \fi
1548 \fi
1549 \fi
1550 }

1551 \def\HyPsd@CJKdigits#1{%
1552 \ifx*#1\relax
1553 \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero

```

```

1554 \else
1555   \HyPsd@@@CJKdigits\CJK@null{#1}%
1556 \fi
1557 }
1558 \def\HyPsd@@@CJKdigits#1#2{%
1559   \ifx\#2\%
1560   \else
1561     \HyPsd@@@CJKdigits#1#2\@nil
1562   \fi
1563 }%
1564 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1565   \HyPsd@CJKdigit#1{#2}%
1566   \ifx\#3\%
1567     \expandafter\@gobble
1568   \else
1569     \expandafter\@firstofone
1570   \fi
1571   {%
1572     \HyPsd@@@CJKdigits#1#3\@nil
1573   }%
1574 }
1575 \def\HyPsd@CJKdigit#1#2{%
1576   \ifcase#2 %
1577     #1\or
1578     \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1579     \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1580   \fi
1581 }

```

### 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  $\TeX 2_{\epsilon}$  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 ( $\TeX 2_{\epsilon}$  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\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}

1582 \def\HyPsd@inmathwarn#1#2{%
1583 \ifx#2\expandafter
1584 \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1585 \HyPsd@GLYPHERR
1586 \expandafter\@gobble\string#1%
1587 >%
1588 \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1589 \else
1590 \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1591 \fi
1592 \else
1593 \expandafter#2%
1594 \fi
1595 }
1596 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1597 \def\HyPsd@EndWithElse#1\else\else{}

\HyPsd@add@accent

1598 \def\HyPsd@add@accent#1#2{%
1599 \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1600 #2%
1601 }%

```

### 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`.

```

1602 \def\HyPsd@LetUnexpandableSpace#1{%
1603 \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1604 }

```

`\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.

```

1605 \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.

```
1606 \edef\HyPsd@XSPACE{\string#\string X}
1607 \edef\HyPsd@ITALCORR{\string#\string I}
1608 \edef\HyPsd@GLYPHERR{\string#\string G}
```

### 6.5.9 `\hspace fix`

`\HyPsd@hspace`

```
1609 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}
```

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

```
1610 \def\HyPsd@@hspace#1*#2\END{%
1611   \ifx\#2\%
1612     \HyPsd@hspacetest{#1}%
1613   \else
1614     \expandafter\HyPsd@hspacetest
1615   \fi
1616 }
```

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

```
1617 \def\HyPsd@hspacetest#1{\ifdim#1>\z@\space\fi}
```

### 6.5.10 Fix for AMS classes

```
1618 \ltx@ifundefined{tocsection}{%
1619   \let\HyPsd@AMSclassfix\relax
1620 }{%
1621   \def\HyPsd@AMSclassfix{%
1622     \let\tocpart\HyPsd@tocsection
1623     \let\tocchapter\HyPsd@tocsection
1624     \let\tocappendix\HyPsd@tocsection
1625     \let\tocsection\HyPsd@tocsection
1626     \let\tocsubsection\HyPsd@tocsection
1627     \let\tocsubsubsection\HyPsd@tocsection
1628     \let\tocparagraph\HyPsd@tocsection
1629   }%
1630   \def\HyPsd@tocsection#1#2#3{%
1631     \if @#2@ \else \if @#1@ \else #1 \fi #2. \fi
1632     #3%
1633   }%
1634 }
```

### 6.5.11 Reference commands

`\HyPsd@href`

```
1635 \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.

```
1636 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%
```



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

```
1637 \def\HyPsd@@ref#1*#2\END{%
1638   \ifx\#2\%
1639     \HyPsd@@@ref{#1}%
1640   \else
1641     \expandafter\HyPsd@@@ref
1642   \fi
1643 }
```

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

```
1644 \def\HyPsd@@@ref#1{%
1645   \expandafter\ifx\csname r@#1\endcsname\relax
1646     ??%
1647   \else
1648     \expandafter\expandafter\expandafter
1649     \@car\csname r@#1\endcsname\@nil
1650   \fi
1651 }
```

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

```
1652 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}
```

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

```
1653 \def\HyPsd@@pageref#1*#2\END{%
1654   \ifx\#2\%
1655     \HyPsd@@@pageref{#1}%
1656   \else
1657     \expandafter\HyPsd@@@pageref
1658   \fi
1659 }
```

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

```
1660 \def\HyPsd@@@pageref#1{%
1661   \expandafter\ifx\csname r@#1\endcsname\relax
1662     ??%
1663   \else
1664     \expandafter\expandafter\expandafter\expandafter
1665     \expandafter\expandafter\expandafter\@car
1666     \expandafter\expandafter\expandafter\@gobble
1667     \csname r@#1\endcsname{}\@nil
1668   \fi
1669 }
```

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

```
1670 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}
```

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

```
1671 \def\HyPsd@@nameref#1*#2\END{%
1672   \ifx\#2\%
1673     \HyPsd@@@nameref{#1}%
1674   \else
1675     \expandafter\HyPsd@@@nameref
1676   \fi
1677 }
```

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

```
1678 \def\HyPsd@@@nameref#1{%
1679   \expandafter\ifx\csname r@#1\endcsname\relax
1680     ??%
1681   \else
1682     \expandafter\expandafter\expandafter\expandafter
1683     \expandafter\expandafter\expandafter\@car
1684     \expandafter\expandafter\expandafter\@gobbletwo
1685     \csname r@#1\endcsname\}\}\@nil
1686   \fi
1687 }
```

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

```
1688 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}
```

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

```
1689 \def\HyPsd@@autoref#1*#2\END{%
1690   \ifx\#2\%
1691     \HyPsd@@@autoref{#1}%
1692   \else
1693     \expandafter\HyPsd@@@autoref
1694   \fi
1695 }
```

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

```
1696 \def\HyPsd@@@autoref#1{%
1697   \expandafter\ifx\csname r@#1\endcsname\relax
1698     ??%
1699   \else
1700     \expandafter\expandafter\expandafter\HyPsd@autorefname
1701     \csname r@#1\endcsname\}\}\@nil
1702     \expandafter\expandafter\expandafter
1703     \@car\csname r@#1\endcsname\@nil
1704   \fi
1705 }
```

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

```
1706 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1707   \ifx\#4\%
1708   \else
1709     \HyPsd@@autorefname#4.\@nil
1710   \fi
1711 }
```

`\HyPsd@@autorefname`

```
1712 \def\HyPsd@@autorefname#1.#2\@nil{%
1713   \ltx@ifundefined{#1autorefname}{%
1714     \ltx@ifundefined{#1name}{%
1715     }{%
1716       \csname#1name\endcsname\space
1717     }%
1718   }{%
1719     \csname#1autorefname\endcsname\space
1720   }%
1721 }
```

## 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 cause 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 doesn'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 unbalanced `\if...` tokens, the cases `\let\if...\iftrue` and `\let\if...\iffalse` are checked and ignored.

```

\HyPsd@DefCommand
\HyPsd@LetCommand
1722 \begingroup
1723   \def\x#1#2{%
1724     \endgroup
1725     \let#1\def
1726     \def\HyPsd@DefCommand##1##2##3{%
1727       #1%
1728       \expandafter\noexpand
1729         \csname\expandafter\@gobble\string##1\@empty\endcsname
1730       \@gobble
1731     }%
1732     \let#2\let
1733     \def\HyPsd@@LetCommand##1{%
1734       \expandafter\ifx\csname##1\expandafter\endcsname
1735         \csname iftrue\endcsname
1736       \pdfstringdefWarn\let
1737       \expandafter\@gobble
1738     \else
1739       \expandafter\ifx\csname##1\expandafter\endcsname
1740         \csname iffalse\endcsname
1741       \pdfstringdefWarn\let
1742       \expandafter\expandafter\expandafter\@gobble
1743     \else
1744       #2%
1745       \expandafter\noexpand
1746       \csname##1\expandafter\expandafter\expandafter\endcsname

```

```

1747     \fi
1748     \fi
1749   }%
1750 }%
1751 \expandafter\x\csname <def>-command\expandafter\endcsname
1752     \csname <let>-command\endcsname
1753 \def\HyPsd@LetCommand#1{%
1754   \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1755     \expandafter\expandafter\expandafter{%
1756     \expandafter\@gobble\string#1\@empty
1757   }%
1758 }

```

### 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).

```

1759 \def\HyPsd@ifnextchar#1{%
1760   \pdfstringdefWarn#1%
1761   \expandafter\@gobbletwo\@gobble
1762 }

```

### 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`.

```

1763 \def\HyPsd@protected@testopt#1{%
1764   \pdfstringdefWarn#1%
1765   \@gobbletwo
1766 }

```

## 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:

```

1767 \def\HyPsd@Warning#1{%
1768   \begingroup
1769     \def\space{ }%
1770     \Hy@Warning{#1}%
1771   \endgroup
1772 }

```

## 6.6.2 Protecting spaces

```

1773 \RequirePackage{etexcmds}[2007/09/09]
1774 \ifetex@unexpanded
1775   \expandafter\@secondoftwo
1776 \else
1777   \expandafter\@firstoftwo
1778 \fi
1779 {%

```

`\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`.

```

1780   \def\HyPsd@ProtectSpaces#1{%
1781     \iftrue
1782       \expandafter\HyPsd@@ProtectSpacesFi
1783       \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1784     \fi
1785   }%

```

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

```

1786   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1787     \fi
1788     \ifx\scrollmode#2\scrollmode
1789       \HyPsd@RemoveMask#1\HyPsd@End#3%
1790     \else
1791       \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1792       \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1793     \fi
1794   }%

```

### 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.

```

1795   \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1796     \toks@ \expandafter{#1}%
1797     \xdef#2{\the\toks@}%
1798   }%

1799 }{%
1800   \let\HyPsd@fi\fi
1801   \def\HyPsd@ProtectSpaces#1{%
1802     \xdef#1{%
1803       \iftrue
1804         \expandafter\HyPsd@@ProtectSpacesFi
1805         \expandafter|\expandafter\@empty#1| %
1806       \HyPsd@fi
1807     }%
1808     \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1809   }%
1810   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1811     \fi
1812     \etex@unexpanded{#1}%
1813     \ifx\scrollmode#2\scrollmode
1814     \else
1815       \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%

```

```

1816 \HyPsd@fi
1817 }%
1818 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1819 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1820 }%
1821 }

```

### 6.6.3 Remove grouping braces

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

```

1822 \def\HyPsd@RemoveBraces#1{%
1823 \ifx\scrollmode#1\scrollmode
1824 \else
1825 \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1826 \fi
1827 }

```

`\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`.

```

1828 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1829 \fi
1830 \def\Hy@temp@A{#1#2}%
1831 \def\Hy@temp@B{#3}%
1832 \ifx\Hy@temp@A\Hy@temp@B
1833 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1834 \HyPsd@String#1%
1835 }%
1836 \ifx\scrollmode#2\scrollmode
1837 \else
1838 \Hy@ReturnAfterFiFiEnd{%
1839 \HyPsd@RemoveBraces{#2}%
1840 }%
1841 \fi
1842 \else
1843 \def\Hy@temp@A{#1}%
1844 \HyPsd@AppendItalcrr\HyPsd@String
1845 \ifx\Hy@temp@A\@empty
1846 \Hy@ReturnAfterElseFiFiEnd{%
1847 \HyPsd@RemoveBraces{#2}%
1848 }%
1849 \else
1850 \HyPsd@ProtectSpaces\Hy@temp@A
1851 \HyPsd@AppendItalcrr\Hy@temp@A
1852 \Hy@ReturnAfterFiFiEnd{%
1853 \expandafter\HyPsd@RemoveBraces\expandafter
1854 {\Hy@temp@A#2}%
1855 }%
1856 \fi
1857 \fi

```

```

1858 \Hy@ReturnEnd
1859 }

```

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

```

1860 \def\HyPsd@AppendItalcrr#1{%
1861 \expandafter\HyPsd@@AppendItalcrr\expandafter{\/#1}%
1862 }
1863 \def\HyPsd@@AppendItalcrr#1#2{%
1864 \expandafter\def\expandafter#2\expandafter{#2#1}%
1865 }

```

#### 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).

```

1866 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1867 \global\let\HyPsd@Rest\relax
1868 \ifcat\relax\noexpand#1\relax
1869 \ifx#1\protect
1870 \else
1871 \ifx#1\penalty
1872 \setbox\z@=\hbox{%
1873 \afterassignment\HyPsd@AfterCountRemove
1874 \count@=#2\HyPsd@End
1875 }%
1876 \else
1877 \ifx#1\kern
1878 \setbox\z@=\hbox{%
1879 \afterassignment\HyPsd@AfterDimenRemove
1880 \dimen@=#2\HyPsd@End
1881 }%
1882 \else
1883 \ifx#1\hskip
1884 \setbox\z@=\hbox{%
1885 \afterassignment\HyPsd@AfterSkipRemove
1886 \skip@=#2\HyPsd@End
1887 }%
1888 \else
1889 \HyPsd@CatcodeWarning{#1}%
1890 \fi
1891 \fi
1892 \fi
1893 \fi
1894 \else
1895 \ifcat#1A% letter
1896 \expandafter\def\expandafter\HyPsd@String\expandafter{%

```

```

1897     \HyPsd@String#1%
1898   }%
1899 \else
1900   \ifcat#1 % SPACE
1901     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1902       \HyPsd@String\HyPsd@SPACEOPTI
1903     }%
1904 \else
1905   \ifcat$#1%
1906     \HyPsd@CatcodeWarning{math shift}%
1907 \else
1908   \ifcat&#1%
1909     \HyPsd@CatcodeWarning{alignment tab}%
1910 \else
1911   \ifcat^#1%
1912     \HyPsd@CatcodeWarning{superscript}%
1913 \else
1914   \ifcat_#1%
1915     \HyPsd@CatcodeWarning{subscript}%
1916 \else
1917   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1918     \HyPsd@String#1%
1919   }%
1920 \fi
1921 \fi
1922 \fi
1923 \fi
1924 \fi
1925 \fi
1926 \fi
1927 \ifx\HyPsd@Rest\relax
1928   \ifx\scrollmode#2\scrollmode
1929 \else
1930   \Hy@ReturnAfterFiFiEnd{%
1931     \HyPsd@CheckCatcodes#2\HyPsd@End
1932   }%
1933 \fi
1934 \else
1935   \ifx\HyPsd@Rest\@empty
1936 \else
1937   \Hy@ReturnAfterFiFiEnd{%
1938     \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1939   }%
1940 \fi
1941 \fi
1942 \Hy@ReturnEnd
1943 }

```

### Remove counts, dimens, skips.

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

```

1944 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1945   \gdef\HyPsd@Rest{#1}%
1946 }

```

\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.

```

1947 \def\HyPsd@AfterDimenRemove#1\HyPsd@end{%
1948 \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1949 \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1950 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1951 \else
1952 \ifdim\dimen@=\z@
1953 \else
1954 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1955 \fi
1956 \gdef\HyPsd@Rest{#1}%
1957 \fi
1958 }

```

`\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).

```

1959 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1960 \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1961 \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1962 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1963 \else
1964 \ifdim\skip@=\z@
1965 \else
1966 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1967 \fi
1968 \gdef\HyPsd@Rest{#1}%
1969 \fi
1970 }

```

### Catcode warnings.

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

```

1971 \def\HyPsd@CatcodeWarning#1{%
1972 \HyPsd@Warning{%
1973 Token not allowed in a PDF string (%
1974 \ifHy@unicode
1975 Unicode%
1976 \else
1977 PDFDocEncoding%
1978 \fi
1979 ):%
1980 \MessageBreak removing ‘\HyPsd@RemoveCmdPrefix#1’%
1981 }%
1982 }
1983 \begingroup
1984 \catcode‘\|=0 %
1985 \catcode‘\|=12 %
1986 |gdef|HyPsd@RemoveCmdPrefix#1{%
1987 |expandafter|HyPsd@@RemoveCmdPrefix
1988 |string#1|@empty\<>-|@empty|@empty
1989 }%
1990 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1991 |endgroup

```

`\HyPsd@RemoveSpaceWarning`

```

1992 \def\HyPsd@RemoveSpaceWarning#1{%
1993   \HyPsd@Warning{%
1994     Token not allowed in a PDF string (%)
1995     \ifHy@unicode
1996       Unicode%
1997     \else
1998       PDFDocEncoding%
1999     \fi
2000   }:%
2001   \MessageBreak #1\MessageBreak
2002   removed%
2003 }%
2004 }

```

\HyPsd@ReplaceSpaceWarning

```

2005 \def\HyPsd@ReplaceSpaceWarning#1{%
2006   \HyPsd@Warning{%
2007     Token not allowed in a PDF string (%)
2008     \ifHy@unicode
2009       Unicode%
2010     \else
2011       PDFDocEncoding%
2012     \fi
2013   }:%
2014   \MessageBreak #1\MessageBreak
2015   replaced by space%
2016 }%
2017 }

```

### 6.6.5 Check for wrong glyphs

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

```

2018 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
2019   \expandafter\def\expandafter\HyPsd@String\expandafter{%
2020     \HyPsd@String#1%
2021   }%
2022   \ifx\#2\%
2023   \else
2024     \Hy@ReturnAfterFi{%
2025       \HyPsd@GlyphProcessWarning#2\@empty
2026     }%
2027   \fi
2028 }
2029 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
2030   \HyPsd@@@GlyphProcessWarning#1++>%
2031   \HyPsd@GlyphProcess#2\@empty
2032 }
2033 \def\HyPsd@@@GlyphProcessWarning#1+#2+#3>{%
2034   \ifx\#2\%
2035     \HyPsd@Warning{%
2036       Glyph not defined in %
2037       P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
2038       removing ‘\@backslashchar#1’%
2039     }%
2040   \else
2041     \HyPsd@Warning{%

```

```

2042 Composite letter '@backslashchar#1+#2'\MessageBreak
2043 not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
2044 \MessageBreak
2045 removing '@backslashchar#1'%
2046 }%
2047 \fi
2048 }

```

### 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`.

```

2049 \def\HyPsd@spaceopti#1{ % first space
2050 \ifx\HyPsd@spaceopti#1%
2051 \040%
2052 \else
2053 #1%
2054 \fi
2055 }%

```

### 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.

2056 \def\HyPsd@Subst#1#2#3{%
2057 \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
2058 \fi
2059 ##1%
2060 \ifx\scrollmode##2\scrollmode
2061 \else
2062 #2%
2063 \HyPsd@@ReplaceFi##2\END
2064 \fi
2065 }%
2066 \xdef#3{%
2067 \iftrue
2068 \expandafter\HyPsd@@ReplaceFi#3#1\END
2069 \fi
2070 }%
2071 }

```

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

```

2072 \def\HyPsd@StringSubst#1{%
2073 \expandafter\HyPsd@Subst\expandafter{\string#1}%
2074 }

```

`\HyPsd@EscapeTeX`

```

2075 \begingroup
2076 \lccode'!='\%%
2077 \lccode'\|='\%%

```

```

2078 \lccode'\(=\{\%
2079 \lccode'\)=\}%
2080 \lccode'0=\ltx@zero
2081 \lccode'1=\ltx@zero
2082 \lccode'3=\ltx@zero
2083 \lccode'4=\ltx@zero
2084 \lccode'5=\ltx@zero
2085 \lccode'7=\ltx@zero
2086 \lowercase{\endgroup
2087 \def\HyPsd@EscapeTeX#1{%
2088   \HyPsd@Subst!{|045}#1%
2089   \HyPsd@Subst({|173}#1%
2090   \HyPsd@Subst){|175}#1%
2091 }%
2092 }

```

### 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.

```

2093 \def\HyPsd@doxspace#1{%
2094   \ifx#1\relax\else
2095     \ifx#1.\else
2096       \ifx#1:\else
2097         \ifx#1,\else
2098           \ifx#1;\else
2099             \ifx#1!\else
2100               \ifx#1?\else
2101                 \ifx#1/\else
2102                   \ifx#1-\else
2103                     \ifx#1'\else
2104                       \HyPsd@SPACEOPTI
2105                     \fi
2106                   \fi
2107                 \fi
2108               \fi
2109             \fi
2110           \fi
2111         \fi
2112       \fi
2113     \fi
2114   \fi
2115   #1%
2116 }%

```

### 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.

```

2117 \begingroup
2118 \catcode'\|=0 %
2119 \catcode'\=12 %

```

`\HyPsd@ConvertToUnicode`

```

2120 |gdef|HyPsd@ConvertToUnicode#1{%
2121 |xdef#1{%
2122 |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
2123 }%
2124 |ifx#1|@empty
2125 |else
2126 |xdef#1{%
2127 \376\377%
2128 #1%
2129 }%
2130 |fi
2131 }%

```

\HyPsd@DoConvert

```

2132 |gdef|HyPsd@DoConvert#1{%
2133 |ifx#1|@empty
2134 |else
2135 |Hy@ReturnAfterFi{%
2136 |ifx#1\%%
2137 \%%
2138 |expandafter|HyPsd@DoEscape
2139 |else
2140 |HyPsd@Char{#1}%
2141 |expandafter|HyPsd@DoConvert
2142 |fi
2143 }%
2144 |fi
2145 }%

```

\HyPsd@DoEscape

```

2146 |gdef|HyPsd@DoEscape#1{%
2147 |ifx#19%
2148 |expandafter|HyPsd@GetTwoBytes
2149 |else
2150 |Hy@ReturnAfterFi{%
2151 |ifx#18%
2152 00%
2153 |expandafter|HyPsd@GetTwoBytes
2154 |else
2155 #1%
2156 |expandafter|HyPsd@GetOneByte
2157 |fi
2158 }%
2159 |fi
2160 }%

```

\HyPsd@GetTwoBytes

```

2161 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
2162 #1\#2#3#4%
2163 |HyPsd@DoConvert
2164 }%

```

\HyPsd@GetOneByte

```

2165 |gdef|HyPsd@GetOneByte#1#2{%
2166 #1#2%
2167 |HyPsd@DoConvert
2168 }%

```

2169 |endgroup

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

```
2170 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%  
2171   \xdef#4{#4#1#2}%  
2172   \HyPsd@@ConvertToUnicode#3\END#4%  
2173 }
```

\HyPsd@Char

```
2174 \begingroup  
2175   \catcode0=9 %  
2176   \catcode'\^=7 %  
2177   \catcode'\^^=12 %  
2178   \def\x{^^^0000}%  
2179 \expandafter\endgroup  
2180 \ifx\x\@empty  
2181   \def\HyPsd@Char#1{%  
2182     \ifnum'#1<128 %  
2183       \@backslashchar 000#1%  
2184     \else  
2185       \ifnum'#1<65536 %  
2186         \expandafter\HyPsd@CharTwoByte\number'#1!%  
2187       \else  
2188         \expandafter\expandafter\expandafter\HyPsd@CharSurrogate  
2189         \intcalcSub{'#1}{65536}!%  
2190       \fi  
2191     \fi  
2192   }%  
2193 \def\HyPsd@CharTwoByte#1!{%  
2194   \expandafter\expandafter\expandafter\HyPsd@CharOctByte  
2195   \IntCalcDiv#1!256!!%  
2196   \expandafter\expandafter\expandafter\HyPsd@CharOctByte  
2197   \IntCalcMod#1!256!!%  
2198 }%  
2199 \def\HyPsd@CharOctByte#1!{%  
2200   \@backslashchar  
2201   \IntCalcDiv#1!64!%  
2202   \intcalcDiv{\IntCalcMod#1!64!}{8}%  
2203   \IntCalcMod#1!8!%  
2204 }%  
2205 \def\HyPsd@CharSurrogate#1!{%  
2206   \@backslashchar 33%  
2207   \IntCalcDiv#1!262144!%  
2208   \expandafter\expandafter\expandafter\HyPsd@CharOctByte  
2209   \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%  
2210   \@backslashchar 33%  
2211   \expandafter\expandafter\expandafter\IntCalcAdd  
2212   \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%  
2213   \expandafter\expandafter\expandafter\HyPsd@CharOctByte  
2214   \IntCalcMod#1!256!!%  
2215 }%  
2216 \else  
2217   \def\HyPsd@Char#1{%  
2218     \@backslashchar 000#1%  
2219   }%  
2220 \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

2221 \begingroup\expandafter\expandafter\expandafter\endgroup
2222 \expandafter\ifx\csname numexpr\endcsname\relax
2223   \let\HyPsd@UTFviii\relax
2224 \else
2225   \begingroup
2226     \lccode'\~='^f4\relax
2227   \lowercase{\endgroup
2228     \def\HyPsd@UTFviii{%
2229       \let\UTFviii@two@octets\HyPsd@UTFviii@two
2230       \let\UTFviii@three@octets\HyPsd@UTFviii@three
2231       \let\UTFviii@four@octets\HyPsd@UTFviii@four
2232       \ifx~\HyPsd@UTFviii@ccxliv@undef
2233         \let~\HyPsd@UTFviii@ccxliv@def
2234       \fi
2235       \let\unichar\HyPsd@unichar
2236     }%
2237   }%
2238   \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
2239   \edef\HyPsd@UTFviii@ccxliv@def{%
2240     \noexpand\UTFviii@four@octets\string ^f4%
2241   }%
```

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.

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

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

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

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

$$(5)$$

```

2242 \def\HyPsd@UTFviii@two#1#2{%
2243   \expandafter\HyPsd@UTFviii@@two
2244   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter| %
2245   \number'#1\expandafter| %
2246   \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter| %
2247   \number'#2 \@nil
2248 }%
2249 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
2250   \expandafter\8%
2251   \number\numexpr #1-48\expandafter\relax
2252   \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
2253   \number\numexpr #3-8*%
```

```

2254 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
2255 \number\dimexpr #4-8*#3\relax
2256 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

2257 \def\HyPsd@UTFviii@three#1#2#3{%
2258 \expandafter\HyPsd@UTFviii@three
2259 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter| %
2260 \number'#1\expandafter| %
2261 \number\ifnum\dimexpr'#2-128\relax <32 0\else 1\fi\expandafter| %
2262 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter| %
2263 \number'#2\expandafter| %
2264 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter| %
2265 \number'#3 \@nil
2266 }%
2267 \def\HyPsd@UTFviii@four#1#2#3#4#5#6#7\@nil{%
2268 \expandafter\9%
2269 \number\dimexpr #1-56\expandafter\relax
2270 \number\dimexpr 2*(#2-4*#1)+#3\expandafter\relax
2271 \number\dimexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
2272 \csname\number\dimexpr #5-4*#4\relax\expandafter\endcsname
2273 \number\dimexpr #6-16\expandafter\relax
2274 \number\dimexpr #7-8*#6\relax
2275 }%

```

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

```

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

```

```

2276 \def\HyPsd@UTFviii@four#1#2#3#4{%
2277 \expandafter\HyPsd@UTFviii@four\number
2278 \dimexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
2279 \expandafter|\number
2280 \dimexpr'#2-16*\dimexpr.0625\dimexpr'#3sp| %
2281 }%
2282 \def\HyPsd@UTFviii@four#1#2#3#4{%
2283 \933\number\dimexpr.25\dimexpr'#1sp\relax\relax
2284 \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr'#1sp\endcsname
2285 \ifodd#2 %
2286 \number\dimexpr(#2-1)/2\relax
2287 \else
2288 \number\dimexpr#2/2\relax
2289 \fi

```



```

2290 \number\numexpr\ifodd#2 4+\fi
2291 \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
2292 \933%
2293 \expandafter\HyPsd@@@UTFviii@four\number
2294 \numexpr'#3-16*\dimexpr.0625\dimexpr'#3sp| %
2295 }%
2296 \def\HyPsd@@@UTFviii@four#1|#2{%
2297 \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
2298 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
2299 \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
2300 \number\numexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
2301 }%

```

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

```

2302 \def\HyPsd@unichar#1{%
2303 \ifHy@unicode
2304 \ifnum#1>"10FFFF %
2305 \HyPsd@UnicodeReplacementCharacter % illegal
2306 \else
2307 \ifnum#1>"FFFF %

```

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

```

2308 \expandafter\HyPsd@unichar\expandafter{%
2309 \number\numexpr 55296+%
2310 \dimexpr.0009765625\dimexpr\number#1sp-\p@
2311 \relax\relax\relax
2312 }%

```

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

```

2313 \expandafter\HyPsd@unichar\expandafter{%
2314 \number\numexpr#1-9216%
2315 -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
2316 \relax\relax\relax
2317 }%
2318 \else
2319 \ifnum#1>"7FF %
2320 \9%
2321 \expandafter\HyPsd@unichar@first@byte\expandafter{%
2322 \number
2323 \dimexpr.00390625\dimexpr\number#1sp\relax\relax
2324 }%
2325 \else
2326 \8%
2327 \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
2328 \fi
2329 \expandafter\HyPsd@unichar@second@byte\expandafter{%
2330 \number
2331 \numexpr#1-256*\number
2332 \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
2333 }%
2334 \fi
2335 \fi
2336 \else
2337 .% unsupported (Unicode -> PDF Doc Encoding)
2338 \fi
2339 }%
2340 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%

```

```

2341 \def\HyPsd@unichar@first@byte#1{%
2342 \number\dimexpr.015625\dimexpr#1sp\relax\relax
2343 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2344 \number
2345 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2346 \relax\relax\relax
2347 }%
2348 }%
2349 \def\HyPsd@unichar@second@byte#1{%
2350 \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2351 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2352 \number
2353 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2354 \relax\relax\relax
2355 }%
2356 }%
2357 \def\HyPsd@unichar@octtwo#1{%
2358 \number\dimexpr.125\dimexpr#1sp\relax\relax
2359 \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2360 \relax\relax\relax
2361 }%
2362 \fi

```

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

```

2363 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2364 \ifx\@gobble#1%
2365 \else
2366 [Please insert \textbackslash PrerenderUnicode%
2367 \textbraceleft#1\textbraceright\space
2368 into preamble]%
2369 \fi
2370 }%

```

## 7 Support of other packages

### 7.1 Class memoir

```

2371 \@ifclassloaded{memoir}{%
2372 \Hy@AtEndOfPackage{\RequirePackage{memhfixc}}%
2373 }{}

```

### 7.2 Package subfigure

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

```

2374 \@ifpackageloaded{subfigure}{%
2375 \ltx@ifundefined{sub@label}{%
2376 \Hy@hypertextnamesfalse
2377 }{%
2378 \renewcommand*{\sub@label}[1]{%
2379 \@bsphack
2380 \subfig@oldlabel{#1}%
2381 \if@filesw
2382 \beginngroup
2383 \edef\@currentlabstr{%
2384 \expandafter\strip@prefix\meaning\@currentlabelname
2385 }%

```

```

2386 \protected@write\@auxout{}\{}%
2387 \string\newlabel{sub@#1}\{}%
2388 {\@nameuse{@@thesub\@capytype}}%
2389 {\thepage}%
2390 {\%
2391 \expandafter\strip@period\@currentlabstr
2392 \relax.\relax\@@@%
2393 }%
2394 {\@currentHref}%
2395 {\}%
2396 }%
2397 }%
2398 \endgroup
2399 \fi
2400 \@esphack
2401 }%
2402 \@ifpackagelater{subfigure}{2002/03/26}\{}%
2403 \providecommand*\@toclevel@subfigure{1}%
2404 \providecommand*\@toclevel@subtable{1}%
2405 }%
2406 }%
2407 }\}

```

### 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:

```

2408 \ltx@ifundefined{XR@addURL}\{}%
2409 }\{}%

```

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.

```

2410 \def\xr@addURL#1{\xr@@dURL#1\}\}\}\}\}%
2411 \def\xr@@dURL#1#2#3#4#5\{\%
2412 {#1}\{#2}%
2413 \if!#4!%
2414 \else
2415 {#3}\{#4}\{XR@URL}%
2416 \fi
2417 }%
2418 }

2419 \def\Hy@true{true}
2420 \def\Hy@false{false}

```

Providing dummy definitions.

```

2421 \let\literalps@out\@gobble
2422 \newcommand\pdfbookmark[3]{}
2423 \def\Acrobatmenu#1#2{\leavevmode#2}
2424 \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

```
2425 \let\HyperRaiseLinkHook\@empty
2426 \def\HyperRaiseLinkDefault{\baselineskip}
```

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

```
2427 \newcount\Hy@SavedSpaceFactor
2428 \def\Hy@SaveSpaceFactor{%
2429   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2430 }
2431 \def\Hy@RestoreSpaceFactor{%
2432   \relax
2433   \ifhmode
2434     \ifnum\Hy@SavedSpaceFactor>\z@
2435       \spacefactor=\Hy@SavedSpaceFactor
2436     \fi
2437   \fi
2438 }
2439 \def\Hy@SaveSavedSpaceFactor{%
2440   \edef\Hy@RestoreSavedSpaceFactor{%
2441     \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2442   }%
2443 }
2444 \def\Hy@raisedlink#1{%
2445   \ifvmode
2446     #1%
2447   \else
2448     \Hy@SaveSpaceFactor
2449     \penalty\@M
2450     \smash{%
2451       \begin{group}
2452         \let\HyperRaiseLinkLength\@tempdima
2453         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2454         \HyperRaiseLinkHook
2455       \expandafter\endgroup
2456       \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2457         \Hy@RestoreSpaceFactor
2458         #1%
2459         \Hy@SaveSpaceFactor
2460       }%
2461     }%
2462     \Hy@RestoreSpaceFactor
2463   \fi
2464 }
```

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

```
2465 \def\Hy@SaveLastskip{%
2466   \let\Hy@RestoreLastskip\relax
2467   \ifvmode
2468     \ifdim\lastskip=\z@
2469       \let\Hy@RestoreLastskip\nobreak
2470     \else
```

```

2471 \begingroup
2472 \skip@=-\lastskip
2473 \edef\x{%
2474 \endgroup
2475 \def\noexpand\Hy@RestoreLastskip{%
2476 \noexpand\ifvmode
2477 \noexpand\nobreak
2478 \vskip\the\skip@
2479 \vskip\the\lastskip\relax
2480 \noexpand\fi
2481 }%
2482 }%
2483 \x
2484 \fi
2485 \else
2486 \ifhmode
2487 \ifdim\lastskip=\z@
2488 \let\Hy@RestoreLastskip\nobreak
2489 \else
2490 \begingroup
2491 \skip@=-\lastskip
2492 \edef\x{%
2493 \endgroup
2494 \def\noexpand\Hy@RestoreLastskip{%
2495 \noexpand\ifhmode
2496 \noexpand\nobreak
2497 \hskip\the\skip@
2498 \hskip\the\lastskip\relax
2499 \noexpand\fi
2500 }%
2501 }%
2502 \x
2503 \fi
2504 \fi
2505 \fi
2506 }%

```

## 9 Options

```

2507 \SetupKeyvalOptions{%
2508 family=Hyp,%
2509 prefix=HyOpt%
2510 }

```

### 9.1 Help macros

\Hy@boolkey

```

2511 \def\Hy@boolkey{\@dblarg\Hy@@boolkey}
2512 \def\Hy@@boolkey[#1]#2#3{%
2513 \edef\Hy@tempa{#3}%
2514 \lowercase\expandafter{%
2515 \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2516 }%
2517 \ifx\Hy@tempa\@empty
2518 \let\Hy@tempa\Hy@true
2519 \fi
2520 \ifx\Hy@tempa\Hy@true

```

```

2521 \else
2522 \ifx\Hy@tempa\Hy>false
2523 \else
2524 \let\Hy@tempa\relax
2525 \fi
2526 \fi
2527 \ifx\Hy@tempa\relax
2528 \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
2529 \else
2530 \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
2531 \csname Hy@#2\Hy@tempa\endcsname
2532 \fi
2533 }

```

\Hy@WarnOptionValue

```

2534 \def\Hy@WarnOptionValue#1#2#3{%
2535 \Hy@Warning{%
2536 Unexpected value ‘#1’\MessageBreak
2537 of option ‘#2’ instead of\MessageBreak
2538 #3%
2539 }%
2540 }

```

\Hy@DisableOption

```

2541 \def\Hy@DisableOption#1{%
2542 \@ifundefined{KV@Hyp@#1@default}{%
2543 \define@key{Hyp}{#1}%
2544 }{%
2545 \define@key{Hyp}{#1}[]%
2546 }%
2547 {\Hy@WarnOptionDisabled{#1}}%
2548 }

```

\Hy@WarnOptionDisabled

```

2549 \def\Hy@WarnOptionDisabled#1{%
2550 \Hy@Warning{%
2551 Option ‘#1’ has already been used,\MessageBreak
2552 setting the option has no effect%
2553 }%
2554 }

```

\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.

```

2555 \def\Hy@CheckOptionValue#1#2#3{%
2556 \begingroup
2557 \edef\x{#1}%
2558 \@onelevel@sanitize\x
2559 \let\y=y%
2560 \def\do##1##2{%
2561 \def\z{##1}%
2562 \@onelevel@sanitize\z
2563 \ifx\x\z
2564 \let\y=n%
2565 \let\do\@gobbletwo
2566 \fi
2567 }%
2568 #3%

```

```

2569 \ifx\y y%
2570 \def\do##1##2{%
2571   * '##1'%
2572   \ifx\\##2\\\else\space(##2)\fi
2573   \MessageBreak
2574 }%
2575 \Hy@Warning{%
2576   Values of option '#2':\MessageBreak
2577   ##3%
2578   * An empty value disables the option.\MessageBreak
2579   Unknown value '\x'%
2580 }%
2581 \fi
2582 \endgroup
2583 }

```

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

```

2584 \def\Hy@DefNameKey#1{%
2585   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
2586 }

```

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

```

2587 \def\Hy@@DefNameKey#1#2#3{%
2588   \define@key{Hyp}{#2}{%
2589     \edef#1{##1}%
2590     \ifx#1\@empty
2591     \else
2592       \Hy@CheckOptionValue{##1}{#2}{#3}%
2593     \fi
2594   }%
2595   \let#1\@empty
2596 }

```

`\Hy@UseNameKey`

```

2597 \def\Hy@UseNameKey#1#2{%
2598   \ifx#2\@empty
2599   \else
2600     /#1/#2%
2601   \fi
2602 }

```

## 9.2 Defining the options

```

2603 \define@key{Hyp}{implicit}[true]{%
2604   \Hy@boolkey{implicit}{#1}%
2605 }
2606 \define@key{Hyp}{draft}[true]{%
2607   \Hy@boolkey{draft}{#1}%
2608 }
2609 \define@key{Hyp}{final}[true]{%
2610   \Hy@boolkey{final}{#1}%
2611 }

```

```

2612 \let\KV@Hyp@nolinks\KV@Hyp@draft
2613 \def\Hy@ObsoletePaperOption#1{%
2614   \Hy@WarningNoLine{%
2615     Option '#1' is no longer used%
2616   }%
2617   \define@key{Hyp}{#1}[true]{}%
2618 }
2619 \def\Hy@temp#1{%
2620   \define@key{Hyp}{#1}[true]{%
2621     \Hy@ObsoletePaperOption{#1}%
2622   }%
2623 }
2624 \Hy@temp{a4paper}
2625 \Hy@temp{a5paper}
2626 \Hy@temp{b5paper}
2627 \Hy@temp{letterpaper}
2628 \Hy@temp{legalpaper}
2629 \Hy@temp{executivepaper}

2630 \define@key{Hyp}{setpagesize}[true]{%
2631   \Hy@boolkey{setpagesize}{#1}%
2632 }
2633 \define@key{Hyp}{debug}[true]{%
2634   \Hy@boolkey[debug]{verbose}{#1}%
2635 }
2636 \define@key{Hyp}{linktocpage}[true]{%
2637   \Hy@boolkey{linktocpage}{#1}%
2638   \ifHy@linktocpage
2639     \let\Hy@linktoc\Hy@linktoc@page
2640   \else
2641     \let\Hy@linktoc\Hy@linktoc@section
2642   \fi
2643 }
2644 \chardef\Hy@linktoc@none=0 %
2645 \chardef\Hy@linktoc@section=1 %
2646 \chardef\Hy@linktoc@page=2 %
2647 \chardef\Hy@linktoc@all=3 %
2648 \ifHy@linktocpage
2649   \let\Hy@linktoc\Hy@linktoc@page
2650 \else
2651   \let\Hy@linktoc\Hy@linktoc@section
2652 \fi
2653 \define@key{Hyp}{linktoc}{%
2654   \@ifundefined{Hy@linktoc@#1}{%
2655     \Hy@Warning{%
2656       Unexpected value '#1' of\MessageBreak
2657       option 'linktoc' instead of 'none',\MessageBreak
2658       'section', 'page' or 'all'%
2659     }%
2660   }{%
2661     \expandafter\let\expandafter\Hy@linktoc
2662     \csname Hy@linktoc@#1\endcsname
2663   }%
2664 }
2665 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2666 \let\XR@ext\relax
2667 \define@key{Hyp}{verbose}[true]{%
2668   \Hy@boolkey{verbose}{#1}%

```



```

2669 }
2670 \define@key{Hyp}{typexml}[true]{%
2671   \Hy@boolkey{typexml}{#1}%
2672 }

```

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.

```

2673 \define@key{Hyp}{raiselinks}[true]{%
2674   \Hy@boolkey{raiselinks}{#1}%
2675 }

```

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

```

2676 \def\Hy@setbreaklinks#1{%
2677   \csname breaklinks#1\endcsname
2678 }

2679 \def\Hy@breaklinks@unsupported{%
2680   \ifx\Hy@setbreaklinks\@gobble
2681     \ifHy@breaklinks
2682       \Hy@WarningNoLine{%
2683         You have enabled option ‘breaklinks’.\MessageBreak
2684         But driver ‘\Hy@driver.def’ does not support this.\MessageBreak
2685         Expect trouble with the link areas of broken links%
2686       }%
2687     \fi
2688   \fi
2689 }

2690 \define@key{Hyp}{breaklinks}[true]{%
2691   \Hy@boolkey{breaklinks}{#1}%
2692   \let\Hy@setbreaklinks\@gobble
2693 }

2694 \define@key{Hyp}{localanchorname}[true]{%
2695   \Hy@boolkey{localanchorname}{#1}%
2696 }

```

Determines whether an automatic anchor is put on each page

```

2697 \define@key{Hyp}{pageanchor}[true]{%
2698   \Hy@boolkey{pageanchor}{#1}%
2699 }

```

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.

```

2700 \define@key{Hyp}{plainpages}[true]{%
2701   \Hy@boolkey{plainpages}{#1}%
2702 }

```

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

```

2703 \define@key{Hyp}{naturalnames}[true]{%
2704   \Hy@boolkey{naturalnames}{#1}%
2705 }

```

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

```

2706 \define@key{Hyp}{hypertexnames}[true]{%
2707   \Hy@boolkey{hypertexnames}{#1}%
2708 }

```

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

```

2709 \define@key{Hyp}{nesting}[true]{%
2710   \Hy@boolkey{nesting}{#1}%
2711 }

2712 \define@key{Hyp}{unicode}[true]{%
2713   \Hy@boolkey{unicode}{#1}%
2714   \ifHy@unicode
2715     \def\HyPsd@pdfencoding{unicode}%
2716     \HyPsd@LoadUnicode
2717   \else
2718     \def\HyPsd@pdfencoding{pdfdoc}%
2719   \fi
2720 }

2721 \def\HyPsd@LoadUnicode{%
2722   \@ifundefined{T@PU}{%
2723     \input{puenc.def}%
2724     \HyLinguex@Restore
2725   }{}%
2726   \DeclareFontFamily{PU}{pdf}{}%
2727   \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
2728   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
2729   \global\let\HyPsd@LoadUnicode\relax
2730 }

2731 \Hy@AtBeginDocument{%
2732   \ifx\HyPsd@LoadUnicode\relax
2733   \else
2734     \def\HyPsd@LoadUnicode{%
2735       \Hy@Error{%
2736         Unicode support for bookmarks is not available.\MessageBreak
2737         Activate unicode support by using one of the options\MessageBreak
2738         'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
2739         in the preamble%
2740       }\@ehc
2741       \global\let\HyPsd@LoadUnicode\relax
2742       \global\Hy@unicodedefalse
2743       \global\let\Hy@unicodetrue\Hy@unicodedefalse
2744     }%
2745   \fi
2746 }

2747 \define@key{Hyp}{pdfencoding}{%
2748   \edef\HyPsd@temp{#1}%
2749   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2750     \let\HyPsd@pdfencoding\HyPsd@temp
2751     \Hy@unicodedefalse
2752   \else
2753     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2754       \z@
2755     \else
2756       \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2757         \z@
2758       \else
2759         \@ne
2760       \fi
2761     \fi
2762     \let\HyPsd@pdfencoding\HyPsd@temp
2763     \hypersetup{unicode}%
2764     \ifHy@unicode
2765       \def\HyPsd@pdfencoding{#1}%

```

```

2766 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2767 \HyPsd@LoadStringEnc
2768 \fi
2769 \else
2770 \Hy@Warning{Cannot switch to unicode bookmarks}%
2771 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2772 \fi
2773 \else
2774 \@onelevel@sanitize\HyPsd@temp
2775 \Hy@Warning{%
2776 Values of option 'pdfencoding':\MessageBreak
2777 'pdfdoc', 'unicode', 'auto'.\MessageBreak
2778 Ignoring unknown value '\HyPsd@temp'%
2779 }%
2780 \fi
2781 \fi
2782 }
2783 \def\HyPsd@pdfencoding@auto{auto}
2784 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2785 \def\HyPsd@pdfencoding@unicode{unicode}
2786 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
2787 \def\HyPsd@LoadStringEnc{%
2788 \RequirePackage{stringenc}[2009/12/15]%
2789 \let\HyPsd@LoadStringEnc\relax
2790 }
2791 \Hy@AtBeginDocument{%
2792 \@ifpackageloaded{stringenc}{%
2793 \let\HyPsd@LoadStringEnc\relax
2794 }{%
2795 \def\HyPsd@LoadStringEnc{%
2796 \Hy@WarningNoLine{%
2797 Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak
2798 in the preamble or load the package there%
2799 }%
2800 }%
2801 }%
2802 }
2803 \def\hypersetup{\kvsetkeys{Hyp}}
2804 \newif\ifHy@setpdfversion
2805 \define@key{Hyp}{pdfversion}{%
2806 \@ifundefined{Hy@pdfversion@#1}{%
2807 \PackageWarning{hyperref}{%
2808 Unsupported PDF version '#1'.\MessageBreak
2809 Valid values: 1.2 until 1.9%
2810 }%
2811 }{%
2812 \Hy@setpdfversiontrue
2813 \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
2814 }%
2815 }
2816 \@namedef{Hy@pdfversion@1.2}{2}%
2817 \@namedef{Hy@pdfversion@1.3}{3}%
2818 \@namedef{Hy@pdfversion@1.4}{4}%
2819 \@namedef{Hy@pdfversion@1.5}{5}%
2820 \@namedef{Hy@pdfversion@1.6}{6}%
2821 \@namedef{Hy@pdfversion@1.7}{7}%
2822 \@namedef{Hy@pdfversion@1.8}{8}%

```

```

2823 \@namedef{Hy@pdfversion@1.9}{9}%
2824 \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

2825 \newif\ifHy@DviMode
2826 \let\Hy@DviErrMsg\ltx@empty
2827 \ifpdf
2828   \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2829 \else
2830   \ifxetex
2831     \def\Hy@DviErrMsg{XeTeX is running}%
2832   \else
2833     \ifvtex
2834       \ifvtexdvi
2835         \Hy@DviModetrue
2836       \else
2837         \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2838       \fi
2839     \else
2840       \Hy@DviModetrue
2841     \fi
2842   \fi
2843 \fi
2844 \def\HyOpt@CheckDvi#1{%
2845   \ifHy@DviMode
2846     \expandafter\ltx@firstofone
2847   \else
2848     \Hy@Error{%
2849       Wrong DVI mode driver option ‘#1’,\MessageBreak
2850       because \Hy@DviErrMsg
2851     }\@ehc
2852     \expandafter\ltx@gobble
2853   \fi
2854 }

2855 \DeclareVoidOption{tex4ht}{%
2856   \Hy@texhttrue
2857   \kvsetkeys{Hyp}{colorlinks=true}%
2858   \def\BeforeTeXIVht{\RequirePackage{color}}}%
2859 \def\Hy@driver{htex4ht}%
2860 \def\MaybeStopEarly{%
2861   \Hy@Message{Stopped early}%
2862   \Hy@AtBeginDocument{%
2863     \PDF@FinishDoc
2864     \gdef\PDF@FinishDoc{}%
2865   }%
2866   \endinput
2867 }%
2868 }

2869 \DeclareVoidOption{pdftex}{%
2870   \ifpdf
2871     \def\Hy@driver{hpdftex}%
2872   \else
2873     \Hy@Error{%
2874       Wrong driver option ‘pdftex’,\MessageBreak
2875       because pdfTeX in PDF mode is not detected%
2876     }\@ehc

```

```

2877 \fi
2878 }
2879 \DeclareVoidOption{nativepdf}{%
2880 \HyOpt@CheckDvi{nativepdf}{%
2881 \def\Hy@driver{hdvips}%
2882 }%
2883 }
2884 \DeclareVoidOption{dvipdfm}{%
2885 \HyOpt@CheckDvi{dvipdfm}{%
2886 \def\Hy@driver{hdvipdfm}%
2887 }%
2888 }
2889 \DeclareVoidOption{dvipdfmx}{%
2890 \HyOpt@CheckDvi{dvipdfmx}{%
2891 \def\Hy@driver{hdvipdfm}%
2892 }%
2893 }
2894 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2895 \expandafter\ifx\csname if#1\expandafter\endcsname
2896 \csname iftrue\endcsname
2897 \chardef\SpecialDvipdfmxOutlineOpen\@ne
2898 \else
2899 \chardef\SpecialDvipdfmxOutlineOpen\z@
2900 \fi
2901 }
2902 \DeclareVoidOption{xetex}{%
2903 \ifxetex
2904 \def\Hy@driver{hxetex}%
2905 \else
2906 \Hy@Error{%
2907 Wrong driver option 'xetex',\MessageBreak
2908 because XeTeX is not detected%
2909 }\@ehc
2910 \fi
2911 }
2912 \DeclareVoidOption{pdfmark}{%
2913 \HyOpt@CheckDvi{pdfmark}{%
2914 \def\Hy@driver{hdvips}%
2915 }%
2916 }
2917 \DeclareVoidOption{dvips}{%
2918 \HyOpt@CheckDvi{dvips}{%
2919 \def\Hy@driver{hdvips}%
2920 }%
2921 }
2922 \DeclareVoidOption{hypertex}{%
2923 \HyOpt@CheckDvi{hypertex}{%
2924 \def\Hy@driver{hypertex}%
2925 }%
2926 }
2927 \let\Hy@MaybeStopNow\relax
2928 \DeclareVoidOption{vtex}{%
2929 \ifvtex
2930 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2931 \def\Hy@driver{hvtex}%
2932 \else
2933 \ifnum\OpMode=10\relax

```

```

2934 \def\Hy@driver{hvtexhtm}%
2935 \def\MaybeStopEarly{%
2936   \Hy@Message{Stopped early}%
2937   \Hy@AtBeginDocument{%
2938     \PDF@FinishDoc
2939     \gdef\PDF@FinishDoc{}}%
2940   }%
2941   \endinput
2942 }%
2943 \else
2944   \Hy@Error{%
2945     Wrong driver option 'vtex',\MessageBreak
2946     because of wrong OpMode (\the\OpMode)%
2947   }\@ehc
2948   \fi
2949 \fi
2950 \else
2951   \Hy@Error{%
2952     Wrong driver option 'vtex',\MessageBreak
2953     because VTeX is not running%
2954   }\@ehc
2955   \fi
2956 }
2957 \DeclareVoidOption{vtexpdfmark}{%
2958   \ifvtex
2959     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2960     \def\Hy@driver{hvtexmrk}%
2961   \else
2962     \Hy@Error{%
2963       Wrong driver option 'vtexpdfmark',\MessageBreak
2964       because of wrong OpMode (\the\OpMode)%
2965     }\@ehc
2966     \fi
2967   \else
2968     \Hy@Error{%
2969       Wrong driver option 'vtexpdfmark,\MessageBreak
2970       because VTeX is not running%
2971     }\@ehc
2972   \fi
2973 }
2974 \DeclareVoidOption{dviwindo}{%
2975   \HyOpt@CheckDvi{dviwindo}{%
2976     \def\Hy@driver{hdviwind}%
2977     \kvsetkeys{Hyp}{colorlinks}%
2978     \PassOptionsToPackage{dviwindo}{color}%
2979   }%
2980 }
2981 \DeclareVoidOption{dvipsone}{%
2982   \HyOpt@CheckDvi{dvipsone}{%
2983     \def\Hy@driver{hdvipson}%
2984   }%
2985 }
2986 \DeclareVoidOption{textures}{%
2987   \HyOpt@CheckDvi{textures}{%
2988     \def\Hy@driver{htexture}%
2989   }%
2990 }

```

```

2991 \DeclareVoidOption{latex2html}{%
2992   \HyOpt@CheckDvi{latex2html}{%
2993     \Hy@AtBeginDocument{\@@@latex2htmlX}%
2994   }%
2995 }

```

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

```

2996 \DeclareVoidOption{ps2pdf}{%
2997   \HyOpt@CheckDvi{ps2pdf}{%
2998     \def\Hy@driver{hdvips}%
2999   }%
3000 }

3001 \let\HyOpt@DriverFallback\ltx@empty
3002 \define@key{Hyp}{driverfallback}{%
3003   \ifHy@DviMode
3004     \def\HyOpt@DriverFallback{#1}%
3005     \Hy@Match\HyOpt@DriverFallback{%
3006       ~(|dvipdfm|dvipdfmx|dvips|dvipsone|dviwindo|hypertex|ps2pdf|
3007       latex2html|tex4ht)$%
3008     }{}%
3009     \let\HyOpt@DriverFallback\ltx@empty
3010   }%
3011 \fi
3012 }

```

## 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.

```

3013 \define@key{Hyp}{hyperfigures}[true]{%
3014   \Hy@boolkey[hyperfigures]{figures}{#1}%
3015 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

3016 \define@key{Hyp}{hyperfootnotes}[true]{%
3017   \Hy@boolkey[hyperfootnotes]{#1}%
3018 }

```

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

```

3019 \def\back@none{none}
3020 \def\back@section{section}
3021 \def\back@page{page}
3022 \def\back@slide{slide}
3023 \define@key{Hyp}{backref}[section]{%
3024   \lowercase{\def\Hy@tempa{#1}}%
3025   \ifx\Hy@tempa\@empty
3026     \let\Hy@tempa\back@section
3027   \fi
3028   \ifx\Hy@tempa\Hy@false
3029     \let\Hy@tempa\back@none
3030   \fi
3031   \ifx\Hy@tempa\back@slide
3032     \let\Hy@tempa\back@section
3033   \fi
3034   \ifx\Hy@tempa\back@page
3035     \PassOptionsToPackage{hyperpageref}{backref}%
3036     \Hy@backreftrue
3037   \else

```

```

3038 \ifx\Hy@tempa\back@section
3039 \PassOptionsToPackage{hyperref}{backref}%
3040 \Hy@backreftrue
3041 \else
3042 \ifx\Hy@tempa\back@none
3043 \Hy@backreffalse
3044 \else
3045 \Hy@WarnOptionValue{#1}{backref}{%
3046 'section', 'slide', 'page', 'none',\MessageBreak
3047 or 'false'}%
3048 \fi
3049 \fi
3050 \fi
3051 }
3052 \define@key{Hyp}{pagebackref}[true]{%
3053 \edef\Hy@tempa{#1}%
3054 \lowercase\expandafter{%
3055 \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
3056 }%
3057 \ifx\Hy@tempa\@empty
3058 \let\Hy@tempa\Hy>true
3059 \fi
3060 \ifx\Hy@tempa\Hy>true
3061 \PassOptionsToPackage{hyperpageref}{backref}%
3062 \Hy@backreftrue
3063 \else
3064 \ifx\Hy@tempa\Hy>false
3065 \Hy@backreffalse
3066 \else
3067 \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
3068 \fi
3069 \fi
3070 }

```

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

```

3071 \define@key{Hyp}{hyperindex}[true]{%
3072 \Hy@boolkey{hyperindex}{#1}%
3073 }

```

Configuration of encap char.

```

3074 \define@key{Hyp}{encap}[|]{%
3075 \def\HyInd@EncapChar{#1}%
3076 }

```

## 12 Language options

The `\autoref` feature depends on the language.

```

3077 \def\HyLang@afrikaans{%
3078 \def\equationautorefname{Vergelyking}%
3079 \def\footnoteautorefname{Voetnota}%
3080 \def\itemautorefname{Item}%
3081 \def\figureautorefname{Figuur}%
3082 \def\tableautorefname{Tabel}%
3083 \def\partautorefname{Deel}%
3084 \def\appendixautorefname{Bylae}%
3085 \def\chapterautorefname{Hoofstuk}%

```



```

3086 \def\sectionautorefname{Afdeling}%
3087 \def\subsectionautorefname{Subafdeling}%
3088 \def\subsubsectionautorefname{Subsubafdeling}%
3089 \def\paragraphautorefname{Paragraaf}%
3090 \def\subparagraphautorefname{Subparagraaf}%
3091 \def\FancyVerbLineautorefname{Lyn}%
3092 \def\theoremautorefname{Teorema}%
3093 \def\pageautorefname{Bladsy}%
3094 }
3095 \def\HyLang@english{%
3096 \def\equationautorefname{Equation}%
3097 \def\footnoteautorefname{footnote}%
3098 \def\itemautorefname{item}%
3099 \def\figureautorefname{Figure}%
3100 \def\tableautorefname{Table}%
3101 \def\partautorefname{Part}%
3102 \def\appendixautorefname{Appendix}%
3103 \def\chapterautorefname{chapter}%
3104 \def\sectionautorefname{section}%
3105 \def\subsectionautorefname{subsection}%
3106 \def\subsubsectionautorefname{subsubsection}%
3107 \def\paragraphautorefname{paragraph}%
3108 \def\subparagraphautorefname{subparagraph}%
3109 \def\FancyVerbLineautorefname{line}%
3110 \def\theoremautorefname{Theorem}%
3111 \def\pageautorefname{page}%
3112 }
3113 \def\HyLang@french{%
3114 \def\equationautorefname{'Equation}%
3115 \def\footnoteautorefname{note}%
3116 \def\itemautorefname{item}%
3117 \def\figureautorefname{Figure}%
3118 \def\tableautorefname{Tableau}%
3119 \def\partautorefname{Partie}%
3120 \def\appendixautorefname{Appendice}%
3121 \def\chapterautorefname{chapitre}%
3122 \def\sectionautorefname{section}%
3123 \def\subsectionautorefname{sous-section}%
3124 \def\subsubsectionautorefname{sous-sous-section}%
3125 \def\paragraphautorefname{paragraphe}%
3126 \def\subparagraphautorefname{sous-paragraphe}%
3127 \def\FancyVerbLineautorefname{ligne}%
3128 \def\theoremautorefname{Th\'eor\'eme}%
3129 \def\pageautorefname{page}%
3130 }
3131 \def\HyLang@german{%
3132 \def\equationautorefname{Gleichung}%
3133 \def\footnoteautorefname{Fu\ss note}%
3134 \def\itemautorefname{Punkt}%
3135 \def\figureautorefname{Abbildung}%
3136 \def\tableautorefname{Tabelle}%
3137 \def\partautorefname{Teil}%
3138 \def\appendixautorefname{Anhang}%
3139 \def\chapterautorefname{Kapitel}%
3140 \def\sectionautorefname{Abschnitt}%
3141 \def\subsectionautorefname{Unterabschnitt}%
3142 \def\subsubsectionautorefname{Unterunterabschnitt}%

```

```

3143 \def\paragraphautorefname{Absatz}%
3144 \def\subparagraphautorefname{Unterabsatz}%
3145 \def\FancyVerbLineautorefname{Zeile}%
3146 \def\theoremautorefname{Theorem}%
3147 \def\pageautorefname{Seite}%
3148 }
3149 \def\HyLang@italian{%
3150 \def\equationautorefname{Equazione}%
3151 \def\footnoteautorefname{nota}%
3152 \def\itemautorefname{punto}%
3153 \def\figureautorefname{Figura}%
3154 \def\tableautorefname{Tabella}%
3155 \def\partautorefname{Parte}%
3156 \def\appendixautorefname{Appendice}%
3157 \def\chapterautorefname{Capitolo}%
3158 \def\sectionautorefname{sezione}%
3159 \def\subsectionautorefname{sottosezione}%
3160 \def\subsubsectionautorefname{sottosottosezione}%
3161 \def\paragraphautorefname{paragrafo}%
3162 \def\subparagraphautorefname{sottoparagrafo}%
3163 \def\FancyVerbLineautorefname{linea}%
3164 \def\theoremautorefname{Teorema}%
3165 \def\pageautorefname{Pag.\@}%
3166 }
3167 \def\HyLang@magyar{%
3168 \def\equationautorefname{Egyenlet}%
3169 \def\footnoteautorefname{[\'abjegyzet}%
3170 \def\itemautorefname{Elem}%
3171 \def\figureautorefname{\'Abra}%
3172 \def\tableautorefname{T\'abl\'azat}%
3173 \def\partautorefname{R\'esz}%
3174 \def\appendixautorefname{F\'uggel\'ek}%
3175 \def\chapterautorefname{fejezet}%
3176 \def\sectionautorefname{szakasz}%
3177 \def\subsectionautorefname{alszakasz}%
3178 \def\subsubsectionautorefname{alalszakasz}%
3179 \def\paragraphautorefname{bekezd\'es}%
3180 \def\subparagraphautorefname{albekezd\'es}%
3181 \def\FancyVerbLineautorefname{sor}%
3182 \def\theoremautorefname{T\'etel}%
3183 \def\pageautorefname{oldal}%
3184 }
3185 \def\HyLang@portuges{%
3186 \def\equationautorefname{Equa\c c\~ao}%
3187 \def\footnoteautorefname{Nota de rodap\'e}%
3188 \def\itemautorefname{Item}%
3189 \def\figureautorefname{Figura}%
3190 \def\tableautorefname{Tabela}%
3191 \def\partautorefname{Parte}%
3192 \def\appendixautorefname{Ap\^endice}%
3193 \def\chapterautorefname{Cap\'itulo}%
3194 \def\sectionautorefname{Se\c c\~ao}%
3195 \def\subsectionautorefname{Subse\c c\~ao}%
3196 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
3197 \def\paragraphautorefname{par\'agrafo}%
3198 \def\subparagraphautorefname{subpar\'agrafo}%
3199 \def\FancyVerbLineautorefname{linha}%

```



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.

```
3224 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrI.}%
3225 % \def\appendixautorefname{%
3226 % \cyr\cyrp\cyrr\cyri\cyrI\cyro\cyrzh\cyre\cyrn\cyri\cyre
3227 % }%
```

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.

```
3228 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
3229 \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.

```
3230 \def\paragraphautorefname{\cyr\cyrp.}%
3231 \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.

```
3232 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
3233 % \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.

```
3234 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%
```

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

```
3235 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
3236 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
3237 % \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 ...

```
3238 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
3239 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
3240 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
3241 \def\pageautorefname{\cyr\cyrs.}%
3242 }
```

```
3243 \def\HyLang@spanish{%
3244 \def\equationautorefname{Ecuaci'on}%
3245 \def\footnoteautorefname{Nota a pie de p'agina}%
3246 \def\itemautorefname{Elemento}%
3247 \def\figureautorefname{Figura}%
3248 \def\tableautorefname{Tabla}%
3249 \def\partautorefname{Parte}%
```

```

3250 \def\appendixautorefname{Ap\'endice}%
3251 \def\chapterautorefname{Cap\'itulo}%
3252 \def\sectionautorefname{Secci\'on}%
3253 \def\subsectionautorefname{Subsecci\'on}%
3254 \def\subsubsectionautorefname{Subsubsecci\'on}%
3255 \def\paragraphautorefname{P\'arrafo}%
3256 \def\subparagraphautorefname{Subp\'arrafo}%
3257 \def\FancyVerbLineautorefname{L\'inea}%
3258 \def\theoremautorefname{Teorema}%
3259 \def\pageautorefname{P\'agina}%
3260 }
3261 \def\HyLang@vietnamese{%
3262 \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr\'inh}%
3263 \def\footnoteautorefname{Ch\'u th\'ich}%
3264 \def\itemautorefname{m\du{c}%
3265 \def\figureautorefname{H\'inh}%
3266 \def\tableautorefname{B\h{a}ng}%
3267 \def\partautorefname{Ph\'acircumflex{}n}%
3268 \def\appendixautorefname{Ph\du{l}\du{c}%
3269 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
3270 \def\sectionautorefname{m\du{c}%
3271 \def\subsectionautorefname{m\du{c}%
3272 \def\subsubsectionautorefname{m\du{c}%
3273 \def\paragraphautorefname{\dj{}o\da{n}%
3274 \def\subparagraphautorefname{\dj{}o\da{n}%
3275 \def\FancyVerbLineautorefname{d\'ong}%
3276 \def\theoremautorefname{DJ{}\di{nh l\'y}%
3277 \def\pageautorefname{Trang}%
3278 }

```

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

```

3279 \def\HyLang@addto#1#2{%
3280 #2%
3281 \@temptokena{#2}%
3282 \ifx#1\relax
3283 \let#1\@empty
3284 \fi
3285 \ifx#1\@undefined
3286 \edef#1{\the\@temptokena}%
3287 \else
3288 \toks@\expandafter{#1}%
3289 \edef#1{\the\toks@\the\@temptokena}%
3290 \fi
3291 \@temptokena{}\toks@\@temptokena
3292 }
3293 \def\HyLang@DeclareLang#1#2#3{%
3294 \@ifpackagewith{babel}{#1}{%
3295 \expandafter\HyLang@addto
3296 \csname extras#1\expandafter\endcsname
3297 \csname HyLang@#2\endcsname
3298 \begingroup
3299 \edef\x{\endgroup
3300 #3%
3301 }%
3302 \x
3303 \@namedef{HyLang@#1@done}{}%

```

```

3304 }{}%
3305 \begingroup
3306 \edef\x##1##2{%
3307   \noexpand\ifx##2\relax
3308     \errmessage{No definitions for language #2' found!}%
3309   \noexpand\fi
3310 \endgroup
3311 \noexpand\define@key{Hyp}{#1}[]{}%
3312 \noexpand\@ifundefined{HyLang@#1@done}{}%
3313 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3314 #3%
3315 \noexpand\@namedef{HyLang@#1@done}{}%
3316 }{}%
3317 }%
3318 }%
3319 \expandafter\x\csname extras#1\expandafter\endcsname
3320 \csname HyLang@#2\endcsname
3321 }
3322 \HyLang@DeclareLang{english}{english}{}
3323 \HyLang@DeclareLang{UKenglish}{english}{}
3324 \HyLang@DeclareLang{british}{english}{}
3325 \HyLang@DeclareLang{USenglish}{english}{}
3326 \HyLang@DeclareLang{american}{english}{}
3327 \HyLang@DeclareLang{german}{german}{}
3328 \HyLang@DeclareLang{austrian}{german}{}
3329 \HyLang@DeclareLang{ngerman}{german}{}
3330 \HyLang@DeclareLang{naustrian}{german}{}
3331 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3332 \HyLang@DeclareLang{brazil}{portuges}{}
3333 \HyLang@DeclareLang{brazilian}{portuges}{}
3334 \HyLang@DeclareLang{portuguese}{portuges}{}
3335 \HyLang@DeclareLang{spanish}{spanish}{}
3336 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3337 \HyLang@DeclareLang{french}{french}{}
3338 \HyLang@DeclareLang{frenchb}{french}{}
3339 \HyLang@DeclareLang{francais}{french}{}
3340 \HyLang@DeclareLang{acadian}{french}{}
3341 \HyLang@DeclareLang{canadien}{french}{}
3342 \HyLang@DeclareLang{italian}{italian}{}
3343 \HyLang@DeclareLang{magyar}{magyar}{}
3344 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

3345 \DeclareVoidOption{vietnamese}{%
3346   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
3347   \Hy@AtEndOfPackage{%
3348     \@ifundefined{T@PU}{}{}%
3349     \input{puvnenc.def}%
3350   }%
3351 }%
3352 }
3353 \DeclareVoidOption{vietnam}{%
3354   \HyLang@addto\extravietnam\HyLang@vietnamese
3355   \Hy@AtEndOfPackage{%
3356     \@ifundefined{T@PU}{}{}%
3357     \input{puvnenc.def}%
3358   }%
3359 }%

```

```
3360 }
```

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

```
3361 \DeclareVoidOption{arabic}{}%
3362 \Hy@AtEndOfPackage{%
3363   \ifundefined{T@PU}{-}{%
3364     \input{puarenc.def}%
3365   }%
3366 }%
3367 }
```

## 13 Options to change appearance of links

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

```
3368 \define@key{Hyp}{colorlinks}[true]{%
3369   \Hy@boolkey{colorlinks}{#1}%
3370 }
3371 \DeclareVoidOption{hidelinks}{}%
3372 \Hy@colorlinksfalse
3373 \Hy@ocgcolorlinksfalse
3374 \Hy@frenchlinksfalse
3375 \def\Hy@colorlink##1{\begingroup}%
3376 \def\Hy@endcolorlink{\endgroup}%
3377 \def\@pdfborder{0 0 0}%
3378 \let\@pdfborderstyle\ltx@empty
3379 }
3380 \define@key{Hyp}{ocgcolorlinks}[true]{%
3381   \Hy@boolkey{ocgcolorlinks}{#1}%
3382 }
3383 \Hy@AtBeginDocument{%
3384   \begingroup
3385   \ifundefined{OBJ@OCG@view}{%
3386     \ifHy@ocgcolorlinks
3387       \Hy@Warning{%
3388         Driver does not support ‘ocgcolorlinks’,\MessageBreak
3389         using ‘colorlinks’ instead%
3390       }%
3391     \fi
3392   }{}%
3393   \endgroup
3394 }
3395 \define@key{Hyp}{frenchlinks}[true]{%
3396   \Hy@boolkey{frenchlinks}{#1}%
3397 }
```

## 14 Bookmarking

```
3398 \begingroup\expandafter\expandafter\expandafter\endgroup
3399 \expandafter\ifx\csname chapter\endcsname\relax
3400   \def\toclevel@part{0}%
3401 \else
3402   \def\toclevel@part{-1}%
3403 \fi
3404 \def\toclevel@chapter{0}
3405 \def\toclevel@section{1}
```

```

3406 \def\toclevel@subsection{2}
3407 \def\toclevel@subsubsection{3}
3408 \def\toclevel@paragraph{4}
3409 \def\toclevel@subparagraph{5}
3410 \def\toclevel@figure{0}
3411 \def\toclevel@table{0}
3412 \ifpackageloaded{listings}{%
3413   \providecommand*\theHlstlisting{\thelstlisting}%
3414   \providecommand*\toclevel@lstlisting{0}%
3415 }{}
3416 \ifpackageloaded{listing}{%
3417   \providecommand*\theHlisting{\thelisting}%
3418   \providecommand*\toclevel@listing{0}%
3419 }{}

3420 \define@key{Hyp}{bookmarks}[true]{%
3421   \Hy@boolkey{bookmarks}{#1}%
3422 }

3423 \define@key{Hyp}{bookmarksopen}[true]{%
3424   \Hy@boolkey{bookmarksopen}{#1}%
3425 }

```

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.

```

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

```



```

3451 }%
3452 \fi
3453 \endgroup
3454 }

```

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

```

3455 \define@key{Hyp}{bookmarksopenlevel}{%
3456 \def\@bookmarksopenlevel{#1}%
3457 }
3458 \def\@bookmarksopenlevel{\maxdimen}
3459 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
3460 \define@key{Hyp}{bookmarkstype}{%
3461 \def\Hy@bookmarkstype{#1}%
3462 }
3463 \def\Hy@bookmarkstype{toc}

```

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

```

3464 \define@key{Hyp}{bookmarksnumbered}[true]{%
3465 \Hy@boolkey{bookmarksnumbered}{#1}%
3466 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

3467 \define@key{Hyp}{CJKbookmarks}[true]{%
3468 \Hy@boolkey{CJKbookmarks}{#1}%
3469 }

3470 \def\Hy@temp#1{%
3471 \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3472 }
3473 \def\Hy@@temp#1#2#3{%
3474 \define@key{Hyp}{#2color}{%
3475 \HyColor@HyperrefColor{##1}{#1}%
3476 }%
3477 \def#1{#3}%
3478 }
3479 \Hy@temp{link}{red}
3480 \Hy@temp{anchor}{black}
3481 \Hy@temp{cite}{green}
3482 \Hy@temp{file}{cyan}
3483 \Hy@temp{url}{magenta}
3484 \Hy@temp{menu}{red}
3485 \Hy@temp{run}{\@filecolor}
3486 \define@key{Hyp}{pagecolor}{%
3487 \Hy@WarningPageColor
3488 }
3489 \def\Hy@WarningPageColor{%
3490 \Hy@WarningNoLine{Option ‘pagecolor’ is not available anymore}%
3491 \global\let\Hy@WarningPageColor\relax
3492 }
3493 \define@key{Hyp}{allcolors}{%
3494 \HyColor@HyperrefColor{#1}\@linkcolor
3495 \HyColor@HyperrefColor{#1}\@anchorcolor
3496 \HyColor@HyperrefColor{#1}\@citecolor
3497 \HyColor@HyperrefColor{#1}\@filecolor
3498 \HyColor@HyperrefColor{#1}\@urlcolor
3499 \HyColor@HyperrefColor{#1}\@menucolor
3500 \HyColor@HyperrefColor{#1}\@runcolor
3501 }

```

```

3502 \def\hyperbaseurl#1{\def\@baseurl{#1}}
3503 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
3504 \let\@baseurl\@empty
3505 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
3506 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
3507 \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.

```

3508 \let\@pdfpagetransition\relax
3509 \define@key{Hyp}{pdfpagetransition}{%
3510   \def\@pdfpagetransition{#1}%
3511 }

```

`\@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.

```

3512 \let\@pdfpageduration\relax
3513 \define@key{Hyp}{pdfpageduration}{%
3514   \def\@pdfpageduration{#1}%
3515   \Hy@Match\@pdfpageduration{%
3516     ^([|0-9]+\.\?[0-9]*|[0-9]*\.[0-9]+)$%
3517   }{ }{%
3518     \Hy@Warning{%
3519       Invalid value '\@pdfpageduration'\MessageBreak
3520       of option 'pdfpageduration'\MessageBreak
3521       is replaced by an empty value%
3522     }%
3523     \let\@pdfpageduration\ltx@empty
3524   }%
3525 }

```

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.

```

3526 \newif\ifHy@useHidKey
3527 \Hy@useHidKeyfalse
3528 \define@key{Hyp}{pdfpagehidden}[true]{%
3529   \Hy@boolkey{pdfpagehidden}{#1}%
3530   \ifHy@pdfpagehidden
3531     \global\Hy@useHidKeytrue
3532   \fi
3533 }

```

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).

```

3534 \def\Hy@ColorList{cite,file,link,menu,run,url}

```

```

3535 \@for\Hy@temp:=\Hy@ColorList\do{%
3536   \edef\Hy@temp{%
3537     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
3538       \noexpand\HyColor@HyperrefBorderColor
3539         {##1}%
3540       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
3541         {hyperref}%
3542       {\Hy@temp bordercolor}%
3543     }%
3544   }%
3545   \Hy@temp
3546 }
3547 \define@key{Hyp}{pagebordercolor}{%
3548   \Hy@WarningPageBorderColor
3549 }
3550 \def\Hy@WarningPageBorderColor{%
3551   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
3552   \global\let\Hy@WarningPageBorderColor\relax
3553 }
3554 \define@key{Hyp}{allbordercolors}{%
3555   \def\Hy@temp##1##2{%
3556     \HyColor@HyperrefBorderColor{#1}##1{hyperref}{##2bordercolor}%
3557   }%
3558   \Hy@temp\@citebordercolor{cite}%
3559   \Hy@temp\@filebordercolor{file}%
3560   \Hy@temp\@linkbordercolor{link}%
3561   \Hy@temp\@menubordercolor{menu}%
3562   \Hy@temp\@runbordercolor{run}%
3563   \Hy@temp\@urlbordercolor{url}%
3564 }
3565 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
3566 \Hy@DefNameKey{pdfhighlight}{%
3567   \do{/I}{Invert}%
3568   \do{/N}{None}%
3569   \do{/O}{Outline}%
3570   \do{/P}{Push}%
3571 }
3572 \define@key{Hyp}{pdfborder}{%
3573   \let\Hy@temp\@pdfborder
3574   \def\@pdfborder{#1}%
3575   \Hy@Match\@pdfborder{%
3576     ^\HyPat@NonNegativeReal/ %
3577     \HyPat@NonNegativeReal/ %
3578     \HyPat@NonNegativeReal/%
3579     ( ?[\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)*])?%%
3580   }{}{%
3581     \Hy@Warning{%
3582       Invalid value '\@pdfborder'\MessageBreak
3583       for option 'pdfborder'\MessageBreak
3584       Option setting is ignored%
3585     }%
3586     \let\@pdfborder\Hy@temp
3587   }%
3588 }
3589 \define@key{Hyp}{pdfborderstyle}{%
3590   \let\Hy@temp\@pdfborderstyle
3591   \def\@pdfborderstyle{#1}%

```

```

3592 \Hy@Match\@pdfborderstyle{%
3593   ^%
3594   ( */Type */Border%
3595   | */W +\HyPat@NonNegativeReal/%
3596   | */S */[SDBIU]%
3597   | */D *[\ *(\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)?)]%
3598   )* *$%
3599 }{}{%
3600   \Hy@Warning{%
3601     Invalid value '\@pdfborderstyle'\MessageBreak
3602     for option 'pdfborderstyle'\MessageBreak
3603     Option setting is ignored%
3604   }%
3605   \let\@pdfborderstyle\Hy@temp
3606 }%
3607 }
3608 \def\Hy@setpdfborder{%
3609   \ifx\@pdfborder\@empty
3610   \else
3611     /Border[\@pdfborder]%
3612   \fi
3613   \ifx\@pdfborderstyle\@empty
3614   \else
3615     /BS<<\@pdfborderstyle>>%
3616   \fi
3617 }
3618 \Hy@DefNameKey{pdfpagemode}{%
3619   \do{UseNone}{}%
3620   \do{UseOutlines}{}%
3621   \do{UseThumbs}{}%
3622   \do{FullScreen}{}%
3623   \do{UseOC}{PDF 1.5}%
3624   \do{UseAttachments}{PDF 1.6}%
3625 }
3626 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3627   \do{UseNone}{}%
3628   \do{UseOutlines}{}%
3629   \do{UseThumbs}{}%
3630   \do{FullScreen}{}%
3631   \do{UseOC}{PDF 1.5}%
3632   \do{UseAttachments}{PDF 1.6}%
3633 }
3634 \Hy@DefNameKey{pdfdirection}{%
3635   \do{L2R}{Left to right}%
3636   \do{R2L}{Right to left}%
3637 }
3638 \Hy@DefNameKey{pdfviewarea}{%
3639   \do{MediaBox}{}%
3640   \do{CropBox}{}%
3641   \do{BleedBox}{}%
3642   \do{TrimBox}{}%
3643   \do{ArtBox}{}%
3644 }
3645 \Hy@DefNameKey{pdfviewclip}{%
3646   \do{MediaBox}{}%
3647   \do{CropBox}{}%
3648   \do{BleedBox}{}%

```

```

3649 \do{TrimBox}{}%
3650 \do{ArtBox}{}%
3651 }
3652 \Hy@DefNameKey{pdfprintarea}{%
3653 \do{MediaBox}{}%
3654 \do{CropBox}{}%
3655 \do{BleedBox}{}%
3656 \do{TrimBox}{}%
3657 \do{ArtBox}{}%
3658 }
3659 \Hy@DefNameKey{pdfprintclip}{%
3660 \do{MediaBox}{}%
3661 \do{CropBox}{}%
3662 \do{BleedBox}{}%
3663 \do{TrimBox}{}%
3664 \do{ArtBox}{}%
3665 }
3666 \Hy@DefNameKey{pdfprintscaling}{%
3667 \do{AppDefault}{}%
3668 \do{None}{}%
3669 }
3670 \Hy@DefNameKey{pdfduplex}{%
3671 \do{Simplex}{}%
3672 \do{DuplexFlipShortEdge}{}%
3673 \do{DuplexFlipLongEdge}{}%
3674 }
3675 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3676 \do{true}{}%
3677 \do{false}{}%
3678 }
3679 \define@key{Hyp}{pdfprintpagerange}{%
3680 \def\@pdfprintpagerange{#1}%
3681 }
3682 \Hy@DefNameKey{pdfnumcopies}{%
3683 \do{2}{two copies}%
3684 \do{3}{three copies}%
3685 \do{4}{four copies}%
3686 \do{5}{five copies}%
3687 }
3688 \define@key{Hyp}{pdfusetitle}[true]{%
3689 \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
3690 }
3691 \def\HyXeTeX@CheckUnicode{%
3692 \ifxetex
3693 \ifHy@unicode
3694 \else
3695 \Hy@WarningNoLine{%
3696 XeTeX driver only supports unicode.\MessageBreak
3697 Enabling option 'unicode'%
3698 }%
3699 \kvsetkeys{Hyp}{unicode}%
3700 \fi
3701 \else
3702 \let\HyXeTeX@CheckUnicode\relax
3703 \fi
3704 }
3705 \def\HyPsd@PrerenderUnicode#1{%

```

```

3706 \begingroup
3707 \expandafter\ifx\curname PrerenderUnicode\endcsname\relax
3708 \else
3709 \sbox0{%
3710 \let\GenericInfo\@gobbletwo
3711 \let\GenericWarning\@gobbletwo
3712 \let\GenericError\@gobblefour
3713 \PrerenderUnicode{#1}%
3714 }%
3715 \fi
3716 \endgroup
3717 }
3718 \define@key{Hyp}{pdftitle}{%
3719 \HyXeTeX@CheckUnicode
3720 \HyPsd@XeTeXBigCharstrue
3721 \HyPsd@PrerenderUnicode{#1}%
3722 \pdfstringdef\@pdftitle{#1}%
3723 }
3724 \define@key{Hyp}{pdfauthor}{%
3725 \HyXeTeX@CheckUnicode
3726 \HyPsd@XeTeXBigCharstrue
3727 \HyPsd@PrerenderUnicode{#1}%
3728 \pdfstringdef\@pdfauthor{#1}%
3729 }
3730 \define@key{Hyp}{pdfproducer}{%
3731 \HyXeTeX@CheckUnicode
3732 \HyPsd@XeTeXBigCharstrue
3733 \HyPsd@PrerenderUnicode{#1}%
3734 \pdfstringdef\@pdfproducer{#1}%
3735 }
3736 \define@key{Hyp}{pdfcreator}{%
3737 \HyXeTeX@CheckUnicode
3738 \HyPsd@XeTeXBigCharstrue
3739 \HyPsd@PrerenderUnicode{#1}%
3740 \pdfstringdef\@pdfcreator{#1}%
3741 }
3742 \define@key{Hyp}{pdfcreationdate}{%
3743 \begingroup
3744 \Hy@unicodedefalse
3745 \pdfstringdef\@pdfcreationdate{#1}%
3746 \endgroup
3747 }
3748 \define@key{Hyp}{pdfmoddate}{%
3749 \begingroup
3750 \Hy@unicodedefalse
3751 \pdfstringdef\@pdfmoddate{#1}%
3752 \endgroup
3753 }
3754 \define@key{Hyp}{pdfsubject}{%
3755 \HyXeTeX@CheckUnicode
3756 \HyPsd@XeTeXBigCharstrue
3757 \HyPsd@PrerenderUnicode{#1}%
3758 \pdfstringdef\@pdfsubject{#1}%
3759 }
3760 \define@key{Hyp}{pdfkeywords}{%
3761 \HyXeTeX@CheckUnicode
3762 \HyPsd@XeTeXBigCharstrue

```

```

3763 \HyPsd@PrerenderUnicode{#1}%
3764 \pdfstringdef\@pdfkeywords{#1}%
3765 }
3766 \define@key{Hyp}{pdftrapped}{%
3767 \lowercase{\edef\Hy@temp{#1}}%
3768 \ifx\Hy@temp\HyInfo@trapped@true
3769 \def\@pdftrapped{True}%
3770 \else
3771 \ifx\Hy@temp\HyInfo@trapped@false
3772 \def\@pdftrapped{False}%
3773 \else
3774 \ifx\Hy@temp\HyInfo@trapped@unknown
3775 \def\@pdftrapped{Unknown}%
3776 \else
3777 \ifx\Hy@temp\@empty
3778 \else
3779 \Hy@Warning{%
3780 Unsupported value '#1'\MessageBreak
3781 for option 'pdftrapped'%
3782 }%
3783 \fi
3784 \def\@pdftrapped{}}%
3785 \fi
3786 \fi
3787 \fi
3788 }
3789 \def\HyInfo@trapped@true{true}
3790 \def\HyInfo@trapped@false{false}
3791 \def\HyInfo@trapped@unknown{unknown}
3792 \def\HyInfo@TrappedUnsupported{%
3793 \ifx\@pdftrapped\@empty
3794 \else
3795 \Hy@WarningNoLine{'pdftrapped' is not supported by this driver}%
3796 \gdef\HyInfo@TrappedUnsupported{}}%
3797 \fi
3798 }
3799 \define@key{Hyp}{pdfinfo}{%
3800 \kvsetkeys{pdfinfo}{#1}%
3801 }
3802 \def\Hy@temp#1{%
3803 \lowercase{\Hy@temp@A{#1}}{#1}%
3804 }
3805 \def\Hy@temp@A#1#2{%
3806 \define@key{pdfinfo}{#2}{%
3807 \hypersetup{pdf#1={##1}}%
3808 }%
3809 }
3810 \Hy@temp{Title}
3811 \Hy@temp{Author}
3812 \Hy@temp{Keywords}
3813 \Hy@temp{Subject}
3814 \Hy@temp{Creator}
3815 \Hy@temp{Producer}
3816 \Hy@temp{CreationDate}
3817 \Hy@temp{ModDate}
3818 \Hy@temp{Trapped}
3819 \newif\ifHyInfo@AddonUnsupported

```

```

3820 \kv@set@family@handler{pdfinfo}{%
3821   \HyInfo@AddonHandler{#1}{#2}%
3822 }
3823 \let\HyInfo@do\relax
3824 \def\HyInfo@AddonHandler#1#2{%
3825   \ifx\kv@value\relax
3826     \Hy@Warning{%
3827       Option 'pdfinfo': ignoring key '\kv@key' without value%
3828     }%
3829   \else
3830     \EdefEscapeName\HyInfo@KeyEscaped{\kv@key}%
3831     \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3832     \expandafter\ifx\csname KV@pdfinfo@\HyInfo@Key\endcsname\relax
3833       \ifHyInfo@AddonUnsupported
3834         \Hy@Warning{%
3835           This driver does not support additional\MessageBreak
3836           information entries, therefore\MessageBreak
3837           '\kv@key' is ignored%
3838         }%
3839       \else
3840         \define@key{pdfinfo}{\HyInfo@Key}{%
3841           \HyXeTeX@CheckUnicode
3842           \HyPsd@XeTeXBigCharstrue
3843           \HyPsd@PrerenderUnicode{##1}%
3844           \pdfstringdef\HyInfo@Value{##1}%
3845           \expandafter\let\csname HyInfo@Value@\HyInfo@Key\endcsname
3846             \HyInfo@Value
3847         }%
3848         \edef\HyInfo@AddonList{%
3849           \HyInfo@AddonList
3850           \HyInfo@do{\HyInfo@Key}%
3851         }%
3852         \kv@parse@normalized{%
3853           \HyInfo@Key={#2}%
3854         }{%
3855           \kv@processor@default{pdfinfo}%
3856         }%
3857       \fi
3858     \else
3859       \kv@parse@normalized{%
3860         \HyInfo@Key={#2}%
3861       }{%
3862         \kv@processor@default{pdfinfo}%
3863       }%
3864     \fi
3865   \fi
3866 }
3867 \def\HyInfo@GenerateAddons{%
3868   \ifHyInfo@AddonUnsupported
3869     \def\HyInfo@Addons{}%
3870   \else
3871     \begingroup
3872     \toks@{}%
3873     \def\HyInfo@do##1{%
3874       \EdefEscapeName\HyInfo@Key{##1}%
3875       \edef\x{%
3876         \toks@{

```



```

3877         \the\toks@
3878         /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
3879     }%
3880 }%
3881 \x
3882 }%
3883 \HyInfo@AddonList
3884 \edef\x{\endgroup
3885     \def\noexpand\HyInfo@Addons{\the\toks@}%
3886 }%
3887 \x
3888 \fi
3889 }
3890 \def\HyInfo@AddonList{}

3891 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}
3892 \define@key{Hyp}{pdfinkmargin}{\setpdfinkmargin{#1}}
3893 \let\setpdfinkmargin\@gobble
3894 \def\calculate@pdfview#1 #2\{\%
3895     \def\@pdfview{#1}%
3896     \ifx\#2\%
3897         \def\@pdfviewparams{-32768}%
3898     \else
3899         \def\@pdfviewparams{#2}%
3900     \fi
3901 }

3902 \begingroup\expandafter\expandafter\expandafter\endgroup
3903 \expandafter\ifx\csname numexpr\endcsname\relax
3904     \def\Hy@number#1{%
3905         \expandafter\@firstofone\expandafter{\number#1}%
3906     }%
3907 \else
3908     \def\Hy@number#1{%
3909         \the\numexpr#1\relax
3910     }%
3911 \fi

3912 \define@key{Hyp}{pdfstartpage}{%
3913     \ifx\#1\%
3914         \def\@pdfstartpage{}%
3915     \else
3916         \def\@pdfstartpage{\Hy@number{#1}}%
3917     \fi
3918 }%

3919 \define@key{Hyp}{pdfstartview}{%
3920     \ifx\#1\%
3921         \def\@pdfstartview{}%
3922     \else
3923         \hypercalcbpdef\@pdfstartview{/#1}%
3924     \fi
3925 }

3926 \def\HyPat@NonNegativeReal/{%
3927     \ *([0-9]+\.[0-9]*|[0-9]*\.[0-9]+) *%
3928 }

3929 \define@key{Hyp}{pdfremotestartview}{%
3930     \ifx\#1\%
3931         \def\@pdfremotestartview{/Fit}%
3932     \else
3933         \hypercalcbpdef\@pdfremotestartview{#1}%

```

```

3934 \edef\@pdfremotestartview{\@pdfremotestartview}%
3935 \Hy@Match\@pdfremotestartview{%
3936   ~(XYZ -?(null|\HyPat@NonNegativeReal/) %
3937     -?(null|\HyPat@NonNegativeReal/) %
3938     (null|\HyPat@NonNegativeReal/)|%
3939     Fit(|B|%
3940     (H|V|BH|BV) (null|\HyPat@NonNegativeReal/)|%
3941     R \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/ %
3942     \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/%
3943   )$%
3944 }~}%
3945 \Hy@Warning{%
3946   Invalid value '\@pdfremotestartview'\MessageBreak
3947   of 'pdfremotestartview'\MessageBreak
3948   is replaced by 'Fit'%
3949 }%
3950 \let\@pdfremotestartview\@empty
3951 }%
3952 \ifx\@pdfremotestartview\@empty
3953   \def\@pdfremotestartview{/Fit}%
3954 \else
3955   \edef\@pdfremotestartview{/ \@pdfremotestartview}%
3956 \fi
3957 \fi
3958 }
3959 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
3960 \define@key{Hyp}{pdftoolbar}[true]{%
3961   \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
3962 }
3963 \define@key{Hyp}{pdfmenubar}[true]{%
3964   \Hy@boolkey[pdfmenubar]{menubar}{#1}%
3965 }
3966 \define@key{Hyp}{pdfwindowui}[true]{%
3967   \Hy@boolkey[pdfwindowui]{windowui}{#1}%
3968 }
3969 \define@key{Hyp}{pdfwindow}{true}{%
3970   \Hy@boolkey[pdfwindow]{window}{#1}%
3971 }
3972 \define@key{Hyp}{pdfcenterwindow}[true]{%
3973   \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
3974 }
3975 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
3976   \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
3977 }
3978 \define@key{Hyp}{pdfa}[true]{%
3979   \Hy@boolkey[pdfa]{#1}%
3980 }
3981 \define@key{Hyp}{pdfnewwindow}[true]{%
3982   \def\Hy@temp{#1}%
3983   \ifx\Hy@temp\@empty
3984     \Hy@newwindowsetfalse
3985   \else
3986     \Hy@newwindowsettrue
3987     \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
3988   \fi
3989 }
3990 \def\Hy@SetNewWindow{%

```

```

3991 \ifHy@newwindowset
3992 /NewWindow %
3993 \ifHy@newwindow true\else false\fi
3994 \fi
3995 }
3996 \Hy@DefNameKey{pdfpagelayout}{%
3997 \do{SinglePage}{}%
3998 \do{OneColumn}{}%
3999 \do{TwoColumnLeft}{}%
4000 \do{TwoColumnRight}{}%
4001 \do{TwoPageLeft}{PDF 1.5}%
4002 \do{TwoPageRight}{PDF 1.5}%
4003 }
4004 \define@key{Hyp}{pdflang}{%
4005 \def\@pdflang{#1}%
4006 }
4007 \define@key{Hyp}{pdfpagelabels}[true]{%
4008 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
4009 }
4010 \define@key{Hyp}{pdfescapeform}[true]{%
4011 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
4012 }

```

Default values:

```

4013 \def\@linkbordercolor{1 0 0}
4014 \def\@urlbordercolor{0 1 1}
4015 \def\@menubordercolor{1 0 0}
4016 \def\@filebordercolor{0 .5 .5}
4017 \def\@runbordercolor{0 .7 .7}
4018 \def\@citebordercolor{0 1 0}
4019 \def\@pdfhighlight{/I}
4020 \def\@pdftitle{}
4021 \def\@pdfauthor{}
4022 \let\@pdfproducer\relax
4023 \def\@pdfcreator{LaTeX with hyperref package}
4024 \def\@pdfcreationdate{}
4025 \def\@pdfmoddate{}
4026 \def\@pdfsubject{}
4027 \def\@pdfkeywords{}
4028 \def\@pdftrapped{}
4029 \def\@pdfpagescrop{}
4030 \def\@pdfstartview{/Fit}
4031 \def\@pdfremotestartview{/Fit}
4032 \def\@pdfstartpage{1}
4033 \def\@pdfprintpagerange{}
4034 \def\@pdflang{}
4035 \let\PDF@SetupDoc\@empty
4036 \let\PDF@FinishDoc\@empty
4037 \let\phantomsection\@empty
4038 \let\special@paper\@empty
4039 \def\HyperDestNameFilter#1{#1}
4040 \Hy@AtBeginDocument{%
4041 \begingroup
4042 \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
4043 \dimen@=\x\relax
4044 \ifdim\dimen@>\z@
4045 \else
4046 \dimen@=11in\relax

```

```

4047 \Hy@WarningNoLine{%
4048   Height of page (\expandafter\string\x) %
4049   is invalid (\the\x),\MessageBreak
4050   using 11in%
4051 }%
4052 \fi
4053 \dimen@=0.99626401\dimen@
4054 \xdef\Hy@pageheight{\strip@pt\dimen@}%
4055 \endgroup
4056 }
4057 \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.

```

4058 \let\hyper@normalise\ExecuteOptions
4059 \let\ExecuteOptions\hypersetup
4060 \Hy@RestoreCatcodes
4061 \InputIfFileExists{hyperref.cfg}{-}{-}
4062 \Hy@SetCatcodes
4063 \let\ExecuteOptions\hyper@normalise
4064 \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.

```

4065 \SetupKeyvalOptions{family=Hyp}
4066 \DeclareLocalOptions{%
4067   a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
4068 }

```

Add option tex4ht if package tex4ht is loaded.

```

4069 \@ifpackageloaded{tex4ht}{-%
4070   \@ifpackagewith{hyperref}{tex4ht}{-}{-}
4071   \PassOptionsToPackage{tex4ht}{hyperref}%
4072 }%
4073 }{-}

```

```

4074 \let\ReadBookmarks\relax
4075 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

4076 \Hy@AtBeginDocument{%
4077   \ifHy@draft
4078     \let\hyper@@anchor\@gobble
4079     \gdef\hyper@link#1#2#3{#3\Hy@xspace@end}%
4080     \def\hyper@anchorstart#1#2{#2\Hy@xspace@end}%
4081     \def\hyper@anchorend{\Hy@xspace@end}%
4082     \let\hyper@linkstart\@gobbletwo
4083     \def\hyper@linkend{\Hy@xspace@end}%
4084     \def\hyper@linkurl#1#2{#1\Hy@xspace@end}%
4085     \def\hyper@linkfile#1#2#3{#1\Hy@xspace@end}%
4086     \def\hyper@link@{#1}#2#3#4{#4\Hy@xspace@end}%
4087     \def\Acrobatmenu#1#2{\leavevmode#2\Hy@xspace@end}%
4088     \let\PDF@SetupDoc\@empty
4089     \let\PDF@FinishDoc\@empty
4090     \let\@fifthoffive\@secondoftwo
4091     \let\@secondoffive\@secondoftwo
4092     \let\ReadBookmarks\relax
4093     \let\WriteBookmarks\relax

```

```

4094 \Hy@WarningNoLine{Draft mode on}%
4095 \fi
4096 \Hy@DisableOption{draft}%
4097 \Hy@DisableOption{nolinks}%
4098 \Hy@DisableOption{final}%
4099 }

```

## 15.1 PDF/A

```

4100 \Hy@DisableOption{pdfa}

4101 \ifHy@pdfa
4102 \kvsetkeys{Hyp}{pdfversion=1.4}%
4103 \def\Hy@Acrobatmenu#1#2{%
4104 \leavevmode
4105 \begingroup
4106 \edef\x{#1}%
4107 \@onelevel@sanitize\x
4108 \ifx\x\Hy@NextPage
4109 \let\y=Y%
4110 \else
4111 \ifx\x\Hy@PrevPage
4112 \let\y=Y%
4113 \else
4114 \ifx\x\Hy@FirstPage
4115 \let\y=Y%
4116 \else
4117 \ifx\x\Hy@LastPage
4118 \let\y=Y%
4119 \else
4120 \let\y=N%
4121 \fi
4122 \fi
4123 \fi
4124 \fi
4125 \expandafter\endgroup
4126 \ifx\y Y%
4127 \else
4128 \Hy@Error{%
4129 PDF/A: Named action ‘#1’ is not permitted%
4130 }\@ehc
4131 {#2}%
4132 \expandafter\@gobble
4133 \fi
4134 }%
4135 \def\Hy@temp#1{%
4136 \expandafter\def\csname Hy@#1\endcsname{#1}%
4137 \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
4138 }%
4139 \Hy@temp{NextPage}%
4140 \Hy@temp{PrevPage}%
4141 \Hy@temp{FirstPage}%
4142 \Hy@temp{LastPage}%
4143 \else
4144 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4145 \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.

```
4146 \Hy@nextfalse
4147 \ltx@ifundefined{spanish@sh@"@sel}{\Hy@nexttrue}
4148 \ltx@ifundefined{galician@sh@"@sel}{\Hy@nexttrue}
4149 \ltx@ifundefined{estonian@sh@"@sel}{\Hy@nexttrue}
4150 \ifHy@next
4151   \let\texttilde\~%
4152 \fi

4153 \def\Hy@wrapper@babel#1#2{%
4154   \begingroup
4155     \Hy@safe@activetrue
4156     \set@display@protect
4157     \edef\x{#2}%
4158     \@onelevel@sanitize\x
4159     \toks@{#1}%
4160     \edef\x{\endgroup\the\toks@{\x}}%
4161     \x
4162 }
4163 \def\Hy@WrapperDef#1{%
4164   \begingroup
4165     \escapechar=\m@ne
4166     \xdef\Hy@gtemp{%
4167       \expandafter\noexpand\csname HyWrap@string#1\endcsname
4168     }%
4169   \endgroup
4170   \edef#1{%
4171     \noexpand\Hy@wrapper@babel
4172     \expandafter\noexpand\Hy@gtemp
4173   }%
4174   \expandafter\def\Hy@gtemp
4175 }

4176 \ifHy@figures
4177   \Hy@Info{Hyper figures ON}%
4178 \else
4179   \Hy@Info{Hyper figures OFF}%
4180 \fi
4181 \ifHy@nesting
4182   \Hy@Info{Link nesting ON}%
4183 \else
4184   \Hy@Info{Link nesting OFF}%
4185 \fi
4186 \ifHy@hyperindex
4187   \Hy@Info{Hyper index ON}%
4188 \else
4189   \Hy@Info{Hyper index OFF}%
4190 \fi
4191 \ifHy@plainpages
4192   \Hy@Info{Plain pages ON}%
4193 \else
4194   \Hy@Info{Plain pages OFF}%
4195 \fi
4196 \ifHy@backref
4197   \Hy@Info{Backreferencing ON}%
4198 \else
```

```

4199 \Hy@Info{Backreferencing OFF}%
4200 \fi
4201 \ifHy@typexml
4202 \Hy@AtEndOfPackage{%
4203   \RequirePackage{color}%
4204   \RequirePackage{nameref}%
4205 }%
4206 \fi
4207 \Hy@DisableOption{typexml}
4208 \ifHy@implicit
4209 \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4210 \else
4211 \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4212 \def\MaybeStopEarly{%
4213   \Hy@Message{Stopped early}%
4214   \Hy@AtBeginDocument{%
4215     \PDF@FinishDoc
4216     \gdef\PDF@FinishDoc{}%
4217   }%
4218   \endinput
4219 }%
4220 \Hy@AtBeginDocument{%
4221   \let\autoref\ref
4222   \let\autopageref\pageref
4223   \ifx\@pdfpagemode\@empty
4224     \gdef\@pdfpagemode{UseNone}%
4225   \fi
4226   \global\Hy@backreffalse
4227 }%
4228 \Hy@AtEndOfPackage{%
4229   \global\let\ReadBookmarks\relax
4230   \global\let\WriteBookmarks\relax
4231 }%
4232 \fi
4233 \Hy@DisableOption{implicit}

```

### 15.2.1 Driver loading

```

4234 \Hy@AtEndOfPackage{%
4235   \@ifpackageloaded{tex4ht}{%
4236     \def\Hy@driver{htex4ht}%
4237     \Hy@texhttrue
4238   }{}%

```

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.

```

4239 \ifx\Hy@driver\@empty
4240 \else
4241 \def\Hy@temp{hpdfTeX}%
4242 \ifpdf
4243 \ifx\Hy@driver\Hy@temp
4244 \else
4245 \Hy@WarningNoLine{%
4246   Wrong driver ‘\Hy@driver.def’;\MessageBreak
4247   pdfTeX is running in PDF mode.\MessageBreak
4248   Forcing driver ‘\Hy@temp.def’%
4249 }%
4250 \let\Hy@driver\Hy@temp

```

```

4251 \fi
4252 \else
4253 \ifx\Hy@driver\Hy@temp
4254 \Hy@WarningNoLine{%
4255 Wrong driver ‘\Hy@driver.def’;\MessageBreak
4256 pdfTeX is not running in PDF mode.\MessageBreak
4257 Using default driver%
4258 }%
4259 \let\Hy@driver\@empty
4260 \fi
4261 \fi
4262 \fi
4263 \ifHy@texht
4264 \else
4265 \ifx\Hy@driver\@empty
4266 \else
4267 \def\Hy@temp{hxtex}%
4268 \ifxetex
4269 \ifx\Hy@driver\Hy@temp
4270 \else
4271 \Hy@WarningNoLine{%
4272 Wrong driver ‘\Hy@driver.def’;\MessageBreak
4273 XeTeX is running.\MessageBreak
4274 Forcing driver ‘\Hy@temp.def’ for XeTeX%
4275 }%
4276 \let\Hy@driver\Hy@temp
4277 \fi
4278 \fi
4279 \fi
4280 \fi
4281 \ifx\Hy@driver\@empty
4282 \else
4283 \def\Hy@temp{hvtexhtm}%
4284 \ifvtexhtml
4285 \ifx\Hy@driver\Hy@temp
4286 \else
4287 \Hy@WarningNoLine{%
4288 Wrong driver ‘\Hy@driver.def’;\MessageBreak
4289 VTeX is running in HTML mode.\MessageBreak
4290 Forcing driver ‘\Hy@temp.def’%
4291 }%
4292 \let\Hy@driver\Hy@temp
4293 \fi
4294 \else
4295 \ifx\Hy@driver\Hy@temp
4296 \Hy@WarningNoLine{%
4297 Wrong driver ‘\Hy@driver.def’;\MessageBreak
4298 VTeX is not running in HTML mode.\MessageBreak
4299 Using default driver%
4300 }%
4301 \let\Hy@driver\@empty
4302 \fi
4303 \fi
4304 \fi

```

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

```

4305 \def\HyOpt@DriverType{%
4306 \ifx\Hy@driver\@empty

```



```

4307 \def\HyOpt@DriverType{ (autodetected)}%
4308 \providecommand*{\Hy@defaultdriver}{hypertex}%
4309 \ifpdf
4310 \def\Hy@driver{hpdfTeX}%
4311 \else
4312 \ifxetex
4313 \def\Hy@driver{hxetex}%
4314 \else
4315 \ifvtexhtml
4316 \def\Hy@driver{hvtexhtm}%
4317 \def\MaybeStopEarly{%
4318 \Hy@Message{Stopped early}%
4319 \Hy@AtBeginDocument{%
4320 \PDF@FinishDoc
4321 \gdef\PDF@FinishDoc{}}%
4322 }%
4323 \endinput
4324 }%
4325 \else
4326 \ifvtexpdf
4327 \def\Hy@driver{hvtex}%
4328 \else
4329 \ifvtexps
4330 \def\Hy@driver{hvtex}%
4331 \else
4332 \ifx\HyOpt@DriverFallback\ltx@empty
4333 \let\Hy@driver\Hy@defaultdriver
4334 \def\HyOpt@DriverType{ (default)}%
4335 \else
4336 \begingroup
4337 \toks@{\expandafter{\HyOpt@DriverFallback}}%
4338 \edef\x{\endgroup
4339 \noexpand\kvsetkeys{Hyp}{\the\toks@}}%
4340 }%
4341 \x
4342 \ifx\Hy@driver\ltx@empty
4343 \let\Hy@driver\Hy@defaultdriver
4344 \def\HyOpt@DriverType{ (default)}%
4345 \else
4346 \def\HyOpt@DriverType{ (fallback)}%
4347 \fi
4348 \fi
4349 \fi
4350 \fi
4351 \fi
4352 \fi
4353 \fi
4354 \ifx\Hy@driver\Hy@defaultdriver
4355 \def\Hy@temp{hdvwind}%
4356 \ifx\Hy@temp\Hy@driver
4357 \kvsetkeys{Hyp}{colorlinks}%
4358 \PassOptionsToPackage{dviwindo}{color}%
4359 \fi
4360 \fi
4361 \fi
4362 \Hy@Message{Driver\HyOpt@DriverType: \Hy@driver}%
4363 \chardef\Hy@VersionChecked=0 %

```

```

4364 \input{\Hy@driver.def}%
4365 \ifcase\Hy@VersionChecked
4366   \Hy@VersionCheck{\Hy@driver.def}%
4367 \fi
4368 \let\@unprocessedoptions\relax
4369 \Hy@RestoreCatcodes
4370 \Hy@DisableOption{tex4ht}%
4371 \Hy@DisableOption{pdftex}%
4372 \Hy@DisableOption{nativepdf}%
4373 \Hy@DisableOption{dvipdfm}%
4374 \Hy@DisableOption{dvipdfmx}%
4375 \Hy@DisableOption{dvipdfmx-outline-open}%
4376 \Hy@DisableOption{pdfmark}%
4377 \Hy@DisableOption{dvips}%
4378 \Hy@DisableOption{hypertex}%
4379 \Hy@DisableOption{vtex}%
4380 \Hy@DisableOption{vtexpdfmark}%
4381 \Hy@DisableOption{dviwindo}%
4382 \Hy@DisableOption{dvipsone}%
4383 \Hy@DisableOption{textures}%
4384 \Hy@DisableOption{latex2html}%
4385 \Hy@DisableOption{ps2pdf}%
4386 \Hy@DisableOption{xetex}%
4387 \Hy@DisableOption{pdfversion}%
4388 }

```

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.

```

4389 \newif\ifHy@DvipdfmxOutlineOpen
4390 \ifxetex
4391   \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4392   \else
4393     \chardef\SpecialDvipdfmxOutlineOpen\@ne
4394     \Hy@DvipdfmxOutlineOpentrue
4395   \fi
4396 \fi
4397 \begingroup\expandafter\expandafter\expandafter\endgroup
4398 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
4399 \else
4400   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4401     \Hy@DvipdfmxOutlineOpentrue
4402   \fi
4403 \fi

```

### 15.2.2 Bookmarks

```

4404 \def\WriteBookmarks{0}
4405 \def\@bookmarkopenstatus#1{%
4406   \ifHy@bookmarksopen

```

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

```

4407   \ifnum#1<\expandafter\@firstofone\expandafter
4408     {\number\@bookmarksopenlevel} % explicit space
4409   \else
4410     -%
4411   \fi
4412 \else

```

```

4413 -%
4414 \fi
4415 }
4416 \ifHy@bookmarks
4417 \Hy@Info{Bookmarks ON}%
4418 \ifx\@pdfpagemode\@empty
4419 \def\@pdfpagemode{UseOutlines}%
4420 \fi
4421 \else
4422 \def\@bookmarkopenstatus#1{%
4423 \Hy@Info{Bookmarks OFF}%
4424 \Hy@AtEndOfPackage{%
4425 \global\let\ReadBookmarks\relax
4426 \global\let\WriteBookmarks\relax
4427 }%
4428 \ifx\@pdfpagemode\@empty
4429 \def\@pdfpagemode{UseNone}%
4430 \fi
4431 \fi
4432 \Hy@DisableOption{bookmarks}

    Add wrapper for setting standard catcodes (babel's shorthands).
4433 \def\Hy@CatcodeWrapper#1{%
4434 \def\Hy@EndWrap{%
4435 \def\TMP@EnsureCode##1##2{%
4436 \edef\Hy@EndWrap{%
4437 \Hy@EndWrap
4438 \catcode##1\the\catcode##1\relax
4439 }%
4440 \catcode##1##2\relax
4441 }%
4442 \TMP@EnsureCode{10}{12}% ^^J
4443 \TMP@EnsureCode{33}{12}% !
4444 \TMP@EnsureCode{34}{12}% "
4445 \TMP@EnsureCode{36}{3}% $ (math)
4446 \TMP@EnsureCode{38}{4}% & (alignment)
4447 \TMP@EnsureCode{39}{12}% '
4448 \TMP@EnsureCode{40}{12}% (
4449 \TMP@EnsureCode{41}{12}% )
4450 \TMP@EnsureCode{42}{12}% *
4451 \TMP@EnsureCode{43}{12}% +
4452 \TMP@EnsureCode{44}{12}% ,
4453 \TMP@EnsureCode{45}{12}% -
4454 \TMP@EnsureCode{46}{12}% .
4455 \TMP@EnsureCode{47}{12}% /
4456 \TMP@EnsureCode{58}{12}% :
4457 \TMP@EnsureCode{59}{12}% ;
4458 \TMP@EnsureCode{60}{12}% <
4459 \TMP@EnsureCode{61}{12}% =
4460 \TMP@EnsureCode{62}{12}% >
4461 \TMP@EnsureCode{63}{12}% ?
4462 \TMP@EnsureCode{91}{12}% [
4463 \TMP@EnsureCode{93}{12}% ]
4464 \TMP@EnsureCode{94}{7}% ^ (superscript)
4465 \TMP@EnsureCode{95}{8}% _ (subscript)
4466 \TMP@EnsureCode{96}{12}% '
4467 \TMP@EnsureCode{124}{12}% |
4468 \TMP@EnsureCode{126}{13}% ~ (active)

```

```

4469 #1\relax
4470 \Hy@EndWrap
4471 }

```

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

```

4472 \Hy@AtBeginDocument{%
4473   \ifHy@ocgcolorlinks
4474     \kvsetkeys{Hyp}{colorlinks}%
4475     \ifHy@pdfa
4476       \Hy@Warning{%
4477         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4478         using 'colorlinks' instead of 'ocgcolorlinks'%
4479       }%
4480     \Hy@ocgcolorlinksfalse
4481   \fi
4482 \fi
4483 \ifHy@ocgcolorlinks
4484 \else
4485   \Hy@DisableOption{ocgcolorlinks}%
4486 \fi
4487 \ifHy@colorlinks
4488   \def\@pdfborder{0 0 0}%
4489   \let\@pdfborderstyle\@empty
4490   \ifHy@typexml
4491   \else
4492     \Hy@CatcodeWrapper{%
4493       \RequirePackage{color}%
4494     }%
4495   \fi
4496   \def\Hy@colorlink#1{%
4497     \begingroup
4498     \HyColor@UseColor#1%
4499   }%
4500   \def\Hy@endcolorlink{\endgroup}%
4501   \Hy@Info{Link coloring ON}%
4502 \else
4503   \ifHy@frenchlinks
4504     \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
4505     \def\Hy@endcolorlink{\endgroup}%
4506     \Hy@Info{French linking ON}%
4507   \else

```

for grouping consistency:

```

4508     \def\Hy@colorlink#1{\begingroup}%
4509     \def\Hy@endcolorlink{\endgroup}%
4510     \Hy@Info{Link coloring OFF}%
4511   \fi
4512 \fi
4513 \Hy@DisableOption{colorlinks}%
4514 \Hy@DisableOption{frenchlinks}%
4515 \ifHy@texht
4516   \long\def\@firstoffive#1#2#3#4#5{#1}%
4517   \long\def\@secondoffive#1#2#3#4#5{#2}%
4518   \long\def\@thirdoffive#1#2#3#4#5{#3}%
4519   \long\def\@fourthoffive#1#2#3#4#5{#4}%
4520   \long\def\@fifthoffive#1#2#3#4#5{#5}%
4521   \providecommand*\@safe@activestrue{}%
4522   \providecommand*\@safe@activesfalse{}%

```

```

4523 \def\T@ref#1{%
4524   \Hy@safe@activetrue
4525   \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
4526   \Hy@safe@activesfalse
4527 }%
4528 \def\T@pageref#1{%
4529   \Hy@safe@activetrue
4530   \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
4531   \Hy@safe@activesfalse
4532 }%
4533 \else
4534   \ifHy@typexml
4535   \else
4536     \Hy@CatcodeWrapper{%
4537       \RequirePackage{nameref}%
4538     }%
4539   \fi
4540 \fi
4541 \DeclareRobustCommand\ref{%
4542   \@ifstar\@refstar\T@ref
4543 }%
4544 \DeclareRobustCommand\pageref{%
4545   \@ifstar\@pagerefstar\T@pageref
4546 }%
4547 % \ifclassloaded{memoir}{%
4548 %   \ltx@ifundefined{@mem@titlerefno link}\ltx@secondoftwo{%
4549 %     \ltx@ifundefined{@mem@titleref}\ltx@secondoftwo\ltx@firstoftwo
4550 %   }%
4551 % } \ltx@secondoftwo
4552 % {%
4553 %   \DeclareRobustCommand*{\nameref}{%
4554 %     \@ifstar\@mem@titlerefno link\@mem@titleref
4555 %   }%
4556 % }{%
4557   \DeclareRobustCommand*{\nameref}{%
4558     \@ifstar\@namerefstar\T@nameref
4559   }%
4560 % }%
4561 }
4562 \Hy@AtBeginDocument{%
4563   \ifHy@texht
4564   \else
4565     \Hy@CatcodeWrapper\ReadBookmarks
4566   \fi
4567 }
4568 \ifHy@backref
4569   \RequirePackage{backref}%
4570 \else
4571   \let\Hy@backout\@gobble
4572 \fi
4573 \Hy@DisableOption{backref}
4574 \Hy@DisableOption{pagebackref}
4575 \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.

```
4576 \begingroup
4577   \endlinechar=-1 %
4578   \catcode'\^^A=14 %
4579   \catcode'\^^M\active
4580   \catcode'\%\active
4581   \catcode'\#\active
4582   \catcode'\_\active
4583   \catcode'\$\active
4584   \catcode'\&\active
4585   \gdef\hyper@normalise{^^A
4586     \begingroup
4587       \catcode'\^^M\active
4588       \def^^M{ }^^A
4589       \catcode'\%\active
4590       \let%\@percentchar
4591       \let%\@percentchar
4592       \catcode'\#\active
4593       \def#{\hyper@hash}^^A
4594       \def\#{\hyper@hash}^^A
4595       \@makeother\&^^A
4596       \edef&{\string&}^^A
4597       \edef\&{\string&}^^A
4598       \edef\textunderscore{\string_}^^A
4599       \let\_ \textunderscore
4600       \catcode'\_\active
4601       \let\_ \textunderscore
4602       \let~\hyper@tilde
4603       \let~\hyper@tilde
4604       \let\textasciitilde\hyper@tilde
4605       \let\\ \@backslashchar
4606       \edef${\string$}^^A
4607       \Hy@safe@activetrue
4608       \hyper@n@rmalise
4609     }^^A
4610     \catcode'\#=6 ^^A
4611     \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4612     \gdef\hyper@n@rmalise#1#2{^^A
4613       \def\Hy@tempa{#2}^^A
4614       \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4615         \Hy@ReturnAfterElseFi{^^A
4616           \hyper@@normalise{#1}^^A
4617         }^^A
4618       \else
4619         \Hy@ReturnAfterFi{^^A
4620           \hyper@@normalise{#1}{#2}^^A
4621         }^^A
4622       \fi
4623     }^^A
4624     \gdef\hyper@@normalise#1#2{^^A
```

```

4625 \edef\Hy@tempa{^^A
4626 \endgroup
4627 \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4628 }^^A
4629 \Hy@tempa
4630 }^^A
4631 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4632 #1^^A
4633 \ifx\limits#2\limits
4634 \else
4635 \Hy@ReturnAfterFi{^^A
4636 \Hy@RemovePercentCr #2\@nil
4637 }^^A
4638 \fi
4639 }^^A
4640 \endgroup
4641 \providecommand*\hyper@chars{%
4642 \let\#\hyper@hash
4643 \let\%\@percentchar
4644 \Hy@safe@activetrue
4645 }

4646 \def\hyperlink#1#2{%
4647 \hyper@@link{#1}{#2}%
4648 }

4649 \def\Hy@VerboseLinkStart#1#2{%
4650 \ifHy@verbose
4651 \begingroup
4652 \Hy@safe@activetrue
4653 \xdef\Hy@VerboseGlobalTemp{(#1) '#2'}%
4654 \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4655 \xdef\Hy@VerboseGlobalTemp{%
4656 \Hy@VerboseGlobalTemp, %
4657 line \the\inputlineno
4658 }%
4659 \endgroup
4660 \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4661 \@onelevel@sanitize\Hy@VerboseLinkInfo
4662 \fi
4663 }

4664 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4665 \def\Hy@VerboseLinkStop{%
4666 \ifHy@verbose
4667 \begingroup
4668 \edef\x{\endgroup
4669 \write\m@ne{%
4670 Package 'hyperref' Info: %
4671 End of reference \Hy@VerboseLinkInfo.%
4672 }%
4673 }%
4674 \x
4675 \fi
4676 }

4677 \def\Hy@VerboseAnchor#1{%
4678 \ifHy@verbose
4679 \begingroup
4680 \Hy@safe@activetrue

```

```

4681 \Hy@Info{Anchor ‘\HyperDestNameFilter{#1}’}%
4682 \endgroup
4683 \fi
4684 }

4685 \def\Hy@AllowHyphens{%
4686 \relax
4687 \ifhmode
4688 \penalty\@M
4689 \hskip\z@skip
4690 \fi
4691 }

4692 \DeclareRobustCommand*{\href}[1][]{%
4693 \begingroup
4694 \setkeys{href}{#1}%
4695 \@ifnextchar\bgrouph\Hy@href{\hyper@normalise\href@}%
4696 }
4697 \def\Hy@href#{%
4698 \hyper@normalise\href@
4699 }
4700 \begingroup
4701 \catcode‘\$=6 %
4702 \catcode‘\#=12 %
4703 \gdef\href@\$1{\expandafter\href@split$1##\}%
4704 \gdef\href@split$1#\$2#\$3\\$4{%
4705 \hyper@@link{$1}{$2}{$3}{$4}%
4706 \endgroup
4707 }%
4708 \endgroup

```

Option ‘page’.

```

4709 \define@key{href}{page}{%
4710 \def\Hy@href@page{#1}%
4711 }
4712 \let\Hy@href@page\@empty
4713 \newcount\c@Hy@tempcnt
4714 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4715 \def\Hy@MakeRemoteAction{%
4716 \ifx\Hy@href@page\@empty
4717 \def\Hy@href@page{0}%
4718 \else
4719 \setcounter{Hy@tempcnt}{\Hy@href@page}%
4720 \ifnum\c@Hy@tempcnt<\@ne
4721 \Hy@Warning{%
4722 Invalid page number (\theHy@tempcnt)\MessageBreak
4723 for remote PDF file.\MessageBreak
4724 Using page 1%
4725 }%
4726 \def\Hy@href@page{0}%
4727 \else
4728 \global\advance\c@Hy@tempcnt\m@ne
4729 \edef\Hy@href@page{\theHy@tempcnt}%
4730 \fi
4731 \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.

```

4732 \ifx\Hy@href@nextactionraw\@empty

```



```

4733 \else
4734   \Hy@newwindowsettrue
4735   \Hy@newwindowtrue
4736 \fi
4737 }

```

Option ‘pdfremotestartview’.

```

4738 \define@key{href}{pdfremotestartview}{%
4739   \setkeys{Hyp}{pdfremotestartview={#1}}%
4740 }

```

Option ‘pdfnewwindow’.

```

4741 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4742 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4743 \newif\ifHy@href@ismap
4744 \define@key{href}{ismap}[true]{%
4745   \ltx@ifundefined{Hy@href@ismap#1}{%
4746     \Hy@Error{%
4747       Invalid value (#1) for key ‘ismap’.\MessageBreak
4748       Permitted values are ‘true’ or ‘false’.\MessageBreak
4749       Ignoring ‘ismap’%
4750     }\@ehc
4751   }{%
4752     \csname Hy@href@ismap#1\endcsname
4753   }%
4754 }

```

Option ‘nextactionraw’.

```

4755 \let\Hy@href@nextactionraw\@empty
4756 \define@key{href}{nextactionraw}{%
4757   \edef\Hy@href@nextactionraw{#1}%
4758   \ifx\Hy@href@nextactionraw\@empty
4759     \else
4760       \Hy@Match\Hy@href@nextactionraw{%
4761         ^(\HyPat@ObjRef/|<<.*[/S[/].+>>|%
4762         \[( ?\HyPat@ObjRef/|<<.*[/S[/].+>>)+ ?)]$%
4763       }{%
4764         \Hy@Warning{Invalid value for ‘nextactionraw’:\MessageBreak
4765           \Hy@href@nextactionraw\MessageBreak
4766           The action is discarded%
4767         }%
4768       }%
4769       \ifx\Hy@href@nextactionraw\@empty
4770         \else
4771           \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4772         \fi
4773       \fi
4774 }
4775 \def\HyPat@ObjRef/{.+}

```

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

```

4776 \RequirePackage{url}
4777 \let\HyOrg@url\url
4778 \def\Hurl{\begingroup \Url}
4779 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
4780 \def\nolinkurl@#1{\Hurl{#1}}
4781 \DeclareRobustCommand*\url{\hyper@normalise\url@}
4782 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

```

```

4783 \DeclareRobustCommand*\hyperimage*\hyper@normalise\hyper@image}
4784 \providecommand\hyper@image[2]{#2}

4785 \def\hypertarget#1#2{%
4786   \ifHy@nesting
4787     \hyper@@anchor{#1}{#2}%
4788   \else
4789     \hyper@@anchor{#1}{\relax}#2%
4790   \fi
4791 }

```

`\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.

```

4792 \DeclareRobustCommand*\hyperref{%
4793   \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref
4794 }

4795 \def\Hy@babelnormalise#1[#2]{%
4796   \begingroup
4797     \Hy@safe@activetrue
4798     \edef\Hy@tempa{%
4799       \endgroup
4800       \noexpand#1[#2]}%
4801   }%
4802   \Hy@tempa
4803 }

4804 \def\@hyperref{\hyper@normalise\@hyperref}
4805 \def\@hyperref#1#2#3{%
4806   \edef\ref@one{\ifx\#2\\\else#2.\fi#3}%
4807   \expandafter\tryhyper@link\ref@one\{#1}%
4808 }

4809 \def\tryhyper@link#1\#2{%
4810   \hyper@@link{#2}{#1}%
4811 }

4812 \def\hyperdef{\@ifnextchar{\label@hyperdef}\@hyperdef}
4813 \def\@hyperdef#1#2#3{%, category, name, text
4814   \ifx\#1\%
4815     \def\Hy@AnchorName{#2}%
4816   \else
4817     \def\Hy@AnchorName{#1.#2}%
4818   \fi
4819   \ifHy@nesting
4820     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4821   \else
4822     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4823   \fi
4824 }

```

We also have a need to give a  $\LaTeX$  *label* to a hyper reference, to ease the pain of referring to it later.

```

4825 \def\label@hyperref[#1]{%
4826   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
4827 }%
4828 \def\label@@hyperref#1#2#3{%
4829   \ifx#1\relax

```

```

4830 \protect\G@refundefinedtrue
4831 \@latex@warning{%
4832   Hyper reference '#2' on page \thepage \space undefined%
4833 }%
4834 \hyper@@link@{??}{#3}%
4835 \else
4836 \hyper@@link@{\expandafter\@fifthoffive#1}%
4837 {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
4838 \fi
4839 }
4840 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
4841                               % anchor text
4842 \@bsphack
4843 \ifx\#2\%
4844 \def\Hy@AnchorName{#3}%
4845 \else
4846 \def\Hy@AnchorName{#2.#3}%
4847 \fi
4848 \if@filesw
4849 \protected@write\@auxout@{-%
4850 \string\newlabel{#1}{#2}{#3}{\Hy@AnchorName}}%
4851 }%
4852 \fi
4853 \@esphack
4854 \ifHy@nesting
4855 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
4856 \else
4857 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
4858 \fi
4859 }

```

## 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.

```

4860 \def\hyper@@link@{\let\Hy@reserved@a\relax
4861 \@ifnextchar{\hyper@link@}{\hyper@link@[link]}}%
4862 }
4863 \def\hyper@link@[#1]#2#3#4{%
4864 \begingroup
4865 \protected@edef\Hy@tempa{#2}%
4866 \Hy@safe@activestrue
4867 \edef\x{#3}%
4868 \ifx\Hy@tempa\@empty
4869 \toks0{\hyper@link{#1}}%
4870 \else
4871 \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
4872 \fi
4873 \toks2{%
4874 \Hy@safe@activesfalse
4875 #4%
4876 }%
4877 \edef\Hy@tempa{\the\toks2}%
4878 \edef\x{\endgroup

```

```

4879 \ifx\Hy@tempa\@empty
4880 \noexpand\Hy@Warning{Suppressing empty link}%
4881 \else
4882 \the\toks0 {\x}{\the\toks2}%
4883 \fi
4884 }%
4885 \x
4886 }

```

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.

```

4887 \def\hyper@readexternallink#1\|#2#3#4{%
4888 \begingroup
4889 \let\\\relax
4890 \expandafter\endgroup
4891 \expandafter\@hyper@\@readexternallink#1\#{#2}{#3}{#4}%
4892 }
4893 \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.

```

4894 \@hyper@readexternallink{#2}{#3}{#4}#1::\#{#1}%
4895 }

```

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

```

4896 \def\@pdftempwordfile{file}%
4897 \def\@pdftempwordrun{run}%
4898 \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:

```

4899 \ifx\\\#6\\\%
4900 \@hyper@linkfile file:#7\\\#{#3}{#2}{#7}%
4901 \else
4902 \ifx\\\#4\\\%
4903 \@hyper@linkfile file:#7\\\#{#3}{#2}{#7}%
4904 \else

```

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

```

4905 \def\@pdftempa{#4}%
4906 \ifx\@pdftempa\@pdftempwordfile
4907 \@hyper@linkfile#7\\\#{#3}{#2}{#7}%
4908 \else

```

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

```
4909     \ifx\@pdftempa\@pdftempwordrun
4910     \ifHy@pdfa
4911         \Hy@Error{%
4912             PDF/A: Launch action is prohibited%
4913         }\@ehc
4914     \begingroup
4915         \leavevmode
4916         #2%
4917     \endgroup
4918     \else
4919         \@hyper@launch#7\{\#3\}{\#2}%
4920     \fi
4921     \else
```

otherwise its a URL

```
4922         \hyper@linkurl{\#3\}{\#7\ifx\#2\\\else\hyper@hash#2\fi}%
4923     \fi
4924 \fi
4925 \fi
4926 \fi
4927 }
```

By default, turn run: into file:

```
4928 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
4929     \hyper@linkurl{\#2\}{%
4930         \Hy@linkfileprefix
4931         #1%
4932         \ifx\#3\\\%
4933         \else
4934             \hyper@hash
4935             #3%
4936         \fi
4937     }%
4938 }
```

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

```
4939 \def\@hyper@linkfile file:#1\#2#3#4{%
4940     %file url,link string, name, original uri
4941     \filename@parse{\#1}%
4942     \ifx\filename@ext\relax
4943         \edef\filename@ext{\XR@ext}%
4944     \fi
4945     \def\use@file{\filename@area\filename@base.\filename@ext}%
4946     \Hy@IfStringEndsWith\filename@ext\XR@ext{%
4947         \hyper@linkfile{\#2\}{\use@file}{\#3}%
4948     }{%
4949         \ifx\@baseurl\@empty
4950             \hyper@linkurl{\#2\}{%
4951                 #4\ifx\#3\\\else\hyper@hash#3\fi
4952             }%
4953         \else
4954             \hyper@linkurl{\#2\}{\use@file\ifx\#3\\\else\hyper@hash#3\fi}%
4955         \fi
4956     }%
4957 }
```

```
4958 \def\Hy@IfStringEndsWith#1#2{%
```

```

4959 \begingroup
4960 \edef\x{#1}%
4961 \@onelevel@sanitize\x
4962 \edef\x{. \x$}%
4963 \edef\y{#2}%
4964 \@onelevel@sanitize\y
4965 \edef\y{. \y$}%
4966 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
4967   \endgroup
4968   \ifx\relax##2\relax
4969     \expandafter\ltx@secondoftwo
4970   \else
4971     \expandafter\ltx@firstoftwo
4972   \fi
4973 }%
4974 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
4975 }

4976 \def\Hy@StringLocalhost{localhost}
4977 \@onelevel@sanitize\Hy@StringLocalhost
4978 \def\Hy@CleanupFile#1{%
4979   \edef#1{#1}%
4980   \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}}%
4981 }
4982 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
4983   \begingroup
4984   \toks@{\endgroup}%
4985   \def\x{#1}%
4986   \ifx\x\@empty
4987     \def\x{#2}%
4988   \ifx\x\@empty
4989     \toks@{\endgroup\def#5{/#3}}%
4990   \else
4991     \@onelevel@sanitize\x
4992     \ifx\x\Hy@StringLocalhost
4993       \toks@{\endgroup\def#5{/#3}}%
4994     \fi
4995   \fi
4996   \fi
4997   \the\toks@
4998 }

```

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.

```

4999 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
5000 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
5001   \ifx\#1\%
5002     #2\Hy@Warning{Ignoring empty anchor}%
5003   \else
5004     \def\anchor@spot{#2#3}%
5005     \let\put@me@back\@empty
5006     \ifx\relax#2\relax
5007     \else

```

```

5008 \ifHy@nesting
5009 \else
5010 \ifcat a\noexpand#2\relax
5011 \else
5012 \ifcat 0\noexpand#2 \relax
5013 \else
5014 % \typeout{Anchor start is not alphanumeric %
5015 % on input line\the\inputlineno%
5016 % }%
5017 \let\anchor@spot\@empty
5018 \def\put@me@back{#2#3}%
5019 \fi
5020 \fi
5021 \fi
5022 \fi
5023 \ifHy@activeanchor
5024 \anchor@spot
5025 \else
5026 \hyper@anchor{#1}%
5027 \fi
5028 \expandafter\put@me@back
5029 \fi
5030 \let\anchor@spot\@empty
5031 }
5032 \def\anchor@spot{}

```

## 18 Compatibility with the *LT<sub>E</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.

```

5033 \let\htmladding\hyperimage
5034 \def\htmladdnormallink#1#2{\href{#2}{#1}}
5035 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
5036 \def\htmlref#1#2{% anchor text, label
5037 \label@hyperref[{#2}]{#1}%
5038 }

```

This is really too much. The *LT<sub>E</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.

```

5039 \def\@latex2htmlX{%
5040 \let\hhyperref\hyperref
5041 \def\hyperref##1##2##3##4{% anchor text for HTML
5042 % text to print before label in print
5043 % label
5044 % post-label text in print
5045 ##2\ref{##4}##3%
5046 }%
5047 }

```

## 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.

```
5048 \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
5049 \def\HyField@NewFlag#1#2{%
5050 \lowercase{\HyField@NewOption{#2}}}%
5051 \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5052 }
```

```
\HyField@NewFlagOnly
5053 \def\HyField@NewFlagOnly#1#2{%
5054 \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5055 }
```

```
\HyField@NewOption #1: option name
5056 \def\HyField@NewOption#1{%
5057 \expandafter\newif\csname ifFld@#1\endcsname
5058 \define@key{Field}{#1}[true]{%
5059 \lowercase{\Field@boolkey{##1}}{#1}%
5060 }%
5061 }
```

\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
5062 \def\HyField@NewBitsetFlag#1#2#3#4{%
5063 \begingroup
5064 \count@=#4\relax
5065 \advance\count@\m@ne
5066 \def\x##1{%
5067 \endgroup
5068 \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
5069 \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
5070 \expandafter\edef\csname HyField@#3@##1\endcsname{%
5071 (\number#4) #2%
5072 }%
5073 \else
5074 \expandafter\edef\csname HyField@#3@##1\endcsname{%
```



```

5075     \csname HyField@#3@#1\endcsname
5076     /#2%
5077   }%
5078   \fi
5079 }%
5080 \expandafter\x\expandafter{\the\count@}%
5081 }

```

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

```

5082 \def\HyField@UseFlag#1#2{%
5083   \lowercase{\HyField@@UseFlag{#2}}{#1}%
5084 }

```

\HyField@@UseFlag

```

5085 \def\HyField@@UseFlag#1#2{%
5086   \bitsetSetValue{HyField@#2}{%
5087     \csname HyField@#2@#1\endcsname
5088   }{%
5089     \csname ifFld@#1\endcsname 1\else 0\fi
5090   }%
5091 }

```

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

```

5092 \def\HyField@SetFlag#1#2{%
5093   \lowercase{\HyField@@SetFlag{#2}}{#1}%
5094 }

```

\HyField@@SetFlag

```

5095 \def\HyField@@SetFlag#1#2{%
5096   \bitsetSetValue{HyField@#2}{%
5097     \csname HyField@#2@#1\endcsname
5098   }{1}%
5099 }

```

\HyField@PrintFlags

```

5100 \def\HyField@PrintFlags#1#2{%
5101   \ifHy@verbose
5102     \begingroup
5103     \let\Hy@temp\@empty
5104     \let\MessageBreak\relax
5105     \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5106     \bitsetGetSetBitList{HyField@#1}\do{%
5107       \edef\Hy@temp{%
5108         \Hy@temp
5109         \csname HyField@#1@\x\endcsname\MessageBreak
5110       }%
5111     }%
5112   \edef\x{\endgroup
5113     \noexpand\Hy@Info{%
5114       Field flags: %
5115       \expandafter\ifx\@car#1\@nil S\else/\fi
5116       #1 %
5117       \bitsetGetDec{HyField@#1} %
5118       (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5119     \Hy@temp
5120     for #2%

```

```

5121     }%
5122     }\x
5123   \fi
5124 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5125 \HyField@NewFlag{Ff}{ReadOnly}{1}
5126 \HyField@NewFlag{Ff}{Required}{2}
5127 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5128 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5129 \HyField@NewFlag{Ff}{Radio}{16}
5130 \HyField@NewFlag{Ff}{Pushbutton}{17}
5131 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5132 \HyField@NewFlag{Ff}{Multiline}{13}
5133 \HyField@NewFlag{Ff}{Password}{14}
5134 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5135 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5136 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5137 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5138 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5139 \HyField@NewFlag{Ff}{Combo}{18}
5140 \HyField@NewFlag{Ff}{Edit}{19}
5141 \HyField@NewFlag{Ff}{Sort}{20}
5142 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5143 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5144 \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.

```

5145 \newif\ifFld@popdown
5146 \define@key{Field}{popdown}[true]{%
5147   \lowercase{\Field@boolkey{#1}}{popdown}%
5148 }

```

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.

```

5149 \HyField@NewFlag{F}{Invisible}{1}
5150 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5151 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5152 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5153 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5154 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5155 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5156 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5157 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

```

```

5158 \ifHy@pdfa
5159 \def\HyField@PDFAFldWarning#1#2{%
5160   \Hy@Warning{%
5161     PDF/A: Annotation flag '#1' must\MessageBreak
5162     be set to '#2'%
5163   }%
5164 }%
5165 \Fld@invisiblefalse
5166 \def\Fld@invisibletrue{%
5167   \HyField@PDFAFldWarning{invisible}{false}%
5168 }%
5169 \Fld@hiddenfalse
5170 \def\Fld@hiddentruetrue{%
5171   \HyField@PDFAFldWarning{hidden}{false}%
5172 }%
5173 \Fld@printtrue
5174 \def\Fld@printfalse{%
5175   \HyField@PDFAFldWarning{print}{true}%
5176 }%
5177 \Fld@nozoomtrue
5178 \def\Fld@nozoomfalse{%
5179   \HyField@PDFAFldWarning{nozoom}{true}%
5180 }%
5181 \Fld@norotatefalse
5182 \def\Fld@norotatefalse{%
5183   \HyField@PDFAFldWarning{norotate}{true}%
5184 }%
5185 \Fld@noviewfalse
5186 \def\Fld@noviewtrue{%
5187   \HyField@PDFAFldWarning{noview}{false}%
5188 }%
5189 \fi

```

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

```

5190 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5191 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5192 \HyField@NewFlag{Submit}{GetMethod}{4}
5193 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5194 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5195 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
5196 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5197 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5198 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5199 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5200 \HyField@NewFlag{Submit}{ExclFKey}{12}
5201 \HyField@NewFlag{Submit}{EmbedForm}{14}

5202 \define@key{Field}{export}{%
5203   \lowercase{\def\Hy@temp{#1}}%
5204   \@ifundefined{Fld@export@Hy@temp}{%
5205     \@onelevel@sanitize\Hy@temp
5206     \Hy@Error{%
5207       Unknown export format '\Hy@temp'\MessageBreak
5208       Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
5209     }%
5210   }%
5211   \let\Fld@export\Hy@temp
5212 }%

```

```

5213 }
5214 \def\Fld@export{fdf}
5215 \@namedef{Fld@export@fdf}{0}%
5216 \@namedef{Fld@export@html}{1}%
5217 \@namedef{Fld@export@xfdf}{2}%
5218 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

5219 \def\HyField@FlagsSubmit{%
5220   \bitsetReset{HyField@Submit}%
5221   \ifcase\@nameuse{Fld@export@Fld@export} %
5222     % FDF
5223     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5224     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5225     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5226     \HyField@UseFlag{Submit}{IncludeAnnotations}%
5227     \HyField@UseFlag{Submit}{CanonicalFormat}%
5228     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5229     \HyField@UseFlag{Submit}{ExclFKey}%
5230     \HyField@UseFlag{Submit}{EmbedForm}%
5231   \or % HTML
5232     \HyField@SetFlag{Submit}{ExportFormat}%
5233     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5234     \HyField@UseFlag{Submit}{GetMethod}%
5235     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5236     \HyField@UseFlag{Submit}{CanonicalFormat}%
5237   \or % XFDF
5238     \HyField@SetFlag{Submit}{XFDF}%
5239     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5240     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5241     \HyField@UseFlag{Submit}{CanonicalFormat}%
5242   \or % PDF
5243     \HyField@SetFlag{Submit}{SubmitPDF}%
5244     \HyField@UseFlag{Submit}{GetMethod}%
5245   \fi
5246   \HyField@PrintFlags{Submit}{submit button field}%
5247   \bitsetIsEmpty{HyField@Submit}{%
5248     \def\Fld@submitflags{%
5249     }{%
5250       \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}}%
5251   }%
5252 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5253 \def\HyField@FlagsAnnot#1{%
5254   \bitsetReset{HyField@F}%
5255   \HyField@UseFlag{F}{Invisible}%
5256   \HyField@UseFlag{F}{Hidden}%
5257   \HyField@UseFlag{F}{Print}%
5258   \HyField@UseFlag{F}{NoZoom}%
5259   \HyField@UseFlag{F}{NoRotate}%
5260   \HyField@UseFlag{F}{NoView}%

```

```

5261 \HyField@UseFlag{F}{Locked}%
5262 \HyField@UseFlag{F}{ToggleNoView}%
5263 \HyField@UseFlag{F}{LockedContents}%
5264 \HyField@PrintFlags{F}{#1}%
5265 \bitsetIsEmpty{HyField@F}{%
5266   \def\Fld@annotflags{%
5267   }{%
5268   \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}}%
5269 }%
5270 }

```

#### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5271 \def\HyField@FlagsPushButton{%
5272 \HyField@FlagsAnnot{push button field}%
5273 \bitsetReset{HyField@Ff}%
5274 \HyField@UseFlag{Ff}{ReadOnly}%
5275 \HyField@UseFlag{Ff}{Required}%
5276 \HyField@UseFlag{Ff}{NoExport}%
5277 \HyField@SetFlag{Ff}{Pushbutton}%
5278 \HyField@PrintFlags{Ff}{push button field}%
5279 \bitsetIsEmpty{HyField@Ff}{%
5280   \def\Fld@flags{%
5281   }{%
5282   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5283 }%
5284 }

```

#### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

5285 \def\HyField@FlagsCheckBox{%
5286 \HyField@FlagsAnnot{check box field}%
5287 \bitsetReset{HyField@Ff}%
5288 \HyField@UseFlag{Ff}{ReadOnly}%
5289 \HyField@UseFlag{Ff}{Required}%
5290 \HyField@UseFlag{Ff}{NoExport}%
5291 \HyField@PrintFlags{Ff}{check box field}%
5292 \bitsetIsEmpty{HyField@Ff}{%
5293   \def\Fld@flags{%
5294   }{%
5295   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5296 }%
5297 }

```

#### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

5298 \def\HyField@FlagsRadioButton{%
5299 \HyField@FlagsAnnot{radio button field}%
5300 \bitsetReset{HyField@Ff}%
5301 \HyField@UseFlag{Ff}{ReadOnly}%
5302 \HyField@UseFlag{Ff}{Required}%
5303 \HyField@UseFlag{Ff}{NoExport}%
5304 \HyField@UseFlag{Ff}{NoToggleToOff}%

```

```

5305 \HyField@SetFlag{Ff}{Radio}%
5306 \HyField@UseFlag{Ff}{RadiosInUnison}%
5307 \HyField@PrintFlags{Ff}{radio button field}%
5308 \bitsetIsEmpty{HyField@Ff}{%
5309   \def\Fld@flags{%
5310   }{%
5311     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5312   }%
5313 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

5314 \def\HyField@FlagsText{%
5315   \HyField@FlagsAnnot{text field}%
5316   \bitsetReset{HyField@Ff}%
5317   \HyField@UseFlag{Ff}{ReadOnly}%
5318   \HyField@UseFlag{Ff}{Required}%
5319   \HyField@UseFlag{Ff}{NoExport}%
5320   \HyField@UseFlag{Ff}{Multiline}%
5321   \HyField@UseFlag{Ff}{Password}%
5322   \HyField@UseFlag{Ff}{FileSelect}%
5323   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5324   \HyField@UseFlag{Ff}{DoNotScroll}%
5325   \ifFld@comb
5326     \ifcase0\ifFld@multiline
5327       \else\ifFld@password
5328       \else\ifFld@fileselect
5329       \else 1\fi\fi\fi\relax
5330     \Hy@Error{%
5331       Field option ‘comb’ cannot used together with\MessageBreak
5332       ‘multiline’, ‘password’, or ‘fileselect’%
5333     }\@ehc
5334   \else
5335     \HyField@UseFlag{Ff}{Comb}%
5336   \fi
5337 \fi
5338 \HyField@UseFlag{Ff}{RichText}%
5339 \HyField@PrintFlags{Ff}{text field}%
5340 \bitsetIsEmpty{HyField@Ff}{%
5341   \def\Fld@flags{%
5342   }{%
5343     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5344   }%
5345 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5346 \def\HyField@FlagsChoice{%
5347   \HyField@FlagsAnnot{choice field}%
5348   \bitsetReset{HyField@Ff}%
5349   \HyField@UseFlag{Ff}{ReadOnly}%
5350   \HyField@UseFlag{Ff}{Required}%
5351   \HyField@UseFlag{Ff}{NoExport}%
5352   \HyField@UseFlag{Ff}{Combo}%

```

```

5353 \ifFld@combo
5354 \HyField@UseFlag{Ff}{Edit}%
5355 \fi
5356 \HyField@UseFlag{Ff}{Sort}%
5357 \HyField@UseFlag{Ff}{MultiSelect}%
5358 \ifFld@combo
5359 \ifFld@edit
5360 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5361 \fi
5362 \fi
5363 \HyField@UseFlag{Ff}{CommitOnSelChange}%
5364 \HyField@PrintFlags{Ff}{choice field}%
5365 \bitsetIsEmpty{HyField@Ff}{%
5366 \def\Fld@flags{%
5367 }{%
5368 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5369 }%
5370 }

```

## 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.

```

5371 \def\HyField@PDFChoices#1{%
5372 \begingroup
5373 \gdef\Fld@choices{%
5374 \def\HyTmp@optlist{%
5375 \let\HyTmp@optitem\relax
5376 \count@=0 %
5377 \kv@parse{#1}{%
5378 \Hy@pdfstringdef\kv@key\kv@key
5379 \ifx\kv@value\relax
5380 \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
5381 \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
5382 \else
5383 \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5384 \fi
5385 \else
5386 \Hy@pdfstringdef\kv@value\kv@value
5387 \xdef\Fld@choices{\Fld@choices[(\kv@value)(\kv@key)]}%
5388 \fi
5389 \edef\HyTmp@optlist{%
5390 \HyTmp@optlist
5391 \HyTmp@optitem{\the\count@}{\kv@key}0%
5392 }%
5393 \advance\count@ by 1 %
5394 \@gobbletwo
5395 }%
5396 \xdef\Fld@choices{/Opt[\Fld@choices]}%
5397 \ifFld@multiselect
5398 \HyField@@PDFChoices{DV}\Fld@default
5399 \HyField@@PDFChoices{V}\Fld@value
5400 \else
5401 \ifx\Fld@default\relax
5402 \else
5403 \pdfstringdef\Hy@gtemp\Fld@default

```

```

5404     \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5405     \fi
5406     \ifx\Fld@value\relax
5407     \else
5408         \pdfstringdef\Hy@gtemp\Fld@value
5409         \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5410     \fi
5411     \fi
5412 \endgroup
5413 }

```

\HyField@@PDFChoices

```

5414 \def\HyField@@PDFChoices#1#2{%
5415     \ifx#2\relax
5416     \else
5417         \count@=0 %
5418         \def\HyTmp@optitem##1##2##3{%
5419             \def\HyTmp@key{##2}%
5420             \ifx\HyTmp@key\Hy@gtemp
5421                 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5422                     \HyTmp@optlist
5423                     \HyTmp@optitem{##1}{##2}1%
5424                 }%
5425                 \let\HyTmp@found=Y%
5426             \else
5427                 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5428                     \HyTmp@optlist
5429                     \HyTmp@optitem{##1}{##2}##3%
5430                 }%
5431             \fi
5432         }%
5433         \expandafter\comma@parse\expandafter{#2}{%
5434             \pdfstringdef\Hy@gtemp\comma@entry
5435             \let\HyTmp@found=N %
5436             \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5437             \HyTmp@optlist
5438             \ifx\HyTmp@found Y%
5439                 \advance\count@ by 1 %
5440             \else
5441                 \@onelevel@sanitize\comma@entry
5442                 \PackageWarning{hyperref}{%
5443                     \string\ChoiceBox: Ignoring value '\comma@entry',%
5444                     \MessageBreak
5445                     it cannot be found in the choices%
5446                 }%
5447             \fi
5448             \@gobble
5449         }%
5450         \def\HyTmp@optitem##1##2##3{%
5451             \ifnum##3=1 %
5452                 (##2)%
5453             \fi
5454         }%
5455         \ifcase\count@
5456         \or
5457             \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5458         \else

```



```

5459 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]]}%
5460 \ifx#1V%
5461 \def\HyTmp@optitem##1##2##3{%
5462 \ifnum##3=1 %
5463 \@firstofone{ ##1}%
5464 \fi
5465 }%
5466 \edef\HyTmp@optlist{\HyTmp@optlist}%
5467 \xdef\Fld@choices{%
5468 \Fld@choices
5469 /I[\expandafter\@firstofone\HyTmp@optlist]%
5470 }%
5471 \fi
5472 \fi
5473 \fi
5474 }

```

### 19.3 Forms

\HyField@SetKeys

```

5475 \def\HyField@SetKeys{%
5476 \kvsetkeys{Field}%
5477 }

5478 \newif\ifFld@checked
5479 \newif\ifFld@disabled
5480 \Fld@checkedfalse
5481 \Fld@disabledfalse
5482 \newcount\Fld@menulength
5483 \newdimen\Fld@Width
5484 \newdimen\Fld@charsize
5485 \Fld@charsize=10\p@
5486 \def\Fld@maxlen{0}
5487 \def\Fld@align{0}
5488 \def\Fld@color{0 0 0 rg}
5489 \def\Fld@bcolor{1 1 1}
5490 \def\Fld@bordercolor{1 0 0}
5491 \def\Fld@bordersep{1\p@}
5492 \def\Fld@borderwidth{1}
5493 \def\Fld@borderstyle{S}
5494 \def\Fld@cbsymbol{4}
5495 \def\Fld@radiosymbol{H}
5496 \def\Fld@rotation{0}
5497 \def\Form{\@ifnextchar{\@Form}{\@Form[]}}
5498 \def\endForm{\@endForm}
5499 \newif\ifForm@html
5500 \Form@htmlfalse
5501 \def\Form@boolkey#1#2{%
5502 \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5503 }
5504 \define@key{Form}{action}{%
5505 \hyper@normalise\Hy@DefFormAction{#1}%
5506 }
5507 \def\Hy@DefFormAction{\def\Form@action}
5508 \def\enc@html{html}
5509 \define@key{Form}{encoding}{%
5510 \def\Hy@tempa{#1}%

```

```

5511 \ifx\Hy@tempa\enc@@html
5512 \Form@htmltrue
5513 \def\Fld@export{html}%
5514 \else
5515 \Hy@Warning{%
5516   Form 'encoding' key with \MessageBreak
5517   unknown value '#1'%
5518 }%
5519 \Form@htmlfalse
5520 \fi
5521 }
5522 \define@key{Form}{method}{%
5523 \lowercase{\def\Hy@temp{#1}}%
5524 \@ifundefined{Form@method@\Hy@temp}{%
5525 \@onelevel@sanitize\Hy@temp
5526 \Hy@Error{%
5527   Unknown method '\Hy@temp'\MessageBreak
5528   Known values are 'post' and 'get'%
5529 } \@ehc
5530 }{%
5531 \let\Form@method\Hy@temp
5532 \ifcase\@nameuse{Form@method@\Hy@temp} %
5533 \Fld@getmethodfalse
5534 \else
5535 \Fld@getmethodtrue
5536 \fi
5537 }%
5538 }
5539 \def\Form@method{}
5540 \@namedef{Form@method@post}{0}
5541 \@namedef{Form@method@get}{1}

5542 \newif\ifHyField@NeedAppearances
5543 \def\HyField@NeedAppearancesfalse{%
5544 \global\let\ifHyField@NeedAppearances\iffalse
5545 }
5546 \def\HyField@NeedAppearancetrue{%
5547 \global\let\ifHyField@NeedAppearances\iftrue
5548 }
5549 \HyField@NeedAppearancetrue
5550 \define@key{Form}{NeedAppearances}[true]{%
5551 \edef\Hy@tempa{#1}%
5552 \ifx\Hy@tempa\Hy@true
5553 \HyField@NeedAppearancetrue
5554 \else
5555 \ifx\Hy@tempa\Hy@false
5556 \HyField@NeedAppearancesfalse
5557 \else
5558 \Hy@Error{%
5559   Unexpected value '\Hy@tempa'\MessageBreak
5560   of option 'NeedAppearances' instead of\MessageBreak
5561   'true' or 'false'%
5562 } \@ehc
5563 \fi
5564 \fi
5565 }
5566 \def\Field@boolkey#1#2{%
5567 \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname

```

```

5568 }
5569 \ifHy@texht
5570 \newtoks\Field@toks
5571 \Field@toks={ }%
5572 \def\Field@addtoks#1#2{%
5573   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
5574   \@processme
5575 }%
5576 \else
5577 \def\Hy@WarnHTMLFieldOption#1{%
5578   \Hy@Warning{%
5579     HTML field option '#1'\MessageBreak
5580     is ignored%
5581   }%
5582 }%
5583 \fi
5584 \def\Fld@checkequals#1=#2=#3\\{%
5585   \def\@currDisplay{#1}%
5586   \ifx\\#2\\%
5587     \def\@currValue{#1}%
5588   \else
5589     \def\@currValue{#2}%
5590   \fi
5591 }
5592 \define@key{Field}{loc}{%
5593   \def\Fld@loc{#1}%
5594 }
5595 \define@key{Field}{checked}[true]{%
5596   \lowercase{\Field@boolkey{#1}}{checked}%
5597 }
5598 \define@key{Field}{disabled}[true]{%
5599   \lowercase{\Field@boolkey{#1}}{disabled}%
5600 }
5601 \ifHy@texht
5602 \define@key{Field}{accesskey}{%
5603   \Field@addtoks{accesskey}{#1}%
5604 }%
5605 \define@key{Field}{tabkey}{%
5606   \Field@addtoks{tabkey}{#1}%
5607 }%
5608 \else
5609 \define@key{Field}{accesskey}{%
5610   \Hy@WarnHTMLFieldOption{accesskey}%
5611 }%
5612 \define@key{Field}{tabkey}{%
5613   \Hy@WarnHTMLFieldOption{tabkey}%
5614 }%
5615 \fi
5616 \define@key{Field}{name}{%
5617   \def\Fld@name{#1}%
5618 }
5619 \let\Fld@altname\relax
5620 \define@key{Field}{altname}{%
5621   \def\Fld@altname{#1}%
5622 }
5623 \let\Fld@mappingname\relax
5624 \define@key{Field}{mappingname}{%

```

```

5625 \def\Fld@mappingname{#1}%
5626 }
5627 \define@key{Field}{width}{%
5628 \def\Fld@width{#1}%
5629 \Field@Width#1\setbox0=\hbox{m}%
5630 }
5631 \define@key{Field}{maxlen}{%
5632 \def\Fld@maxlen{#1}%
5633 }
5634 \define@key{Field}{menulength}{%
5635 \Fld@menulength=#1\relax
5636 }
5637 \define@key{Field}{height}{%
5638 \def\Fld@height{#1}%
5639 }
5640 \define@key{Field}{charsize}{%
5641 \Fld@charsize#1%
5642 }
5643 \define@key{Field}{borderwidth}{%
5644 \def\Fld@borderwidth{#1}%
5645 }
5646 \define@key{Field}{borderstyle}{%
5647 \let\Hy@temp\Fld@borderstyle
5648 \def\Fld@borderstyle{#1}%
5649 \Hy@Match\Fld@borderstyle{%
5650 ~[SDBIU]$%
5651 }{}{%
5652 \Hy@Warning{%
5653 Invalid value '\@pdfborderstyle'\MessageBreak
5654 for option 'pdfborderstyle'. Valid values:\MessageBreak
5655 \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
5656 \space\space I (Inset), U (Underline)\MessageBreak
5657 Option setting is ignored%
5658 }%
5659 \let\Fld@borderstyle\Hy@temp
5660 }%
5661 }
5662 \define@key{Field}{bordersep}{%
5663 \def\Fld@bordersep{#1}%
5664 }
5665 \define@key{Field}{default}{%
5666 \def\Fld@default{#1}%
5667 }
5668 \define@key{Field}{align}{%
5669 \def\Fld@align{#1}%
5670 }
5671 \define@key{Field}{value}{%
5672 \def\Fld@value{#1}%
5673 }
5674 \define@key{Field}{checkboxsymbol}{%
5675 \Fld@DingDef\Fld@cbsymbol{#1}%
5676 }
5677 \define@key{Field}{radiosymbol}{%
5678 \Fld@DingDef\Fld@radiosymbol{#1}%
5679 }
5680 \def\Fld@DingDef#1#2{%
5681 \def\Fld@temp{#1}%

```

```

5682 \Fld@@DingDef#2\ding{}}\@nil
5683 \let#1\Fld@temp
5684 }
5685 \def\Fld@@DingDef#1\ding#2#3\@nil{%
5686 \expandafter\def\expandafter\Fld@temp\expandafter{%
5687 \Fld@temp
5688 #1%
5689 }%
5690 \ifx\#3\%
5691 \expandafter\@gobble
5692 \else
5693 \begingroup
5694 \lccode'0=#2\relax
5695 \lowercase{\endgroup
5696 \expandafter\def\expandafter\Fld@temp\expandafter{%
5697 \Fld@temp
5698 0%
5699 }%
5700 }%
5701 \expandafter\@firstofone
5702 \fi
5703 {%
5704 \Fld@@DingDef#3\@nil
5705 }%
5706 }

5707 \define@key{Field}{rotation}{%
5708 \def\Fld@rotation{#1}%
5709 }

5710 \define@key{Field}{backgroundcolor}{%
5711 \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
5712 }
5713 \define@key{Field}{bordercolor}{%
5714 \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
5715 }
5716 \define@key{Field}{color}{%
5717 \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
5718 }

5719 \def\Fld@onclick@code{}
5720 \def\Fld@format@code{}
5721 \def\Fld@validate@code{}
5722 \def\Fld@calculate@code{}
5723 \def\Fld@keystroke@code{}
5724 \def\Fld@onfocus@code{}
5725 \def\Fld@onblur@code{}
5726 \def\Fld@onmousedown@code{}
5727 \def\Fld@onmouseup@code{}
5728 \def\Fld@onenter@code{}
5729 \def\Fld@onexit@code{}
5730 \def\Hy@temp#1{%
5731 \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
5732 }
5733 \def\Hy@@temp#1#2{%
5734 \ifHy@pdfa
5735 \define@key{Field}{#2}{%
5736 \Hy@Error{%
5737 PDF/A: Additional action '#2' is prohibited%

```

```

5738     }\@ehc
5739  }%
5740 \else
5741   \define@key{Field}{#2}{%
5742     \def#1{##1}%
5743   }%
5744 \fi
5745 }
5746 \Hy@temp{keystroke}
5747 \Hy@temp{format}
5748 \Hy@temp{validate}
5749 \Hy@temp{calculate}
5750 \Hy@temp{onfocus}
5751 \Hy@temp{onblur}
5752 \Hy@temp{onenter}
5753 \Hy@temp{onexit}
5754 \ifHy@texht
5755   \def\Hy@temp#1{%
5756     \define@key{Field}{#1}{%
5757       \Field@addtoks{#1}{##1}%
5758     }%
5759   }%
5760 \else
5761   \def\Hy@temp#1{%
5762     \define@key{Field}{#1}{%
5763       \Hy@WarnHTMLFieldOption{#1}%
5764     }%
5765   }%
5766 \fi
5767 \Hy@temp{ondblclick}
5768 \Hy@temp{onmousedown}
5769 \Hy@temp{onmouseup}
5770 \Hy@temp{onmouseover}
5771 \Hy@temp{onmousemove}
5772 \Hy@temp{onmouseout}
5773 \Hy@temp{onkeydown}
5774 \Hy@temp{onkeyup}
5775 \Hy@temp{onselect}
5776 \Hy@temp{onchange}
5777 \Hy@temp{onkeypress}
5778 \ifHy@texht
5779   \define@key{Field}{onclick}{%
5780     \Field@addtoks{onclick}{#1}%
5781   }%
5782 \else
5783   \ifHy@pdfa
5784     \define@key{Field}{onclick}{%
5785       \Hy@Error{%
5786         PDF/A: Action 'onclick' is prohibited%
5787       }\@ehc
5788     }%
5789   \else
5790     \define@key{Field}{onclick}{%
5791       \def\Fld@onclick@code{#1}%
5792     }%
5793   \fi
5794 \fi

```

```

5795 \DeclareRobustCommand\TextField{%
5796   \ifnextchar[{\@TextField}{\@TextField[]}%
5797 }
5798 \DeclareRobustCommand\ChoiceMenu{%
5799   \ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
5800 }
5801 \DeclareRobustCommand\CheckBox{%
5802   \ifnextchar[{\@CheckBox}{\@CheckBox[]}%
5803 }
5804 \DeclareRobustCommand\PushButton{%
5805   \ifnextchar[{\@PushButton}{\@PushButton[]}%
5806 }
5807 \DeclareRobustCommand\Gauge{%
5808   \ifnextchar[{\@Gauge}{\@Gauge[]}%
5809 }
5810 \DeclareRobustCommand\Submit{%
5811   \ifnextchar[{\@Submit}{\@Submit[]}%
5812 }
5813 \DeclareRobustCommand\Reset{%
5814   \ifnextchar[{\@Reset}{\@Reset[]}%
5815 }
5816 \def\LayoutTextField#1#2{% label, field
5817   #1 #2%
5818 }
5819 \def\LayoutChoiceField#1#2{% label, field
5820   #1 #2%
5821 }
5822 \def\LayoutCheckField#1#2{% label, field
5823   #1 #2%
5824 }
5825 \def\LayoutPushButtonField#1{% button
5826   #1%
5827 }
5828 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5829 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5830 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5831 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5832 \def\MakeButtonField#1{%
5833   \sbox0{%
5834     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
5835   }%
5836   \@tempdima\ht0 %
5837   \advance\@tempdima by \Fld@borderwidth bp %
5838   \advance\@tempdima by \Fld@borderwidth bp %
5839   \ht0\@tempdima
5840   \@tempdima\dp0 %
5841   \advance\@tempdima by \Fld@borderwidth bp %
5842   \advance\@tempdima by \Fld@borderwidth bp %
5843   \dp0\@tempdima
5844   \box0\relax
5845 }
5846 \def\DefaultHeightofSubmit{14pt}
5847 \def\DefaultWidthofSubmit{2cm}
5848 \def\DefaultHeightofReset{14pt}
5849 \def\DefaultWidthofReset{2cm}
5850 \def\DefaultHeightofCheckBox{\baselineskip}
5851 \def\DefaultWidthofCheckBox{\baselineskip}

```

```

5852 \def\DefaultHeightofChoiceMenu{\baselineskip}
5853 \def\DefaultWidthofChoiceMenu{\baselineskip}
5854 \def\DefaultHeightofText{\baselineskip}
5855 \def\DefaultHeightofTextMultiline{4\baselineskip}
5856 \def\DefaultWidthofText{3cm}
5857 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
5858 \def\DefaultOptionsofReset{print,name=Reset,noexport}
5859 \def\DefaultOptionsofPushButton{print}
5860 \def\DefaultOptionsofCheckBox{print}
5861 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

5862 \def\DefaultOptionsofListBox{print}
5863 \def\DefaultOptionsofComboBox{print,edit,sort}
5864 \def\DefaultOptionsofPopdownBox{print}
5865 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

5866 \ifHy@figures
5867 \Hy@Info{Hyper figures ON}%
5868 \else
5869 \Hy@Info{Hyper figures OFF}%
5870 \fi
5871 \ifHy@nesting
5872 \Hy@Info{Link nesting ON}%
5873 \else
5874 \Hy@Info{Link nesting OFF}%
5875 \fi
5876 \ifHy@hyperindex
5877 \Hy@Info{Hyper index ON}%
5878 \else
5879 \Hy@Info{Hyper index OFF}%
5880 \fi
5881 \ifHy@backref
5882 \Hy@Info{backreferencing ON}%
5883 \else
5884 \Hy@Info{backreferencing OFF}%
5885 \fi
5886 \ifHy@colorlinks
5887 \Hy@Info{Link coloring ON}%
5888 \else
5889 \Hy@Info{Link coloring OFF}%
5890 \fi
5891 \ifHy@ocgcolorlinks
5892 \Hy@Info{Link coloring with OCG ON}%
5893 \else
5894 \Hy@Info{Link coloring with OCG OFF}%
5895 \fi
5896 \ifHy@pdfa
5897 \Hy@Info{PDF/A mode ON}%
5898 \else
5899 \Hy@Info{PDF/A mode OFF}%
5900 \fi

```



## 21 Low-level utility macros

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

```
5901 \edef\hyper@hash{\string#}  
5902 \edef\hyper@tilde{\string~}  
5903 \edef\hyper@quote{\string"}
```

Support \label before \begin{document}.

```
5904 \def\@currentHref{Doc-Start}  
5905 \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.

```
5906 \Hy@AtBeginDocument{%  
5907   \Hy@pdfstringtrue  
5908   \PDF@SetupDoc  
5909   \let\PDF@SetupDoc\@empty  
5910   \Hy@DisableOption{pdfpagescrop}%  
5911   \Hy@DisableOption{pdfpagemode}%  
5912   \Hy@DisableOption{pdfnonfullscreenpagemode}%  
5913   \Hy@DisableOption{pdfdirection}%  
5914   \Hy@DisableOption{pdfviewarea}%  
5915   \Hy@DisableOption{pdfviewclip}%  
5916   \Hy@DisableOption{pdfprintarea}%  
5917   \Hy@DisableOption{pdfprintclip}%  
5918   \Hy@DisableOption{pdfprintscaling}%  
5919   \Hy@DisableOption{pdfduplex}%  
5920   \Hy@DisableOption{pdfpicktraybypdfsize}%  
5921   \Hy@DisableOption{pdfprintpagerange}%  
5922   \Hy@DisableOption{pdfnumcopies}%  
5923   \Hy@DisableOption{pdfstartview}%  
5924   \Hy@DisableOption{pdfstartpage}%  
5925   \Hy@DisableOption{pdftoolbar}%  
5926   \Hy@DisableOption{pdfmenubar}%  
5927   \Hy@DisableOption{pdfwindowui}%  
5928   \Hy@DisableOption{pdfitwindow}%  
5929   \Hy@DisableOption{pdfcenterwindow}%  
5930   \Hy@DisableOption{pdfdisplaydoctitle}%  
5931   \Hy@DisableOption{pdfpagelayout}%  
5932   \Hy@DisableOption{pdflang}%  
5933   \Hy@DisableOption{baseurl}%  
5934   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi  
5935   \Hy@pdfstringfalse  
5936 }
```

Ignore star from referencing macros:

```
5937 \LetLtxMacro\NoHy@OrgRef\ref  
5938 \DeclareRobustCommand*\ref{%  
5939   \@ifstar\NoHy@OrgRef\NoHy@OrgRef  
5940 }  
5941 \LetLtxMacro\NoHy@OrgPageRef\pageref  
5942 \DeclareRobustCommand*\pageref{%  
5943   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef  
5944 }
```

## 22 Localized nullifying of package

Sometimes we just don't want the wretched package interfering with us. Define an environment we can put in manually, or include in a style file, which stops the hyperref functions doing anything. This is used, for instance, in the Elsevier classes, to stop hyperref playing havoc in the front matter.

```
5945 \def\NoHyper{%
5946   \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
5947   \def\hyper@@anchor##1##2{##2\Hy@xspace@end}%
5948   \global\let\hyper@livelink\hyper@link
5949   \gdef\hyper@link##1##2##3{##3\Hy@xspace@end}%
5950   \def\hyper@anchor##1{}%
5951   \def\hyper@anchorstart##1{}%
5952   \def\hyper@anchorend{\Hy@xspace@end}%
5953   \def\hyper@linkstart##1##2{}%
5954   \def\hyper@linkend{\Hy@xspace@end}%
5955   \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
5956   \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
5957   \let\Hy@backout\@gobble
5958 }
5959 \def\stop@hyper{%
5960   \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
5961   \let\Hy@backout\@gobble
5962   \def\hyper@@anchor##1{}%
5963   \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
5964   \def\hyper@anchor##1{}%
5965   \def\hyper@anchorstart##1{}%
5966   \def\hyper@anchorend{\Hy@xspace@end}%
5967   \def\hyper@linkstart##1##2{}%
5968   \def\hyper@linkend{\Hy@xspace@end}%
5969   \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
5970   \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
5971 }
5972 \def\endNoHyper{%
5973   \global\let\hyper@link\hyper@livelink
5974 }
5975 \</package>
```

## 23 Package nohyperref

This package is introduced by Sebastian Rahtz.

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

Some low-level commands:

```
5976 \<nohyperref>
5977 \RequirePackage{letltxmacro}[2008/06/13]
5978 \let\hyper@@anchor\@gobble
5979 \def\hyper@link##1##2##3{##3}%
5980 \let\hyper@anchorstart\@gobble
5981 \let\hyper@anchorend\@empty
5982 \let\hyper@linkstart\@gobbletwo
5983 \let\hyper@linkend\@empty
5984 \def\hyper@linkurl##1##2{##1}%
```

```

5985 \def\hyper@linkfile#1#2#3{#1}%
5986 \def\hyper@link@{#1}#2#3{#1}%
5987 \let\PDF@SetupDoc\@empty
5988 \let\PDF@FinishDoc\@empty
5989 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

5990 \def\Acrobatmenu#1#2{\leavevmode#2}
5991 \let\pdfstringdefDisableCommands\@gobbletwo
5992 \let\texorpdfstring\@firstoftwo
5993 \let\pdfbookmark\@undefined
5994 \newcommand\pdfbookmark[3]{}{}
5995 \let\phantomsection\@empty
5996 \let\hypersetup\@gobble
5997 \let\hyperbaseurl\@gobble
5998 \newcommand*{\href}[3]{}{#3}
5999 \let\hyperdef\@gobbletwo
6000 \let\hyperlink\@gobble
6001 \let\hypertarget\@gobble
6002 \def\hyperref{%
6003   \@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
6004 }
6005 \long\def\@gobbleopt[#1]{#1}
6006 \let\hyperpage\@empty

```

Ignore star from referencing macros:

```

6007 \LetLtxMacro\NoHy@OrgRef\ref
6008 \DeclareRobustCommand*{\ref}{%
6009   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
6010 }
6011 \LetLtxMacro\NoHy@OrgPageRef\pageref
6012 \DeclareRobustCommand*{\pageref}{%
6013   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6014 }
6015 \let\@nohyperref\@empty

```

## 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}`

```

6016 \if@package
6017 \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.

```

6018 \if@filesw
6019 \ifHy@typexml
6020 \immediate\closeout\@mainaux
6021 \immediate\openout\@mainaux\jobname.aux\relax
6022 \immediate\write\@auxout{<relaxxml>\relax}%
6023 \fi
6024 \immediate\write\@auxout{%
6025   \string\providecommand\string\HyperFirstAtBeginDocument{%
6026     \string\AtBeginDocument}^^J%
6027   \string\HyperFirstAtBeginDocument{%

```

```

6028 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6029 \string\global\string\let\string\oldcontentsline\string\contentsline^^J%
6030 \string\gdef\string\contentsline%
6031 \string#1\string#2\string#3\string#4{%
6032 \string\oldcontentsline%
6033 {\string#1}{\string#2}{\string#3}}^^J%
6034 \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6035 \string\gdef\string\newlabel\string#1\string#2{%
6036 \string\newlabelxx{\string#1}\string#2}^^J%
6037 \string\gdef\string\newlabelxx%
6038 \string#1\string#2\string#3\string#4\string#5\string#6{%
6039 \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.

```

6040 \string\AtEndDocument{%
6041 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6042 \string\let\string\contentsline\string\oldcontentsline^^J%
6043 \string\let\string\newlabel\string\oldnewlabel^^J%
6044 \string\fi%
6045 }^^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.

```

6046 \string\fi%
6047 }^^J%
6048 \string\global\string\let\string\hyper@last\relax^^J%
6049 \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6050 }%
6051 \fi
6052 \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.

```

6053 \ifx\hyper@last\@undefined
6054 \def\@starttoc#1{%
6055 \begingroup
6056 \makeatletter
6057 \IfFileExists{\jobname.#1}{%
6058 \Hy@WarningNoLine{%
6059 old #1 file detected, not used; run LaTeX again%
6060 }%
6061 }{}%
6062 \if@files
6063 \expandafter\newwrite\csname tf@#1\endcsname
6064 \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
6065 \fi
6066 \@nobreakfalse
6067 \endgroup
6068 }%
6069 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{}}}%
6070 \fi
6071 }

```

## 25 Title strings

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

```

6072 \ifHy@usetitle
6073   \let\HyOrg@title\title
6074   \let\HyOrg@author\author
6075   \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6076   \def\Hy@scanopttitle[#1]{%
6077     \gdef\Hy@title{#1}%
6078     \HyOrg@title{#1}%
6079   }%
6080   \def\Hy@scantitle#1{%
6081     \gdef\Hy@title{#1}%
6082     \HyOrg@title{#1}%
6083   }%
6084   \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6085   \def\Hy@scanoptauthor[#1]{%
6086     \gdef\Hy@author{#1}%
6087     \HyOrg@author{#1}%
6088   }%
6089   \def\Hy@scanauthor#1{%
6090     \gdef\Hy@author{#1}%
6091     \HyOrg@author{#1}%
6092   }%

```

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

```

6093 \begingroup
6094   \def\process@me#1\@nil#2{%
6095     \expandafter\let\expandafter\x\csname @#2\endcsname
6096     \edef\y{\expandafter\strip@prefix\meaning\x}%
6097     \def\c##1#1##2\@nil{%
6098       \ifx\\##1\\%
6099       \else
6100         \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6101           \expandafter{x}%
6102       \fi
6103     }%
6104     \expandafter\c\y\relax#1\@nil
6105   }%
6106   \expandafter\process@me\string\@latex@\@nil{title}%
6107   \expandafter\process@me\string\@latex@\@nil{author}%
6108 \endgroup
6109 \fi
6110 \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.

```

6111 \def\Hy@UseMaketitleString#1{%

```

```

6112 \ltx@ifundefined{Hy@#1}{}{%
6113   \begingroup
6114     \let\Hy@saved@hook\pdfstringdefPreHook
6115     \pdfstringdefDisableCommands{%
6116       \expandafter\let\expandafter\\csname Hy@newline@#1\endcsname
6117       \let\newline\\%
6118     }%
6119     \expandafter\ifx\csname @pdf#1\endcsname\@empty
6120       \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6121         \csname Hy@#1\endcsname\@empty
6122       }%
6123     \fi
6124     \global\let\pdfstringdefPreHook\Hy@saved@hook
6125   \endgroup
6126 }%
6127 }
6128 \def\Hy@newline@title#1{ #1}
6129 \def\Hy@newline@author#1{, #1}
6130 \def\Hy@UseMaketitleInfos{%
6131   \Hy@UseMaketitleString{title}%
6132   \Hy@UseMaketitleString{author}%
6133 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

6134 \RequirePackage{atbegshi}[2007/09/09]
6135 \def\Hy@EveryPageHook{}
6136 \def\Hy@EveryPageBoxHook{}
6137 \def\Hy@FirstPageHook{}
6138 \AtBeginShipout{%
6139   \Hy@EveryPageHook
6140   \ifx\Hy@EveryPageBoxHook\@empty
6141     \else
6142       \setbox\AtBeginShipoutBox=\vbox{%
6143         \offinterlineskip
6144         \Hy@EveryPageBoxHook
6145         \box\AtBeginShipoutBox
6146       }%
6147     \fi
6148 }
6149 \AtBeginShipoutFirst{%
6150   \Hy@FirstPageHook
6151 }
6152 \g@addto@macro\Hy@FirstPageHook{%
6153   \PDF@FinishDoc
6154   \gdef\PDF@FinishDoc{}%
6155 }

```

### 27.1 PDF /PageLabels

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

```

6156 \ifHy@pagelabels
6157   \begingroup\expandafter\expandafter\expandafter\endgroup
6158   \expandafter\ifx\csname thepage\endcsname\relax
6159     \Hy@pagelabelsfalse
6160     \Hy@WarningNoLine{%
6161       Option 'pdfpagelabels' is turned off\MessageBreak
6162       because \string\thepage\space is undefined%
6163     }%
6164     \csname fi\endcsname
6165     \csname iffalse\expandafter\endcsname
6166   \fi

```

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

```

6167   \def\thispdfpagelabel#1{%
6168     \gdef\HyPL@thisLabel{#1}%
6169   }%
6170   \global\let\HyPL@thisLabel\relax

```

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

```

6171   \def\HyPL@Labels{}%

```

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

```

6172   \newcount\Hy@abspage
6173   \Hy@abspage=0 %

```

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

```

6174   \def\HyPL@LastType{init}%
6175   \def\HyPL@LastNumber{0}%
6176   \def\HyPL@LastPrefix{}%

```

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

```

6177   \def\HyPL@arabic{D}%
6178   \def\HyPL@Roman{R}%
6179   \def\HyPL@roman{r}%
6180   \def\HyPL@Alph{A}%
6181   \def\HyPL@alph{a}%

6182   \def\HyPL@SlidesSetPage{}%
6183   \ltx@ifclassloaded{slides}{%
6184     \def\HyPL@SlidesSetPage{%
6185       \advance\c@page\ltx@one
6186       \ifnum\value{page}>\ltx@one
6187         \protected@edef\HyPL@SlidesOptionalPage{%
6188           \Hy@SlidesFormatOptionalPage{\thepage}%
6189         }%
6190       \else
6191         \def\HyPL@SlidesOptionalPage{}%
6192       \fi
6193       \advance\c@page-\ltx@one
6194       \def\HyPL@page{%
6195         \csname the\Hy@SlidesPage\endcsname
6196         \HyPL@SlidesOptionalPage
6197       }%
6198     }%
6199   }{}%

```

`\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.

```

6200 \def\HyPL@EveryPage{%
6201   \begingroup
6202   \ifx\HyPL@thisLabel\relax
6203     \let\HyPL@page\thepage
6204     \HyPL@SlidesSetPage
6205   \else
6206     \let\HyPL@page\HyPL@thisLabel
6207     \global\let\HyPL@thisLabel\relax
6208   \fi
6209   \let\HyPL@Type\relax
6210   \ifnum\the\c@page>0 %
6211     \ifx\HyPL@SlidesSetPage\ltx@empty
6212       \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6213     \fi
6214   \fi
6215   \let\Hy@temp Y%
6216   \ifx\HyPL@Type\HyPL@LastType
6217   \else
6218     \let\Hy@temp N%
6219   \fi
6220   \ifx\HyPL@Type\relax
6221     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6222   \else
6223     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6224   \fi
6225   \ifx\HyPL@Prefix\HyPL@LastPrefix
6226   \else
6227     \let\Hy@temp N%
6228   \fi
6229   \if Y\Hy@temp
6230     \advance\c@page by -1 %
6231     \ifnum\HyPL@LastNumber=\the\c@page\relax
6232     \else
6233       \let\Hy@temp N%
6234     \fi
6235     \Hy@StepCount\c@page
6236   \fi
6237   \if N\Hy@temp
6238     \ifx\HyPL@Type\relax
6239       \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6240     \else
6241       \HyPL@StorePageLabel{%
6242         \ifx\HyPL@Prefix\@empty
6243         \else
6244           /P(\HyPL@Prefix)%
6245         \fi
6246         /S/\csname HyPL\HyPL@Type\endcsname
6247         \ifnum\the\c@page=1 %
6248         \else
6249           \space/St \the\c@page
6250         \fi
6251       }%
6252     \fi
6253   \fi
6254   \xdef\HyPL@LastNumber{\the\c@page}%

```



```

6255 \global\let\HyPL@LastType\HyPL@Type
6256 \global\let\HyPL@LastPrefix\HyPL@Prefix
6257 \endgroup
6258 \Hy@GlobalStepCount\Hy@abspage
6259 }%

```

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

```

6260 \def\HyPL@CheckThePage#1\@nil{%
6261 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6262 }%

```

`\HyPL@@CheckThePage` The first check is, is `\thepage` is defined such as in  $\text{\LaTeX}$ , 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`.

```

6263 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6264 \def\Hy@tempa{#4}%
6265 \def\Hy@tempb{\csname\endcsname\c@page}%
6266 \ifx\Hy@tempa\Hy@tempb
6267 \expandafter\ifx\csname HyPL#3\endcsname\relax
6268 \else
6269 \def\HyPL@Type{#3}%
6270 \def\HyPL@Prefix{#2}%
6271 \fi
6272 \else
6273 \begingroup
6274 \let\Hy@next\endgroup
6275 \let\HyPL@found\@undefined
6276 \def\arabic{\HyPL@Format{arabic}}%
6277 \def\Roman{\HyPL@Format{Roman}}%
6278 \def\roman{\HyPL@Format{roman}}%
6279 \def\Alph{\HyPL@Format{Alph}}%
6280 \def\alph{\HyPL@Format{alph}}%
6281 \protected@edef\Hy@temp{#1}%
6282 \ifx\HyPL@found\relax
6283 \toks@{\expandafter{\Hy@temp}}%
6284 \edef\Hy@next{\endgroup
6285 \noexpand\HyPL@@CheckThePage\the\toks@
6286 \noexpand\HyPL@found\relax\noexpand\@nil
6287 }%
6288 \fi
6289 \Hy@next
6290 \fi
6291 }%

```

`\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`.

```

6292 \def\HyPL@Format#1#2{%
6293 \ifx\HyPL@found\@undefined
6294 \expandafter\ifx\csname c@#2\endcsname\c@page
6295 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6296 \else
6297 \expandafter\noexpand\csname#1\endcsname{#2}%
6298 \fi

```

```

6299 \else
6300 \expandafter\noexpand\csname#1\endcsname{#2}%
6301 \fi
6302 }%

```

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

```

6303 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6304 \def\Hy@tempa{#3}%
6305 \def\Hy@tempb{\HyPL@found\relax}%
6306 \ifx\Hy@tempa\Hy@tempb
6307 \def\HyPL@Type{#2}%
6308 \def\HyPL@Prefix{#1}%
6309 \fi
6310 }%

```

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

```

6311 \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`.

```

6312 \def\HyPL@Useless{0<</S/D>>}%
6313 \@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.

```

6314 \def\HyPL@SetPageLabels{%
6315 \@onelevel@sanitize\HyPL@Labels
6316 \ifx\HyPL@Labels\@empty
6317 \else
6318 \ifx\HyPL@Labels\HyPL@Useless
6319 \else
6320 \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6321 \fi
6322 \fi
6323 }%

```

```

6324 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6325 \fi

```

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

```

6326 \Hy@DisableOption{pdfpagelabels}
6327 </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`

```

6328 <*pdfTeX>
6329 \pdf@ifdraftmode{%
6330 \let\Hy@PutCatalog\ltx@gobble
6331 }{%
6332 \let\Hy@PutCatalog\pdfcatalog
6333 }
6334 </pdfTeX>

```

The code for VTeX is more complicate, because it does not allow the direct access to the /Catalog object. The command scans its argument and looks for a /PageLabels entry.

VTeX 6.59g is the first version, that implements \special{!pdfpagelabels...}. For this version \VTeXversion reports 660.

```

6335 <*vtex>
6336 \providecommand*{\XR@ext}{pdf}
6337 \edef\Hy@VTeXversion{%
6338   \ifx\VTeXversion\@undefined
6339     \z@
6340   \else
6341     \ifx\VTeXversion\relax
6342       \z@
6343     \else
6344       \VTeXversion
6345     \fi
6346   \fi
6347 }
6348 \begingroup
6349   \ifnum\Hy@VTeXversion<660 %
6350     \gdef\Hy@PutCatalog#1{%
6351       \Hy@WarningNoLine{%
6352         VTeX 6.59g or above required for pdfpagelabels%
6353       }%
6354     }%
6355   \else
6356     \gdef\Hy@PutCatalog#1{%
6357       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6358     }%
6359     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6360       \ifx\#2\%
6361         \else
6362           \immediate\special{!pdfpagelabels #2}%
6363         \fi
6364       }%
6365     \fi
6366 \endgroup
6367 </vtex>

6368 <*pdfTeX | vtex>

```

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

```

6369 \ifHy@pagelabels
6370   \def\HyPL@StorePageLabel#1{%
6371     \toks@\expandafter{\HyPL@Labels}%
6372     \xdef\HyPL@Labels{%
6373       \the\toks@
6374       \the\Hy@abspage<<#1>>%
6375     }%
6376   }%

```

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.

```

6377 \RequirePackage{atveryend}[2009/12/07]%
6378 \AtVeryEndDocument{%
6379   \HyPL@SetPageLabels
6380 }%

```

```

6381 \fi
6382 </pdfutex | vtex>

```

### 27.1.2 xetex

```

6383 <*xetex>
6384 \HyPsd@LoadUnicode
6385 \Hy@unicodetrue
6386 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6387 \else
6388 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6389 \fi
6390 \HyPsd@LoadStringEncoding
6391 \define@key{Hyp}{unicode}[true]{%
6392 \Hy@boolkey{unicode}{#1}%
6393 \ifHy@unicode
6394 \else
6395 \Hy@Warning{%
6396 XeTeX driver only supports 'unicode=true'. Ignoring\MessageBreak
6397 option setting 'unicode=false'%
6398 }%
6399 \Hy@unicodetrue
6400 \fi
6401 }
6402 \define@key{Hyp}{pdfencoding}{%
6403 \edef\HyPsd@temp{#1}%
6404 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6405 \let\HyPsd@pdfencoding\HyPsd@temp
6406 \else
6407 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6408 \let\HyPsd@pdfencoding\HyPsd@temp
6409 \else
6410 \Hy@Warning{%
6411 XeTeX driver only supports\MessageBreak
6412 'pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6413 setting 'pdfencoding=\HyPsd@temp'%
6414 }%
6415 \fi
6416 \fi
6417 }
6418 \let\HyXeTeX@CheckUnicode\relax
6419 </xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6420 <*pdfmarkbase>
6421 \begingroup
6422 \@ifundefined{headerps@out}{%
6423 \toks@{\expandafter{\Hy@FirstPageHook}%
6424 \xdef\Hy@FirstPageHook{%
6425 \noexpand\headerps@out{%
6426 systemdict /pdfmark known%
6427 {%
6428 userdict /?pdfmark systemdict /exec get put%
6429 }{%
6430 userdict /?pdfmark systemdict /pop get put %
6431 userdict /pdfmark systemdict /cleartomark get put%
6432 }%

```

```

6433     ifelse%
6434     }%
6435     \the\toks@
6436   }%
6437 }%
6438 \endgroup
6439 \pdfmarkbase>

```

\Hy@PutCatalog

```

6440 <dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfmark{docview << #1 >>}}
6441 <*pdfmarkbase>
6442 \def\Hy@PutCatalog#1{%
6443   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
6444 }
6445 </pdfmarkbase>

6446 <*pdfmarkbase | dvipdfm | xetex>
6447 \ifHy@pagelabels

```

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

```

6448 \def\HyPL@StorePageLabel#1{%
6449   \if@filesw
6450     \begingroup
6451     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6452     \immediate\write\@mainaux{%
6453       \string\HyPL@Entry{\Hy@tempa}%
6454     }%
6455     \endgroup
6456   \fi
6457 }%

```

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.

```

6458 \Hy@AtBeginDocument{%
6459   \if@filesw
6460     \immediate\write\@mainaux{%
6461       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6462     }%
6463   \fi
6464   \ifx\HyPL@Labels\@empty
6465     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6466   \else
6467     \HyPL@SetPageLabels
6468   \fi
6469   \let\HyPL@Entry\@gobble
6470 }%

```

\HyPL@Entry

```

6471 \def\HyPL@Entry#1{%
6472   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6473     \HyPL@Labels
6474     #1%
6475   }%
6476 }%

6477 \fi
6478 </pdfmarkbase | dvipdfm | xetex>

```

```

6479 <*package>
6480 \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 L<sup>A</sup>T<sub>E</sub>X provides, which may be useable. But then its up to you to make sure these are legal PDF and HTML names. The ‘hypertextnames=false’ option just makes up arbitrary names.

All the shenanigans is to make sure section numbers etc are always arabic, separated by dots. Who knows how people will set up `\@currentlabel`? If they put spaces in, or brackets (quite legal) then the hypertext processors will get upset.

But this is flaky, and open to abuse. Styles like `subeqn` will mess it up, for starters. Appendices are an issue, too. We just hope to cover most situations. We can at least cope with the standard sectioning structure, allowing for `\part` and `\chapter`.

Start with a fallback for equations

```

6481 \def\Hy@CounterExists#1{%
6482   \begingroup\expandafter\expandafter\expandafter\endgroup
6483   \expandafter\ifx\csname c@#1\endcsname\relax
6484     \expandafter\@gobble
6485   \else
6486     \begingroup\expandafter\expandafter\expandafter\endgroup
6487     \expandafter\ifx\csname the#1\endcsname\relax
6488       \expandafter\expandafter\expandafter\@gobble
6489     \else
6490       \expandafter\expandafter\expandafter\@firstofone
6491     \fi
6492   \fi
6493 }
6494 \Hy@CounterExists{section}{%
6495   \newcommand\theHequation{\theHsection.\arabic{equation}}}%
6496 }
6497 \Hy@CounterExists{part}{%
6498   \newcommand\theHpart{\arabic{part}}}%
6499 }
6500 \ltx@ifundefined{thechapter}{%
6501   \newcommand\theHsection   {\arabic{section}}}%
6502   \newcommand\theHfigure    {\arabic{figure}}}%
6503   \newcommand\theHtable     {\arabic{table}}}%
6504 }{%
6505   \newcommand\theHchapter   {\arabic{chapter}}}%
6506   \newcommand\theHfigure    {\theHchapter.\arabic{figure}}}%
6507   \newcommand\theHtable     {\theHchapter.\arabic{table}}}%
6508   \newcommand\theHsection   {\theHchapter.\arabic{section}}}%
6509 }
6510 \newcommand\theHsubsection  {\theHsection.\arabic{subsection}}
6511 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6512 \newcommand\theHparagraph   {\theHsubsubsection.\arabic{paragraph}}
6513 \newcommand\theHsubparagraph{\theHparagraph.\arabic{subparagraph}}

```

```

6514 \newcommand\theHtheorem    {\theHsection.\arabic{theorem}}
6515 \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.

```

6516 \let\H@item\item
6517 \newcounter{Item}
6518 \def\theHItem{\arabic{Item}}
6519 \def\item{%
6520   \@hyper@itemfalse
6521   \if@nmbrlist\@hyper@itemtrue\fi
6522   \H@item
6523 }

6524 \newcommand\theHenumi    {\theHItem}
6525 \newcommand\theHenumii   {\theHItem}
6526 \newcommand\theHenumiii  {\theHItem}
6527 \newcommand\theHenumiv   {\theHItem}
6528 \newcommand\theHHfootnote {\arabic{Hfootnote}}
6529 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
6530 \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.

```

6531 \let\H@refstepcounter\refstepcounter
6532 \edef\name@of@eq{equation}%
6533 \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.

```

6534 \newif\if@hyper@item
6535 \newif\if@skiphyperref
6536 \@hyper@itemfalse
6537 \@skiphyperreffalse
6538 \def\refstepcounter#1{%
6539   \ifHy@pdfstring
6540   \else
6541     \H@refstepcounter{#1}%
6542     \edef\This@name{#1}%
6543     \ifx\This@name\name@of@slide
6544     \else
6545       \if@skiphyperref
6546       \else
6547         \if@hyper@item
6548           \stepcounter{Item}%
6549           \hyper@refstepcounter{Item}%
6550           \@hyper@itemfalse
6551         \else
6552           \hyper@refstepcounter{#1}%
6553         \fi
6554       \fi
6555     \fi
6556   \fi
6557 }
6558 \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.

```
6559 \ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}
```

`\hyper@refstepcounter`

```
6560 \def\hyper@refstepcounter#1{%
6561   \edef\This@name{#1}%
6562   \ifx\This@name\name@of@eq
6563     \ifundefined{theHequation}{%
6564       \make@stripped@name{\theequation}%
6565       \let\theHequation\newname
6566     }{%
6567   \fi
6568   \ifundefined{theH#1}{%
6569     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
6570   }{%
6571   \hyper@makecurrent{#1}%
6572   \ifmeasuring@
6573   \else
6574     \Hy@raisedlink{%
6575       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6576     }%
6577   \fi
6578 }
```

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`.

```
6579 \begingroup\expandafter\expandafter\expandafter\endgroup
6580 \expandafter\ifx\csname chapter\endcsname\relax
6581   \def\Hy@chapterstring{section}%
6582 \else
6583   \def\Hy@chapterstring{chapter}%
6584 \fi
6585 \def\Hy@appendixstring{appendix}
6586 \def\Hy@chapapp{\Hy@chapterstring}
6587 \ltx@ifundefined{appendix}{%
6588 }{%
6589   \let\HyOrg@appendix\appendix
6590   \def\appendix{%
6591     \ltx@ifundefined{chapter}%
6592     {\gdef\theHsection{\Alph{section}}}%
6593     {\gdef\theHchapter{\Alph{chapter}}}%
6594     \xdef\Hy@chapapp{\Hy@appendixstring}%
6595     \HyOrg@appendix
6596   }%
6597 }
```

`\Hy@Test@alph`

```
6598 \def\Hy@Test@alph#1{%
6599   \ifcase#1\or
6600     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6601     k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
```



```

6602   u\or v\or w\or x\or y\or z%
6603   \else
6604   \@ctrerr
6605   \fi
6606 }

```

\Hy@Test@Alph

```

6607 \def\Hy@Test@Alph#1{%
6608   \ifcase#1\or
6609   A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6610   K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6611   U\or V\or W\or X\or Y\or Z%
6612   \else
6613   \@ctrerr
6614   \fi
6615 }

```

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

```

6616 \def\hyper@makecurrent#1{%
6617   \begingroup
6618   \edef\Hy@param{#1}%
6619   \ifx\Hy@param\Hy@chapterstring
6620     \let\Hy@param\Hy@chapapp
6621   \fi
6622   \ifHy@hypertextnames
6623     \let\@number\@firstofone
6624     \def\@fnsymbol##1{\fnsymbol\number##1}%
6625     \def\@arabic##1{\number##1}%
6626     \ifx\@alph\Hy@Test@alph
6627       \else
6628       \def\@alph{alph\number}%
6629     \fi
6630     \ifx\@Alph\Hy@Test@Alph
6631       \else
6632       \def\@Alph{Alph\number}%
6633     \fi
6634     \ifHy@naturalnames
6635       \let\textlatin\@firstofone
6636       \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
6637     \else
6638       \xdef\HyperGlobalCurrentHref{%
6639         \csname
6640           the%
6641           \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
6642           #1%
6643         \endcsname
6644       }%
6645     \fi
6646     \xdef\HyperGlobalCurrentHref{%
6647       \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
6648     }%
6649   \else
6650     \Hy@GlobalStepCount\Hy@linkcounter
6651     \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
6652   \fi
6653 \endgroup

```

```

6654 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6655 \ifHy@localanchorname
6656   \let\@currentHref\HyperLocalCurrentHref
6657 \else
6658   \global\let\@currentHref\HyperGlobalCurrentHref
6659 \fi
6660 }

```

\Hy@MakeCurrentHref

```

6661 \def\Hy@MakeCurrentHref#1{%
6662   \edef\HyperLocalCurrentHref{#1}%
6663   \@onelevel@sanitize\HyperLocalCurrentHref
6664   \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
6665   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6666   \ifHy@localanchorname
6667     \let\@currentHref\HyperLocalCurrentHref
6668   \else
6669     \global\let\@currentHref\HyperGlobalCurrentHref
6670   \fi
6671 }

```

\Hy@MakeCurrentHrefAuto

```

6672 \def\Hy@MakeCurrentHrefAuto#1{%
6673   \Hy@GlobalStepCount\Hy@linkcounter
6674   \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
6675 }

```

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

```

6676 \def\@currentHlabel{\@currentHref}

6677 \@ifpackageloaded{fancyvrb}{%
6678   \@ifpackagelater{fancyvrb}{1998/05/20}{-}{%
6679     \def\FV@StepLineNo{%
6680       \FV@SetLineNo
6681       \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
6682       \FV@SetLineNo
6683     }%
6684   }%
6685 }{}

```

## 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. 39). The link will not work if option pageanchor is set to false.

\lastpage@putlabel

```

6686 \Hy@AtBeginDocument{%
6687   \@ifclassloaded{revtex4}{%
6688     \@namedef{ver@lastpage.sty}{1994/06/25}%
6689   }{}%

```

```

6690 \ifpackageloaded{lastpage}{%
6691   \ifHy@pageanchor
6692   \else
6693     \Hy@WarningNoLine{%
6694       The \string\pageref{LastPage} link doesn't work\MessageBreak
6695       with disabled option 'pageanchor'%
6696     }%
6697   \fi
6698   \def\lastpage@putlabel{%
6699     \addtocounter{page}{-1}%
6700     \if@filesw
6701       \begingroup
6702         \let\@number\@firstofone
6703         \ifHy@pageanchor
6704           \ifHy@hypertextnames
6705             \ifHy@plainpages
6706               \def\Hy@temp{\arabic{page}}%
6707             \else
6708               \Hy@unicodefalse
6709               \pdfstringdef\Hy@temp{\thepage}%
6710             \fi
6711           \else
6712             \def\Hy@temp{\the\Hy@pagecounter}%
6713           \fi
6714         \fi
6715         \immediate\write\@auxout{%
6716           \string\newlabel
6717           {LastPage}{{}{\thepage}}{%
6718             \ifHy@pageanchor page.\Hy@temp\fi}}}%
6719       }%
6720     \endgroup
6721   \fi
6722   \addtocounter{page}{1}%
6723 }%
6724 \@ifclassloaded{revtex4}{%
6725   \begingroup
6726     \toks@\expandafter{\lastpage@putlabel}%
6727     \edef\x{\endgroup
6728       \def\noexpand\lastpage@putlabel{%
6729         \noexpand\stepcounter{page}%
6730         \the\toks@
6731         \noexpand\addtocounter{page}\noexpand\m@ne
6732       }%
6733     }%
6734     \x
6735   }{}%
6736 }{}%
6737 }
6738 \end{package}
6739 \if*check
6740 \checkpackage{lastpage}[1994/06/25]
6741 \checkcommand\def\lastpage@putlabel{%
6742   \addtocounter{page}{-1}%
6743   \immediate\write\@auxout{%
6744     \string\newlabel{LastPage}{{}{\thepage}}}%
6745   }%
6746   \addtocounter{page}{1}%

```

```

6747 }
6748 </check>
6749 <*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.

```

6750 \def\hypergetref#1{\getrefbykeydefault{#1}{-}{??}}
6751 \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:

```

6752 \@ifpackageloaded{titlesec}{%
6753   \def\ttl@Hy@steplink#1{%
6754     \Hy@MakeCurrentHrefAuto{#1*}%
6755     \edef\ttl@Hy@saveanchor{%
6756       \noexpand\Hy@raisedlink{%
6757         \noexpand\hyper@anchorstart{\@currentHref}%
6758         \noexpand\hyper@anchorend
6759         \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
6760         \noexpand\ttl@Hy@PatchSaveWrite
6761       }%
6762     }%
6763   }%
6764   \def\ttl@Hy@PatchSaveWrite{%
6765     \begingroup
6766     \toks@\expandafter{\ttl@savewrite}%
6767     \edef\x{\endgroup
6768       \def\noexpand\ttl@savewrite{%
6769         \let\noexpand\@currentHref
6770         \noexpand\ttl@Hy@SavedCurrentHref
6771         \the\toks@
6772       }%
6773     }%
6774     \x
6775   }%
6776   \def\ttl@Hy@refstepcounter#1{%
6777     \let\ttl@b\Hy@raisedlink
6778     \def\Hy@raisedlink##1{%
6779       \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
6780     }%
6781     \refstepcounter{#1}%
6782     \let\Hy@raisedlink\ttl@b
6783   }%
6784 }{}

```

Package titletoc support:

```

6785 \@ifpackageloaded{titletoc}{%
6786   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
6787 }{}

```

## 32 Package varioref support

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

```
6788 \def\Hy@varioref@undefined{{??}{??}{}}{}{}
6789 \ifpackageloaded{varioref}{%
6790   \def\vref@pagenum#1#2{%
6791     \@ifundefined{r@#2}{%
6792       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
6793     }{}%
6794     \edef#1{\getpagerefnumber{#2}}%
6795   }%
6796 }
```

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

```
6797 \def\Hy@varioref@refstepcounter#1{%
6798   \stepcounter{#1}%
6799   \protected@edef\@currentlabel{%
6800     \csname p@#1\expandafter\endcsname\csname the#1\endcsname
6801   }%
6802 }
6803 \AtBeginDocument{%
6804   \ifx\refstepcounter\Hy@varioref@refstepcounter
6805     \let\H@refstepcounter\refstepcounter
6806     \let\refstepcounter\Hy@saved@refstepcounter
6807   \fi
6808 }
```

## 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

```
6809 \ifpackageloaded{longtable}{%
6810   \begingroup
6811     \def\y{\LT@array}%
6812     \@ifundefined{scr@LT@array}{%
6813       \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
6814     }{\def\y{\scr@LT@array}}%
6815     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
6816       \expandafter\endgroup
6817       \expandafter\def\y[##1]##2{%
6818         \H@refstepcounter{#1}%
6819         \hyper@makecurrent{table}%
6820         \let\Hy@LT@currentHref\@currentHref
6821         #2\@sharp###3###4%
6822       }%
6823     }%
6824     \expandafter\expandafter\expandafter\x\y{#1}{#2}\@nil
```

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

```
6825 \begingroup
6826   \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
```

```

6827 \endgroup
6828 \def\LT@start{%
6829   #1%
6830   \ifvoid\LT@foot#2\fi
6831   \let\@currentHref\Hy@LT@currentHref
6832   \Hy@raisedlink{%
6833     \hyper@anchorstart{\@currentHref}\hyper@anchorend
6834   }%
6835   #3%
6836   }%
6837 }%
6838 \expandafter\x\LT@start\@nil
6839 }{}

```

## 34 Package xspace support

```

6840 \def\Hy@xspace@end{}
6841 \ltx@ifundefined{xspaceaddexceptions}{%
6842   \Hy@AtBeginDocument{%
6843     \ltx@ifundefined{xspaceaddexceptions}{%
6844       }{%
6845         \def\Hy@xspace@end{%
6846           \ltx@gobble{end for xspace}%
6847         }%
6848         \xspaceaddexceptions{\Hy@xspace@end,\hyper@linkend,\hyper@anchorend}%
6849       }%
6850     }%
6851   }{%
6852     \def\Hy@xspace@end{%
6853       \ltx@gobble{end for xspace}%
6854     }%
6855     \xspaceaddexceptions{\Hy@xspace@end,\hyper@linkend,\hyper@anchorend}%
6856   }

```

## 35 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 42). 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.

```

6857 \let\new@refstepcounter\refstepcounter
6858 \let\H@equation\equation
6859 \let\H@endequation\endequation
6860 \ifpackageloaded{amsmath}{%
6861   \long\def\Hy@temp{%
6862     \incr@eqnum
6863     \mathdisplay@push
6864     \st@rredfalse \global\@eqnswtrue
6865     \mathdisplay{equation}%
6866   }%
6867   \ifx\Hy@temp\equation
6868     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
6869       \csname iftrue\endcsname
6870   \else

```

```

6871 \long\def\equation{%
6872 \mathdisplay@push
6873 \st@rredfalse \global\@eqnswtrue
6874 \mathdisplay{equation}%
6875 \incr@eqnum
6876 }%
6877 \fi
6878 \fi
6879 }{%
6880 \def\equation{%
6881 \let\refstepcounter\H@refstepcounter
6882 \H@equation
6883 \@ifundefined{theHequation}{%
6884 \make@stripped@name{\theequation}%
6885 \let\theHequation\newname
6886 }{}%
6887 \hyper@makecurrent{equation}%
6888 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
6889 \let\refstepcounter\new@refstepcounter
6890 }%
6891 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
6892 }

```

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.

```

6893 \newif\if@eqnstar
6894 \@eqnstarfalse
6895 \let\H@eqnarray\eqnarray
6896 \let\H@endeqnarray\endeqnarray
6897 \def\eqnarray{%
6898 \let\Hy@reserved@a\relax
6899 \def\@currentHref{}%
6900 \H@eqnarray
6901 \if@eqnstar
6902 \else
6903 \ifx\\ \@currentHref\\%
6904 \else
6905 \@ifundefined{theHequation}{%
6906 \make@stripped@name{\theequation}%
6907 \let\theHequation\newname
6908 }{}%
6909 \hyper@makecurrent{equation}%
6910 \hyper@anchorstart{\@currentHref}{\hyper@anchorend
6911 \fi
6912 \fi
6913 }
6914 \def\endeqnarray{%
6915 \H@endeqnarray
6916 }

```

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.

```

6917 \@namedef{eqnarray*}{%
6918 \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
6919 }

```

```

6920 \@namedef{endeqnarray*}{%
6921   \nonumber\endeqnarray\@eqnstarfalse
6922 }

```

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

```

6923 \ltx@ifundefined{subeqnarray}{%}{%
6924   \let\H@subeqnarray\subeqnarray
6925   \let\H@endsubeqnarray\endsubeqnarray
6926   \def\subeqnarray{%
6927     \let\Hy@reserved@a\relax
6928     \H@subeqnarray
6929     \@ifundefined{theHequation}{%
6930       \make@stripped@name{\theequation}%
6931       \let\theHequation\newname
6932     }{}%
6933     \hyper@makecurrent{equation}%
6934     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
6935   }%
6936   \def\endsubeqnarray{%
6937     \H@endsubeqnarray
6938   }%
6939   \newcommand\theHsubequation{\theHequation\alph{subequation}}}%
6940 }

```

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

```

6941 \def\make@stripped@name#1{%
6942   \begingroup
6943   \escapechar\m@ne
6944   \global\let\newname\@empty
6945   \protected@edef\Hy@tempa{#1}%
6946   \edef\@tempb{%
6947     \noexpand\@tfor\noexpand\Hy@tempa:=%
6948     \expandafter\strip@prefix\meaning\Hy@tempa
6949   }%
6950   \@tempb\do{%
6951     \if{\Hy@tempa\else
6952     \if}\Hy@tempa\else
6953     \xdef\newname{\newname\Hy@tempa}%
6954   \fi
6955   \fi
6956   }%
6957   \endgroup
6958 }

```

Support for amsmath's subequations:

```

6959 \begingroup\expandafter\expandafter\expandafter\endgroup
6960 \expandafter\ifx\csname subequations\endcsname\relax
6961 \else
6962   \let\HyOrg@subequations\subequations
6963   \def\subequations{%
6964     \stepcounter{equation}%
6965     \protected@edef\theHparentequation{%
6966       \@ifundefined{theHequation}\theequation\theHequation
6967     }%
6968     \addtocounter{equation}{-1}%
6969     \HyOrg@subequations
6970     \def\theHequation{\theHparentequation\alph{equation}}}%
6971   \ignorespaces

```



```

6972 }%
6973 \fi

```

Support for package amsthm (Daniel Müllner):

```

6974 \@ifpackageloaded{amsthm}{%

```

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

```

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

6975 \def\Hy@temp#1#2#3{%
6976   \ifhmode\unskip\unskip\par\fi
6977   \normalfont
6978   \trivlist
6979   \let\thmheadnl\relax
6980   \let\thm@swap\@gobble
6981   \let\thm@indent\indent % indent
6982   \thm@headfont{\scshape}% heading font small caps
6983   \thm@notefont{\fontseries\mddefault\upshape}%
6984   \thm@headpunct{.}% add period after heading
6985   \thm@headsep 5\p@ plus\p@ minus\p@\relax
6986   \thm@space@setup
6987   #1% style overrides
6988   \@topsep \thm@preskip          % used by thm head
6989   \@topsepadd \thm@postskip      % used by \@endparenv
6990   \def\@tempa{#2}\ifx\@empty\@tempa
6991     \def\@tempa{\@oparg{\@begintheorem{#3}{}}{}}}%
6992   \else
6993     \refstepcounter{#2}%
6994     \def\@tempa{\@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}}}%
6995   \fi
6996   \@tempa
6997 }%
6998 \ifx\Hy@temp\@thm
6999 \def\@thm#1#2#3{%
7000   \ifhmode
7001     \unskip\unskip\par
7002   \fi
7003   \normalfont
7004   \trivlist
7005   \let\thmheadnl\relax
7006   \let\thm@swap\@gobble
7007   \let\thm@indent\indent % indent
7008   \thm@headfont{\scshape}% heading font small caps
7009   \thm@notefont{\fontseries\mddefault\upshape}%
7010   \thm@headpunct{.}% add period after heading
7011   \thm@headsep 5\p@ plus\p@ minus\p@\relax
7012   \thm@space@setup
7013   #1% style overrides
7014   \@topsep \thm@preskip          % used by thm head
7015   \@topsepadd \thm@postskip      % used by \@endparenv
7016   \def\@thm@counter{#2}%
7017   \ifx\@empty\@thm@counter
7018     \def\@tempa{%
7019       \@oparg{\@begintheorem{#3}{}}{}}}%
7020   }%
7021   \else

```

```

7022     \H@refstepcounter{#2}%
7023     \hyper@makecurrent{#2}%
7024     \let\Hy@dth@currentHref\@currentHref
7025     \def\@tempa{%
7026       \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
7027     }%
7028     \fi
7029     \@tempa
7030   }%
7031 \else
7032   \def\@thm#1#2#3{%
7033     \ifhmode
7034       \unskip\unskip\par
7035     \fi
7036     \normalfont
7037     \trivlist
7038     \let\thmheadnl\relax
7039     \let\thm@swap\@gobble
7040     \thm@notefont{\fontseries\mddefault\upshape}%
7041     \thm@headpunct{.}% add period after heading
7042     \thm@headsep 5\p@ plus\p@ minus\p@\relax
7043     \thm@space@setup
7044     #1% style overrides
7045     \@topsep \thm@preskip           % used by thm head
7046     \@topsepadd \thm@postskip      % used by \@endparenv
7047     \def\dth@counter{#2}%
7048     \ifx\@empty\dth@counter
7049       \def\@tempa{%
7050         \@oparg{\@begintheorem{#3}{}}{}%
7051       }%
7052     \else
7053       \H@refstepcounter{#2}%
7054       \hyper@makecurrent{#2}%
7055       \let\Hy@dth@currentHref\@currentHref
7056       \def\@tempa{%
7057         \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
7058       }%
7059       \fi
7060       \@tempa
7061     }%
7062   \fi
7063   \dth@everypar={%
7064     \@minipagefalse
7065     \global\@newlistfalse
7066     \@noparitemfalse
7067     \if@inlabel
7068       \global\@inlabelfalse
7069     \begingroup
7070     \setbox\z@\lastbox
7071     \ifvoid\z@
7072       \kern-\itemindent
7073     \fi
7074     \endgroup
7075     \ifx\@empty\dth@counter
7076     \else
7077       \Hy@raisedlink{%
7078         \hyper@anchorstart{%

```

```

7079         \ltx@ifundefined{Hy@dth@currentHref}%
7080         \@currentHref\Hy@dth@currentHref
7081     }\hyper@anchorend
7082 }%
7083 \fi
7084 \unhbox\@labels
7085 \fi
7086 \if@nobreak
7087     \@nobreakfalse \clubpenalty\@M
7088 \else
7089     \clubpenalty\@clubpenalty \everypar{}%
7090 \fi
7091 }%
7092 }{}

```

## 36 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.

```

7093 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
7094 \ifHy@hyperfootnotes
7095     \newcounter{Hfootnote}%
7096     \let\H@@@footnotetext\@footnotetext
7097     \let\H@@@footnotemark\@footnotemark
7098     \def\xfootnotenext[#1]{%
7099         \begingroup
7100             \csname c@\@mpfn\endcsname #1\relax
7101             \unrestored@protected@xdef\@thefnmark{\thempfn}%
7102         \endgroup
7103         \ifx\@footnotetext\@mpfootnotetext
7104             \expandafter\H@@@mpfootnotetext
7105         \else
7106             \expandafter\H@@@footnotetext
7107         \fi
7108     }%
7109     \def\xfootnotemark[#1]{%
7110         \begingroup
7111             \c@footnote #1\relax
7112             \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7113         \endgroup
7114         \H@@@footnotemark
7115     }%
7116     \let\H@@@mpfootnotetext\@mpfootnotetext
7117     \long\def\@mpfootnotetext#1{%
7118         \H@@@mpfootnotetext{%
7119             \ifHy@nesting
7120                 \expandafter\hyper@@anchor\expandafter{%
7121                     \Hy@footnote@currentHref
7122                 }\{#1}%
7123             \else
7124                 \Hy@raisedlink{%
7125                     \expandafter\hyper@@anchor\expandafter{%
7126                         \Hy@footnote@currentHref

```

```

7127     }{\relax}%
7128     }#1%
7129     \fi
7130   }%
7131 }%
7132 \long\def\@footnotetext#1{%
7133   \H@@footnotetext{%
7134     \ifHy@nesting
7135       \expandafter\hyper@@anchor\expandafter{%
7136         \Hy@footnote@currentHref
7137       }{#1}%
7138     \else
7139       \Hy@raisedlink{%
7140         \expandafter\hyper@@anchor\expandafter{%
7141           \Hy@footnote@currentHref
7142         }{\relax}%
7143       }%
7144       \let\@currentHref\Hy@footnote@currentHref
7145       \let\@currentlabelname\@empty
7146       #1%
7147     \fi
7148   }%
7149 }%

```

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.

```

7150 \def\@footnotemark{%
7151   \leavevmode
7152   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7153   \stepcounter{Hfootnote}%
7154   \global\let\Hy@saved@currentHref\@currentHref
7155   \hyper@makecurrent{Hfootnote}%
7156   \global\let\Hy@footnote@currentHref\@currentHref
7157   \global\let\@currentHref\Hy@saved@currentHref
7158   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7159   \@makefnmark
7160   \hyper@linkend
7161   \ifhmode\spacefactor\@x@sf\fi
7162   \relax
7163 }%

```

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

```

7164 \@ifpackageloaded{longtable}{%
7165   \CheckCommand*\LT@p@ftntext}[1]{%
7166     \edef\@tempa{%
7167       \the\LT@p@ftn
7168       \noexpand\footnotetext[\the\c@footnote]%
7169     }%
7170     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7171   }%
7172   \long\def\LT@p@ftntext#1{%
7173     \edef\@tempa{%
7174       \the\LT@p@ftn

```

```

7175 \begingroup
7176 \noexpand\c@footnote=\the\c@footnote\relax
7177 \noexpand\protected@xdef\noexpand\@thefnmark{%
7178 \noexpand\thempfn
7179 }%
7180 \noexpand\Hy@LT@footnotetext{%
7181 \Hy@footnote@currentHref
7182 }%
7183 }%
7184 \global\LT@p@ftn\expandafter{%
7185 \@tempa{#1}%
7186 \endgroup
7187 }%
7188 }%
7189 \long\def\Hy@LT@footnotetext#1#2{%
7190 \H@@@footnotetext{%
7191 \ifHy@nesting
7192 \hyper@@@anchor{#1}{#2}%
7193 \else
7194 \Hy@raisedlink{%
7195 \hyper@@@anchor{#1}{\relax}%
7196 }%
7197 \def\@currentHref{#1}%
7198 \let\@currentlabelname\@empty
7199 #2%
7200 \fi
7201 }%
7202 }%
7203 }{}%

```

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

```

7204 \ifpackageloaded{fancyvrb}{%
7205 \def\V@@@footnotetext{%
7206 \insert\footins\bgroup
7207 \csname reset@font\endcsname
7208 \footnotesize
7209 \interlinepenalty\interfootnotelinepenalty
7210 \splittopskip\footnotesep
7211 \splitmaxdepth\dp\strutbox
7212 \floatingpenalty \@MM
7213 \hsize\columnwidth
7214 \@parboxrestore
7215 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
7216 \@makefnmark{}%
7217 \rule{\z@}{\footnotesep}%
7218 \bgroup
7219 \aftergroup\V@@@footnotetext
7220 \Hy@raisedlink{%
7221 \expandafter\hyper@@@anchor\expandafter{%
7222 \Hy@footnote@currentHref
7223 }{\relax}%
7224 }%
7225 \let\@currentHref\Hy@footnote@currentHref
7226 \let\@currentlabelname\@empty
7227 \ignorespaces
7228 }%
7229 }{}%

```

KOMA-Script defines \footref that uses both \ref and \@footnotemark resulting

in two links, one of them wrong.

```

7230 \def\Hy@temp#1{%
7231   \begingroup
7232   \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7233   \endgroup
7234   \@footnotemark
7235 }%
7236 \ifx\Hy@temp\footref
7237   \def\footref#1{%
7238     \begingroup
7239     \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7240     \endgroup
7241     \H@@@footnotemark
7242   }%
7243 \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.

```

7244 \let\HyOrg@maketitle\maketitle
7245 \def\maketitle{%
7246   \let\Hy@saved@footnotemark\@footnotemark
7247   \let\Hy@saved@footnotetext\@footnotetext
7248   \let\@footnotemark\H@@@footnotemark
7249   \let\@footnotetext\H@@@footnotetext
7250   \@ifnextchar[\Hy@maketitle@optarg{% ]
7251   \HyOrg@maketitle
7252   \Hy@maketitle@end
7253 }%
7254 }%
7255 \def\Hy@maketitle@optarg[#1]{%
7256   \HyOrg@maketitle[{#1}]%
7257   \Hy@maketitle@end
7258 }%
7259 \def\Hy@maketitle@end{%
7260   \ifx\@footnotemark\H@@@footnotemark
7261     \let\@footnotemark\Hy@saved@footnotemark
7262   \fi
7263   \ifx\@footnotetext\H@@@footnotetext
7264     \let\@footnotetext\Hy@saved@footnotetext
7265   \fi
7266 }%

```

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

```

7267 \def\realfootnote{%
7268   \@ifnextchar[\@xfootnote{%
7269     \stepcounter{\@mpfn}%
7270     \protected@xdef\@thefnmark{\thempfn}%
7271     \H@@@footnotemark\H@@@footnotetext
7272   }%
7273 }%
7274 \fi
7275 \Hy@DisableOption{hyperfootnotes}

7276 \</package>
7277 \<*check>
7278 \checklatex
7279 \checkcommand\def\@xfootnotenext[#1]{%

```

```

7280 \begingroup
7281 \csname c@\@mpfn\endcsname #1\relax
7282 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7283 \endgroup
7284 \@footnotetext
7285 }
7286 \checkcommand\def\@xfootnotemark[#1]{%
7287 \begingroup
7288 \c@footnote #1\relax
7289 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7290 \endgroup
7291 \@footnotemark
7292 }
7293 \checkcommand\def\@footnotemark{%
7294 \leavevmode
7295 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7296 \@makefnmark
7297 \ifhmode\spacefactor\@x@sf\fi
7298 \relax
7299 }
7300 </check>
7301 <*package>

```

## 37 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.

```

7302 \def\caption{%
7303 \ifx\@captype\@undefined
7304 \latex@error{\noexpand\caption outside float}\@ehd
7305 \expandafter\@gobble
7306 \else
7307 \H@refstepcounter\@captype
7308 \let\Hy@tempa\@caption
7309 \ifundefined{float@caption}{%
7310 }{%
7311 \expandafter\ifx\csname @float@c@\@captype\endcsname
7312 \float@caption
7313 \let\Hy@tempa\Hy@float@caption
7314 \fi
7315 }%
7316 \expandafter\@firstofone
7317 \fi
7318 {\@dblarg{\Hy@tempa\@captype}}%
7319 }
7320 \long\def\@caption#1[#2]#3{%
7321 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7322 \csname iftrue\endcsname
7323 \global\let\@currentHref\hc@currentHref
7324 \else
7325 \hyper@makecurrent{\@captype}%
7326 \fi
7327 \@ifundefined{NR@gettitle}{%
7328 \def\@currentlabelname{#2}%
7329 }{%
7330 \NR@gettitle{#2}%

```

```

7331 }%
7332 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7333   \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7334 }%
7335 \begingroup
7336   \@parboxrestore
7337   \if@minipage
7338     \@setminipage
7339   \fi
7340   \normalsize
7341   \expandafter\ifx\csname if@capstart\expandafter\endcsname
7342     \csname iftrue\endcsname
7343     \global\@capstartfalse
7344     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7345   \else
7346     \@makecaption{\csname fnum@#1\endcsname}{%
7347       \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7348   \ifHy@nesting
7349     \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7350   \else
7351     \Hy@raisedlink{%
7352       \expandafter\hyper@@anchor\expandafter{%
7353         \@currentHref
7354       }\relax}%
7355     }%
7356     #3%
7357   \fi
7358 }%
7359 \fi
7360 \par
7361 \endgroup
7362 }

```

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.

```

7363 \let\Hy@float@caption\@caption
7364 \ifpackageloaded{float}{%
7365   \def\Hy@float@caption{%
7366     \ifx\Hy@float@currentHref\@undefined
7367       \hyper@makecurrent{\@cuptype}%
7368       \global\let\Hy@float@currentHref\@currentHref
7369     \else
7370       \let\@currentHref\Hy@float@currentHref
7371     \fi
7372   \float@caption
7373 }%
7374 \let\HyOrg@float@makebox\float@makebox
7375 \renewcommand{\float@makebox}[1]{%
7376   \HyOrg@float@makebox{%
7377     #1\relax
7378   \ifx\Hy@float@currentHref\@undefined
7379   \else
7380     \expandafter\hyper@@anchor\expandafter{%
7381       \Hy@float@currentHref
7382     }\relax}%
7383   \global\let\Hy@float@currentHref\@undefined

```



```

7384 \fi
7385 }%
7386 }%
7387 {}
7388 </package>
7389 <*check>
7390 \checklatex[1999/06/01 - 2000/06/01]
7391 \checkcommand\def\caption{%
7392 \ifx\@captive\@undefined
7393 \latexerror{\noexpand\caption outside float}\@ehd
7394 \expandafter\@gobble
7395 \else
7396 \refstepcounter\@captive
7397 \expandafter\@firstofone
7398 \fi
7399 {\@dblarg{\@caption\@captive}}%
7400 }
7401 \checkcommand\long\def\@caption#1[#2]#3{%
7402 \par
7403 \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7404 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7405 }%
7406 \begingroup
7407 \@parboxrestore
7408 \if@minipage
7409 \setminipage
7410 \fi
7411 \normalize
7412 \makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7413 \endgroup
7414 }
7415 </check>
7416 <*package>

```

## 38 Bibliographic references

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

However, let's make an attempt to get *natbib* right, because that's a powerful, important package. Patrick Daly ([daly@linmpi.mpg.de](mailto:daly@linmpi.mpg.de)) has provided hooks for us, so all we need to do is activate them.

```

7417 \def\hyper@natlinkstart#1{%
7418 \Hy@backout{#1}%
7419 \hyper@linkstart{cite}{cite.#1}%
7420 \def\hyper@nat@current{#1}%
7421 }
7422 \def\hyper@natlinkend{%
7423 \hyper@linkend
7424 }
7425 \def\hyper@natlinkbreak#1#2{%
7426 \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7427 }

```

```

7428 \def\hyper@natanchorstart#1{%
7429   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7430 }
7431 \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.

```

7432 \ltx@ifundefined{NAT@parse}{%
7433   \providecommand*\@extra@binfo{}%
7434   \providecommand*\@extra@b@citeb{}%
7435   \def\bibcite#1#2{%
7436     \@newl@bel{b}{#1}\@extra@binfo}{%
7437     \hyper@link[cite]{#1}\@extra@b@citeb}{#2}%
7438   }%
7439 }%
7440 \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.”.

```

7441 \let\Hy@bibcite\bibcite
7442 \begingroup
7443   \ifundefined{bbl@cite@choice}{}%
7444   \g@addto@macro\bbl@cite@choice{%
7445     \let\bibcite\Hy@bibcite
7446   }%
7447 }%
7448 \endgroup

```

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

```

7449 \providecommand*\@BIBLABEL{\@biblabel}%
7450 \def\@bibitem[#1]#2{%
7451   \@skiphyperreftrue
7452   \H@item[%
7453     \ifx\Hy@raisedlink\@empty
7454       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7455       \@BIBLABEL{#1}%
7456       \hyper@anchorend
7457     \else
7458       \Hy@raisedlink{%
7459         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7460       }%
7461       \@BIBLABEL{#1}%
7462     \fi
7463     \hfill
7464   ]%
7465   \@skiphyperreffalse
7466   \if@filesw
7467     \begingroup
7468       \let\protect\noexpand
7469       \immediate\write\@auxout{%
7470         \string\bibcite{#2}{#1}%
7471       }%
7472     \endgroup
7473   \fi
7474   \ignorespaces
7475 }%

```

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

```

7476 \def\@bibitem#1{%
7477   \@skiphyperreftrue\H@item\@skiphyperreffalse
7478   \Hy@raisedlink{%
7479     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7480   }%
7481   \if@filesw
7482     \begingroup
7483     \let\protect\noexpand
7484     \immediate\write\@auxout{%
7485       \string\bibcite{#1}{\the\value{\@listctr}}}%
7486     }%
7487   \endgroup
7488   \fi
7489   \ignorespaces
7490 }%
7491 }{}

7492 </package>
7493 <*check>
7494 \checklatex
7495 \checkcommand\def\@lbibitem[#1]#2{%
7496   \item[\@biblabel{#1}\hfill]%
7497   \if@filesw
7498     {%
7499       \let\protect\noexpand
7500       \immediate\write\@auxout{%
7501         \string\bibcite{#2}{#1}%
7502       }%
7503     }%
7504   \fi
7505   \ignorespaces
7506 }
7507 \checkcommand\def\@bibitem#1{%
7508   \item
7509   \if@filesw
7510     \immediate\write\@auxout{%
7511       \string\bibcite{#1}{\the\value{\@listctr}}}%
7512     }%
7513   \fi
7514   \ignorespaces
7515 }
7516 </check>
7517 <*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.

```

7518 \@ifclassloaded{revtex}{%
7519   \Hy@Info{*** compatibility with revtex **** }%
7520   \def\revtex@checking#1#2{%
7521     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
7522     \expandafter\def\csname b@#1\endcsname{#2}%
7523     \@SetMaxRnhfLabel{#1}%
7524     \expandafter\let\csname b@#1\endcsname\T@temp
7525   }%

```

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

```

7526 \ifundefined{CITE}{\def\CITE{\@cite}}{}%
7527 \providecommand*{\@extra@b@citeb}{}%
7528 \def\CITEX[#1]#2{%
7529   \let\@citea\@empty
7530   \leavevmode
7531   \unskip
7532   $^{}%
7533   \scriptstyle
7534   \@CITE{%
7535     \@for\@citeb:=#2\do{%
7536       \@citea
7537       \def\@citea{,\penalty\@m\ }%
7538       \edef\@citeb{\expandafter\@firstofone\@citeb}%
7539       \if@filesw
7540         \immediate\write\@auxout{\string\citation{\@citeb}}%
7541       \fi
7542       \ifundefined{b@\@citeb\extra@b@citeb}{%
7543         \mbox{\reset@font\bfseries ?}%
7544         \G@refundefinedtrue
7545         \@latex@warning{%
7546           Citation '\@citeb' on page \thepage \space undefined%
7547         }%
7548       }{%
7549         {\csname b@\@citeb\extra@b@citeb\endcsname}%
7550       }%
7551     }%
7552   }{#1}%
7553 }$%
7554 }%

```

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

```

7555 \def\@citex[#1]#2{%
7556   \let\@citea\@empty
7557   \@cite{%
7558     \@for\@citeb:=#2\do{%
7559       \@citea
7560       \def\@citea{,\penalty\@m\ }%
7561       \edef\@citeb{\expandafter\@firstofone\@citeb}%
7562       \if@filesw
7563         \immediate\write\@auxout{\string\citation{\@citeb}}%
7564       \fi
7565       \ifundefined{b@\@citeb\extra@b@citeb}{%
7566         \mbox{\reset@font\bfseries ?}%
7567         \G@refundefinedtrue
7568         \@latex@warning{%
7569           Citation '\@citeb' on page \thepage \space undefined%
7570         }%
7571       }{%
7572         \hbox{\csname b@\@citeb\extra@b@citeb\endcsname}%
7573       }%
7574     }%
7575   }{#1}%
7576 }%
7577 }{}

```

## 38.1 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.

```

7578 \ifpackageloaded{harvard}{%
7579   \Hy@AtBeginDocument{%
7580     \Hy@Info{*** compatibility with harvard **** }%
7581     \Hy@raiselinksfalse
7582     \def\harvardcite#1#2#3#4{%
7583       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{#1}{#2}}%
7584       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{#1}{#3}}%
7585       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{#1}{#4}}%
7586       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7587     }%
7588     \def\HAR@citetoaux#1{%
7589       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7590       \ifHy@backref
7591         \ifx\@empty\@currentlabel
7592           \else
7593             \@bsphack
7594             \if@filesw
7595               \protected@write\@auxout{}{%
7596                 \string\@writefile{brf}{%
7597                   \string\backcite{#1}{%
7598                     {\thepage}{\@currentlabel}{\@currentHref}%
7599                   }%
7600                 }%
7601             }%
7602             \fi
7603             \@esphack
7604           \fi
7605         \fi
7606       }%
7607     \def\harvarditem{%
7608       \ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7609     }%
7610     \def\@harvarditem[#1]#2#3#4#5\par{%
7611       \item[]%
7612       \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7613       \if@filesw
7614         \begingroup
7615         \def\protect##1{\string ##1\space}%
7616         \ifthenelse{\equal{#1}{\null}}{%
7617           {\def\next{{#4}{#2}{#3}}}%
7618           {\def\next{{#4}{#2}{#1}{#3}}}%
7619         \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7620       \endgroup
7621       \fi
7622       \protect\hspace*{-\labelwidth}%
7623       \protect\hspace*{-\labelsep}%
7624       \ignorespaces
7625       #5%
7626       \ifHy@backref

```

```

7627 \newblock
7628 \backref{\csname br@#4\endcsname}%
7629 \fi
7630 \par
7631 }%

```

\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:

```

7632 \long\def\HAR@checkcitations#1#2#3#4{%
7633 \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#2}}%
7634 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7635 \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#3}}%
7636 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7637 \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#4}}%
7638 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7639 \else
7640 \@tempswatrue
7641 \fi
7642 \else
7643 \@tempswatrue
7644 \fi
7645 \else
7646 \@tempswatrue
7647 \fi
7648 }%
7649 }%

7650 }{}

```

## 38.2 Package chicago

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

```

7651 \@ifpackageloaded{chicago}{%

```

\citeN

```

7652 \def\citeN{%
7653 \def\@citesep{-1000}%
7654 \def\@cite##1##2{##1}%
7655 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7656 \@citedata@opt
7657 }%

```

\shortciteN

```

7658 \def\shortciteN{%
7659 \def\@citesep{-1000}%
7660 \def\@cite##1##2{##1}%
7661 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7662 \@citedata@opt
7663 }%

```

\@citedata@opt

```

7664 \def\@citedata@opt{%
7665 \let\@cite@opt\@empty
7666 \@ifnextchar {%
7667 \@tempswatrue

```

```

7668 \citedatax@opt
7669 }{%
7670 \@tempwafalse
7671 \citedatax[]%
7672 }%
7673 }%

```

\citedatax@opt

```

7674 \def\citedatax@opt[#1]{%
7675 \def\cite@opt{, #1}%
7676 \citedatax[{#1}]%
7677 }%

7678 }{}

```

## 39 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.

```

7679 \ltx@ifclassloaded{slides}{%
7680 \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7681 \def\Hy@PageAnchorSlidesPlain{%
7682 \advance\c@page\ltx@one
7683 \edef\Hy@TempPageAnchor{%
7684 \noexpand\hyper@@anchor{%
7685 page.\the\c@slide.\the\c@overlay.\the\c@note%
7686 \ifnum\c@page=\ltx@one
7687 \else
7688 .\the\c@page
7689 \fi
7690 }%
7691 }%
7692 \advance\c@page-\ltx@one
7693 }%
7694 \def\Hy@PageAnchorSlide{%
7695 \advance\c@page\ltx@one
7696 \ifnum\c@page>\ltx@one
7697 \ltx@ifundefined{theHpage}{%
7698 \protected@edef\Hy@TheSlideOptionalPage{%
7699 \Hy@SlidesFormatOptionalPage{\thepage}%
7700 }%
7701 }{%
7702 \protected@edef\Hy@TheSlideOptionalPage{%
7703 \Hy@SlidesFormatOptionalPage{\theHpage}%
7704 }%
7705 }%
7706 \else
7707 \def\Hy@TheSlideOptionalPage{}%
7708 \fi
7709 \advance\c@page-\ltx@one
7710 \pdfstringdef\the@H@page{%
7711 \csname

```

```

7712     the%
7713     \ltx@ifundefined{theH\Hy@SlidesPage}{H}%
7714     \Hy@SlidesPage
7715     \endcsname
7716     \Hy@TheSlideOptionalPage
7717   }%
7718   \ltx@gobblethree
7719 }%
7720 \def\Hy@SlidesPage{slide}%
7721 \g@addto@macro\slide{%
7722   \def\Hy@SlidesPage{slide}%
7723 }%
7724 \g@addto@macro\overlay{%
7725   \def\Hy@SlidesPage{overlay}%
7726 }%
7727 \g@addto@macro\note{%
7728   \def\Hy@SlidesPage{note}%
7729 }%
7730 }{%
7731   \def\Hy@PageAnchorSlidesPlain{}%
7732   \def\Hy@PageAnchorSlide{}%
7733 }
7734 \def\Hy@EveryPageAnchor{%
7735   \Hy@DistillerDestFix
7736   \ifHy@pageanchor
7737     \ifHy@hypertextnames
7738       \ifHy@plainpages
7739         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7740         \Hy@PageAnchorSlidesPlain
7741       \else
7742         \begingroup
7743         \let\@number\@firstofone
7744         \Hy@unicodedefalse
7745         \Hy@PageAnchorSlide
7746         \pdfstringdef\@the@H@page{\thepage}%
7747         \endgroup
7748         \EdefUnescapeString\@the@H@page{\@the@H@page}%
7749         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7750       \fi
7751     \else
7752       \Hy@GlobalStepCount\Hy@pagecounter
7753       \def\Hy@TempPageAnchor{%
7754         \hyper@@anchor{page.\the\Hy@pagecounter}%
7755       }%
7756     \fi
7757   \vbox to 0pt{%
7758     \kern\voffset
7759     \kern\topmargin
7760     \kern-1bp\relax
7761     \hbox to 0pt{%
7762       \kern\hoffset
7763       \kern\ifodd\value{page}%
7764         \oddsidemargin
7765       \else
7766         \evensidemargin
7767     }%
7768     \kern-1bp\relax

```



```

7769      \Hy@TempPageAnchor\relax
7770      \hss
7771    }%
7772    \vss
7773  }%
7774 \fi
7775 }
7776 \g@addto@macro\Hy@EveryPageBoxHook{%
7777   \Hy@EveryPageAnchor
7778 }

```

## 40 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.

```

7779 \def\addcontentsline#1#2#3{% toc extension, type, tag
7780   \begingroup
7781     \let\label\@gobble
7782     \ifx\@currentHref\@empty
7783       \Hy@Warning{%
7784         No destination for bookmark of \string\addcontentsline,%
7785         \MessageBreak destination is added%
7786       }%
7787     \phantomsection
7788   \fi
7789   \expandafter\ifx\csname toplevel@#2\endcsname\relax
7790     \begingroup
7791       \def\Hy@tempa{#1}%
7792       \ifx\Hy@tempa\Hy@bookmarkstype
7793         \Hy@WarningNoLine{%
7794           bookmark level for unknown #2 defaults to 0%
7795         }%
7796       \else
7797         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7798       \fi
7799     \endgroup
7800     \expandafter\gdef\csname toplevel@#2\endcsname{0}%
7801   \fi
7802   \edef\Hy@toplevel{\csname toplevel@#2\endcsname}%
7803   \Hy@writebookmark{\csname the#2\endcsname}%
7804     {#3}%
7805     {\@currentHref}%
7806     {\Hy@toplevel}%
7807     {#1}%
7808   \ifHy@verbose
7809     \begingroup
7810       \def\Hy@tempa{#3}%
7811       \@onelevel@sanitize\Hy@tempa
7812       \let\temp@online\on@line
7813       \let\on@line\@empty
7814       \Hy@Info{%
7815         bookmark\temp@online:\MessageBreak
7816         thecounter {\csname the#2\endcsname}\MessageBreak
7817         text {\Hy@tempa}\MessageBreak
7818         reference {\@currentHref}\MessageBreak

```

```

7819         toplevel {\Hy@toplevel}\MessageBreak
7820         type {#1}%
7821     }%
7822 \endgroup
7823 \fi
7824 \addtocontents{#1}{%
7825     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
7826 }%
7827 \endgroup
7828 }
7829 \def\contentsline#1#2#3#4{%
7830     \ifx\\#4\\%
7831         \csname l@#1\endcsname{#2}{#3}%
7832     \else
7833         \ifcase\Hy@linktoc % none
7834             \csname l@#1\endcsname{#2}{#3}%
7835         \or % section
7836             \csname l@#1\endcsname{%
7837                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7838             }{#3}%
7839         \or % page
7840             \csname l@#1\endcsname{#2}{#3}{%
7841                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7842             }%
7843         \else % all
7844             \csname l@#1\endcsname{%
7845                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7846             }{%
7847                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7848             }%
7849         \fi
7850     \fi
7851 }
7852 \</package>
7853 \<*check>
7854 \checklatex
7855 \checkcommand\def\addcontentsline#1#2#3{%
7856     \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
7857 }
7858 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
7859 \</check>
7860 \<*package>

```

## 41 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.

```

7861 \let\H@definecounter\@definecounter
7862 \def\@definecounter#1{%
7863     \H@definecounter{#1}%
7864     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
7865 }

```

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.

```

7866 \let\H@newctr\@newctr

```

```

7867 \def\@newctr#1[#2]{%
7868   \H@newctr#1[#2]}%
7869 \expandafter\def\csname theH#1\endcsname{%
7870   \csname the\@ifundefined{theH#2}{H}#2\endcsname.\arabic{#1}%
7871 }%
7872 }

```

## 42 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.

```

7873 \ifpackageloaded{amsmath}{%
7874   \def\Hy@make@anchor{%
7875     \Hy@MakeCurrentHrefAuto{AMS}%
7876     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7877   }%
7878   \def\Hy@make@df@tag@@#1{%
7879     \gdef\df@tag{%
7880       \maketag@@@{\Hy@make@anchor#1}%
7881       \def\@currentlabel{#1}%
7882     }%
7883   }%
7884   \def\Hy@make@df@tag@@@#1{%
7885     \gdef\df@tag{%
7886       \tagform@{\Hy@make@anchor#1}%
7887       \toks@{\xp{p@equation{#1}}}%
7888       \edef\@currentlabel{\the\toks@}%
7889     }%
7890   }%
7891   \let\HyOrg@make@df@tag@@\make@df@tag@@
7892   \let\HyOrg@make@df@tag@@@\make@df@tag@@@
7893   \let\make@df@tag@@\Hy@make@df@tag@@
7894   \let\make@df@tag@@@\Hy@make@df@tag@@@
7895 }{}

```

Only play with `\seteqlebal` if we are using pdf $\text{\TeX}$ . Other drivers cause problems; requested by Michael Downes (AMS).

```

7896 \ifpackagewith{hyperref}{pdf $\text{\TeX}$ }{%
7897   \let\H@seteqlabel\@seteqlabel
7898   \def\@seteqlabel#1{%
7899     \H@seteqlabel{#1}%
7900     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
7901     \Hy@raisedlink{%
7902       \hyper@anchorstart{\@currentHref}\hyper@anchorend
7903     }%
7904   }%
7905 }{}

```

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}}}}

```

## 42.1 \@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.

```

7906 \let\HyOrg@addtoreset\@addtoreset
7907 \def\@addtoreset#1#2{%
7908   \HyOrg@addtoreset{#1}{#2}%
7909   \expandafter\xdef\csname theH#1\endcsname{%
7910     \expandafter\noexpand
7911       \csname the\@ifundefined{theH#2}{H#2}\endcsname
7912     .\noexpand\the\noexpand\value{#1}%
7913   }%
7914 }

```

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

```

7915 </package>
7916 <*check>
7917 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
7918 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
7919   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
7920     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
7921       \@addtoreset{#2}{#3}%
7922       \@xp\xdef\csname the#2\endcsname{%
7923         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7924       }%
7925     }%
7926   }%
7927 }%
7928 </check>
7929 <*package>
7930 \@ifpackageloaded{amsmath}{%
7931   \@ifpackagelater{amsmath}{1999/12/14}{%
7932     \renewcommand*{\numberwithin}[3][\arabic]{%
7933       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
7934         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
7935           \HyOrg@addtoreset{#2}{#3}%
7936           \@xp\xdef\csname the#2\endcsname{%
7937             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7938           }%
7939           \@xp\xdef\csname theH#2\endcsname{%
7940             \@xp\@nx
7941             \csname the\@ifundefined{theH#3}{H#3}\endcsname
7942             .\@nx#1{#2}%
7943           }%
7944         }%
7945       }%
7946     }%
7947   }{%
7948     \Hy@WarningNoLine{%
7949       \string\numberwithin\space of package ‘amsmath’ %

```

```

7950    only fixed\MessageBreak
7951    for version 2000/06/06 v2.12 or newer%
7952 }%
7953 }%
7954 }{}

```

## 43 Included figures

Simply intercept the low level graphics package macro.

```

7955 \ifHy@figures
7956 \let\Hy@Gin@setfile\Gin@setfile
7957 \def\Gin@setfile#1#2#3{%
7958 \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
7959 }%
7960 \fi
7961 \Hy@DisableOption{hyperfigures}

```

## 44 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.

```

7962 \ifHy@hyperindex
7963 \def\HyInd@ParenLeft{({}%
7964 \def\HyInd@ParenRight{)}}%
7965 \def\hyperindexformat#1#2{%
7966 \let\HyOrg@hyperpage\hyperpage
7967 \let\hyperpage\@firstofone
7968 #1{\HyOrg@hyperpage{#2}}%
7969 \let\hyperpage\HyOrg@hyperpage
7970 }%
7971 \Hy@nextfalse
7972 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
7973 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
7974 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
7975 \begingroup
7976 \lccode'\|=\expandafter\HyInd@EncapChar\relax
7977 \lccode'\|=\|\\relax
7978 \lowercase{\endgroup
7979 \ifHy@next
7980 \let\HyInd@org@wrindex\@wrindex
7981 \def\@wrindex#1#2{\HyInd@@wrindex{#1}{#2}||\\}%
7982 \def\HyInd@@wrindex#1#2|#3|#4\\{%
7983 \ifx\\#3\\%
7984 \HyInd@org@wrindex{#1}{#2|hyperpage}%
7985 \else
7986 \HyInd@@@wrindex{#1}{#2}{#3}\\%
7987 \fi

```

```

7988 }%
7989 \def\HyInd@@@wrindex#1#2#3#4\\{%
7990 \def\Hy@temp@A{#3}%
7991 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7992 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7993 \relax
7994 \HyInd@org@wrindex{#1}{%
7995 #2|hyperindexformat{/#3#4}%
7996 }%
7997 \else
7998 \ifx\\#4\\%
7999 \ifx\Hy@temp@A\HyInd@ParenRight
8000 \HyInd@org@wrindex{#1}{#2|#3}%
8001 \else
8002 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8003 \fi
8004 \else
8005 \HyInd@org@wrindex{#1}{%
8006 #2|#3hyperindexformat{/#4}%
8007 }%
8008 \fi
8009 \fi
8010 }%
8011 \else
8012 \def\@wrindex#1{\@@wrindex#1||\}%
8013 \def\@@wrindex#1|#2|#3\\{%
8014 \if@filesw
8015 \ifx\\#2\\%
8016 \protected@write\@indexfile{}{%
8017 \string\indexentry{#1|hyperpage}{\thepage}%
8018 }%
8019 \else
8020 \HyInd@@@wrindex{#1}#2\\%
8021 \fi
8022 \fi
8023 \endgroup
8024 \@esphack
8025 }%
8026 \def\HyInd@@@wrindex#1#2#3\\{%
8027 \def\Hy@temp@A{#2}%
8028 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8029 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8030 \relax
8031 \protected@write\@indexfile{}{%
8032 \string\indexentry{%
8033 #1|hyperindexformat{/#2#3}%
8034 }{\thepage}%
8035 }%
8036 \else
8037 \ifx\\#3\\%
8038 \ifx\Hy@temp@A\HyInd@ParenRight
8039 \protected@write\@indexfile{}{%
8040 \string\indexentry{#1|#2}{\thepage}%
8041 }%
8042 \else
8043 \protected@write\@indexfile{}{%
8044 \string\indexentry{#1|#2hyperpage}{\thepage}%

```

```

8045         }%
8046         \fi
8047     \else
8048         \protected@write\@indexfile{}\{
8049             \string\indexentry{%
8050                 #1|#2hyperindexformat{/#3}%
8051             }\thepage}%
8052         }%
8053     \fi
8054 \fi
8055 }%
8056 \fi
8057 }%
8058 \fi
8059 \Hy@DisableOption{hyperindex}
8060 \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.

```

8061 \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.

```

8062 \def\hyperpage#1{%
8063   \HyInd@hyperpage#1\nohyperpage{}\@nil
8064 }
8065 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8066   \HyInd@@hyperpage{#1}%
8067   #2%
8068   \def\Hy@temp{#3}%
8069   \ifx\Hy@temp\@empty
8070   \else
8071     \Hy@ReturnAfterFi{%
8072       \HyInd@hyperpage#3\@nil
8073     }%
8074   \fi
8075 }
8076 \def\HyInd@@hyperpage#1{\@hyperpage#1---\}
8077 \def\@hyperpage#1--#2--#3\\\{%
8078   \ifx\#2\\\%
8079     \@commahyperpage{#1}%
8080   \else
8081     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8082   \fi
8083 }
8084 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
8085 \def\@commahyperpage#1, #2,#3\\\{%
8086   \ifx\#2\\\%
8087     \HyInd@pagelink{#1}%
8088   \else
8089     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8090   \fi
8091 }

```

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

```

8092 \def\HyInd@pagelink#1{%

```

```

8093 \begingroup
8094 \toks@={}%
8095 \HyInd@removespaces#1 \@nil
8096 \endgroup
8097 }
8098 \def\HyInd@removespaces#1 #2\@nil{%
8099 \toks@=\expandafter{\the\toks@#1}%
8100 \ifx\#2\%
8101 \edef\x{\the\toks@}%
8102 \ifx\x\@empty
8103 \else
8104 \hyperlink{page.\the\toks@}{\the\toks@}%
8105 \fi
8106 \else
8107 \Hy@ReturnAfterFi{%
8108 \HyInd@removespaces#2\@nil
8109 }%
8110 \fi
8111 }

```

## 45 Compatibility with foiltex

```

8112 \@ifclassloaded{foils}{%
8113 \providecommand*\ext@table{lot}%
8114 \providecommand*\ext@figure{lof}%
8115 }{}

```

## 46 Compatibility with seminar slide package

This requires seminar.bg2, version 1.6 or later. Contributions by Denis Girou (denis.girou@idris.fr).

```

8116 \@ifclassloaded{seminar}{%
8117 \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}}%
8118 }{%
8119 \Hy@seminarslidesfalse
8120 }
8121 \@ifpackageloaded{slidesec}{%
8122 \newcommand\theHslidesection {\arabic{slidesection}}%
8123 \newcommand\theHslidesubsection{%
8124 \theHslidesection.\arabic{slidesubsection}}%
8125 }%
8126 \def\slide@heading[#1]#2{%
8127 \H@refstepcounter{slidesection}%
8128 \@addtoreset{slidesubsection}{slidesection}%
8129 \addtocontents{los}{%
8130 \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
8131 {\@SCTR}{slideheading.\theslidesection}}%
8132 }%
8133 \def\Hy@tempa{#2}%
8134 \ifx\Hy@tempa\@empty
8135 \else
8136 {%
8137 \edef\@currentlabel{%
8138 \csname p@slidesection\endcsname\theslidesection
8139 }%
8140 \makeslideheading{#2}%

```



```

8141 }%
8142 \fi
8143 \gdef\theslideheading{#1}%
8144 \gdef\theslidesubheading{}%
8145 \ifHy@bookmarksnumbered
8146   \def\Hy@slidetitle{\theslide\section\space #1}%
8147 \else
8148   \def\Hy@slidetitle{#1}%
8149 \fi
8150 \ifHy@hypertextnames
8151   \ifHy@naturalnames
8152     \hyper@@anchor{slideheading.\theslide\section}{\relax}%
8153     \Hy@writebookmark
8154       {\theslide\section}%
8155       {\Hy@slidetitle}%
8156       {slideheading.\theslide\section}%
8157       {1}%
8158       {toc}%
8159   \else
8160     \hyper@@anchor{slideheading.\theHslide\section}{\relax}%
8161     \Hy@writebookmark
8162       {\theslide\section}%
8163       {\Hy@slidetitle}%
8164       {slideheading.\theHslide\section}%
8165       {1}%
8166       {toc}%
8167   \fi
8168 \else
8169   \Hy@GlobalStepCount\Hy@linkcounter
8170   \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8171   \Hy@writebookmark
8172     {\theslide\section}%
8173     {\Hy@slidetitle}%
8174     {slideheading.\the\Hy@linkcounter}%
8175     {1}%
8176     {toc}%
8177 \fi
8178 }%
8179 \def\slide@subheading[#1]#2{%
8180   \H@refstepcounter{slidesubsection}%
8181   \addtocontents{los}{%
8182     \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
8183     {\@SCTR}{slideheading.\theslidesubsection}%
8184   }%
8185   \def\Hy@tempa{#2}%
8186   \ifx\Hy@tempa\@empty
8187     \else
8188       {%
8189         \edef\@currentlabel{%
8190           \csname p@slidesubsection\endcsname\theslidesubsection
8191         }%
8192         \makeslidesubheading{#2}%
8193       }%
8194     \fi
8195   \gdef\theslidesubheading{#1}%
8196   \ifHy@bookmarksnumbered
8197     \def\Hy@slidetitle{\theslidesubsection\space #1}%

```

```

8198 \else
8199 \def\Hy@slidetitle{#1}%
8200 \fi
8201 \ifHy@hypertextnames
8202 \ifHy@naturalnames
8203 \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
8204 \Hy@writebookmark
8205 {\theslidesubsection}%
8206 {\Hy@slidetitle}%
8207 {slideheading.\theslidesubsection}%
8208 {2}%
8209 {toc}%
8210 \else
8211 \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
8212 \Hy@writebookmark
8213 {\theslidesubsection}%
8214 {\Hy@slidetitle}%
8215 {slideheading.\theHslidesubsection}%
8216 {2}%
8217 {toc}%
8218 \fi
8219 \else
8220 \Hy@GlobalStepCount\Hy@linkcounter
8221 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8222 \Hy@writebookmark
8223 {\theslidesubsection}%
8224 {\Hy@slidetitle}%
8225 {slideheading.\the\Hy@linkcounter}%
8226 {1}%
8227 {toc}%
8228 \fi
8229 }%
8230 \providecommand*\listslidenamelist{List of Slides}%
8231 \def\listofslides{%
8232 \section*{%
8233 \listslidenamelist
8234 \@mkboth{%
8235 \expandafter\MakeUppercase\listslidenamelist
8236 }{%
8237 \expandafter\MakeUppercase\listslidenamelist
8238 }%
8239 }%
8240 \def\l@slide##1##2##3##4{%
8241 \slide@undottedcline{%
8242 \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
8243 }{%
8244 }%
8245 \let\l@subslide\l@slide
8246 \@startlos
8247 }%
8248 \def\slide@contents{%
8249 \def\l@slide##1##2##3##4{%
8250 \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
8251 }%
8252 \let\l@subslide\@gobblefour
8253 \@startlos
8254 }%

```

```

8255 \def\Slide@contents{%
8256   \def\l@slide##1##2##3##4{%
8257     \ifcase\lslide@flag
8258       \message{##1 ** \the\c@slidesection}%
8259       \ifnum##1>\c@slidesection
8260         \def\lslide@flag{1}%
8261         {%
8262           \large
8263           \slide@cline{%
8264             \slidenumberline{$\Rightarrow\bullet$}%
8265             {\hyperlink{##4}{##2}}}%
8266           }{##3}%
8267         }%
8268       \else
8269         {%
8270           \large
8271           \slide@cline{%
8272             \slidenumberline{$\surd\;\bullet$}%
8273             {\hyperlink{##4}{##2}}}%
8274           }{##3}%
8275         }%
8276       \fi
8277     \or
8278     \def\lslide@flag{2}%
8279     {%
8280       \large
8281       \slide@cline{%
8282         \slidenumberline{$\bullet$}%
8283         {\hyperlink{##4}{##2}}}%
8284       }{##3}%
8285     }%
8286     \or
8287     {%
8288       \large
8289       \slide@cline{%
8290         \slidenumberline{$\bullet$}%
8291         {\hyperlink{##4}{##2}}}%
8292       }{##3}%
8293     }%
8294     \fi
8295   }%
8296   \def\l@subslide##1##2##3##4{%
8297     \ifnum\lslide@flag=1 %
8298       \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}}%
8299     \fi
8300   }%
8301   \def\lslide@flag{0}%
8302   \@startlos
8303 }%
8304 }{}

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.)

8305 \ifHy@texht
8306   \expandafter\endinput
8307 \fi
8308 \let\real@setref\@setref

```

```

8309 \def\@setref#1#2#3{% csname, extract group, refname
8310   \ifx#1\relax
8311     \protect\G@refundefinedtrue
8312     \nfss@text{\reset@font\bfseries ??}%
8313     \@latex@warning{%
8314       Reference '#3' on page \thepage \space undefined%
8315     }%
8316   \else
8317     \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
8318   \fi
8319 }

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

8320 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8321   \begingroup
8322   \toks0={\hyper@@link{#5}{#4}}%
8323   \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8324   \edef\x{\endgroup
8325     \the\toks0 {\the\toks1 }%
8326   }%
8327   \x
8328 }

8329 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8330   \ifx#1\relax
8331     \protect\G@refundefinedtrue
8332     \nfss@text{\reset@font\bfseries ??}%
8333     \@latex@warning{%
8334       Reference '#3' on page \thepage \space undefined%
8335     }%
8336   \else
8337     \protect\hyper@@link
8338     {\expandafter\@fifthoffive#1}%
8339     {page.\expandafter\@secondoffive#1}%
8340     {\expandafter\@secondoffive#1}%
8341   \fi
8342 }

8343 </package>
8344 <*check>
8345 \checklatex
8346 \checkcommand\def\@setref#1#2#3{%
8347   \ifx#1\relax
8348     \protect\G@refundefinedtrue
8349     \nfss@text{\reset@font\bfseries ??}%
8350     \@latex@warning{%
8351       Reference '#3' on page \thepage \space undefined%
8352     }%
8353   \else
8354     \expandafter#2#1\null
8355   \fi
8356 }
8357 </check>
8358 <*package>

```

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

```

8359 \def\HyRef@StarSetRef#1{%
8360   \begingroup

```

```

8361 \Hy@safe@activetrue
8362 \edef\x{#1}%
8363 \@onelevel@sanitize\x
8364 \edef\x{\endgroup
8365 \noexpand\HyRef@@StarSetRef
8366 \expandafter\noexpand\csname r@\x\endcsname{\x}%
8367 }%
8368 \x
8369 }
8370 \def\HyRef@@StarSetRef#1#2#3{%
8371 \ifx#1\@undefined
8372 \let#1\relax
8373 \fi
8374 \real@setref#1#3{#2}%
8375 }
8376 \def\@refstar#1{%
8377 \HyRef@StarSetRef{#1}\@firstoffive
8378 }
8379 \def\@pagerefstar#1{%
8380 \HyRef@StarSetRef{#1}\@secondoffive
8381 }
8382 \def\@namerefstar#1{%
8383 \HyRef@StarSetRef{#1}\@thirdoffive
8384 }
8385 \Hy@AtBeginDocument{%
8386 \@ifpackageloaded{varioref}{%
8387 \def\@Refstar#1{%
8388 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8389 }%
8390 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8391 \MakeUppercase#1%
8392 }%
8393 \DeclareRobustCommand*\@Ref*{%
8394 \@ifstar\@Refstar\HyRef@Ref
8395 }%
8396 \def\HyRef@Ref#1{%
8397 \hyperref[{#1}]{\Ref*{#1}}%
8398 }%
8399 \def\Vr@f#1{%
8400 \leavevmode\unskip\vref@space
8401 \hyperref[{#1}]{%
8402 \Ref*{#1}%
8403 \let\vref@space\nobreakspace
8404 \@vpageref\unskip}{#1}%
8405 }%
8406 }%
8407 \def\vr@f#1{%
8408 \leavevmode\unskip\vref@space
8409 \begingroup
8410 \let\T@pageref\@pagerefstar
8411 \hyperref[{#1}]{%
8412 \ref*{#1}%
8413 \vpageref\unskip}{#1}%
8414 }%
8415 \endgroup
8416 }%
8417 }{}%

```

```

8418 }
8419 \DeclareRobustCommand*{\autopageref}{%
8420   \@ifstar{%
8421     \HyRef@autopagerefname\pageref*%
8422   }\HyRef@autopageref
8423 }
8424 \def\HyRef@autopageref#1{%
8425   \hyperref[#1]{\HyRef@autopagerefname\pageref*{#1}}%
8426 }
8427 \def\HyRef@autopagerefname{%
8428   \ltx@ifundefined{pageautorefname}{%
8429     \ltx@ifundefined{pagename}{%
8430       \Hy@Warning{No autoref name for 'page'}%
8431     }{%
8432       \pagename\nobreakspace
8433     }%
8434   }{%
8435     \pageautorefname\nobreakspace
8436   }%
8437 }
8438 \DeclareRobustCommand*{\autoref}{%
8439   \@ifstar{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@@link}%
8440 }
8441 \def\HyRef@autoref#1#2{%
8442   \begingroup
8443     \Hy@safe@activetrue
8444     \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8445   \endgroup
8446 }
8447 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8448   \HyRef@ShowKeysRef{#2}%
8449   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8450   \edef\HyRef@thisref{%
8451     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8452   }%
8453   \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8454   \Hy@safe@activesfalse
8455   #3{%
8456     \expandafter\@ffthoffive#1\@empty\@empty\@empty
8457   }{%
8458     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8459   }{%
8460     \HyRef@currentHtag
8461     \expandafter\@firstoffive#1\@empty\@empty\@empty
8462     \null
8463   }%
8464   \else
8465     \protect\G@refundefinedtrue
8466     \nfss@text{\reset@font\bfseries ??}%
8467     \@latex@warning{%
8468       Reference '#2' on page \thepage\space undefined%
8469     }%
8470   \fi
8471 }
8472 \def\HyRef@testreftype#1.#2\.{%
8473   \ltx@ifundefined{#1autorefname}{%
8474     \ltx@ifundefined{#1name}{%

```

```

8475 \HyRef@StripStar#1\\*\\@nil{#1}%
8476 \ltx@ifundefined{\HyRef@name autorefname}{%
8477 \ltx@ifundefined{\HyRef@name name}{%
8478 \def\HyRef@currentHtag{}%
8479 \Hy@Warning{No autoref name for '#1'}%
8480 }{%
8481 \edef\HyRef@currentHtag{%
8482 \expandafter\noexpand\csname\HyRef@name name\endcsname
8483 \noexpand~%
8484 }%
8485 }%
8486 }{%
8487 \edef\HyRef@currentHtag{%
8488 \expandafter\noexpand
8489 \csname\HyRef@name autorefname\endcsname
8490 \noexpand~%
8491 }%
8492 }%
8493 }{%
8494 \edef\HyRef@currentHtag{%
8495 \expandafter\noexpand\csname#1name\endcsname
8496 \noexpand~%
8497 }%
8498 }%
8499 }{%
8500 \edef\HyRef@currentHtag{%
8501 \expandafter\noexpand\csname#1autorefname\endcsname
8502 \noexpand~%
8503 }%
8504 }%
8505 }
8506 \def\HyRef@StripStar#1*\\#2\@nil#3{%
8507 \def\HyRef@name{#2}%
8508 \ifx\HyRef@name\HyRef@CaseStar
8509 \def\HyRef@name{#1}%
8510 \else
8511 \def\HyRef@name{#3}%
8512 \fi
8513 }
8514 \def\HyRef@CaseStar{*\\}
8515 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8516 \let\HyRef@ShowKeysRef\@gobble
8517 \def\HyRef@ShowKeysInit{%
8518 \begingroup\expandafter\expandafter\expandafter\endgroup
8519 \expandafter\ifx\csname SK@@label\endcsname\relax
8520 \else
8521 \ifx\SK@ref\@empty
8522 \else
8523 \def\HyRef@ShowKeysRef{%
8524 \SK@\SK@@ref
8525 }%
8526 \fi
8527 \fi
8528 }

```

```

8529 \@ifpackageloaded{showkeys}{%
8530   \HyRef@ShowKeysInit
8531 }{%
8532   \Hy@AtBeginDocument{%
8533     \@ifpackageloaded{showkeys}{%
8534       \HyRef@ShowKeysInit
8535     }{}%
8536   }%
8537 }

```

Defaults for the names that \autoref uses.

```

8538 \providecommand*\AMSautorefname{\equationautorefname}
8539 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8540 \providecommand*\Itemautorefname{\itemautorefname}
8541 \providecommand*\itemautorefname{item}
8542 \providecommand*\equationautorefname{Equation}
8543 \providecommand*\footnoteautorefname{footnote}
8544 \providecommand*\itemautorefname{item}
8545 \providecommand*\figureautorefname{Figure}
8546 \providecommand*\tableautorefname{Table}
8547 \providecommand*\partautorefname{Part}
8548 \providecommand*\appendixautorefname{Appendix}
8549 \providecommand*\chapterautorefname{chapter}
8550 \providecommand*\sectionautorefname{section}
8551 \providecommand*\subsectionautorefname{subsection}
8552 \providecommand*\subsubsectionautorefname{subsubsection}
8553 \providecommand*\paragraphautorefname{paragraph}
8554 \providecommand*\subparagraphautorefname{subparagraph}
8555 \providecommand*\FancyVerbLineautorefname{line}
8556 \providecommand*\theoremautorefname{Theorem}
8557 \providecommand*\pageautorefname{page}
8558 </package>

```

## 47 Configuration files

### 47.1 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.

```

8559 <*pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>
8560 \begingroup\expandafter\expandafter\expandafter\endgroup
8561 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8562   \begingroup
8563     \catcode'\|=0 %
8564     \@makeother\| %
8565     |@firstofone{|endgroup
8566     |def|Hy@pstringdef#1#2{%
8567       |begingroup
8568         |edef~{|string~}%
8569         |xdef|Hy@gtemp{#2}%
8570       |endgroup

```



```

8571 |let#1|Hy@gtemp
8572 |@onelevel@sanitize#1%
8573 |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8574 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8575 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8576 }%
8577 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8578 #1%
8579 |ifx|\#2\|}%
8580 |else
8581 \\\%
8582 |Hy@ReturnAfterFi{%
8583 |Hy@ExchangeBackslash#2|@nil
8584 }%
8585 |fi
8586 }%
8587 }%
8588 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8589 #1%
8590 \ifx\#2\|}%
8591 \else
8592 \@backslashchar{%
8593 \Hy@ReturnAfterFi{%
8594 \Hy@ExchangeLeftParenthesis#2\@nil
8595 }%
8596 \fi
8597 }%
8598 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8599 #1%
8600 \ifx\#2\|}%
8601 \else
8602 \@backslashchar{%
8603 \Hy@ReturnAfterFi{%
8604 \Hy@ExchangeRightParenthesis#2\@nil
8605 }%
8606 \fi
8607 }%
8608 \else
8609 \def\Hy@pstringdef#1#2{%
8610 \begingroup
8611 \edef~{\string~}%
8612 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8613 \endgroup
8614 \let#1\Hy@gtemp
8615 }%
8616 \fi
8617 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)

```

## 47.2 pdfTeX

```

8618 <{*pdfTeX}
8619 \providecommand*{\XR@ext}{pdf}
8620 \Hy@setbreaklinks{true}
8621 \def\HyPat@ObjRef{%
8622 [0-9]*[1-9][0-9]* 0 R%
8623 }

```

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

```

8624 \let\Hy@pdfminorversion\relax
8625 \begingroup\expandafter\expandafter\expandafter\endgroup
8626 \expandafter\ifx\csname pdfminorversion\endcsname\relax
8627 \begingroup\expandafter\expandafter\expandafter\endgroup
8628 \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
8629 \else
8630 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8631 \fi
8632 \else
8633 \def\Hy@pdfminorversion{\pdfminorversion}%
8634 \fi
8635 \ifundefined{Hy@pdfminorversion}{%
8636 \PackageInfo{hyperref}{%
8637 PDF version is not set, because pdfTeX is too old (<1.10a)%
8638 }%
8639 }{%
8640 \ifHy@ocgcolorlinks
8641 \ifnum\Hy@pdfminorversion<5 %
8642 \kvsetkeys{Hyp}{pdfversion=1.5}%
8643 \fi
8644 \fi
8645 \ifHy@setpdfversion
8646 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
8647 \else
8648 \Hy@pdfminorversion=\Hy@pdfversion\relax
8649 \fi
8650 \PackageInfo{hyperref}{%
8651 \expandafter\string\Hy@pdfminorversion
8652 :=\number\Hy@pdfversion\space
8653 }%
8654 \fi
8655 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
8656 }
8657 \Hy@DisableOption{pdfversion}%

8658 \ifHy@ocgcolorlinks
8659 \pdf@ifdraftmode{}{%
8660 \immediate\pdfobj{%
8661 <<%
8662 /Type/OCG%
8663 /Name(View)%
8664 /Usage<<%
8665 /Print<<%
8666 /PrintState/OFF%
8667 >>%
8668 /View<<%
8669 /ViewState/ON%
8670 >>%
8671 >>%
8672 >>%

```

```

8673 }%
8674 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
8675 \immediate\pdfobj{%
8676   <<%
8677     /Type/OCG%
8678     /Name(Print)%
8679     /Usage<<%
8680       /Print<<%
8681         /PrintState/ON%
8682       >>%
8683     /View<<%
8684       /ViewState/OFF%
8685     >>%
8686   >>%
8687 }%
8688 }%
8689 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
8690 \immediate\pdfobj{%
8691   [%
8692     \OBJ@OCG@view\space\OBJ@OCG@print
8693   ]%
8694 }%
8695 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
8696 \pdfcatalog{%
8697   /OCProperties<<%
8698     /OCGs \OBJ@OCGs
8699   /D<<%
8700     /OFF[\OBJ@OCG@print]%
8701     /AS[%
8702       <<%
8703         /Event/View%
8704         /OCGs \OBJ@OCGs
8705         /Category[/View]%
8706       >>%
8707       <<%
8708         /Event/Print%
8709         /OCGs \OBJ@OCGs
8710         /Category[/Print]%
8711       >>%
8712       <<%
8713         /Event/Export%
8714         /OCGs \OBJ@OCGs
8715         /Category[/Print]%
8716       >>%
8717     ]%
8718   >>%
8719 }%
8720 }%
8721 \beginingroup
8722 \edef\x{\endgroup
8723   \pdfpageresources{%
8724     /Properties<<%
8725       /OCView \OBJ@OCG@view
8726       /OCPrint \OBJ@OCG@print
8727     >>%
8728   }%
8729 }%

```

```

8730 \x
8731 }%
8732 \Hy@AtBeginDocument{%
8733 \def\Hy@colorlink#1{%
8734 \begingroup
8735 \ifHy@ocgcolorlinks
8736 \def\Hy@ocgcolor{#1}%
8737 \setbox0=\hbox\bgroup\color@begingroup
8738 \else
8739 \HyColor@UseColor#1%
8740 \fi
8741 }%
8742 \def\Hy@endcolorlink{%
8743 \ifHy@ocgcolorlinks
8744 \color@endgroup\egroup
8745 \mbox{%
8746 \pdfliteral page{/OC/OCPrint BDC}%
8747 \rlap{\copy0}%
8748 \pdfliteral page{EMC/OC/OCView BDC}%
8749 \begingroup
8750 \expandafter\HyColor@UseColor\Hy@ocgcolor
8751 \box0 %
8752 \endgroup
8753 \pdfliteral page{EMC}%
8754 }%
8755 \fi
8756 \endgroup
8757 }%
8758 }%
8759 \else
8760 \Hy@DisableOption{ocgcolorlinks}%
8761 \fi

```

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

```

8762 \def\setpdfinkmargin#1{\pdfinkmargin#1}
8763 \ifx\pdfstartlink\@undefined% less than version 14
8764 \let\pdfstartlink\pdfannotlink
8765 \let\pdfinkmargin\@tempdima
8766 \let\pdfxform\pdfform
8767 \let\pdfastxform\pdfastform
8768 \let\pdfrefxform\pdfrefform
8769 \else
8770 \pdfinkmargin1pt %
8771 \fi

```

First set up the default linking

```

8772 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

8773 \Hy@WrapperDef\new@pdfink#1{%
8774 \ifhmode
8775 \savesf\spacefactor
8776 \fi
8777 \Hy@SaveLastskip
8778 \Hy@VerboseAnchor{#1}%
8779 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8780 \Hy@DestName\Hy@pstringDest\@pdfview
8781 \Hy@RestoreLastskip
8782 \ifhmode

```

```

8783 \spacefactor\@savsf
8784 \fi
8785 }
8786 \let\pdf@endanchor\@empty

```

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

```

8787 \def\Hy@DestName#1#2{%
8788 \pdfdest name{#1}#2\relax
8789 }

```

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.

```

8790 \providecommand*\@pdfborder{0 0 1}
8791 \providecommand*\@pdfborderstyle{}
8792 \def\Hy@undefinedname{UNDEFINED}
8793 \def\find@pdflink#1#2{%
8794 \leavevmode
8795 \protected@edef\Hy@testname{#2}%
8796 \ifx\Hy@testname\@empty
8797 \Hy@Warning{%
8798 Empty destination name,\MessageBreak
8799 using '\Hy@undefinedname'%
8800 }%
8801 \let\Hy@testname\Hy@undefinedname
8802 \else
8803 \Hy@pstringdef\Hy@testname{%
8804 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8805 }%
8806 \fi
8807 \Hy@StartlinkName{%
8808 \ifHy@pdfa /F 4\fi
8809 \Hy@setpdfborder
8810 \ifx\@pdfhighlight\@empty
8811 \else
8812 /H\@pdfhighlight
8813 \fi
8814 \ifx\CurrentBorderColor\relax
8815 \else
8816 /C[\CurrentBorderColor]%
8817 \fi
8818 }\Hy@testname
8819 \expandafter\Hy@colorlink\csname @#1color\endcsname
8820 }
8821 \def\Hy@StartlinkName#1#2{%
8822 \pdfstartlink attr{#1}goto name{#2}\relax
8823 }
8824 \def\close@pdflink{%
8825 \Hy@endcolorlink
8826 \Hy@VerboseLinkStop
8827 \pdfendlink
8828 }
8829 \def\hyper@anchor#1{%
8830 \new@pdflink{#1}\anchor@spot\pdf@endanchor
8831 }

```

```

8832 \def\hyper@anchorstart#1{%
8833   \new@pdfink{#1}%
8834   \Hy@activeanchortrue
8835 }
8836 \def\hyper@anchorend{%
8837   \pdf@endanchor
8838   \Hy@activeanchorfalse
8839 }
8840 \def\hyper@linkstart#1#2{%
8841   \Hy@VerboseLinkStart{#1}{#2}%
8842   \ltx@ifundefined{@#1bordercolor}{%
8843     \let\CurrentBorderColor\relax
8844   }{%
8845     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8846   }%
8847   \find@pdfink{#1}{#2}%
8848 }
8849 \def\hyper@linkend{\close@pdfink}
8850 \def\hyper@link#1#2#3{%
8851   \Hy@VerboseLinkStart{#1}{#2}%
8852   \ltx@ifundefined{@#1bordercolor}{%
8853     \let\CurrentBorderColor\relax
8854   }{%
8855     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8856   }%
8857   \find@pdfink{#1}{#2}#3\Hy@xspace@end
8858   \close@pdfink
8859 }
8860 \let\CurrentBorderColor\@linkbordercolor
8861 \def\hyper@linkurl#1#2{%
8862   \begingroup
8863     \Hy@pstringdef\Hy@pstringURI{#2}%
8864     \hyper@chars
8865     \leavevmode
8866     \pdfstartlink
8867       attr{%
8868         \Hy@setpdfborder
8869         \ifx\@pdfhighlight\@empty
8870           \else
8871             /H\@pdfhighlight
8872           \fi
8873         \ifx\@urlbordercolor\relax
8874           \else
8875             /C[\@urlbordercolor]%
8876           \fi
8877       }%
8878     user{%
8879       /Subtype/Link%
8880       \ifHy@pdfa /F 4\fi
8881       /A<<%
8882       /Type/Action%
8883       /S/URI%
8884       /URI(\Hy@pstringURI)%
8885       \ifHy@href@ismap
8886         /IsMap true%
8887       \fi
8888       \Hy@href@nextactionraw

```

```

8889     >>%
8890     }%
8891     \relax
8892     \Hy@colorlink\@urlcolor#1\Hy@xspace@end
8893     \close@pdflink
8894 \endgroup
8895 }
8896 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
8897 \begingroup
8898 \def\Hy@pstringF{#2}%
8899 \Hy@CleanupFile\Hy@pstringF
8900 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
8901 \Hy@pstringdef\Hy@pstringD{#3}%
8902 \Hy@MakeRemoteAction
8903 \leavevmode
8904 \pdfstartlink
8905 attr{%
8906     \Hy@setpdfborder
8907     \ifx\@pdfhighlight\@empty
8908     \else
8909     /H\@pdfhighlight
8910     \fi
8911     \ifx\@filebordercolor\relax
8912     \else
8913     /C[\@filebordercolor]%
8914     \fi
8915 }%
8916 user {%
8917     /Subtype/Link%
8918     \ifHy@pdfa /F 4\fi
8919     /A<<%
8920     /F(\Hy@pstringF)%
8921     /S/GoToR%
8922     \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}

```

```

8923     \ifx\#3\%
8924     /D[\Hy@href@page\@pdfremotestartview]%
8925     \else
8926     /D(\Hy@pstringD)%
8927     \fi
8928     \Hy@href@nextactionraw
8929     >>%
8930     }%
8931     \relax
8932     \Hy@colorlink\@filecolor#1\Hy@xspace@end
8933     \close@pdflink
8934 \endgroup

```

```

8935 }
8936 \def\@hyper@launch run:#1\|#2#3{% filename, anchor text linkname
8937 \begingroup
8938 \Hy@pstringdef\Hy@pstringF{#1}%
8939 \Hy@pstringdef\Hy@pstringP{#3}%
8940 \leavevmode
8941 \pdfstartlink
8942 attr{%
8943 \Hy@setpdfborder
8944 \ifx\@pdfhighlight\@empty
8945 \else
8946 /H\@pdfhighlight
8947 \fi
8948 \ifx\@runbordercolor\relax
8949 \else
8950 /C[\@runbordercolor]%
8951 \fi
8952 }%
8953 user {%
8954 /Subtype/Link%
8955 \ifHy@pdfa /F 4\fi
8956 /A<<%
8957 /F(\Hy@pstringF)%
8958 /S/Launch%
8959 \Hy@SetNewWindow
8960 \ifx\|#3\|%
8961 \else
8962 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8963 \fi
8964 \Hy@href@nextactionraw
8965 >>%
8966 }%
8967 \relax
8968 \Hy@colorlink\@runcolor#2\Hy@xspace@end
8969 \close@pdfink
8970 \endgroup
8971 }

```

\@pdfproducer

```

8972 \ifx\@pdfproducer\relax
8973 \begingroup\expandafter\expandafter\expandafter\endgroup
8974 \expandafter\ifx\csname luatexversion\endcsname\relax
8975 \def\@pdfproducer{pdfTeX}%
8976 \ifx\eTeXversion\@undefined
8977 \else
8978 \ifx\eTeXversion\relax
8979 \else
8980 \ifnum\eTeXversion>0 %
8981 \def\@pdfproducer{pdfTeX}%
8982 \fi
8983 \fi
8984 \fi
8985 \ifx\pdfTeXversion\@undefined
8986 \else
8987 \ifnum\pdfTeXversion<100 %
8988 \edef\@pdfproducer{%
8989 \@pdfproducer

```



```

8990     \the\pdfTeXversion.\pdfTeXrevision
8991   }%
8992 \else
8993   \ifnum\pdfTeXversion<130 %
8994     \edef\@pdfproducer{%
8995       \@pdfproducer-%
8996       \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
8997       \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
8998       \pdfTeXrevision
8999     }%
9000   \else
9001     \ifnum\pdfTeXversion<140 %
9002       \else
9003         \def\@pdfproducer{pdfTeX}%
9004       \fi
9005     \edef\@pdfproducer{%
9006       \@pdfproducer-%
9007       \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
9008       \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
9009       \pdfTeXrevision
9010     }%
9011   \fi
9012 \fi
9013 \fi
9014 \else
9015   \begingroup
9016     \count@=\luaTeXversion
9017     \divide\count@ by 100 %
9018     \edef\x{\the\count@}%
9019     \count@=-\x\relax
9020     \multiply\count@ by 100 %
9021     \advance\count@ by \luaTeXversion
9022     \edef\x{\endgroup
9023       \def\noexpand\@pdfproducer{%
9024         LuaTeX-\x.\the\count@.\luaTeXrevision
9025       }%
9026     }%
9027   \x
9028 \fi
9029 \fi

```

\PDF@SetupDox

```

9030 \def\PDF@SetupDoc{%
9031   \ifx\@pdfpagescrop\@empty
9032   \else
9033     \edef\process@me{%
9034       \pdfpagesattr={%
9035         /CropBox[\@pdfpagescrop]%
9036         \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
9037         \else
9038           ^^J\the\pdfpagesattr
9039         \fi
9040       }%
9041     }%
9042     \process@me
9043   \fi
9044   \Hy@pstringdef\Hy@pstringB{\@baseurl}%

```

```

9045 \pdfcatalog{%
9046 /PageMode/\@pdfpagemode
9047 \ifx\@baseurl\@empty
9048 \else
9049 /URI<</Base(\Hy@pstringB)>>%
9050 \fi
9051 }%
9052 \ifx\@pdfstartpage\@empty
9053 \else
9054 \ifx\@pdfstartview\@empty
9055 \else
9056 openaction goto page\@pdfstartpage{\@pdfstartview}%
9057 \fi
9058 \fi
9059 \edef\Hy@temp{%
9060 \ifHy@toolbar\else /HideToolbar true\fi
9061 \ifHy@menubar\else /HideMenubar true\fi
9062 \ifHy>windowui\else /HideWindowUI true\fi
9063 \ifHy@fitwindow /FitWindow true\fi
9064 \ifHy@centerwindow /CenterWindow true\fi
9065 \ifHy@displaydoctitle /DisplayDocTitle true\fi
9066 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9067 \Hy@UseNameKey{Direction}\@pdfdirection
9068 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9069 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9070 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9071 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9072 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9073 \Hy@UseNameKey{Duplex}\@pdfduplex
9074 \ifx\@pdfpicktraybypdfsize\@empty
9075 \else
9076 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9077 \fi
9078 \ifx\@pdfprintpagerange\@empty
9079 \else
9080 /PrintPageRange[\@pdfprintpagerange]%
9081 \fi
9082 \ifx\@pdfnumcopies\@empty
9083 \else
9084 /NumCopies \@pdfnumcopies
9085 \fi
9086 }%
9087 \pdfcatalog{%
9088 \ifx\Hy@temp\@empty
9089 \else
9090 /ViewerPreferences<<\Hy@temp>>%
9091 \fi
9092 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9093 \ifx\@pdflang\@empty
9094 \else
9095 /Lang(\@pdflang)%
9096 \fi
9097 }%
9098 }

```

\PDF@FinishDoc

```

9099 \def\PDF@FinishDoc{%

```

```

9100 \pdf@ifdraftmode{}\{
9101 \Hy@UseMaketitleInfos
9102 \HyInfo@GenerateAddons
9103 \pdfinfo{
9104   /Author(\@pdfauthor)%
9105   /Title(\@pdftitle)%
9106   /Subject(\@pdfsubject)%
9107   /Creator(\@pdfcreator)%
9108   \ifx\@pdfcreationdate\@empty
9109   \else
9110     /CreationDate(\@pdfcreationdate)%
9111   \fi
9112   \ifx\@pdfmoddate\@empty
9113   \else
9114     /ModDate(\@pdfmoddate)%
9115   \fi
9116   \ifx\@pdfproducer\relax
9117   \else
9118     /Producer(\@pdfproducer)%
9119   \fi
9120   /Keywords(\@pdfkeywords)%
9121   \ifx\@pdftrapped\@empty
9122   \else
9123     /Trapped/\@pdftrapped
9124   \fi
9125   \HyInfo@Addons
9126 }%
9127 }%
9128 \Hy@DisableOption{pdfauthor}%
9129 \Hy@DisableOption{pdftitle}%
9130 \Hy@DisableOption{pdfsubject}%
9131 \Hy@DisableOption{pdfcreator}%
9132 \Hy@DisableOption{pdfcreationdate}%
9133 \Hy@DisableOption{pdfmoddate}%
9134 \Hy@DisableOption{pdfproducer}%
9135 \Hy@DisableOption{pdfkeywords}%
9136 \Hy@DisableOption{pdftrapped}%
9137 \Hy@DisableOption{pdfinfo}%
9138 }

```

`\hyper@pagetransition` `\@pdfpagetransition` is initialized with `\relax`. So it indicates, if option `pdfpagetransition` is used. First previous `/Trans` entries are removed. If a new `/Trans` key exists, it is appended to `\pdfpageattr`.

```

9139 \def\hyper@pagetransition{%
9140   \ifx\@pdfpagetransition\relax
9141   \else
9142     \expandafter\Hy@RemoveTransPageAttr
9143     \the\pdfpageattr^^J/Trans{>>\END
9144     \ifx\@pdfpagetransition\@empty
9145     \else
9146       \edef\@processme{%
9147         \global\pdfpageattr{%
9148           \the\pdfpageattr
9149           ^^J/Trans << /S /\@pdfpagetransition\space >>%
9150         }%
9151       }%
9152       \@processme

```

```

9153 \fi
9154 \fi
9155 }

```

`\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.

```

9156 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9157 \ifx\#2\%
9158 \global\pdfpageattr{#1}%
9159 \else
9160 \Hy@RemoveTransPageAttr#1#4\END
9161 \fi
9162 }

```

`\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`.

```

9163 \def\hyper@pageduration{%
9164 \ifx\@pdfpageduration\relax
9165 \else
9166 \expandafter
9167 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9168 \ifx\@pdfpageduration\@empty
9169 \else
9170 \edef\@processme{%
9171 \global\pdfpageattr{%
9172 \the\pdfpageattr
9173 ^^J/Dur \@pdfpageduration\space
9174 }%
9175 }%
9176 \@processme
9177 \fi
9178 \fi
9179 }

```

`\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.

```

9180 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9181 \ifx\#2\%
9182 \global\pdfpageattr{#1}%
9183 \else
9184 \Hy@RemoveDurPageAttr#1#4\END
9185 \fi
9186 }

```

`\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).

```

9187 \def\hyper@pagehidden{%
9188 \ifHy@useHidKey
9189 \expandafter
9190 \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END

```

```

9191 \ifHy@pdfpagehidden
9192 \edef\@processme{%
9193 \global\pdfpageattr{%
9194 \the\pdfpageattr
9195 ^^J/Hid true % SPACE
9196 }%
9197 }%
9198 \@processme
9199 \fi
9200 \fi
9201 }

```

`\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.

```

9202 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
9203 \ifx\#2\%
9204 \global\pdfpageattr{#1}%
9205 \else
9206 \Hy@RemoveHidPageAttr#1#4\END
9207 \fi
9208 }

9209 \pdf@ifdraftmode{ }{%
9210 \g@addto@macro\Hy@EveryPageHook{%
9211 \hyper@pagetransition
9212 \hyper@pageduration
9213 \hyper@pagehidden
9214 }%
9215 }

```

Also Xe<sub>T</sub>E<sub>X</sub> support `\pdfpagewidth` and `\pdfpageheight`, but it does not provide `\pdfhorigin` and `\pdfvorigin`.

```

9216 </pdfTeX>
9217 <*pdfTeX | xetex>
9218 \Hy@AtBeginDocument{%
9219 \ifHy@setpagesize
9220 \expandafter\@firstofone
9221 \else
9222 \expandafter\@gobble
9223 \fi
9224 {%
9225 \@ifclassloaded{seminar}{%
9226 <*pdfTeX>
9227 \setlength{\pdfhorigin}{1truein}%
9228 \setlength{\pdfvorigin}{1truein}%
9229 </pdfTeX>
9230 \ifportrait
9231 \ifdim\paperwidth=\z@
9232 \else
9233 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9234 \fi
9235 \ifdim\paperheight=\z@
9236 \else
9237 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9238 \fi
9239 \else

```

```

9240 \ifdim\paperheight=\z@
9241 \else
9242 \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9243 \fi
9244 \ifdim\paperwidth=\z@
9245 \else
9246 \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9247 \fi
9248 \fi
9249 }{%
9250 \ltx@ifundefined{stockwidth}{%
9251 \ifdim\paperwidth>\z@
9252 \setlength{\pdfpagewidth}{\paperwidth}%
9253 \fi
9254 \ifdim\paperheight>\z@
9255 \setlength{\pdfpageheight}{\paperheight}%
9256 \fi
9257 }{%
9258 \ifdim\stockwidth>\z@
9259 \setlength{\pdfpagewidth}{\stockwidth}%
9260 \fi
9261 \ifdim\stockheight>\z@
9262 \setlength{\pdfpageheight}{\stockheight}%
9263 \fi
9264 }%
9265 }%
9266 }%
9267 \Hy@DisableOption{setpagesize}%
9268 }
9269 </pdfTeX | xetex>
9270 <*pdfTeX>
9271 \def\Acrobatmenu#1#2{%
9272 \Hy@Acrobatmenu{#1}{#2}{%
9273 \pdfstartlink
9274 attr{%
9275 \Hy@setpdfborder
9276 \ifx\@pdfhighlight\@empty
9277 \else
9278 /H\@pdfhighlight
9279 \fi
9280 \ifx\@menubordercolor\relax
9281 \else
9282 /C[\@menubordercolor]%
9283 \fi
9284 }%
9285 user{%
9286 /Subtype/Link%
9287 \ifHy@pdfa /F 4\fi
9288 /A<<%
9289 /S/Named%
9290 /N/#1%
9291 \Hy@href@nextactionraw
9292 >>%
9293 }%
9294 \relax
9295 \Hy@colorlink\@menucolor#2%
9296 \close@pdfink

```

```

9297 }%
9298 }

```

#### 47.2.1 Fix for problem with different nesting levels

`\AtBeginShipoutFirst` adds an additional box layer around the first output page. This disturbs pdf<sub>T</sub>E<sub>X</sub>'s low level link commands `\pdfstartlink` and `\pdfendlink`, if a link is broken across the first and second output page.

The problem could be fixed by replacing `\AtBeginShipoutFirst`, because the box layer is not necessary for pdf<sub>T</sub>E<sub>X</sub>—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`.

```

9299 \def\Hy@FixNotFirstPage{%
9300   \gdef\Hy@FixNotFirstPage{%
9301     \setbox\AtBeginShipoutBox=\hbox{%
9302       \copy\AtBeginShipoutBox
9303     }%
9304   }%
9305 }
9306 \AtBeginShipout{\Hy@FixNotFirstPage}
9307 </pdfTeX>

```

### 47.3 hypertext

The Hyper<sub>T</sub>E<sub>X</sub> 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 <sub>T</sub>E<sub>X</sub> file — the <sub>T</sub>E<sub>X</sub> 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.

```

9308 <*hypertext>

```

```

9309 \providecommand*{\XR@ext}{dvi}
9310 \def\PDF@FinishDoc{}
9311 \def\PDF@SetupDoc{%
9312   \ifx\@baseurl\@empty
9313   \else
9314     \special{html:<base href="\@baseurl">}%
9315   \fi
9316 }
9317 \Hy@WrapperDef\hyper@anchor#1{%
9318   \Hy@SaveLastskip
9319   \Hy@VerboseAnchor{#1}%
9320   \begingroup
9321     \let\protect=\string
9322     \hyper@chars
9323     \special{html:<a name=%
9324       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9325   \endgroup
9326   \Hy@activeanchortrue
9327   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9328   \special{html:</a>}%
9329   \Hy@activeanchorfalse
9330   \Hy@RestoreLastskip
9331 }
9332 \Hy@WrapperDef\hyper@anchorstart#1{%
9333   \Hy@SaveLastskip
9334   \Hy@VerboseAnchor{#1}%
9335   \begingroup
9336     \hyper@chars
9337     \special{html:<a name=%
9338       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9339   \endgroup
9340   \Hy@activeanchortrue
9341 }
9342 \def\hyper@anchorend{%
9343   \special{html:</a>}%
9344   \Hy@activeanchorfalse
9345   \Hy@RestoreLastskip
9346 }
9347 \def\@urltype{url}
9348 \def\hyper@linkstart#1#2{%
9349   \Hy@VerboseLinkStart{#1}{#2}%
9350   \expandafter\Hy@colorlink\csname @#1color\endcsname
9351   \def\Hy@tempa{#1}%
9352   \ifx\Hy@tempa\@urltype
9353     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9354   \else
9355     \begingroup
9356       \hyper@chars
9357       \special{html:<a href=%
9358         \hyper@quote\# \HyperDestNameFilter{#2}\hyper@quote>}%
9359     \endgroup
9360   \fi
9361 }
9362 \def\hyper@linkend{%
9363   \special{html:</a>}%
9364   \Hy@endcolorlink
9365 }

```



```

9366 \def\hyper@linkfile#1#2#3{%
9367   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
9368 }
9369 \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.

```

9370 \leavevmode
9371 \ifHy@raiselinks
9372   \Hy@SaveSpaceFactor
9373   \Hy@SaveSavedSpaceFactor
9374   \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9375   \Hy@RestoreSavedSpaceFactor
9376   \@linkdim\dp\@tempboxa
9377   \lower\@linkdim\hbox{%
9378     \hyper@chars
9379     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9380   }%
9381   \Hy@colorlink\@urlcolor
9382   \Hy@RestoreSpaceFactor
9383   #1%
9384   \Hy@SaveSpaceFactor
9385   \@linkdim\ht\@tempboxa

```

Because of the interaction with the `dvi` 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 `dvi`s (Jan 1997).

```

9386   \advance\@linkdim by -6.5\p@
9387   \raise\@linkdim\hbox{\special{html:</a>}}%
9388   \Hy@endcolorlink
9389   \Hy@RestoreSpaceFactor
9390 \else
9391   \begingroup
9392     \hyper@chars
9393     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9394     \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9395     \special{html:</a>}%
9396     \Hy@endcolorlink
9397   \endgroup
9398 \fi
9399 }

```

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

```

9400 \def\hyper@link#1#2#3{%
9401   \Hy@VerboseLinkStart{#1}{#2}%
9402   \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
9403 }
9404 \def\hyper@image#1#2{%
9405   \begingroup
9406     \hyper@chars
9407     \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9408   \endgroup
9409 }
9410 \</hypertex>
9411 \<*dviwindo>

```

## 47.4 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.

```
9412 \providecommand*\XR@ext}{dvi}
9413 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9414 \Hy@WrapperDef\hyper@anchor#1{%
9415   \Hy@SaveLastskip
9416   \Hy@VerboseAnchor{#1}%
9417   \begingroup
9418     \let\protect=\string
9419     \special{mark: #1}%
9420   \endgroup
9421   \Hy@activeanchortrue
9422   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9423   \Hy@activeanchorfalse
9424   \Hy@RestoreLastskip
9425 }
9426 \Hy@WrapperDef\hyper@anchorstart#1{%
9427   \Hy@SaveLastskip
9428   \Hy@VerboseAnchor{#1}%
9429   \special{mark: #1}%
9430   \Hy@activeanchortrue
9431 }
9432 \def\hyper@anchorend{%
9433   \Hy@activeanchorfalse
9434   \Hy@RestoreLastskip
9435 }
9436 \def\hyper@linkstart#1#2{%
9437   \Hy@VerboseLinkStart{#1}{#2}%
9438   \expandafter\Hy@colorlink\csname @#1color\endcsname
9439   \special{button: %
9440     10000000 %
9441     \number\baselineskip\space
9442     #2%
9443   }%
9444 }
9445 \def\hyper@linkend{%
9446   \Hy@endcolorlink
9447 }
9448 \def\hyper@link#1#2#3{%
9449   \Hy@VerboseLinkStart{#1}{#2}%
9450   \leavevmode
9451   \ifHy@raiselinks
9452     \Hy@SaveSpaceFactor
9453     \Hy@SaveSavedSpaceFactor
9454     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9455     \Hy@RestoreSavedSpaceFactor
9456     \linkdim\dp\@tempboxa
```

```

9457 \lower\@linkdim\hbox{%
9458   \special{button: %
9459     \number\wd\@tempboxa\space
9460     \number\ht\@tempboxa\space
9461     #2%
9462   }%
9463   \expandafter\Hy@colorlink\csname @#1color\endcsname
9464   \Hy@RestoreSpaceFactor
9465   #3\Hy@xspace@end
9466   \Hy@SaveSpaceFactor
9467   \Hy@endcolorlink
9468 }%
9469 \@linkdim\ht\@tempboxa
9470 \advance\@linkdim by -6.5\p@
9471 \raise\@linkdim\hbox{}%
9472 \Hy@RestoreSpaceFactor
9473 \else
9474   \special{button: %
9475     \number\wd\@tempboxa\space
9476     \number\ht\@tempboxa\space
9477     #2%
9478   }%
9479   \expandafter\Hy@colorlink\csname @#1color\endcsname
9480   #3\Hy@xspace@end
9481   \Hy@endcolorlink
9482 \fi
9483 }
9484 \def\hyper@linkurl#1#2{%
9485   \begingroup
9486   \hyper@chars
9487   \leavevmode
9488   \ifHy@raiselinks
9489     \Hy@SaveSpaceFactor
9490     \Hy@SaveSavedSpaceFactor
9491     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9492     \Hy@RestoreSavedSpaceFactor
9493     \@linkdim\dp\@tempboxa
9494     \lower\@linkdim\hbox{%
9495       \special{button: %
9496         \number\wd\@tempboxa\space
9497         \number\ht\@tempboxa\space
9498         launch: \wwwbrowser\space
9499         #2%
9500       }%
9501       \Hy@colorlink\@urlcolor
9502       \Hy@RestoreSpaceFactor
9503       #1\Hy@xspace@end
9504       \Hy@SaveSpaceFactor
9505       \Hy@endcolorlink
9506     }%
9507     \@linkdim\ht\@tempboxa
9508     \advance\@linkdim by -6.5\p@
9509     \raise\@linkdim\hbox{}%
9510     \Hy@RestoreSpaceFactor
9511   \else
9512     \special{button: %
9513       \number\wd\@tempboxa\space

```

```

9514 \number\ht\@tempboxa\space
9515 launch: \wwwbrowser\space
9516 #2%
9517 }%
9518 \Hy@colorlink\@urlcolor
9519 #1\Hy@xspace@end
9520 \Hy@endcolorlink
9521 \fi
9522 \endgroup
9523 }
9524 \def\hyper@linkfile#1#2#3{%
9525 \begingroup
9526 \hyper@chars
9527 \leavevmode
9528 \ifHy@raiselinks
9529 \Hy@SaveSpaceFactor
9530 \Hy@SaveSavedSpaceFactor
9531 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9532 \Hy@RestoreSavedSpaceFactor
9533 \@linkdim\dp\@tempboxa
9534 \lower\@linkdim\hbox{%
9535 \special{button: %
9536 \number\wd\@tempboxa\space
9537 \number\ht\@tempboxa\space
9538 #3,%
9539 file: #2%
9540 }%
9541 \Hy@colorlink\@filecolor
9542 \Hy@RestoreSpaceFactor
9543 #1\Hy@xspace@end
9544 \Hy@SaveSpaceFactor
9545 \Hy@endcolorlink
9546 }%
9547 \@linkdim\ht\@tempboxa
9548 \advance\@linkdim by -6.5\p@
9549 \raise\@linkdim\hbox{}%
9550 \Hy@RestoreSpaceFactor
9551 \else
9552 \special{button: %
9553 \number\wd\@tempboxa\space
9554 \number\ht\@tempboxa\space
9555 #3,%
9556 file: #2%
9557 }%
9558 \Hy@colorlink\@filecolor
9559 #1\Hy@xspace@end
9560 \Hy@endcolorlink
9561 \fi
9562 \endgroup
9563 }
9564 \ifx\@pdfproducer\relax
9565 \def\@pdfproducer{dviwindo + Distiller}%
9566 \fi
9567 \HyInfo@AddonUnsupportedtrue
9568 \def\PDF@FinishDoc{%
9569 \Hy@UseMaketitleInfos
9570 \HyInfo@TrappedUnsupported

```

```

9571 \special{PDF: Keywords \@pdfkeywords}%
9572 \special{PDF: Title \@pdftitle}%
9573 \special{PDF: Creator \@pdfcreator}%
9574 \ifx\@pdfcreationdate\@empty
9575 \else
9576 \special{PDF: CreationDate \@pdfcreationdate}%
9577 \fi
9578 \ifx\@pdfmoddate\@empty
9579 \else
9580 \special{PDF: ModDate \@pdfmoddate}%
9581 \fi
9582 \special{PDF: Author \@pdfauthor}%
9583 \ifx\@pdfproducer\relax
9584 \else
9585 \special{PDF: Producer \@pdfproducer}%
9586 \fi
9587 \special{PDF: Subject \@pdfsubject}%
9588 \Hy@DisableOption{pdfauthor}%
9589 \Hy@DisableOption{pdftitle}%
9590 \Hy@DisableOption{pdfsubject}%
9591 \Hy@DisableOption{pdfcreator}%
9592 \Hy@DisableOption{pdfcreationdate}%
9593 \Hy@DisableOption{pdfmoddate}%
9594 \Hy@DisableOption{pdfproducer}%
9595 \Hy@DisableOption{pdfkeywords}%
9596 \Hy@DisableOption{pdftrapped}%
9597 \Hy@DisableOption{pdfinfo}%
9598 }
9599 \def\PDF@SetupDoc{%
9600 \ifx\@baseurl\@empty
9601 \else
9602 \special{PDF: Base \@baseurl}%
9603 \fi
9604 \ifx\@pdfpagescrop\@empty\else
9605 \special{PDF: BBox \@pdfpagescrop}%
9606 \fi
9607 \def\Hy@temp{%
9608 \ifx\@pdfstartpage\@empty
9609 \else
9610 \ifx\@pdfstartview\@empty
9611 \else
9612 \edef\Hy@temp{%
9613 ,Page=\@pdfstartpage
9614 ,View=\@pdfstartview
9615 }%
9616 \fi
9617 \fi
9618 \edef\Hy@temp{%
9619 \noexpand\pdfmark{%
9620 pdfmark=/DOCVIEW,%
9621 PageMode=/\@pdfpagemode
9622 \Hy@temp
9623 }%
9624 }%
9625 \Hy@temp
9626 \ifx\@pdfpagescrop\@empty
9627 \else

```

```

9628 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9629 \fi
9630 \edef\Hy@temp{%
9631 \ifHy@toolbar\else /HideToolbar true\fi
9632 \ifHy@menubar\else /HideMenubar true\fi
9633 \ifHy>windowui\else /HideWindowUI true\fi
9634 \ifHy@fitwindow /FitWindow true\fi
9635 \ifHy@centerwindow /CenterWindow true\fi
9636 \ifHy@displaydoctitle /DisplayDocTitle true\fi
9637 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9638 \Hy@UseNameKey{Direction}\@pdfdirection
9639 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9640 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9641 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9642 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9643 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9644 \Hy@UseNameKey{Duplex}\@pdfduplex
9645 \ifx\@pdfpicktraybypdfsize\@empty
9646 \else
9647 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9648 \fi
9649 \ifx\@pdfprintpagerange\@empty
9650 \else
9651 /PrintPageRange[\@pdfprintpagerange]%
9652 \fi
9653 \ifx\@pdfnumcopies\@empty
9654 \else
9655 /NumCopies \@pdfnumcopies
9656 \fi
9657 }%
9658 \pdfmark{pdfmark=/PUT,%
9659 Raw={%
9660 \string{Catalog}\string}<<%
9661 \ifx\Hy@temp\@empty
9662 \else
9663 /ViewerPreferences<<\Hy@temp>>%
9664 \fi
9665 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9666 \ifx\@pdflang\@empty
9667 \else
9668 /Lang(\@pdflang)%
9669 \fi
9670 >>%
9671 }%
9672 }%
9673 }
9674 </dviwindo>
9675 < *dvipdfm | xetex>

```

## 47.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

9676 \providecommand*{\XR@ext}{pdf}
9677 \Hy@setbreaklinks{true}
9678 \def\HyPat@ObjRef{%
9679 @[\~ ]+%
9680 }

```

```

9681 \newsavebox{\pdfm@box}
9682 \def\@pdfm@mark#1{\special{pdf:#1}}
9683 \Hy@WrapperDef\@pdfm@dest#1{%
9684   \Hy@SaveLastskip
9685   \Hy@VerboseAnchor{#1}%
9686   \begingroup
9687     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9688     \def\x{XYZ}%
9689     \ifx\x\@pdfview
9690       \def\x{XYZ @xpos @ypos null}%
9691     \else
9692       \def\x{FitH}%
9693       \ifx\x\@pdfview
9694         \def\x{FitH @ypos}%
9695       \else
9696         \def\x{FitBH}%
9697         \ifx\x\@pdfview
9698           \def\x{FitBH @ypos}%
9699         \else
9700           \def\x{FitV}%
9701           \ifx\x\@pdfview
9702             \def\x{FitV @xpos}%
9703           \else
9704             \def\x{FitBV}%
9705             \ifx\x\@pdfview
9706               \def\x{FitBV @xpos}%
9707             \else
9708               \def\x{Fit}%
9709               \ifx\x\@pdfview
9710                 \let\x\@pdfview
9711               \else
9712                 \def\x{FitB}%
9713                 \ifx\x\@pdfview
9714                   \let\x\@pdfview
9715                 \else
9716                   \def\x{FitR}%
9717                   \ifx\x\@pdfview
9718                     \Hy@Warning{'pdfview=FitR' is not supported}%
9719                     \def\x{XYZ @xpos @ypos null}%
9720                   \else
9721                     \@onelevel@sanitize\@pdfview
9722                     \Hy@Warning{%
9723                       Unknown value '\@pdfview' for pdfview%
9724                     }%
9725                     \def\x{XYZ @xpos @ypos null}%
9726                   \fi
9727                 \fi
9728               \fi
9729             \fi
9730           \fi
9731         \fi
9732       \fi
9733     \fi
9734     \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9735   \endgroup
9736   \Hy@RestoreLastskip
9737 }

```

```

9738 \providecommand*\@pdfview{XYZ}
9739 \providecommand*\@pdfborder{0 0 1}
9740 \providecommand*\@pdfborderstyle{}
9741 \def\hyper@anchor#1{%
9742   \@pdfm@dest{#1}%
9743 }
9744 \def\hyper@anchorstart#1{%
9745   \Hy@activeanchortrue
9746   \@pdfm@dest{#1}%
9747 }
9748 \def\hyper@anchorend{%
9749   \Hy@activeanchorfalse
9750 }
9751 \newcounter{Hy@AnnotLevel}
9752 \ifHy@ocgcolorlinks
9753   \def\OBJ@OCG@view{@OCG@view}%
9754   \@pdfm@mark{%
9755     obj \OBJ@OCG@view <<%
9756       /Type/OCG%
9757       /Name(View)%
9758       /Usage<<%
9759       /Print<<%
9760       /PrintState/OFF%
9761       >>%
9762       /View<<%
9763       /ViewState/ON%
9764       >>%
9765       >>%
9766     }%
9767   \@pdfm@mark{close \OBJ@OCG@view}%
9768   \def\OBJ@OCG@print{@OCG@print}%
9769   \@pdfm@mark{%
9770     obj \OBJ@OCG@print <<%
9771       /Type/OCG%
9772       /Name(Print)%
9773       /Usage<<%
9774       /Print<<%
9775       /PrintState/ON%
9776       >>%
9777       /View<<%
9778       /ViewState/OFF%
9779       >>%
9780       >>%
9781       >>%
9782     }%
9783   \@pdfm@mark{close \OBJ@OCG@print}%
9784   \def\OBJ@OCGs{@OCGs}%
9785   \@pdfm@mark{%
9786     obj \OBJ@OCGs [%
9787       \OBJ@OCG@view\space\OBJ@OCG@print
9788     ]%
9789   }%
9790   \@pdfm@mark{close \OBJ@OCGs}%
9791   \@pdfm@mark{%
9792     put @catalog <<%
9793       /OCProperties<<%
9794

```



```

9795      /OCGs \OBJ@OCGs
9796      /D<<%
9797      /OFF[\OBJ@OCG@print]%
9798      /AS[%
9799      <<%
9800      /Event/View%
9801      /OCGs \OBJ@OCGs
9802      /Category[/View]%
9803      >>%
9804      <<%
9805      /Event/Print%
9806      /OCGs \OBJ@OCGs
9807      /Category[/Print]%
9808      >>%
9809      <<%
9810      /Event/Export%
9811      /OCGs \OBJ@OCGs
9812      /Category[/Print]%
9813      >>%
9814      l%
9815      >>%
9816      >>%
9817      >>%
9818      }%
9819      \AtBeginShipout{%
9820      \setbox\AtBeginShipoutBox=\hbox{%
9821      \copy\AtBeginShipoutBox
9822      \@pdfm@mark{%
9823      put @resources <<%
9824      /Properties<<%
9825      /OCView \OBJ@OCG@view
9826      /OCPrint \OBJ@OCG@print
9827      >>%
9828      >>%
9829      }%
9830      }%
9831      }%
9832      \Hy@AtBeginDocument{%
9833      \def\Hy@colorlink#1{%
9834      \begingroup
9835      \ifHy@ocgcolorlinks
9836      \def\Hy@ocgcolor{#1}%
9837      \setbox0=\hbox\bgroup\color@begingroup
9838      \else
9839      \HyColor@UseColor#1%
9840      \fi
9841      }%
9842      \def\Hy@endcolorlink{%
9843      \ifHy@ocgcolorlinks
9844      \color@endgroup\egroup
9845      \mbox{%
9846      \@pdfm@mark{content /OC/OCPrint BDC}%
9847      \rlap{\copy0}%
9848      \@pdfm@mark{content EMC/OC/OCView BDC}%
9849      \begingroup
9850      \expandafter\HyColor@UseColor\Hy@ocgcolor
9851      \box0 %

```

```

9852         \endgroup
9853         \@pdfm@mark{content EMC}%
9854     }%
9855     \fi
9856     \endgroup
9857 }%
9858 }%
9859 \else
9860   \Hy@DisableOption{ocgcolorlinks}%
9861 \fi

9862 \def\Hy@BeginAnnot#1{%
9863   \stepcounter{Hy@AnnotLevel}%
9864   \ifnum\value{Hy@AnnotLevel}=\@ne
9865     #1%
9866   \fi
9867 }

9868 \def\Hy@endAnnot{%
9869   \ifnum\value{Hy@AnnotLevel}=\@ne
9870     \Hy@endcolorlink
9871     \@pdfm@mark{eann}%
9872   \fi
9873   \addtocounter{Hy@AnnotLevel}\m@ne
9874 }

9875 \def\Hy@undefinedname{UNDEFINED}
9876 \def\hyper@linkstart#1#2{%
9877   \Hy@VerboseLinkStart{#1}{#2}%
9878   \Hy@BeginAnnot{%
9879     \protected@edef\Hy@testname{#2}%
9880     \ifx\Hy@testname\@empty
9881       \Hy@Warning{%
9882         Empty destination name,\MessageBreak
9883         using '\Hy@undefinedname'%
9884       }%
9885       \let\Hy@testname\Hy@undefinedname
9886     \else
9887       \Hy@pstringdef\Hy@testname{%
9888         \expandafter\HyperDestNameFilter\expandafter{%
9889           \Hy@testname
9890         }%
9891       }%
9892     \fi
9893     \@pdfm@mark{%
9894       bann<<%
9895       /Type/Annot%
9896       /Subtype/Link%
9897       \ifHy@pdfa /F 4\fi
9898       \Hy@setpdfborder
9899       \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9900       \else
9901         /C[\csname @#1bordercolor\endcsname]%
9902       \fi
9903       /A<<%
9904       /S/GoTo%
9905       /D(\Hy@testname)%
9906       \Hy@href@nextactionraw
9907       >>%
9908     >>%

```

```

9909 }%
9910 \expandafter\Hy@colorlink\csname @#1color\endcsname
9911 }%
9912 }
9913 \def\hyper@linkend{\Hy@EndAnnot}%
9914 \def\hyper@link#1#2#3{%
9915 \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
9916 }
9917 \def\hyper@linkfile#1#2#3{%
9918 \leavevmode
9919 \Hy@BeginAnnot{%
9920 \def\Hy@pstringF{#2}%
9921 \Hy@CleanupFile\Hy@pstringF
9922 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9923 \Hy@pstringdef\Hy@pstringD{#3}%
9924 \Hy@MakeRemoteAction
9925 \@pdfm@mark{%
9926 bann<<%
9927 /Type/Annot%
9928 /Subtype/Link%
9929 \ifHy@pdfa /F 4\fi
9930 \Hy@setpdfborder
9931 \ifx\@filebordercolor\relax
9932 \else
9933 /C[\@filebordercolor]%
9934 \fi
9935 /A<<%
9936 /S/GoToR%
9937 /F(\Hy@pstringF)%
9938 /D%
9939 \ifx\@#3\@%
9940 [\Hy@href@page\@pdfremotestartview]%
9941 \else
9942 (\Hy@pstringD)%
9943 \fi
9944 \Hy@SetNewWindow
9945 \Hy@href@nextactionraw
9946 >>%
9947 >>%
9948 }%
9949 \Hy@colorlink\@filecolor
9950 }%
9951 #1\Hy@xspace@end
9952 \Hy@EndAnnot
9953 }
9954 \def\@hyper@launch run:#1\@#2#3{% filename, anchor text linkname
9955 \leavevmode
9956 \Hy@BeginAnnot{%
9957 \Hy@pstringdef\Hy@pstringF{#1}%
9958 \Hy@pstringdef\Hy@pstringP{#3}%
9959 \@pdfm@mark{%
9960 bann<<%
9961 /Type/Annot%
9962 /Subtype/Link%
9963 \ifHy@pdfa /F 4\fi
9964 \Hy@setpdfborder
9965 \ifx\@runbordercolor\relax

```

```

9966 \else
9967 /C[\@runbordercolor]%
9968 \fi
9969 /A<<%
9970 /F(\Hy@pstringF)%
9971 /S/Launch%
9972 \Hy@SetNewWindow
9973 \ifx\#3\%
9974 \else
9975 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9976 \fi
9977 \Hy@href@nextactionraw
9978 >>%
9979 >>%
9980 }%
9981 \Hy@colorlink\@runcolor
9982 }%
9983 #2\Hy@xspace@end
9984 \Hy@EndAnnot
9985 }
9986 \def\hyper@linkurl#1#2{%
9987 \leavevmode
9988 \Hy@BeginAnnot{%
9989 \Hy@pstringdef\Hy@pstringURI{#2}%
9990 \@pdfm@mark{%
9991 bann<<%
9992 /Type/Annot%
9993 /Subtype/Link%
9994 \ifHy@pdfa /F 4\fi
9995 \Hy@setpdfborder
9996 \ifx\@urlbordercolor\relax
9997 \else
9998 /C[\@urlbordercolor]%
9999 \fi
10000 /A<<%
10001 /S/URI%
10002 /URI(\Hy@pstringURI)%
10003 \ifHy@href@ismap
10004 /IsMap true%
10005 \fi
10006 \Hy@href@nextactionraw
10007 >>%
10008 >>%
10009 }%
10010 \Hy@colorlink\@urlcolor
10011 }%
10012 #1\Hy@xspace@end
10013 \Hy@EndAnnot
10014 }
10015 \def\Acrobatmenu#1#2{%
10016 \Hy@Acrobatmenu{#1}{#2}{%
10017 \Hy@BeginAnnot{%
10018 \@pdfm@mark{%
10019 bann<<%
10020 /Type/Annot%
10021 /Subtype/Link%
10022 \ifHy@pdfa /F 4\fi

```

```

10023      /A<<%
10024      /S/Named%
10025      /N/#1%
10026      \Hy@href@nextactionraw
10027      >>%
10028      \Hy@setpdfborder
10029      \ifx\@menubordercolor\relax
10030      \relax
10031      /C[\@menubordercolor]%
10032      \fi
10033      >>%
10034      }%
10035      \Hy@colorlink\@menucolor
10036      }%
10037      #2\Hy@xspace@end
10038      \Hy@endAnnot
10039      }%
10040      }
10041      \ifx\@pdfproducer\relax
10042      \def\@pdfproducer{dvipdfm}%

```

Detect XeTeX. However, but xdvipdfmx will overwrite it in the final PDF file.

```

10043      \begingroup\expandafter\expandafter\expandafter\endgroup
10044      \expandafter\ifx\csname XeTeXversion\endcsname\relax
10045      \else
10046      \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
10047      \fi
10048      \fi
10049      \def\PDF@FinishDoc{%
10050      \Hy@UseMaketitleInfos
10051      \HyInfo@GenerateAddons
10052      \@pdfm@mark{%
10053      docinfo<<%
10054      /Title(\@pdftitle)%
10055      /Subject(\@pdfsubject)%
10056      /Creator(\@pdfcreator)%
10057      \ifx\@pdfcreationdate\@empty
10058      \else
10059      /CreationDate(\@pdfcreationdate)%
10060      \fi
10061      \ifx\@pdfmoddate\@empty
10062      \else
10063      /ModDate(\@pdfmoddate)%
10064      \fi
10065      /Author(\@pdfauthor)%
10066      \ifx\@pdfproducer\relax
10067      \else
10068      /Producer(\@pdfproducer)%
10069      \fi
10070      /Keywords(\@pdfkeywords)%
10071      \ifx\@pdftrapped\@empty
10072      \else
10073      /Trapped/\@pdftrapped
10074      \fi
10075      \HyInfo@Addons
10076      >>%
10077      }%
10078      \Hy@DisableOption{pdfauthor}%

```

```

10079 \Hy@DisableOption{pdftitle}%
10080 \Hy@DisableOption{pdfsubject}%
10081 \Hy@DisableOption{pdfcreator}%
10082 \Hy@DisableOption{pdfcreationdate}%
10083 \Hy@DisableOption{pdfmoddate}%
10084 \Hy@DisableOption{pdfproducer}%
10085 \Hy@DisableOption{pdfkeywords}%
10086 \Hy@DisableOption{pdftrapped}%
10087 \Hy@DisableOption{pdfinfo}%
10088 }

10089 \def\PDF@SetupDoc{%
10090 \edef\Hy@temp{%
10091 \ifHy@toolbar\else /HideToolbar true\fi
10092 \ifHy@menubar\else /HideMenubar true\fi
10093 \ifHy>windowui\else /HideWindowUI true\fi
10094 \ifHy@fitwindow /FitWindow true\fi
10095 \ifHy@centerwindow /CenterWindow true\fi
10096 \ifHy@displaydoctitle /DisplayDocTitle true\fi
10097 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10098 \Hy@UseNameKey{Direction}\@pdfdirection
10099 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10100 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10101 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10102 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10103 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10104 \Hy@UseNameKey{Duplex}\@pdfduplex
10105 \ifx\@pdfpicktraybypdfsize\@empty
10106 \else
10107 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10108 \fi
10109 \ifx\@pdfprintpagerange\@empty
10110 \else
10111 /PrintPageRange\@pdfprintpagerange\%
10112 \fi
10113 \ifx\@pdfnumcopies\@empty
10114 \else
10115 /NumCopies \@pdfnumcopies
10116 \fi
10117 }%
10118 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10119 \@pdfm@mark{%
10120 docview<<%
10121 \ifx\@pdfstartpage\@empty
10122 \else
10123 \ifx\@pdfstartview\@empty
10124 \else
10125 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10126 \fi
10127 \fi
10128 \ifx\@baseurl\@empty
10129 \else
10130 /URI<</Base(\Hy@pstringB)>>%
10131 \fi
10132 /PageMode/\@pdfpagemode
10133 \ifx\Hy@temp\@empty
10134 \else
10135 /ViewerPreferences<<\Hy@temp>>%

```

```

10136 \fi
10137 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10138 \ifx\@pdflang\@empty
10139 \else
10140 /Lang(\@pdflang)%
10141 \fi
10142 >>%
10143 }%
10144 \ifx\@pdfpagescrop\@empty
10145 \else
10146 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
10147 \fi
10148 }
10149 </dvipdfm | xetex>

```

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

```

10150 <*dvipdfm>
10151 \AtBeginShipoutFirst{%
10152 \ifHy@setpagesize
10153 \begingroup
10154 \@ifundefined{stockwidth}{%
10155 \ifdim\paperwidth>\z@
10156 \ifdim\paperheight>\z@
10157 \special{papersize=\the\paperwidth,\the\paperheight}%
10158 \fi
10159 \fi
10160 }{%
10161 \ifdim\stockwidth>\z@
10162 \ifdim\stockheight>\z@
10163 \special{papersize=\the\stockwidth,\the\stockheight}%
10164 \fi
10165 \fi
10166 }%
10167 \endgroup
10168 \fi
10169 \Hy@DisableOption{setpagesize}%
10170 }
10171 </dvipdfm>

```

## 47.6 VTeX typesetting system

Provided by MicroPress, May 1998. They require VTeX version 6.02 or newer; see <http://www.micropress-inc.com/> for details.

```

10172 <*vtexhtml>
10173 \providecommand*\XR@ext}{htm}
10174 \RequirePackage{vtexhtml}
10175 \newif\if@Localurl
10176 \def\PDF@FinishDoc{}
10177 \def\PDF@SetupDoc{%
10178 \ifx\@baseurl\@empty
10179 \else
10180 \special{!direct <base href="\@baseurl">}%
10181 \fi
10182 }
10183 \def\@urltype{url}
10184 \def\hyper@link#1#2#3{%

```

```

10185 \Hy@VerboseLinkStart{#1}{#2}%
10186 \leavevmode
10187 \special{!direct <a href=%
10188     \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10189 #3\Hy@xspace@end
10190 \special{!direct </a>}%
10191 }
10192 \def\hyper@linkurl#1#2{%
10193 \begingroup
10194 \hyper@chars
10195 \leavevmode
10196 \MathBSuppress=1\relax
10197 \special{!direct <a href=%
10198     \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10199 #1\Hy@xspace@end
10200 \MathBSuppress=0\relax
10201 \special{!direct </a>}%
10202 \endgroup
10203 }
10204 \def\hyper@linkfile#1#2#3{%
10205 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
10206 }
10207 \def\hyper@linkstart#1#2{%
10208 \Hy@VerboseLinkStart{#1}{#2}%
10209 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urlltype
10210 \@Localurltrue
10211 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10212 \else
10213 \@Localurlfalse
10214 \begingroup
10215 \hyper@chars
10216 \special{!aref \HyperDestNameFilter{#2}}%
10217 \endgroup
10218 \fi
10219 }
10220 \def\hyper@linkend{%
10221 \if@Localurl
10222 \special{!endaref}%
10223 \else
10224 \special{!direct </a>}%
10225 \fi
10226 }
10227 \Hy@WrapperDef\hyper@anchorstart#1{%
10228 \Hy@SaveLastskip
10229 \Hy@VerboseAnchor{#1}%
10230 \begingroup
10231 \hyper@chars
10232 \special{!aname #1}%
10233 \special{!direct <a name=%
10234     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10235 \endgroup
10236 \Hy@activeanchortrue
10237 }
10238 \def\hyper@anchorend{%
10239 \special{!direct </a>}%
10240 \Hy@activeanchorfalse
10241 \Hy@RestoreLastskip

```



```

10242 }
10243 \Hy@WrapperDef\hyper@anchor#1{%
10244 \Hy@SaveLastskip
10245 \Hy@VerboseAnchor{#1}%
10246 \begingroup
10247 \let\protect=\string
10248 \hyper@chars
10249 \leavevmode
10250 \special{!aname #1}%
10251 \special{!direct <a name=%
10252 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10253 \endgroup
10254 \Hy@activeanchortrue
10255 \bgroup\anchor@spot\egroup
10256 \special{!direct </a>}%
10257 \Hy@activeanchorfalse
10258 \Hy@RestoreLastskip
10259 }
10260 \def\@Form[#1]{%
10261 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10262 }
10263 \def\@endForm{}
10264 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10265 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10266 }
10267 \def\@TextField[#1]#2{% parameters, label
10268 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10269 }
10270 \def\@CheckBox[#1]#2{% parameters, label
10271 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10272 }
10273 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10274 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10275 }
10276 \def\@PushButton[#1]#2{% parameters, label
10277 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10278 }
10279 \def\@Reset[#1]#2{%
10280 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10281 }
10282 \def\@Submit[#1]#2{%
10283 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10284 }
10285 \</vtexhtml>
10286 \<*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.

```

10287 \ifx\mediaheight\@undefined
10288 \else
10289 \ifx\mediaheight\relax
10290 \else
10291 \ifHy@setpagesize
10292 \providecommand*\VTeXInitMediaSize{%
10293 \ltx@ifundefined{stockwidth}{%
10294 \ifdim\paperheight>0pt %

```

```

10295         \setlength\mediaheight\paperheight
10296     \fi
10297     \ifdim\paperheight>0pt %
10298         \setlength\mediawidth\paperwidth
10299     \fi
10300 }{%
10301     \ifdim\stockheight>0pt %
10302         \setlength\mediaheight\stockheight
10303     \fi
10304     \ifdim\stockwidth>0pt %
10305         \setlength\mediawidth\stockwidth
10306     \fi
10307 }%
10308 }%
10309 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10310 \fi
10311 \Hy@DisableOption{setpagesize}%
10312 \fi
10313 \fi

```

Older versions of VTeX require xyz in lower case.

```

10314 \providecommand*\@pdfview{xyz}
10315 \providecommand*\@pdfborder{0 0 1}
10316 \providecommand*\@pdfborderstyle{}
10317 \let\CurrentBorderColor\@linkbordercolor
10318 \Hy@WrapperDef\hyper@anchor#1{%
10319     \Hy@SaveLastskip
10320     \Hy@VerboseAnchor{#1}%
10321     \begingroup
10322         \let\protect=\string
10323         \hyper@chars
10324         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10325     \endgroup
10326     \Hy@activeanchortrue
10327     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10328     \Hy@activeanchorfalse
10329     \Hy@RestoreLastskip
10330 }
10331 \Hy@WrapperDef\hyper@anchorstart#1{%
10332     \Hy@SaveLastskip
10333     \Hy@VerboseAnchor{#1}%
10334     \begingroup
10335         \hyper@chars
10336         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10337     \endgroup
10338     \Hy@activeanchortrue
10339 }
10340 \def\hyper@anchorend{%
10341     \Hy@activeanchorfalse
10342     \Hy@RestoreLastskip
10343 }
10344 \def\@urltype{url}
10345 \def\Hy@undefinedname{UNDEFINED}
10346 \def\hyper@linkstart#1#2{%
10347     \Hy@VerboseLinkStart{#1}{#2}%
10348     \Hy@pstringdef\Hy@pstringURI{#2}%
10349     \expandafter\Hy@colorlink\csname @#1color\endcsname
10350     \ltx@ifundefined{@#1bordercolor}{%

```

```

10351 \let\CurrentBorderColor\relax
10352 }{%
10353 \edef\CurrentBorderColor{%
10354 \csname @#1bordercolor\endcsname
10355 }%
10356 }%
10357 \def\Hy@tempa{#1}%
10358 \ifx\Hy@tempa\@uratype
10359 \special{!%
10360 aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10361 \ifHy@href@ismap
10362 /IsMap true%
10363 \fi
10364 \Hy@href@nextactionraw
10365 >%
10366 a=<%
10367 \ifHy@pdfa /F 4\fi
10368 \Hy@setpdfborder
10369 \ifx\CurrentBorderColor\relax
10370 \else
10371 /C [\CurrentBorderColor]%
10372 \fi
10373 >%
10374 }%
10375 \else
10376 \protected@edef\Hy@testname{#2}%
10377 \ifx\Hy@testname\@empty
10378 \Hy@Warning{%
10379 Empty destination name,\MessageBreak
10380 using '\Hy@undefinedname'%
10381 }%
10382 \let\Hy@testname\Hy@undefinedname
10383 \fi
10384 \special{!%
10385 aref \expandafter\HyperDestNameFilter
10386 \expandafter{\Hy@testname};%
10387 a=<%
10388 \ifHy@pdfa /F 4\fi
10389 \Hy@setpdfborder
10390 \ifx\CurrentBorderColor\relax
10391 \else
10392 /C [\CurrentBorderColor]%
10393 \fi
10394 >%
10395 }%
10396 \fi
10397 }
10398 \def\hyper@linkend{%
10399 \special{!endaref}%
10400 \Hy@endcolorlink
10401 }
10402 \def\hyper@linkfile#1#2#3{%
10403 \leavevmode
10404 \def\Hy@pstringF{#2}%
10405 \Hy@CleanupFile\Hy@pstringF
10406 \special{!%
10407 aref <%

```

```

10408 \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi
10409 f=\Hy@pstringF>#3;%
10410 a=<%
10411 \ifHy@pdfa /F 4\fi
10412 \Hy@setpdfborder
10413 \ifx\@filebordercolor\relax
10414 \else
10415 /C [\@filebordercolor]%
10416 \fi
10417 >%
10418 }%
10419 \Hy@colorlink\@filecolor
10420 #1\Hy@xspace@end
10421 \Hy@endcolorlink
10422 \special{!endaref}%
10423 }
10424 \def\hyper@linkurl#1#2{%
10425 \begingroup
10426 \Hy@pstringdef\Hy@pstringURI{#2}%
10427 \hyper@chars
10428 \leavevmode
10429 \special{!%
10430 aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10431 \ifHy@href@ismap
10432 /IsMap true%
10433 \fi
10434 \Hy@href@nextactionraw
10435 >;%
10436 a=<%
10437 \ifHy@pdfa /F 4\fi
10438 \Hy@setpdfborder
10439 \ifx\@urlbordercolor\relax
10440 \else
10441 /C [\@urlbordercolor]%
10442 \fi
10443 >%
10444 }%
10445 \Hy@colorlink\@urlcolor
10446 #1\Hy@xspace@end
10447 \Hy@endcolorlink
10448 \special{!endaref}%
10449 \endgroup
10450 }
10451 \def\hyper@link#1#2#3{%
10452 \Hy@VerboseLinkStart{#1}{#2}%
10453 \ltx@ifundefined{@#1bordercolor}{%
10454 \let\CurrentBorderColor\relax
10455 }{%
10456 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10457 }%
10458 \leavevmode
10459 \protected@edef\Hy@testname{#2}%
10460 \ifx\Hy@testname\@empty
10461 \Hy@Warning{%
10462 Empty destination name,\MessageBreak
10463 using '\Hy@undefinedname'%
10464 }%

```

```

10465 \let\Hy@testname\Hy@undefinedname
10466 \fi
10467 \special{!%
10468   aref \expandafter\HyperDestNameFilter
10469     \expandafter{\Hy@testname};%
10470   a=<%
10471     \ifHy@pdfa /F 4\fi
10472     \Hy@setpdfborder
10473     \ifx\CurrentBorderColor\relax
10474     \else
10475       /C [\CurrentBorderColor]%
10476     \fi
10477   >%
10478 }%
10479 \expandafter
10480 \Hy@colorlink\csname @#1color\endcsname
10481   #3\Hy@xspace@end
10482 \Hy@endcolorlink
10483 \special{!endaref}%
10484 }
10485 \def\hyper@image#1#2{%
10486 \hyper@linkurl{#2}{#1}%
10487 }
10488 \def\@hyper@launch run:#1\#2#3{%
10489 \Hy@pstringdef\Hy@pstringF{#1}%
10490 \Hy@pstringdef\Hy@pstringP{#3}%
10491 \leavevmode
10492 \special{!aref %
10493   <u=%
10494     /Type/Action%
10495     /S/Launch%
10496     /F(\Hy@pstringF)%
10497     \Hy@SetNewWindow
10498     \ifx\#3\%
10499     \else
10500       /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10501     \fi
10502     \Hy@href@nextactionraw
10503   >;%
10504   a=<%
10505     \ifHy@pdfa /F 4\fi
10506     \Hy@setpdfborder
10507     \ifx\@runbordercolor\relax
10508     \else
10509       /C[\@runbordercolor]%
10510     \fi
10511   >%
10512 }%
10513 \Hy@colorlink\@runcolor
10514   #2\Hy@xspace@end
10515 \Hy@endcolorlink
10516 \special{!endaref}%
10517 }
10518 \def\Acrobatmenu#1#2{%
10519 \Hy@Acrobatmenu{#1}{#2}{%
10520 \special{!%
10521   aref <u=/S /Named /N /#1>;%

```

```

10522     a=<%
10523         \ifHy@pdfa /F 4\fi
10524         \Hy@setpdfborder
10525         \ifx\@menubordercolor\relax
10526         \else
10527         /C[\@menubordercolor]%
10528         \fi
10529     >%
10530 }%
10531 \Hy@colorlink\@menucolor
10532 #2\Hy@xspace@end
10533 \Hy@endcolorlink
10534 \special{!endaref}%
10535 }%
10536 }

```

The following code (transition effects) is made by Alex Kostin.

The code below makes sense for V<sub>T</sub>E<sub>X</sub> 7.02 or later.

Please never use `\@ifundefined{VTeXversion}{...}{...}` globally.

```

10537 \ifnum\Hy@VTeXversion<702 %
10538 \else
10539 \def\hyper@pagetransition{%
10540 \ifx\@pdfpagetransition\relax
10541 \else
10542 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

10543 \else
10544 \hvtex@parse@trans\@pdfpagetransition
10545 \fi
10546 \fi
10547 }%

```

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

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

```

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

```

Transition codes:

```

10548 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10549 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10550 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10551 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%

```

```

10552 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10553 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10554 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10555 \def\hvtex@par@dimension{/Dm}%
10556 \def\hvtex@par@direction{/Di}%
10557 \def\hvtex@par@duration{/D}%
10558 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

10559 \def\hvtex@gettoken{%
10560   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10561 }%

```

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

```

10562 \def\hvtex@gettoken@#1 #2\@nil{%
10563   \edef\hvtex@token{#1}%
10564   \edef\hvtex@buffer{#2}%
10565 }%
10566 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

10567 \let\hvtex@trans@code\@empty
10568 \let\hvtex@param@dimension\@empty
10569 \let\hvtex@param@direction\@empty
10570 \let\hvtex@param@duration\@empty
10571 \let\hvtex@param@motion\@empty
10572 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10573 \hvtex@gettoken
10574 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10575   \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

10576   \else
10577     \hvtex@gettoken
10578   \fi
10579 \fi
10580 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

10581 \hvtex@trans@params
10582 }%

```

Reentrant macro to parse optional parameters.

```

10583 \def\hvtex@trans@params{%
10584   \ifx\hvtex@buffer\@empty
10585   \else
10586     \hvtex@gettoken
10587     \let\hvtex@trans@par\hvtex@token
10588     \ifx\hvtex@buffer\@empty
10589     \else
10590       \hvtex@gettoken
10591       \ifx\hvtex@trans@par\hvtex@par@duration

```

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

```

10592       \let\hvtex@param@duration\hvtex@token
10593     \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```
10594     \expandafter\edef\expandafter\hvtex@param@motion
10595     \expandafter{\expandafter\@gobble\hvtex@token}%
10596     \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
10597     \expandafter\edef\expandafter\hvtex@param@dimension
10598     \expandafter{\expandafter\@gobble\hvtex@token}%
10599     \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).

```
10600     \let\hvtex@param@direction\hvtex@token
10601     \fi\fi\fi\fi
10602     \fi
10603     \fi
10604     \ifx\hvtex@buffer\@empty
10605     \let\next\hvtex@produce@trans
10606     \else
10607     \let\next\hvtex@trans@params
10608     \fi
10609     \next
10610 }%
```

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

```
10611 \def\hvtex@produce@trans{%
10612 \let\vtex@trans@special\@empty
10613 \if S\hvtex@trans@code
10614 \edef\vtex@trans@special{\hvtex@trans@code
10615 \hvtex@param@dimension\hvtex@param@motion}%
10616 \else\if B\hvtex@trans@code
10617 \edef\vtex@trans@special{%
10618 \hvtex@trans@code\hvtex@param@dimension
10619 }%
10620 \else\if X\hvtex@trans@code
10621 \edef\vtex@trans@special{%
10622 \hvtex@trans@code\hvtex@param@motion
10623 }%
10624 \else\if W\hvtex@trans@code
10625 \edef\vtex@trans@special{%
10626 \hvtex@trans@code\hvtex@param@direction
10627 }%
10628 \else\if D\hvtex@trans@code
10629 \let\vtex@trans@special\hvtex@trans@code
10630 \else\if R\hvtex@trans@code
10631 \let\vtex@trans@special\hvtex@trans@code
10632 \else\if G\hvtex@trans@code
10633 \edef\vtex@trans@special{%
10634 \hvtex@trans@code\hvtex@param@direction
10635 }%
10636 \fi\fi\fi\fi\fi\fi
10637 \ifx\vtex@trans@special\@empty
10638 \else
10639 \ifx\hvtex@param@duration\@empty
10640 \else
10641 \setlength{\dimen@}{\hvtex@param@duration\p}%
```

I'm not guilty of possible overflow.



```

10642 \multiply\dimen@ \@m
10643 \edef\vtex@trans@special{%
10644 \vtex@trans@special,\strip@pt\dimen@
10645 }%
10646 \fi

And all the mess is just for this.

10647 \special{!trans \vtex@trans@special}%
10648 \fi
10649 }%

10650 \def\hyper@pageduration{%
10651 \ifx\@pdfpageduration\relax
10652 \else
10653 \ifx\@pdfpageduration\@empty
10654 \special{!duration-}%
10655 \else
10656 \special{!duration \@pdfpageduration}%
10657 \fi
10658 \fi
10659 }%

10660 \def\hyper@pagehidden{%
10661 \ifHy@useHidKey
10662 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
10663 \fi
10664 }%

10665 \g@addto@macro\Hy@EveryPageBoxHook{%
10666 \hyper@pagetransition
10667 \hyper@pageduration
10668 \hyper@pagehidden
10669 }%
10670 \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

```

10671 \ifx\@pdfproducer\relax
10672 \def\@pdfproducer{VTeX}%
10673 \ifnum\Hy@VTeXversion>\z@
10674 \count@\VTeXversion
10675 \divide\count@ 100 %
10676 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10677 \multiply\count@ -100 %
10678 \advance\count@\VTeXversion
10679 \edef\@pdfproducer{%
10680 \@pdfproducer
10681 .\ifnum\count@<10 0\fi\the\count@
10682 \ifx\VTeXOS\@undefined\else
10683 \ifnum\VTeXOS>0 %
10684 \ifnum\VTeXOS<6 %
10685 \space(
10686 \ifcase\VTeXOS

```

```

10687         \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10688         \fi
10689     )%
10690     \fi
10691     \fi
10692     \fi
10693     ,\space
10694     \ifnum\OpMode=\@ne PDF\else PS\fi
10695     \space backend%
10696     \ifx\gexmode\@undefined\else
10697     \ifnum\gexmode>z@\space with GeX\fi
10698     \fi
10699 }%
10700 \fi
10701 \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).

```

10702 \def\PDF@SetupDoc{%
10703     \ifx\@pdfpagescrop\@empty
10704     \else
10705     \special{!pdfinfo b=<\@pdfpagescrop>}%
10706     \fi
10707     \ifx\@pdfstartpage\@empty
10708     \else
10709     \ifx\@pdfstartview\@empty
10710     \else
10711     \special{!onopen Page\@pdfstartpage}%
10712     \fi
10713     \fi
10714     \special{!pdfinfo p=</\@pdfpagemode>}%
10715     \ifx\@baseurl\@empty
10716     \else
10717     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10718     \fi
10719     \special{!pdfinfo v=<<<%
10720         \ifHy@toolbar\else /HideToolbar true\fi
10721         \ifHy@menubar\else /HideMenubar true\fi
10722         \ifHy>windowui\else /HideWindowUI true\fi
10723         \ifHy@fitwindow /FitWindow true\fi
10724         \ifHy@centerwindow /CenterWindow true\fi
10725         \ifHy@displaydoctitle /DisplayDocTitle true\fi
10726         \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10727         \Hy@UseNameKey{Direction}\@pdfdirection
10728         \Hy@UseNameKey{ViewArea}\@pdfviewarea

```

```

10729 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10730 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10731 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10732 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10733 \Hy@UseNameKey{Duplex}\@pdfduplex
10734 \ifx\@pdfpicktraybypdfsize\@empty
10735 \else
10736 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10737 \fi
10738 \ifx\@pdfprintpagerange\@empty
10739 \else
10740 /PrintPageRange\@pdfprintpagerange]%
10741 \fi
10742 \ifx\@pdfnumcopies\@empty
10743 \else
10744 /NumCopies \@pdfnumcopies
10745 \fi
10746 >>>}%
10747 \ifx\@pdfpagelayout\@empty
10748 \else
10749 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10750 \fi
10751 }%
10752 \HyInfo@AddonUnsupportedtrue
10753 \def\PDF@FinishDoc{%
10754 \Hy@UseMaketitleInfos
10755 \HyInfo@TrappedUnsupported
10756 \special{!pdfinfo a=<\@pdfauthor>}%
10757 \special{!pdfinfo t=<\@pdftitle>}%
10758 \special{!pdfinfo s=<\@pdfsubject>}%
10759 \special{!pdfinfo c=<\@pdfcreator>}%
10760 \ifx\@pdfproducer\relax
10761 \else
10762 \special{!pdfinfo r=<\@pdfproducer>}%
10763 \fi
10764 \special{!pdfinfo k=<\@pdfkeywords>}%
10765 \Hy@DisableOption{pdfauthor}%
10766 \Hy@DisableOption{pdftitle}%
10767 \Hy@DisableOption{pdfsubject}%
10768 \Hy@DisableOption{pdfcreator}%
10769 \Hy@DisableOption{pdfcreationdate}%
10770 \Hy@DisableOption{pdfmoddate}%
10771 \Hy@DisableOption{pdfproducer}%
10772 \Hy@DisableOption{pdfkeywords}%
10773 \Hy@DisableOption{pdftrapped}%
10774 \Hy@DisableOption{pdfinfo}%
10775 }
10776 </vtex>

```

## 47.7 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.

```

10777 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10778 <package>\providecommand*{\Hy@DistillerDestFix}{%
10779 <*pdfmark | dviwindo>
10780 \def\Hy@DistillerDestFix{%
10781   \begingroup
10782   \let\x\literalps@out

```

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

```

10783   \ifnum \@ifundefined{OpMode}{0}{%
10784     \@ifundefined{gexmode}{0}{%
10785       \ifnum\gexmode>0 \OpMode\else 0\fi
10786     }>1 %
10787   \def\x##1{%
10788     \immediate\special{!=##1}%
10789   }%
10790   \fi
10791   \x{%
10792     /product where{%
10793       pop %
10794       product(Distiller)search{%
10795         pop pop pop %
10796         version(.)search{%
10797           exch pop exch pop%
10798           (3011)eq{%
10799             gsave %
10800             newpath 0 0 moveto closepath clip%
10801             /Courier findfont 10 scalefont setfont %
10802             72 72 moveto(.).show %
10803             grestore%
10804           }if%
10805         }{pop}ifelse%
10806       }{pop}ifelse%
10807     }if%
10808   }%
10809   \endgroup
10810 }
10811 </pdfmark | dviwindo>

```

## 47.8 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

```

10812 <*pdfmark>
10813 \Hy@breaklinks@unsupported
10814 \def\HyPat@ObjRef{%
10815   \{[^\}]+\}%
10816 }
10817 \Hy@WrapperDef\hyper@anchor#1{%
10818   \Hy@SaveLastskip
10819   \Hy@VerboseAnchor{#1}%
10820   \begingroup
10821     \pdfmark[\anchor@spot]{%
10822       pdfmark=/DEST,%
10823       linktype=anchor,%
10824       View=/\@pdfview \@pdfviewparams,%
10825       DestAnchor={#1}%
10826     }%
10827   \endgroup
10828   \Hy@RestoreLastskip
10829 }
10830 \ltx@ifundefined{hyper@anchorstart}{\endinput}
10831 \Hy@WrapperDef\hyper@anchorstart#1{%
10832   \Hy@SaveLastskip
10833   \Hy@VerboseAnchor{#1}%
10834   \literalps@out{H.S}%
10835   \Hy@AllowHyphens
10836   \xdef\hyper@currentanchor{#1}%
10837   \Hy@activeanchortrue
10838 }
10839 \def\hyper@anchorend{%
10840   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10841   \pdfmark{%
10842     pdfmark=/DEST,%
10843     linktype=anchor,%
10844     View=/\@pdfview \@pdfviewparams,%
10845     DestAnchor=\hyper@currentanchor,%
10846   }%
10847   \Hy@activeanchorfalse
10848   \Hy@RestoreLastskip
10849 }
10850 \def\hyper@linkstart#1#2{%
10851   \Hy@VerboseLinkStart{#1}{#2}%
10852   \ifHy@breaklinks
10853   \else
10854     \leavevmode
10855     \ifmmode
10856       \def\Hy@LinkMath{$}%
10857     \else
10858       \def\Hy@LinkMath{}%
10859     \fi
10860     \Hy@SaveSpaceFactor
10861     \hbox\bgroup
10862     \Hy@RestoreSpaceFactor
10863     \Hy@LinkMath
10864   \fi
10865   \expandafter\Hy@colorlink\csname @#1color\endcsname
10866   \literalps@out{H.S}%
10867   \Hy@AllowHyphens
10868   \xdef\hyper@currentanchor{#2}%

```

```

10869 \gdef\hyper@currentlinktype{#1}%
10870 }
10871 \def\hyper@linkend{%
10872 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10873 \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
10874 \let\Hy@tempcolor\relax
10875 }{%
10876 \edef\Hy@tempcolor{%
10877 \csname @\hyper@currentlinktype bordercolor\endcsname
10878 }%
10879 }%
10880 \pdfmark{%
10881 pdfmark=/ANN,%
10882 linktype=link,%
10883 Subtype=/Link,%
10884 PDFAFlags=4,%
10885 Dest=\hyper@currentanchor,%
10886 AcroHighlight=\@pdfhighlight,%
10887 Border=\@pdfborder,%
10888 BorderStyle=\@pdfborderstyle,%
10889 Color=\Hy@tempcolor,%
10890 Raw=H.B%
10891 }%
10892 \Hy@endcolorlink
10893 \ifHy@breaklinks
10894 \else
10895 \Hy@LinkMath
10896 \Hy@SaveSpaceFactor
10897 \egroup
10898 \Hy@RestoreSpaceFactor
10899 \fi
10900 }

```

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.

```

10901 \begingroup
10902 \catcode'P=12 %
10903 \catcode'T=12 %
10904 \lowercase{\endgroup
10905 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
10906 }
10907 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

\hyper@pagetransition

```

10908 \def\hyper@pagetransition{%
10909 \ifx\@pdfpagetransition\relax
10910 \else
10911 \ifx\@pdfpagetransition\empty
10912 % 1. Does an old entry have to be deleted?
10913 % 2. If 1=yes, how to delete?
10914 \else
10915 \pdfmark{%
10916 pdfmark=/PUT,%
10917 Raw={%
10918 \string{ThisPage\string}%
10919 <</Trans << /S /\@pdfpagetransition\space >> >>%

```

```

10920     }%
10921     }%
10922   \fi
10923 \fi
10924 }

```

\hyper@pageduration

```

10925 \def\hyper@pageduration{%
10926   \ifx\@pdfpageduration\relax
10927   \else
10928     \ifx\@pdfpageduration\@empty
10929     % 1. Does an old entry have to be deleted?
10930     % 2. If 1=yes, how to delete?
10931   \else
10932     \pdfmark{%
10933       pdfmark=/PUT,%
10934       Raw={%
10935         \string{ThisPage\string}%
10936         <</Dur \@pdfpageduration>>%
10937       }%
10938     }%
10939   \fi
10940 \fi
10941 }

```

\hyper@pagehidden

```

10942 \def\hyper@pagehidden{%
10943   \ifHy@useHidKey
10944     \pdfmark{%
10945       pdfmark=/PUT,%
10946       Raw={%
10947         \string{ThisPage\string}%
10948         <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
10949       }%
10950     }%
10951   \fi
10952 }

```

```

10953 \g@addto@macro\Hy@EveryPageBoxHook{%
10954   \hyper@pagetransition
10955   \hyper@pageduration
10956   \hyper@pagehidden
10957 }

```

```

10958 \def\hyper@image#1#2{%
10959   \hyper@linkurl{#2}{#1}%
10960 }
10961 \def\Hy@undefinedname{UNDEFINED}
10962 \def\hyper@link#1#2#3{%
10963   \Hy@VerboseLinkStart{#1}{#2}%
10964   \ltx@ifundefined{@#1bordercolor}{%
10965     \let\Hy@tempcolor\relax
10966   }{%
10967     \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
10968   }%
10969   \begingroup
10970   \protected@edef\Hy@testname{#2}%
10971   \ifx\Hy@testname\@empty

```

```

10972 \Hy@Warning{%
10973   Empty destination name,\MessageBreak
10974   using '\Hy@undefinedname'%
10975 }%
10976 \let\Hy@testname\Hy@undefinedname
10977 \fi
10978 \pdfmark[{#3}]{%
10979   Color=\Hy@tempcolor,%
10980   linktype={#1},%
10981   AcroHighlight=\@pdfhighlight,%
10982   Border=\@pdfborder,%
10983   BorderStyle=\@pdfborderstyle,%
10984   pdfmark=/ANN,%
10985   Subtype=/Link,%
10986   PDFAFlags=4,%
10987   Dest=\Hy@testname
10988 }%
10989 \endgroup
10990 }
10991 \newtoks\pdf@docset
10992 \def\PDF@FinishDoc{%
10993   \Hy@UseMaketitleInfos
10994   \HyInfo@GenerateAddons
10995   \let\Hy@temp\@empty
10996   \ifx\@pdfcreationdate\@empty
10997   \else
10998     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
10999   \fi
11000   \ifx\@pdfmoddate\@empty
11001   \else
11002     \expandafter\def\expandafter\Hy@temp\expandafter{%
11003       \Hy@temp
11004       ModDate=\@pdfmoddate,%
11005     }%
11006   \fi
11007   \ifx\@pdfproducer\relax
11008   \else
11009     \expandafter\def\expandafter\Hy@temp\expandafter{%
11010       \Hy@temp
11011       Producer=\@pdfproducer,%
11012     }%
11013   \fi
11014   \expandafter
11015   \pdfmark\expandafter{%
11016     \Hy@temp
11017     pdfmark=/DOCINFO,%
11018     Title=\@pdftitle,%
11019     Subject=\@pdfsubject,%
11020     Creator=\@pdfcreator,%
11021     Author=\@pdfauthor,%
11022     Keywords=\@pdfkeywords,%
11023     Trapped=\@pdftrapped
11024   }%
11025   \ifx\HyInfo@Addons\@empty
11026   \else
11027     \pdfmark{%
11028       pdfmark=/DOCINFO,%

```



```

11029     Raw={\HyInfo@Addons}%
11030   }%
11031 \fi
11032 \Hy@DisableOption{pdfauthor}%
11033 \Hy@DisableOption{pdftitle}%
11034 \Hy@DisableOption{pdfsubject}%
11035 \Hy@DisableOption{pdfcreator}%
11036 \Hy@DisableOption{pdfcreationdate}%
11037 \Hy@DisableOption{pdfmoddate}%
11038 \Hy@DisableOption{pdfproducer}%
11039 \Hy@DisableOption{pdfkeywords}%
11040 \Hy@DisableOption{pdftrapped}%
11041 \Hy@DisableOption{pdfinfo}%
11042 }
11043 \def\PDF@SetupDoc{%
11044   \def\Hy@temp{}%
11045   \ifx\@pdfstartpage\@empty
11046   \else
11047     \ifx\@pdfstartview\@empty
11048     \else
11049       \edef\Hy@temp{%
11050         ,Page=\@pdfstartpage
11051         ,View=\@pdfstartview
11052       }%
11053     \fi
11054   \fi
11055   \edef\Hy@temp{%
11056     \noexpand\pdfmark{%
11057       pdfmark=/DOCVIEW,%
11058       PageMode=/\@pdfpagemode
11059     }\Hy@temp
11060   }%
11061 }%
11062 \Hy@temp
11063 \ifx\@pdfpagescrop\@empty
11064 \else
11065   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11066 \fi
11067 \edef\Hy@temp{%
11068   \ifHy@toolbar\else /HideToolbar true\fi
11069   \ifHy@menubar\else /HideMenubar true\fi
11070   \ifHy>windowui\else /HideWindowUI true\fi
11071   \ifHy@fitwindow /FitWindow true\fi
11072   \ifHy@centerwindow /CenterWindow true\fi
11073   \ifHy@displaydoctitle /DisplayDocTitle true\fi
11074   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfmonfullscreenpagemode
11075   \Hy@UseNameKey{Direction}\@pdfdirection
11076   \Hy@UseNameKey{ViewArea}\@pdfviewarea
11077   \Hy@UseNameKey{ViewClip}\@pdfviewclip
11078   \Hy@UseNameKey{PrintArea}\@pdfprintarea
11079   \Hy@UseNameKey{PrintClip}\@pdfprintclip
11080   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11081   \Hy@UseNameKey{Duplex}\@pdfduplex
11082   \ifx\@pdfpicktraybypdfsize\@empty
11083   \else
11084     /PickTrayByPDFSize \@pdfpicktraybypdfsize
11085   \fi

```

```

11086 \ifx\@pdfprintpagerange\@empty
11087 \else
11088 /PrintPageRange[\@pdfprintpagerange]%
11089 \fi
11090 \ifx\@pdfnumcopies\@empty
11091 \else
11092 /NumCopies \@pdfnumcopies
11093 \fi
11094 }%
11095 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11096 \pdfmark{%
11097 pdfmark=/PUT,%
11098 Raw={%
11099 \string{Catalog\string}<<%
11100 \ifx\Hy@temp\@empty
11101 \else
11102 /ViewerPreferences<<\Hy@temp>>%
11103 \fi
11104 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11105 \ifx\@pdflang\@empty
11106 \else
11107 /Lang(\@pdflang)%
11108 \fi
11109 \ifx\@baseurl\@empty
11110 \else
11111 /URI<</Base(\Hy@pstringB)>>%
11112 \fi
11113 >>%
11114 }%
11115 }%
11116 }
11117 </pdfmark>
11118 <*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.

```

11119 \newif\ifHy@pdfmarkerror
11120 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}
11121 \def\pdfmark@[#1]#2{%
11122 \Hy@pdfmarkerrorfalse
11123 \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11124 \@processme
11125 \let\pdf@type\relax
11126 \kvsetkeys{PDF}{#2}%
11127 \ifHy@pdfmarkerror
11128 \else
11129 \ifx\pdf@type\relax
11130 \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11131 \ifx\#1\%
11132 \else
11133 \pdf@rect{#1}%
11134 \fi
11135 \else
11136 \ifx\#1\%

```

```

11137 \literalps@out{%
11138 [\the\pdf@toks\space\pdf@type\space pdfmark%
11139 }%
11140 \else
11141 \ltx@ifundefined{@\pdf@linktype color}{%
11142 \Hy@colorlink\@linkcolor
11143 }{%
11144 \expandafter\Hy@colorlink
11145 \csname @\pdf@linktype color\endcsname
11146 }%
11147 \pdf@rect{#1}%
11148 \literalps@out{%
11149 [\the\pdf@toks\space\pdf@type\space pdfmark%
11150 }%
11151 \Hy@endcolorlink
11152 \fi
11153 \fi
11154 \fi
11155 }

```

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 (tobyth@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}

```

```

11156 \newsavebox{\pdf@box}
11157 \providecommand*{\Hy@setouterhbox}{\sbox}
11158 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11159 \def\Hy@DEST{/DEST}
11160 \def\pdf@rect#1{%
11161 \begingroup
11162 \chardef\x=1 %
11163 \def\Hy@temp{#1}%
11164 \ifx\Hy@temp\ltx@empty
11165 \chardef\x=0 %
11166 \else
11167 \def\y{\anchor@spot}%
11168 \ifx\Hy@temp\y
11169 \def\y{\relax}%
11170 \ifx\anchor@spot\y
11171 \chardef\x=0 %
11172 \fi
11173 \fi
11174 \fi
11175 \expandafter\endgroup
11176 \ifcase\x
11177 \literalps@out{H.S}%
11178 \literalps@out{H.R}%
11179 \else
11180 \leavevmode
11181 \Hy@SaveSpaceFactor
11182 \ifmmode

```

```

11183 \def\Hy@LinkMath{$}%
11184 \else
11185 \def\Hy@LinkMath{}%
11186 \fi
11187 \ifHy@breaklinks
11188 \Hy@setouterhbox\pdf@box{%
11189 \Hy@RestoreSpaceFactor
11190 \Hy@LinkMath
11191 \Hy@AllowHyphens#1\Hy@xspace@end
11192 \Hy@LinkMath
11193 \Hy@SaveSpaceFactor
11194 }%
11195 \else
11196 \sbox\pdf@box{%
11197 \Hy@RestoreSpaceFactor
11198 \Hy@LinkMath
11199 #1\Hy@xspace@end
11200 \Hy@LinkMath
11201 \Hy@SaveSpaceFactor
11202 }%
11203 \fi
11204 \dimen@ \ht\pdf@box
11205 \ifdim\dp\pdf@box=\z@
11206 \literalps@out{H.S}%
11207 \else
11208 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11209 \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...).

```

11210 \ifHy@breaklinks
11211 \ifhmode
11212 \Hy@breaklinksunhbox\pdf@box
11213 \else
11214 \box\pdf@box
11215 \fi
11216 \else
11217 \expandafter\box\pdf@box
11218 \fi

```

but if it can have multiple paragraphs you'd need one of these, but in that case the measured box size would be wrong anyway.

```

\ifHy@breaklinks#1\else\box\pdf@box\fi
\ifHy@breaklinks{#1}\else\box\pdf@box\fi

11219 \ifdim\dimen@=\z@
11220 \literalps@out{H.R}%
11221 \else
11222 \raise\dimen@\hbox{\literalps@out{H.R}}%
11223 \fi
11224 \Hy@RestoreSpaceFactor
11225 \fi
11226 \ifx\pdf@type\Hy@DEST
11227 \else
11228 \pdf@addtoksx{H.B}%
11229 \fi
11230 }

```

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.

```

11231 \newtoks\pdf@toks
11232 \newtoks\pdf@defaulttoks
11233 \pdf@defaulttoks={}%
11234 \def\pdf@addtoks#1#2{%
11235   \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11236   \@processme
11237 }
11238 \def\pdf@addtoksx#1{%
11239   \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11240   \@processme
11241 }
11242 \def\PDFdefaults#1{%
11243   \pdf@defaulttoks={#1}%
11244 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

11245 % what is the type of pdfmark?
11246 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11247 % what is the link type?
11248 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11249 \def\pdf@linktype{link}
11250 % parameter is a stream of PDF
11251 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11252 % parameter is a name
11253 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11254 % parameter is a array
11255 \define@key{PDF}{Border}{%
11256   \edef\Hy@temp{#1}%
11257   \ifx\Hy@temp\@empty
11258   \else
11259     \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11260   \fi
11261 }
11262 \let\Hy@BorderArrayPatch\@empty
11263 % parameter is a dictionary
11264 \define@key{PDF}{BorderStyle}{%
11265   \edef\Hy@temp{#1}%
11266   \ifx\Hy@temp\@empty
11267   \else
11268     \pdf@addtoks{<<#1>>}{BS}%
11269   \fi
11270 }
11271 % parameter is a array
11272 \define@key{PDF}{Color}{%
11273   \ifx\relax#1\relax
11274   \else
11275     \pdf@addtoks{[#1]}{Color}% hash-ok
11276   \fi
11277 }
11278 % parameter is a string
11279 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11280 % parameter is a integer
11281 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11282 % parameter is a array
11283 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11284 % parameter is a string

```

```

11285 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11286 % parameter is a string or file
11287 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11288 % parameter is a destination
11289 \define@key{PDF}{Dest}{%
11290   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11291   \ifx\Hy@pstringDest\@empty
11292     \Hy@pdfmarkerrortrue
11293     \Hy@Warning{Destination with empty name ignored}%
11294   \else
11295     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11296   \fi
11297 }
11298 \define@key{PDF}{DestAnchor}{%
11299   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11300   \ifx\Hy@pstringDest\@empty
11301     \Hy@pdfmarkerrortrue
11302     \Hy@Warning{Destination with empty name ignored}%
11303   \else
11304     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11305   \fi
11306 }
11307 % parameter is a string
11308 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11309 % parameter is a string
11310 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11311 % parameter is a int
11312 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11313 \define@key{PDF}{PDFAFlags}{%
11314   \ifHy@pdfa
11315     \pdf@addtoks{#1}{F}%
11316   \fi
11317 }
11318 % parameter is a name
11319 \define@key{PDF}{AcroHighlight}{%
11320   \begingroup
11321     \edef\x{#1}%
11322     \expandafter\endgroup\ifx\x\@empty
11323     \else
11324       \pdf@addtoks{#1}{H}%
11325     \fi
11326 }
11327 % parameter is a string
11328 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11329 % parameter is a string
11330 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11331 % parameter is a string
11332 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11333 % parameter is a string
11334 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11335 % parameter is a Boolean
11336 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11337 % parameter is a integer or name
11338 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11339 % parameter is a name
11340 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11341 % parameter is a string

```

```

11342 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11343 % parameter is a array
11344 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11345 % parameter is a integer
11346 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11347 % parameter is a name
11348 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11349 % parameter is a string
11350 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11351 % parameter is a string
11352 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11353 % parameter is a string
11354 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11355 % parameter is an array
11356 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11357 % parameter is a string
11358 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11359 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11360 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11361 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11362 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11363 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11364 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11365 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11366 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11367 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11368 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11369 \define@key{PDF}{Trapped}{%
11370   \edef\Hy@temp{#1}%
11371   \ifx\Hy@temp\empty
11372     \else
11373       \pdf@addtoks{/#1}{Trapped}%
11374     \fi
11375 }
11376
11377 </pdfmarkbase>
11378 <*pdfmark>
11379 \def\Acrobatmenu#1#2{%
11380   \Hy@Acrobatmenu{#1}{#2}{%
11381     \pdfmark[{#2}]{%
11382       linktype=menu,%
11383       pdfmark=/ANN,%
11384       AcroHighlight=\@pdfhighlight,%
11385       Border=\@pdfborder,%
11386       BorderStyle=\@pdfborderstyle,%
11387       Action={<< /Subtype /Named /N /#1 >>},%
11388       Subtype=/Link,%
11389       PDFAFlags=4%
11390     }%
11391   }%
11392 }

```

And now for some useful examples:

```

11393 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
11394 \def\PDFNextPage@[#1]#2{%
11395   \pdfmark[{#2}]{%

```

```

11396   #1,%
11397   Border=\@pdfborder,%
11398   BorderStyle=\@pdfborderstyle,%
11399   Color=.2 .1 .5,%
11400   pdfmark=/ANN,%
11401   Subtype=/Link,%
11402   PDFAFlags=4,%
11403   Page=/Next%
11404 }%
11405 }
11406 \def\PDFPreviousPage{%
11407   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11408 }
11409 \def\PDFPreviousPage@[#1]#2{%
11410   \pdfmark[{#2}]{%
11411     #1,%
11412     Border=\@pdfborder,%
11413     BorderStyle=\@pdfborderstyle,%
11414     Color=.4 .4 .1,%
11415     pdfmark=/ANN,%
11416     Subtype=/Link,%
11417     PDFAFlags=4,%
11418     Page=/Prev%
11419   }%
11420 }
11421 \def\PDFOpen#1{%
11422   \pdfmark{#1,pdfmark=/DOCVIEW}%
11423 }

```

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

```

11424 \def\hyper@linkurl#1#2{%
11425   \begingroup
11426     \Hy@pstringdef\Hy@pstringURI{#2}%
11427     \hyper@chars
11428     \leavevmode
11429     \pdfmark[{#1}]{%
11430       pdfmark=/ANN,%
11431       linktype=url,%
11432       AcroHighlight=\@pdfhighlight,%
11433       Border=\@pdfborder,%
11434       BorderStyle=\@pdfborderstyle,%
11435       Color=\@urlbordercolor,%
11436       Action={<<%
11437         /Subtype/URI%
11438         /URI(\Hy@pstringURI)%
11439         \ifHy@href@ismap
11440           /IsMap true%
11441         \fi
11442       >>},%
11443       Subtype=/Link,%
11444       PDFAFlags=4%
11445     }%
11446   \endgroup
11447 }
11448 \def\hyper@linkfile#1#2#3{%
11449   \begingroup
11450     \def\Hy@pstringF{#2}%
11451     \Hy@CleanupFile\Hy@pstringF

```



```

11452 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11453 \Hy@pstringdef\Hy@pstringD{#3}%
11454 \Hy@MakeRemoteAction
11455 \leavevmode
11456 \pdfmark[{#1}]{%
11457   pdfmark=/ANN,%
11458   Subtype=/Link,%
11459   PDFAFlags=4,%
11460   AcroHighlight=\@pdfhighlight,%
11461   Border=\@pdfborder,%
11462   BorderStyle=\@pdfborderstyle,%
11463   linktype=file,%
11464   Color=\@filebordercolor,%
11465   Action={%
11466     <<%
11467       /S/GoToR%
11468       \Hy@SetNewWindow
11469       /F(\Hy@pstringF)%
11470       /D%
11471       \ifx\#3\%
11472         [\Hy@href@page\@pdfremotestartview]%
11473       \else
11474         (\Hy@pstringD)cvn%
11475       \fi
11476       \Hy@href@nextactionraw
11477     >>%
11478   }%
11479 }%
11480 \endgroup
11481 }
11482 \def\@hyper@launch run:#1\#2#3{%
11483 \begingroup
11484 \Hy@pstringdef\Hy@pstringF{#1}%
11485 \Hy@pstringdef\Hy@pstringP{#3}%
11486 \leavevmode
11487 \pdfmark[{#2}]{%
11488   pdfmark=/ANN,%
11489   Subtype=/Link,%
11490   PDFAFlags=4,%
11491   AcroHighlight=\@pdfhighlight,%
11492   Border=\@pdfborder,%
11493   BorderStyle=\@pdfborderstyle,%
11494   linktype=run,%
11495   Color=\@runbordercolor,%
11496   Action={%
11497     <<%
11498       /S/Launch%
11499       \Hy@SetNewWindow
11500       /F(\Hy@pstringF)%
11501       \ifx\#3\%
11502       \else
11503         /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11504       \fi
11505       \Hy@href@nextactionraw
11506     >>%
11507   }%
11508 }%

```

```

11509 \endgroup
11510 }
11511 </pdfmark>

```

Unfortunately, some parts of the pdfmark PostScript code depend on vagaries of the dvi driver. We isolate here all the problems.

## 47.9 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.

```

11512 <*dvips>
11513 \providecommand*\XR@ext>{pdf}
11514 \def\Hy@raisedlink{}
11515 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
11516 \def\headerps@out#1{\special{! #1}}%
11517 \input{pdfmark.def}%
11518 \ifx\@pdfproducer\relax
11519 \def\@pdfproducer{dvips + Distiller}%
11520 \fi
11521 \providecommand*\@pdfborder{0 0 1}
11522 \providecommand*\@pdfborderstyle{}
11523 \providecommand*\@pdfview{XYZ}
11524 \providecommand*\@pdfviewparams{ H.V}
11525 \def\Hy@BorderArrayPatch{BorderArrayPatch}
11526 \g@addto@macro\Hy@FirstPageHook{%
11527 \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.

```

11528 /DvipsToPDF{72.27 mul Resolution div} def%
11529 /PDFToDvips{72.27 div Resolution mul} def%
11530 /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.

```

11531 /BorderArrayPatch{%
11532 [exch{%
11533 dup dup type/integertype eq exch type/realtype eq or%
11534 {BPToDvips}if%
11535 }forall]%
11536 }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.

```

11537 /HyperBorder {1 PDFToDvips} def%
11538 /H.V {pdf@hoff pdf@voff null} def%
11539 /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

```

11540 /H.S {%
11541   currentpoint %
11542   HyperBorder add /pdf@lly exch def %
11543   dup DvipsToPDF 72 add /pdf@hoff exch def %
11544   HyperBorder sub /pdf@llx exch def%
11545 } 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`

```

11546 /H.L {%
11547   2 sub dup%
11548   /HyperBasePt exch def %
11549   PDFToDvips /HyperBaseDvips exch def %
11550   currentpoint %
11551   HyperBaseDvips sub /pdf@ury exch def%
11552   /pdf@urx exch def%
11553 } def%
11554 /H.A {%
11555   H.L %
11556 % |pdf@voff| = the distance from the top of the page to a point
11557 % |\baselineskip| above the current point in PDF coordinates
11558   currentpoint exch pop %
11559   vsize 72 sub exch DvipsToPDF %
11560   HyperBasePt sub % baseline skip
11561   sub /pdf@voff exch def%
11562 } def%
11563 /H.R {%
11564   currentpoint %
11565   HyperBorder sub /pdf@ury exch def %
11566   HyperBorder add /pdf@urx exch def %
11567 % |pdf@voff| = the distance from the top of the page to the current point, in
11568 % PDF coordinates
11569   currentpoint exch pop vsize 72 sub %
11570   exch DvipsToPDF sub /pdf@voff exch def%
11571 } def%
11572 }%
11573 }
11574 \AtBeginShipoutFirst{%
11575   \ifHy@setpagesize
11576     \begingroup
11577     \@ifundefined{stockwidth}{%
11578       \ifdim\paperwidth>\z@
11579         \ifdim\paperheight>\z@
11580           \special{papersize=\the\paperwidth,\the\paperheight}%
11581         \fi
11582       \fi
11583     }{%

```

```

11584 \ifdim\stockwidth>\z@
11585 \ifdim\stockheight>\z@
11586 \special{papersize=\the\stockwidth,\the\stockheight}%
11587 \fi
11588 \fi
11589 }%
11590 \endgroup
11591 \fi
11592 \Hy@DisableOption{setpagesize}%
11593 }
11594 </dvips>

```

## 47.10 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.

```

11595 <*vtexpdfmark>
11596 \providecommand*{\XR@ext}{pdf}
11597 \def\Hy@raisedlink{}
11598 \def\literals@out#1{\special{pS:#1}}%
11599 \def\headerps@out#1{\immediate\special{pS:#1}}%
11600 \input{pdfmark.def}%
11601 \ifx\@pdfproducer\relax
11602 \ifnum\OpMode=\@ne
11603 \def\@pdfproducer{VTeX}%
11604 \else
11605 \def\@pdfproducer{VTeX + Distiller}%
11606 \fi
11607 \fi
11608 \providecommand*\@pdfborder{0 0 1}
11609 \providecommand*\@pdfborderstyle{}
11610 \providecommand*\@pdfview{XYZ}
11611 \providecommand*\@pdfviewparams{H.V}
11612 \g@addto@macro\Hy@FirstPageHook{%
11613 \headerps@out{%
11614 /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.

```

11615 /HyperBorder {1} def%
11616 /H.V {pdf@hoff pdf@voff null} def%
11617 /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11618 /H.S {%
11619 currentpoint %
11620 HyperBorder sub%
11621 /pdf@lly exch def %
11622 dup 72 add /pdf@hoff exch def %
11623 HyperBorder sub%
11624 /pdf@llx exch def%
11625 } def%

```

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

```

11626 /H.L {%
11627   2 sub%
11628 /HyperBasePt exch def %
11629 currentpoint %
11630 HyperBasePt add HyperBorder add%
11631 /pdf@ury exch def %
11632 HyperBorder add%
11633 /pdf@urx exch def%
11634 } def%
11635 /H.A {%
11636   H.L %
11637   currentpoint exch pop %
11638   vsize 72 sub exch %
11639   HyperBasePt add add%
11640   /pdf@voff exch def%
11641 } def%

pdf@ury =  $Y_c + \text{HyperBorder}$ , pdf@urx =  $X_c + \text{HyperBorder}$ 

11642 /H.R {%
11643   currentpoint %
11644   HyperBorder add%
11645   /pdf@ury exch def %
11646   HyperBorder add%
11647   /pdf@urx exch def %
11648   currentpoint exch pop vsize 72 sub add%
11649   /pdf@voff exch def%
11650 } def%
11651 }%
11652 }
11653 </vtxpdfmark>

```

## 47.11 Textures

```

11654 <*textures>
11655 \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.

```

11656 \begingroup
11657   \obeylines %
11658   \gdef\Hy@ps@CR{\noexpand
11659   }%
11660 \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`.

```
11661 \def\literalps@out#1{%
11662   \special{postscript 0 0 transform}%
11663   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11664 }%
11665 %
```

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.

```
11666 \def\headerps@out#1{%
11667   \special{%
11668     prepostscript TeXdict begin\Hy@ps@CR
11669     #1\Hy@ps@CR
11670   end%
11671 }%
11672 }%
11673 %
```

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.

```
11674 \g@addto@macro\Hy@FirstPageHook{%
11675   \headerps@out{%
11676     /betterpdfmark {%
11677       systemdict begin %
11678         dup /BP eq%
11679         {cleartomark gsave nulldevice []%
11680         {dup /EP eq%
11681           {cleartomark cleartomark grestore}%
11682           {cleartomark}%
11683           ifelse%
11684         }ifelse %
11685       end%
11686     }def\Hy@ps@CR
11687     ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11688   }% end of \headerps@out
11689 }% end of \AtBeginShipoutFirst
11690 %
11691 \input{pdfmark.def}%
11692 %
11693 \ifx\@pdfproducer\relax
11694   \def\@pdfproducer{Textures + Distiller}%
11695 \fi
11696 \providecommand*\@pdfborder{0 0 1}
11697 \providecommand*\@pdfborderstyle{}
11698 \providecommand*\@pdfview{XYZ}
11699 \providecommand*\@pdfviewparams{ H.V}
11700 %
```

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  $\TeX$ .

```
11701 \Hy@AtBeginDocument{%
```

```

11702 \headerps@out{%
Textures lives in normal points, I think. So conversion from one coordinate system to
another involves doing nothing.

11703 /vsize {\Hy@pageheight} def%
11704 /DvipsToPDF {} def%
11705 /PDFToDvips {} def%
11706 /BPToDvips {} def%
11707 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11708 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11709 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11710 /H.S {%
11711     currentpoint %
11712     HyperBorder add /pdf@lly exch def %
11713     dup DvipsToPDF 72 add /pdf@hoff exch def %
11714     HyperBorder sub /pdf@llx exch def%
11715 } def\Hy@ps@CR
11716 /H.L {%
11717     2 sub %
11718     PDFToDvips /HyperBase exch def %
11719     currentpoint %
11720     HyperBase sub /pdf@ury exch def%
11721     /pdf@urx exch def%
11722 } def\Hy@ps@CR
11723 /H.A {%
11724     H.L %
11725     currentpoint exch pop %
11726     vsize 72 sub exch DvipsToPDF %
11727     HyperBase sub % baseline skip
11728     sub /pdf@voff exch def%
11729 } def\Hy@ps@CR
11730 /H.R {%
11731     currentpoint %
11732     HyperBorder sub /pdf@ury exch def %
11733     HyperBorder add /pdf@urx exch def %
11734     currentpoint exch pop vsize 72 sub %
11735     exch DvipsToPDF sub /pdf@voff exch def%
11736 } def\Hy@ps@CR
11737 }%
11738 }

11739 \Hy@AtBeginDocument{%
11740 \ifHy@colorlinks
11741 \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11742 \fi
11743 }

```

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.

```

11744 \expandafter\let\expandafter\keepPDF@SetupDoc
11745 \csname PDF@SetupDoc\endcsname
11746 \def\PDF@SetupDoc{%
11747 \ifx\@baseurl\@empty
11748 \else
11749 \special{html:<base href="\@baseurl">}%
11750 \fi
11751 \keepPDF@SetupDoc
11752 }

```

```

11753 \Hy@WrapperDef\hyper@anchor#1{%
11754 \Hy@SaveLastskip
11755 \Hy@VerboseAnchor{#1}%
11756 \begingroup
11757 \let\protect=\string
11758 \special{html:<a name=%
11759 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11760 \endgroup
11761 \Hy@activeanchortrue
11762 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11763 \special{html:</a>}%
11764 \Hy@activeanchorfalse
11765 \Hy@RestoreLastskip
11766 }
11767 \Hy@WrapperDef\hyper@anchorstart#1{%
11768 \Hy@SaveLastskip
11769 \Hy@VerboseAnchor{#1}%
11770 \begingroup
11771 \hyper@chars
11772 \special{html:<a name=%
11773 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11774 \endgroup
11775 \Hy@activeanchortrue
11776 }
11777 \def\hyper@anchorend{%
11778 \special{html:</a>}%
11779 \Hy@activeanchorfalse
11780 \Hy@RestoreLastskip
11781 }
11782 \def\@urltype{url}
11783 \def\hyper@linkstart#1#2{%
11784 \Hy@VerboseLinkStart{#1}{#2}%
11785 \expandafter\Hy@colorlink\csname @#1color\endcsname
11786 \def\Hy@tempa{#1}%
11787 \ifx\Hy@tempa\@urltype
11788 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11789 \else
11790 \begingroup
11791 \hyper@chars
11792 \special{%
11793 html:<a href=%
11794 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>%
11795 }%
11796 \endgroup
11797 \fi
11798 }
11799 \def\hyper@linkend{%
11800 \special{html:</a>}%
11801 \Hy@endcolorlink
11802 }
11803 \def\hyper@linkfile#1#2#3{%
11804 \hyper@linkurl{#1}{%
11805 \Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi
11806 }%
11807 }
11808 \def\hyper@linkurl#1#2{%
11809 \leavevmode

```



```

11810 \ifHy@raiselinks
11811 \Hy@SaveSpaceFactor
11812 \Hy@SaveSavedSpaceFactor
11813 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11814 \Hy@RestoreSavedSpaceFactor
11815 \@linkdim\dp\@tempboxa
11816 \lower\@linkdim\hbox{%
11817   \hyper@chars
11818   \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11819 }%
11820 \Hy@colorlink\@urlcolor
11821 \Hy@RestoreSpaceFactor
11822 #1\Hy@xspace@end
11823 \Hy@SaveSpaceFactor
11824 \@linkdim\ht\@tempboxa
11825 \advance\@linkdim by -6.5\p@
11826 \raise\@linkdim\hbox{\special{html:</a>}}%
11827 \Hy@endcolorlink
11828 \Hy@RestoreSpaceFactor
11829 \else
11830 \begingroup
11831   \hyper@chars
11832   \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11833   \Hy@colorlink\@urlcolor#1\Hy@xspace@end
11834   \special{html:</a>}%
11835   \Hy@endcolorlink
11836 \endgroup
11837 \fi
11838 }

```

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

```

11839 \def\hyper@link#1#2#3{%
11840   \Hy@VerboseLinkStart{#1}{#2}%
11841   \hyper@linkurl{#3}{\#\Hy@DestNameFilter{#2}}%
11842 }
11843 \def\hyper@image#1#2{%
11844   \begingroup
11845     \hyper@chars
11846     \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11847   \endgroup
11848 }
11849 </textures>

```

## 47.12 dvipsone

```

11850 % \subsection{dvipsone driver}
11851 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11852 % |\special| commands.
11853 <*dvipsone>
11854 \providecommand*\XR@ext}{pdf}
11855 \def\Hy@raisedlink{}
11856 \providecommand*\@pdfborder{0 0 1}
11857 \providecommand*\@pdfborderstyle{}
11858 \def\literalps@out#1{\special{ps:#1}}%
11859 \def\headerps@out#1{\special{headertext=#1}}%
11860 \input{pdfmark.def}%
11861 \ifx\@pdfproducer\relax
11862   \def\@pdfproducer{dvipsone + Distiller}%

```

```

11863 \fi
11864 \HyInfo@AddonUnsupportedtrue
11865 \def\PDF@FinishDoc{%
11866   \Hy@UseMaketitleInfos
11867   \HyInfo@TrappedUnsupported
11868   \special{PDF: Keywords \@pdfkeywords}%
11869   \special{PDF: Title \@pdftitle}%
11870   \special{PDF: Creator \@pdfcreator}%
11871   \ifx\@pdfcreationdate\@empty
11872   \else
11873     \special{PDF: CreationDate \@pdfcreationdate}%
11874   \fi
11875   \ifx\@pdfmoddate\@empty
11876   \else
11877     \special{PDF: ModDate \@pdfmoddate}%
11878   \fi
11879   \special{PDF: Author \@pdfauthor}%
11880   \ifx\@pdfproducer\relax
11881   \else
11882     \special{PDF: Producer \@pdfproducer}%
11883   \fi
11884   \special{PDF: Subject \@pdfsubject}%
11885   \Hy@DisableOption{pdfauthor}%
11886   \Hy@DisableOption{pdftitle}%
11887   \Hy@DisableOption{pdfsubject}%
11888   \Hy@DisableOption{pdfcreator}%
11889   \Hy@DisableOption{pdfcreationdate}%
11890   \Hy@DisableOption{pdfmoddate}%
11891   \Hy@DisableOption{pdfproducer}%
11892   \Hy@DisableOption{pdfkeywords}%
11893   \Hy@DisableOption{pdftrapped}%
11894   \Hy@DisableOption{pdfinfo}%
11895 }
11896 \def\PDF@SetupDoc{%
11897   \def\Hy@temp{%
11898     \ifx\@pdfstartpage\@empty
11899     \else
11900       \ifx\@pdfstartview\@empty
11901       \else
11902         \edef\Hy@temp{%
11903           ,Page=\@pdfstartpage
11904           ,View=\@pdfstartview
11905         }%
11906       \fi
11907     \fi
11908     \edef\Hy@temp{%
11909       \noexpand\pdfmark{%
11910         pdfmark=/DOCVIEW,%
11911         PageMode=/\@pdfpagemode
11912       }\Hy@temp
11913     }%
11914   }%
11915   \Hy@temp
11916   \ifx\@pdfpagescrop\@empty
11917   \else
11918     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11919   \fi

```

```

11920 \edef\Hy@temp{%
11921   \ifHy@toolbar\else /HideToolbar true\fi
11922   \ifHy@menubar\else /HideMenubar true\fi
11923   \ifHy>windowui\else /HideWindowUI true\fi
11924   \ifHy@fitwindow /FitWindow true\fi
11925   \ifHy@centerwindow /CenterWindow true\fi
11926   \ifHy@displaydoctitle /DisplayDocTitle true\fi
11927   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11928   \Hy@UseNameKey{Direction}\@pdfdirection
11929   \Hy@UseNameKey{ViewArea}\@pdfviewarea
11930   \Hy@UseNameKey{ViewClip}\@pdfviewclip
11931   \Hy@UseNameKey{PrintArea}\@pdfprintarea
11932   \Hy@UseNameKey{PrintClip}\@pdfprintclip
11933   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11934   \Hy@UseNameKey{Duplex}\@pdfduplex
11935   \ifx\@pdfpicktraybypdfsize\@empty
11936   \else
11937     /PickTrayByPDFSize \@pdfpicktraybypdfsize
11938   \fi
11939   \ifx\@pdfprintpagerange\@empty
11940   \else
11941     /PrintPageRange[\@pdfprintpagerange]%
11942   \fi
11943   \ifx\@pdfnumcopies\@empty
11944   \else
11945     /NumCopies \@pdfnumcopies
11946   \fi
11947 }%
11948 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11949 \pdfmark{%
11950   pdfmark=/PUT,%
11951   Raw={%
11952     \string{Catalog}\string}<<%
11953     \ifx\Hy@temp\@empty
11954     \else
11955       /ViewerPreferences<<\Hy@temp>>%
11956     \fi
11957     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11958     \ifx\@pdflang\@empty
11959     \else
11960       /Lang(\@pdflang)%
11961     \fi
11962     \ifx\@baseurl\@empty
11963     \else
11964       /URI<</Base(\Hy@pstringB)>>%
11965     \fi
11966     >>%
11967   }%
11968 }%
11969 }
11970 \providecommand*\@pdfview{XYZ}
11971 \providecommand*\@pdfviewparams{ %
11972   gsave revscl currentpoint grestore %
11973   72 add exch pop null exch null%
11974 }
11975 \def\Hy@BorderArrayPatch{BorderArrayPatch}

```

These are called at the start and end of unboxed links; their job is to leave available PS

variables called pdf@llx pdf@lly pdf@urx pdf@ury, which are the coordinates of the bounding rectangle of the link, and pdf@hoff pdf@voff which are the PDF page offsets. These latter are currently not used in the dvipsone setup. The Rect pair are called at the LL and UR corners of a box known to  $\TeX$ .

```
11976 \g@addto@macro\Hy@FirstPageHook{%
11977   \headerps@out{%
```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```
11978   /DvipsToPDF { 65781 div } def%
11979   /PDFToDvips { 65781 mul } def%
11980   /BPToDvips{65781 mul}def%
11981   /HyperBorder { 1 PDFToDvips } def%
11982   /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.

```
11983   /BorderArrayPatch{%
11984     [exch{%
11985       dup dup type/integertype eq exch type/realtype eq or%
11986       {BPToDvips}if%
11987     }forall]%
11988   }def%

11989   /H.S {%
11990     currentpoint %
11991     HyperBorder add /pdf@lly exch def %
11992     dup DvipsToPDF 72 add /pdf@hoff exch def %
11993     HyperBorder sub /pdf@llx exch def%
11994   } def%

11995   /H.L {%
11996     2 sub %
11997     PDFToDvips /HyperBase exch def %
11998     currentpoint %
11999     HyperBase sub /pdf@ury exch def%
12000     /pdf@urx exch def%
12001   } def%

12002   /H.A {%
12003     H.L %
12004     currentpoint exch pop %
12005     HyperBase sub % baseline skip
12006     DvipsToPDF /pdf@voff exch def%
12007   } def%

12008   /H.R {%
12009     currentpoint %
12010     HyperBorder sub /pdf@ury exch def %
12011     HyperBorder add /pdf@urx exch def %
12012     currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12013   } def%
12014   }%
12015 }
12016 \</dvipsone>
```

## 47.13 TeX4ht

```
12017 \<*tex4ht>
12018 \providecommand*\XR@ext>{html}
12019 \def\Hy@raisedlink{}
12020 \@ifpackageloaded{tex4ht}{%
12021   \Hy@InfoNoLine{tex4ht is already loaded}%
```

```

12022 }{%
12023   \RequirePackage[htex4ht]{tex4ht}%
12024 }
12025 \hyperlinkfileprefix{}
12026 \def\PDF@FinishDoc{}
12027 \def\PDF@SetupDoc{%
12028   \ifx\@baseurl\@empty
12029   \else
12030     \special{t4ht=<base href="\@baseurl">}%
12031   \fi
12032 }
12033 \Hy@WrapperDef\hyper@anchor#1{%
12034   \Hy@SaveLastskip
12035   \Hy@VerboseAnchor{#1}%
12036   \begingroup
12037     \let\protect=\string
12038     \special{t4ht=<a name=%
12039       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12040   \endgroup
12041   \Hy@activeanchortrue
12042   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12043   \special{t4ht=</a>}%
12044   \Hy@activeanchorfalse
12045   \Hy@RestoreLastskip
12046 }
12047 \Hy@WrapperDef\hyper@anchorstart#1{%
12048   \Hy@SaveLastskip
12049   \Hy@VerboseAnchor{#1}%
12050   \begingroup
12051     \hyper@chars\special{t4ht=<a name=%
12052       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12053   \endgroup
12054   \Hy@activeanchortrue
12055 }
12056 \def\hyper@anchorend{%
12057   \special{t4ht=</a>}%
12058   \Hy@activeanchorfalse
12059   \Hy@RestoreLastskip
12060 }
12061 \def\@urltype{url}
12062 \def\hyper@linkstart#1#2{%
12063   \Hy@VerboseLinkStart{#1}{#2}%
12064   \expandafter\Hy@colorlink\csname @#1color\endcsname
12065   \def\Hy@tempa{#1}%
12066   \ifx\Hy@tempa\@urltype
12067     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12068   \else
12069     \begingroup
12070       \hyper@chars
12071       \special{t4ht=<a href=%
12072         \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
12073     \endgroup
12074   \fi
12075 }
12076 \def\hyper@linkend{%
12077   \special{t4ht=</a>}%
12078   \Hy@endcolorlink

```

```

12079 }
12080 \def\hyper@linkfile#1#2#3{%
12081   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
12082 }
12083 \def\hyper@linkurl#1#2{%
12084   \leavevmode
12085   \ifHy@raiselinks
12086     \Hy@SaveSpaceFactor
12087     \Hy@SaveSavedSpaceFactor
12088     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12089     \Hy@RestoreSavedSpaceFactor
12090     \@linkdim\dp\@tempboxa
12091     \lower\@linkdim\hbox{%
12092       \begingroup
12093       \hyper@chars
12094       \special{%
12095         t4ht=<a href=\hyper@quote#2\hyper@quote>%
12096       }%
12097       \endgroup
12098     }%
12099     \Hy@colorlink\@urlcolor
12100     \Hy@RestoreSpaceFactor
12101     #1\Hy@xspace@end
12102     \Hy@SaveSpaceFactor
12103     \Hy@endcolorlink
12104     \@linkdim\ht\@tempboxa
12105     \advance\@linkdim by -6.5\p@
12106     \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12107     \Hy@RestoreSpaceFactor
12108   \else
12109     \begingroup
12110     \hyper@chars
12111     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12112     \Hy@colorlink\@urlcolor
12113     #1\Hy@xspace@end
12114     \Hy@endcolorlink
12115     \special{t4ht=</a>}%
12116   \endgroup
12117 \fi
12118 }

```

Poor implementation of \hyper@link without considering #1.

```

12119 \def\hyper@link#1#2#3{%
12120   \Hy@VerboseLinkStart{#1}{#2}%
12121   \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
12122 }
12123 \def\hyper@image#1#2{%
12124   \begingroup
12125   \hyper@chars
12126   \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12127   \endgroup
12128 }
12129 \let\autoref\ref
12130 \ifx \rEfLiNK \UnDef
12131   \def\rEfLiNK #1#2{#2}%
12132 \fi
12133 \def\backref#1{}

```

Fix for tex4ht.

```

12134 \AtBeginDocument{%
12135   \expandafter\let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12136   \expandafter\def\csname Make:Label\endcsname#1#2{%
12137     \ifhmode
12138       \Hy@SaveSpaceFactor
12139     \else
12140       \global\Hy@SavedSpaceFactor=1000 %
12141     \fi
12142     \Hy@OrgMakeLabel{#1}{%
12143       \Hy@RestoreSpaceFactor
12144       #2\Hy@xspace@end%
12145       \Hy@SaveSpaceFactor
12146     }%
12147     \Hy@RestoreSpaceFactor
12148   }%
12149 }
12150 </tex4ht>
12151 <*tex4htcfg>
12152 \IfFileExists{\jobname.cfg}{\endinput}{}
12153 \Preamble{html}
12154   \begin{document}%
12155 \EndPreamble
12156 \def\TeX{\TeX}
12157 \def\OMEGA{\Omega}
12158 \def\LaTeX{\LaTeX}
12159 \def\LaTeXe{\LaTeX2e}
12160 \def\TeXe{\TeX}
12161 \def\MF{Metafont}
12162 \def\MP{MetaPost}
12163 </tex4htcfg>

```

## 48 Driver-specific form support

### 48.1 pdfmarks

```

12164 <*pdfmark>
12165 \long\def\@Form[#1]{%
12166   \g@addto@macro\Hy@FirstPageHook{%
12167     \headerps@out{%
12168 [%
12169   /_objdef{pdfDocEncoding}%
12170   /type/dict%
12171   /OBJ pdfmark%
12172 [%
12173     {pdfDocEncoding}%
12174     <<%
12175       /Type/Encoding%
12176       /Differences[%
12177         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12178         /tilde %
12179         39/quotesingle %
12180         96/grave %
12181         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12182         /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12183         /quotedblbase/quotedblleft/quotedblright/quoteleft%
12184         /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
12185         /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12186         164/currency %

```

12187 166/brokenbar %  
12188 168/dieresis/copyright/ordfeminine %  
12189 172/logicalnot/.notdef/registered/macron/degree/plusminus%  
12190 /twosuperior/threesuperior/acute/mu %  
12191 183/periodcentered/cedilla/onesuperior/ordmasculine %  
12192 188/onequarter/onehalf/threequarters %  
12193 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%  
12194 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%  
12195 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%  
12196 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%  
12197 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%  
12198 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%  
12199 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%  
12200 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%  
12201 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%  
12202 /ucircumflex/udieresis/yacute/thorn/ydieresis%  
12203 ]%  
12204 >>%  
12205 /PUT pdfmark%  
12206 [%  
12207 /\_\_objdef{ZaDb}%  
12208 /type/dict%  
12209 /OBJ pdfmark%  
12210 [%  
12211 {ZaDb}%  
12212 <<%  
12213 /Type/Font%  
12214 /Subtype/Type1%  
12215 /Name/ZaDb%  
12216 /BaseFont/ZapfDingbats%  
12217 >>%  
12218 /PUT pdfmark%  
12219 [%  
12220 /\_\_objdef{Helv}%  
12221 /type/dict%  
12222 /OBJ pdfmark%  
12223 [%  
12224 {Helv}%  
12225 <<%  
12226 /Type/Font%  
12227 /Subtype/Type1%  
12228 /Name/Helv%  
12229 /BaseFont/Helvetica%  
12230 /Encoding{pdfDocEncoding}%  
12231 >>%  
12232 /PUT pdfmark%  
12233 [%  
12234 /\_\_objdef{aform}%  
12235 /type/dict%  
12236 /OBJ pdfmark%  
12237 [%  
12238 /\_\_objdef{afields}%  
12239 /type/array%  
12240 /OBJ pdfmark%  
12241 {%  
12242 [%  
12243 /BBox[0 0 100 100]%



```

12244  /_objdef{Check}%
12245  /BP pdfmark %
12246  1 0 0 setrgbcolor%
12247  /ZapfDingbats 80 selectfont %
12248  20 20 moveto%
12249  (4)show%
12250  [/EP pdfmark%
12251  [%
12252  /BBox[0 0 100 100]%
12253  /_objdef{Cross}%
12254  /BP pdfmark %
12255  1 0 0 setrgbcolor%
12256  /ZapfDingbats 80 selectfont %
12257  20 20 moveto%
12258  (8)show%
12259  [/EP pdfmark%
12260  [%
12261  /BBox[0 0 250 100]%
12262  /_objdef{Submit}%
12263  /BP pdfmark %
12264  0.6 setgray %
12265  0 0 250 100 rectfill %
12266  1 setgray %
12267  2 2 moveto %
12268  2 98 lineto %
12269  248 98 lineto %
12270  246 96 lineto %
12271  4 96 lineto %
12272  4 4 lineto %
12273  fill %
12274  0.34 setgray %
12275  248 98 moveto %
12276  248 2 lineto %
12277  2 2 lineto %
12278  4 4 lineto %
12279  246 4 lineto %
12280  246 96 lineto %
12281  fill%
12282  /Helvetica 76 selectfont %
12283  0 setgray %
12284  8 22.5 moveto%
12285  (Submit)show%
12286  [/EP pdfmark%
12287  [%
12288  /BBox[0 0 250 100]%
12289  /_objdef{SubmitP}%
12290  /BP pdfmark %
12291  0.6 setgray %
12292  0 0 250 100 rectfill %
12293  0.34 setgray %
12294  2 2 moveto %
12295  2 98 lineto %
12296  248 98 lineto %
12297  246 96 lineto %
12298  4 96 lineto %
12299  4 4 lineto %
12300  fill %

```

```

12301 1 setgray %
12302 248 98 moveto %
12303 248 2 lineto %
12304 2 2 lineto %
12305 4 4 lineto %
12306 246 4 lineto %
12307 246 96 lineto %
12308 fill%
12309 /Helvetica 76 selectfont %
12310 0 setgray %
12311 10 20.5 moveto%
12312 (Submit)show%
12313 [/EP pdfmark%
12314 } ?pdfmark%
12315 [%
12316 {aform}%
12317 <<%
12318 /Fields{afields}%
12319 /DR<<%
12320 /Font<<%
12321 /ZaDb{ZaDb}%
12322 /Helv{Helv}%
12323 >>%
12324 >>%
12325 /DA(/Helv 10 Tf 0 g)%
12326 /CO{corder}%
12327 \ifHy@pdfa
12328 \else
12329 \ifHyField@NeedAppearances
12330 /NeedAppearances true%
12331 \fi
12332 \fi
12333 >>%
12334 /PUT pdfmark%
12335 [%
12336 {Catalog}%
12337 <<%
12338 /AcroForm{aform}%
12339 >>%
12340 /PUT pdfmark%
12341 [%
12342 /__objdef{corder}%
12343 /type/array%
12344 /OBJ pdfmark% dps
12345 }}%
12346 \kvsetkeys{Form}{#1}%
12347 }
12348 \def\@endForm{}
12349 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12350 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12351 }
12352 \def\@TextField[#1]#2{% parameters, label
12353 \def\Fld@name{#2}%
12354 \def\Fld@default{}%
12355 \let\Fld@value\@empty
12356 \def\Fld@width{\DefaultWidthofText}%
12357 \def\Fld@height{%

```

```

12358 \ifFld@multiline
12359 \DefaultHeightofTextMultiline
12360 \else
12361 \DefaultHeightofText
12362 \fi
12363 }%
12364 \begingroup
12365 \expandafter\HyField@SetKeys\expandafter{%
12366 \DefaultOptionsofText,#1%
12367 }%
12368 \HyField@FlagsText
12369 \ifFld@hidden\def\Fld@width{1sp}\fi
12370 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12371 \LayoutTextField{#2}{%
12372 \Hy@escapeform\PDFForm@Text
12373 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12374 pdfmark=/ANN,Raw={\PDFForm@Text}%
12375 }%
12376 }%
12377 \endgroup
12378 }
12379 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12380 \def\Fld@name{#2}%
12381 \let\Fld@default\relax
12382 \let\Fld@value\relax
12383 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12384 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12385 \begingroup
12386 \Fld@menulength=0 %
12387 \@tempdima\z@
12388 \@for\@curropt:=#3\do{%
12389 \expandafter\Fld@checkequals\@curropt==\\%
12390 \Hy@StepCount\Fld@menulength
12391 \settowidth{\@tempdimb}{\@currDisplay}%
12392 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12393 }%
12394 \advance\@tempdima by 15\p@
12395 \begingroup
12396 \HyField@SetKeys{#1}%
12397 \edef\x{\endgroup
12398 \noexpand\expandafter
12399 \noexpand\HyField@SetKeys
12400 \noexpand\expandafter{%
12401 \expandafter\noexpand\csname DefaultOptionsof%
12402 \ifFld@radio
12403 Radio%
12404 \else
12405 \ifFld@combo
12406 \ifFld@popdown
12407 PopdownBox%
12408 \else
12409 ComboBox%
12410 \fi
12411 \else
12412 ListBox%
12413 \fi
12414 \fi

```

```

12415     \endcsname
12416   }%
12417 } \x
12418 \HyField@SetKeys{#1}%
12419 \ifFld@hidden\def\Fld@width{1sp}\fi
12420 \ifx\Fld@value\relax
12421   \let\Fld@value\Fld@default
12422 \fi
12423 \LayoutChoiceField{#2}{%
12424   \ifFld@radio
12425     \HyField@FlagsRadioButton
12426     \@@Radio{#3}%
12427   \else
12428     \beginngroup
12429     \HyField@FlagsChoice
12430     \ifdim\Fld@width<\@tempdima
12431       \ifdim\@tempdima<1cm\@tempdima1cm\fi
12432       \edef\Fld@width{\the\@tempdima}%
12433     \fi
12434     \ifFld@combo
12435     \else
12436       \@tempdima=\the\Fld@menulength\Fld@charsize
12437       \advance\@tempdima by \Fld@borderwidth bp %
12438       \advance\@tempdima by \Fld@borderwidth bp %
12439       \edef\Fld@height{\the\@tempdima}%
12440     \fi
12441     \@@ListBox{#3}%
12442   \endgroup
12443 \fi
12444 }%
12445 \endgroup
12446 }
12447 \def\@@Radio#1{%
12448   \Fld@listcount=0 %
12449   \EdefEscapeName\Fld@default{\Fld@default}%
12450   \@for\@curropt=#1\do{%
12451     \expandafter\Fld@checkequals\@curropt==\%
12452     \EdefEscapeName\@currValue{\@currValue}%
12453     \Hy@StepCount\Fld@listcount
12454     \@currDisplay\space
12455     \Hy@escapeform\PDFForm@Radio
12456     \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12457       pdfmark=/ANN,%
12458       Raw={%
12459         \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12460       }%
12461     } % deliberate space between radio buttons
12462   }%
12463 }
12464 \newcount\Fld@listcount
12465 \def\@@ListBox#1{%
12466   \HyField@PDFChoices{#1}%
12467   \Hy@escapeform\PDFForm@List
12468   \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12469     pdfmark=/ANN,Raw={\PDFForm@List}%
12470   }%
12471 }

```

```

12472 \def\@PushButton[#1]#2{% parameters, label
12473   \def\Fld@name{#2}%
12474   \begingroup
12475     \expandafter\HyField@SetKeys\expandafter{%
12476       \DefaultOptionsofPushButton,#1%
12477     }%
12478     \ifHy@pdfa
12479       \Hy@Error{%
12480         PDF/A: Push button with JavaScript is prohibited%
12481       }\@ehc
12482       \LayoutPushButtonField{%
12483         \leavevmode
12484         \MakeButtonField{#2}%
12485       }%
12486     \else
12487       \HyField@FlagsPushButton
12488       \ifFld@hidden\def\Fld@width{1sp}\fi
12489       \LayoutPushButtonField{%
12490         \leavevmode
12491         \Hy@escapeform\PDFForm@Push
12492         \pdfmark[\MakeButtonField{#2}]{%
12493           pdfmark=/ANN,Raw={\PDFForm@Push}%
12494         }%
12495       }%
12496     \fi
12497   \endgroup
12498 }
12499 \def\@Submit[#1]#2{%
12500   \def\Fld@width{\DefaultWidthofSubmit}%
12501   \def\Fld@height{\DefaultHeightofSubmit}%
12502   \begingroup
12503     \expandafter\HyField@SetKeys\expandafter{%
12504       \DefaultOptionsofSubmit,#1%
12505     }%
12506     \HyField@FlagsPushButton
12507     \HyField@FlagsSubmit
12508     \ifFld@hidden\def\Fld@width{1sp}\fi
12509     \Hy@escapeform\PDFForm@Submit
12510     \pdfmark[\MakeButtonField{#2}]{%
12511       pdfmark=/ANN,%
12512       Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
12513     }%
12514   \endgroup
12515 }
12516 \def\@Reset[#1]#2{%
12517   \def\Fld@width{\DefaultWidthofReset}%
12518   \def\Fld@height{\DefaultHeightofReset}%
12519   \begingroup
12520     \expandafter\HyField@SetKeys\expandafter{%
12521       \DefaultOptionsofReset,#1%
12522     }%
12523     \leavevmode
12524     \ifHy@pdfa
12525       \Hy@Error{%
12526         PDF/A: Reset action is prohibited%
12527       }\@ehc
12528       \MakeButtonField{#2}%

```

```

12529 \else
12530 \HyField@FlagsPushButton
12531 \ifFld@hidden\def\Fld@width{1sp}\fi
12532 \Hy@escapeform\PDFForm@Reset
12533 \pdfmark[\MakeButtonField{#2}]{%
12534 pdfmark=/ANN,Raw={\PDFForm@Reset}%
12535 }%
12536 \fi
12537 \endgroup
12538 }%
12539 \def\@CheckBox[#1]#2{% parameters, label
12540 \def\Fld@name{#2}%
12541 \def\Fld@default{0}%
12542 \begingroup
12543 \def\Fld@width{\DefaultWidthofCheckBox}%
12544 \def\Fld@height{\DefaultHeightofCheckBox}%
12545 \expandafter\HyField@SetKeys\expandafter{%
12546 \DefaultOptionsofCheckBox,#1%
12547 }%
12548 \HyField@FlagsCheckBox
12549 \ifFld@hidden\def\Fld@width{1sp}\fi
12550 \LayoutCheckField{#2}{%
12551 \Hy@escapeform\PDFForm@Check
12552 \pdfmark[\MakeCheckField{Fld@width}{Fld@height}]{%
12553 pdfmark=/ANN,Raw={\PDFForm@Check}%
12554 }%
12555 }%
12556 \endgroup
12557 }
12558 \pdfmark

```

## 48.2 HyperTeX

```

12559 \hypertex
12560 \def\@Form[#1]{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12561 \def\@endForm{}
12562 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12563 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12564 }
12565 \def\@TextField[#1]#2{% parameters, label
12566 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12567 }
12568 \def\@CheckBox[#1]#2{% parameters, label
12569 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12570 }
12571 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12572 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12573 }
12574 \def\@PushButton[#1]#2{% parameters, label
12575 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12576 }
12577 \def\@Reset[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12578 \def\@Submit[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12579 \hypertex

```

## 48.3 TeX4ht

```

12580 \tex4ht
12581 \def\@Form[#1]{%

```

```

12582 \kvsetkeys{Form}{#1}%
12583 \HCode{<form action="\Form@action" method="\Form@method">}%
12584 }
12585 \def\@endForm{\HCode{</form>}}
12586 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12587 \Hy@Message{Sorry, TeX4ht does not support gauges}%
12588 }
12589 \def\@TextField[#1]#2{% parameters, label
12590 \let\Hy@reserved@a\@empty
12591 \def\Fld@name{#2}%
12592 \def\Fld@default{}%
12593 \bgroup
12594 \Field@toks={ }%
12595 \kvsetkeys{Field}{#1}%
12596 \HCode{<label for="\Fld@name">#2</label>}%
12597 \ifFld@password
12598 \@@PasswordField
12599 \else
12600 \@@TextField
12601 \fi
12602 \egroup
12603 }
12604 \def\@@PasswordField{%
12605 \HCode{%
12606 <input type="password" %
12607 id="\Fld@name" %
12608 name="\Fld@name" %
12609 \ifFld@hidden type="hidden" \fi
12610 value="\Fld@default" %
12611 \the\Field@toks
12612 >%
12613 }%
12614 }
12615 \def\@@TextField{%
12616 \ifFld@multiline
12617 \HCode{<textarea %
12618 \ifFld@readonly readonly \fi
12619 id="\Fld@name" %
12620 name="\Fld@name" %
12621 \ifFld@hidden type="hidden" \fi
12622 \the\Field@toks>%
12623 }%
12624 \Fld@default
12625 \HCode{</textarea>}%
12626 \else
12627 \HCode{<input type="text" %
12628 \ifFld@readonly readonly \fi
12629 id="\Fld@name" %
12630 name="\Fld@name" %
12631 \ifFld@hidden type="hidden" \fi
12632 value="\Fld@default" %
12633 \the\Field@toks>%
12634 }%
12635 \fi
12636 }
12637 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12638 \def\Fld@name{#2}%

```

```

12639 \def\Fld@default{ }%
12640 \let\Hy@reserved@a\relax
12641 \begingroup
12642 \expandafter\Fld@findlength#3\\%
12643 \Fld@toks={ }%
12644 \kvsetkeys{Fld}{#1}%
12645 #2%
12646 \ifFld@radio
12647 \expandafter\@@Radio#3\\%
12648 \else
12649 \expandafter\@@Menu#3\\%
12650 \fi
12651 \endgroup
12652 }
12653 \def\Fld@findlength#1\\{%
12654 \Fld@menulength=0 %
12655 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12656 }
12657 \def\@@Menu#1\\{%
12658 \HCode{<select size="\the\Fld@menulength" %
12659 name="\Fld@name" %
12660 \the\Fld@toks>%
12661 }%
12662 \@for\@curropt:=#1\do{%
12663 \expandafter\Fld@checkequals\@curropt==\\%
12664 \HCode{<option %
12665 \ifx\@curropt\Fld@default selected \fi
12666 value="\@currValue">\@currDisplay</option>%
12667 }%
12668 }%
12669 \HCode{</select>}%
12670 }
12671 \def\@@Radio#1\\{%
12672 \@for\@curropt:=#1\do{%
12673 \expandafter\Fld@checkequals\@curropt==\\%
12674 \HCode{<input type="radio" %
12675 \ifx\@curropt\Fld@default checked \fi
12676 name="\Fld@name" %
12677 value="\@currValue" %
12678 \the\Fld@toks>%
12679 }%
12680 \@currDisplay
12681 }%
12682 }
12683 \def\@PushButton[#1]#2{% parameters, label
12684 \def\Fld@name{#2}%
12685 \bgroup
12686 \Fld@toks={ }%
12687 \kvsetkeys{Fld}{#1}%
12688 \HCode{<input type="button" %
12689 name="\Fld@name" %
12690 value="#2" %
12691 \the\Fld@toks>%
12692 }%
12693 \HCode{</button>}%
12694 \egroup
12695 }

```



```

12696 \def\@Submit[#1]#2{%
12697   \HCode{<button type="submit">#2</button>}%
12698 }
12699 \def\@Reset[#1]#2{%
12700   \HCode{<button type="reset">#2</button>}%
12701 }
12702 \def\@CheckBox[#1]#2{% parameters, label
12703   \let\Hy@reserved@a\@empty
12704   \def\Fld@name{#2}%
12705   \def\Fld@default{0}%
12706   \bgroup
12707     \Field@toks={ }%
12708     \kvsetkeys{Field}{#1}%
12709     \HCode{<input type="checkbox" %
12710       \ifFld@checked checked \fi
12711       \ifFld@disabled disabled \fi
12712       \ifFld@readonly readonly \fi
12713       name="\Fld@name" %
12714       \ifFld@hidden type="hidden" \fi
12715       value="\Fld@default" %
12716       \the\Field@toks>%
12717     #2%
12718   }%
12719   \egroup
12720 }
12721 </tex4ht>

```

## 48.4 pdfTeX

```

12722 <*pdftex>
12723 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12724   \Hy@Message{Sorry, pdftex does not support FORM gauges}%
12725 }
12726 \def\MakeFieldObject#1#2{\sbox0{#1}%
12727   \immediate\pdfxform0 %
12728   \expandafter\edef\csname #2Object\endcsname{%
12729     \the\pdfastxform\space 0 R%
12730   }%
12731   % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}%
12732 }%
12733 \def\HyField@afields{}
12734 \begingroup\expandafter\expandafter\expandafter\endgroup
12735 \expandafter\ifx\csname pdfastlink\endcsname\relax
12736   \let\HyField@AddToFields\relax
12737   \PackageInfo{hyperref}{%
12738     You need pdfTeX 1.40.0 for setting the /Fields entry.%
12739     \MessageBreak
12740     Adobe Reader/Acrobat accepts an empty /Field array,%
12741     \MessageBreak
12742     but other PDF viewers might complain%
12743   }%
12744 \else
12745   \def\HyField@AuxAddToFields#1{%
12746     \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%
12747     \Hy@AtBeginDocument{%
12748       \if@filesw
12749         \immediate\write\@mainaux{%
12750           \string\providecommand\string\HyField@AuxAddToFields[1]{}%

```

```

12751 }%
12752 \fi
12753 \let\HyField@AfterAuxOpen\@firstofone
12754 \def\HyField@AuxAddToFields#1{%
12755   \xdef\HyField@afields{%
12756     \ifx\HyField@afields\@empty
12757       \else
12758         \HyField@afields
12759       \space
12760     \fi
12761     #1 0 R%
12762   }%
12763 }%
12764 }%
12765 \def\HyField@AddToFields{%
12766   \expandafter\HyField@@AddToFields\expandafter{%
12767     \the\pdfastlink
12768   }%
12769 }%
12770 \def\HyField@@AddToFields#1{%
12771   \HyField@AfterAuxOpen{%
12772     \if@filesw
12773       \write\@mainaux{%
12774         \string\HyField@AuxAddToFields{#1}%
12775       }%
12776     \fi
12777   }%
12778 }%
12779 \fi
12780 \def\@Form[#1]{%
12781   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12782   \kvsetkeys{Form}{#1}%
12783   \pdf@ifdraftmode{}{%
12784     \Hy@FormObjects
12785     \ifnum\pdfTeXversion>13 %
12786       \pdfrefobj\OBJ@pdfdocencoding
12787       \pdfrefobj\OBJ@ZaDb
12788       \pdfrefobj\OBJ@Helv
12789     \fi
12790     \AtVeryEndDocument{%
12791       \immediate\pdfobj{%
12792         <<%
12793           /Fields[\HyField@afields]%
12794           /DR<<%
12795             /Font<<%
12796               /ZaDb \OBJ@ZaDb\space 0 R%
12797               /Helv \OBJ@Helv\space 0 R%
12798             >>%
12799           >>%
12800           /DA(/Helv 10 Tf 0 g)%
12801           \ifHy@pdfa
12802           \else
12803             \ifHyField@NeedAppearances
12804               /NeedAppearances true%
12805             \fi
12806           \fi
12807           >>%

```

```

12808 }%
12809 \edef\OBJ@acroform{\the\pdfiastobj}%
12810 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
12811 }%
12812 }%
12813 \MakeFieldObject{%

Same as \ding{123} of package pifont.
12814 \beginngroup
12815 \fontfamily{pzd}%
12816 \fontencoding{U}%
12817 \fontseries{m}%
12818 \fontshape{n}%
12819 \selectfont
12820 \char123 %
12821 \endgroup
12822 }{Ding}%
12823 \MakeFieldObject{%
12824 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
12825 }{Submit}%
12826 \MakeFieldObject{%
12827 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
12828 }{SubmitP}%
12829 }
12830 \def\@endForm{}
12831 \def\@TextField[#1]#2{% parameters, label
12832 \def\Fld@name{#2}%
12833 \def\Fld@default{}%
12834 \let\Fld@value\@empty
12835 \def\Fld@width{\DefaultWidthofText}%
12836 \def\Fld@height{%
12837 \ifFld@multiline
12838 \DefaultHeightofTextMultiline
12839 \else
12840 \DefaultHeightofText
12841 \fi
12842 }%
12843 \beginngroup
12844 \expandafter\HyField@SetKeys\expandafter{%
12845 \DefaultOptionsofText,#1%
12846 }%
12847 \PDFForm@Name
12848 \HyField@FlagsText
12849 \ifFld@hidden\def\Fld@width{1sp}\fi
12850 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12851 \LayoutTextField{#2}{%
12852 \Hy@escapeform\PDFForm@Text
12853 \pdfstartlink user {\PDFForm@Text}\relax
12854 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
12855 \HyField@AddToFields
12856 }%
12857 \endgroup
12858 }
12859 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12860 \def\Fld@name{#2}%
12861 \let\Fld@default\relax
12862 \let\Fld@value\relax
12863 \def\Fld@width{\DefaultWidthofChoiceMenu}%

```

```

12864 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12865 \begingroup
12866 \Fld@menulength=0 %
12867 \@tempdima\z@
12868 \@for\@curropt:=#3\do{%
12869 \expandafter\Fld@checkequals\@curropt==\%
12870 \Hy@StepCount\Fld@menulength
12871 \settowidth{\@tempdimb}{\@currDisplay}%
12872 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12873 }%
12874 \advance\@tempdima by 15\p@
12875 \begingroup
12876 \HyField@SetKeys{#1}%
12877 \edef\x{\endgroup
12878 \noexpand\expandafter
12879 \noexpand\HyField@SetKeys
12880 \noexpand\expandafter{%
12881 \expandafter\noexpand\csname DefaultOptionsof%
12882 \ifFld@radio
12883 Radio%
12884 \else
12885 \ifFld@combo
12886 \ifFld@popdown
12887 PopdownBox%
12888 \else
12889 ComboBox%
12890 \fi
12891 \else
12892 ListBox%
12893 \fi
12894 \fi
12895 \endcsname
12896 }%
12897 }\x
12898 \HyField@SetKeys{#1}%
12899 \PDFForm@Name
12900 \ifFld@hidden\def\Fld@width{1sp}\fi
12901 \ifx\Fld@value\relax
12902 \let\Fld@value\Fld@default
12903 \fi
12904 \LayoutChoiceField{#2}{%
12905 \ifFld@radio
12906 \HyField@FlagsRadioButton
12907 \@@Radio{#3}%
12908 \else
12909 \begingroup
12910 \HyField@FlagsChoice
12911 \ifdim\Fld@width<\@tempdima
12912 \ifdim\@tempdima<1cm\@tempdima1cm\fi
12913 \edef\Fld@width{\the\@tempdima}%
12914 \fi
12915 \ifFld@combo
12916 \else
12917 \@tempdima=\the\Fld@menulength\Fld@charsize
12918 \advance\@tempdima by \Fld@borderwidth bp %
12919 \advance\@tempdima by \Fld@borderwidth bp %
12920 \edef\Fld@height{\the\@tempdima}%

```

```

12921      \fi
12922      \@@ListBox{#3}%
12923      \endgroup
12924      \fi
12925      }%
12926      \endgroup
12927      }
12928      \def\@@Radio#1{%
12929      \Fld@listcount=0 %
12930      \EdefEscapeName\Fld@default{\Fld@default}%
12931      \@for\@curropt:=#1\do{%
12932      \expandafter\Fld@checkequals\@curropt==\\%
12933      \EdefEscapeName\@currValue{\@currValue}%
12934      \Hy@StepCount\Fld@listcount
12935      \@currDisplay\space
12936      \leavevmode
12937      \Hy@escapeform\PDFForm@Radio
12938      \pdfstartlink user {%
12939      \PDFForm@Radio
12940      /AP<<%
12941      /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.

```

12942      /\@currValue\space \DingObject
12943      >>%
12944      >>%
12945      }%
12946      \relax
12947      \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
12948      \ifnum\Fld@listcount=1 %
12949      \HyField@AddToFields
12950      \fi
12951      \space % deliberate space between radio buttons
12952      }%
12953      }
12954      \newcount\Fld@listcount
12955      \def\@@ListBox#1{%
12956      \HyField@PDFChoices{#1}%
12957      \leavevmode
12958      \Hy@escapeform\PDFForm@List
12959      \pdfstartlink user {\PDFForm@List}\relax
12960      \MakeChoiceField{\Fld@width}{\Fld@height}%
12961      \pdfendlink
12962      \HyField@AddToFields
12963      }
12964      \def\@PushButton[#1]#2{% parameters, label
12965      \def\Fld@name{#2}%
12966      \begingroup
12967      \expandafter\HyField@SetKeys\expandafter{%
12968      \DefaultOptionsofPushButton,#1%
12969      }%
12970      \PDFForm@Name
12971      \ifHy@pdfa
12972      \Hy@Error{%
12973      PDF/A: Push button with JavaScript is prohibited%
12974      }\@ehc

```

```

12975 \LayoutPushButtonField{%
12976 \leavevmode
12977 \MakeButtonField{#2}%
12978 }%
12979 \else
12980 \HyField@FlagsPushButton
12981 \ifFld@hidden\def\Fld@width{1sp}\fi
12982 \LayoutPushButtonField{%
12983 \leavevmode
12984 \Hy@escapeform\PDFForm@Push
12985 \pdfstartlink user {\PDFForm@Push}\relax
12986 \MakeButtonField{#2}%
12987 \pdfendlink
12988 \HyField@AddToFields
12989 }%
12990 \fi
12991 \endgroup
12992 }
12993 \def\@Submit[#1]#2{%
12994 \def\Fld@width{\DefaultWidthofSubmit}%
12995 \def\Fld@height{\DefaultHeightofSubmit}%
12996 \begingroup
12997 \expandafter\HyField@SetKeys\expandafter{%
12998 \DefaultOptionsofSubmit,#1%
12999 }%
13000 \HyField@FlagsPushButton
13001 \HyField@FlagsSubmit
13002 \ifFld@hidden\def\Fld@width{1sp}\fi
13003 \leavevmode
13004 \Hy@escapeform\PDFForm@Submit
13005 \pdfstartlink user {%
13006 \PDFForm@Submit
13007 /AP<</N \SubmitObject/D \SubmitPObject>>%
13008 }%
13009 \relax
13010 \MakeButtonField{#2}%
13011 \pdfendlink
13012 \HyField@AddToFields
13013 \endgroup
13014 }
13015 \def\@Reset[#1]#2{%
13016 \def\Fld@width{\DefaultWidthofReset}%
13017 \def\Fld@height{\DefaultHeightofReset}%
13018 \begingroup
13019 \expandafter\HyField@SetKeys\expandafter{%
13020 \DefaultOptionsofReset,#1%
13021 }%
13022 \leavevmode
13023 \ifHy@pdfa
13024 \Hy@Error{%
13025 PDF/A: Reset action is prohibited%
13026 }\@ehc
13027 \MakeButtonField{#2}%
13028 \else
13029 \HyField@FlagsPushButton
13030 \ifFld@hidden\def\Fld@width{1sp}\fi
13031 \Hy@escapeform\PDFForm@Reset

```

```

13032 \pdfstartlink user {\PDFForm@Reset}\relax
13033 \MakeButtonField{#2}%
13034 \pdfendlink
13035 \HyField@AddToFields
13036 \fi
13037 \endgroup
13038 }
13039 \def\@CheckBox[#1]#2{% parameters, label
13040 \def\Fld@name{#2}%
13041 \def\Fld@default{0}%
13042 \begingroup
13043 \def\Fld@width{\DefaultWidthofCheckBox}%
13044 \def\Fld@height{\DefaultHeightofCheckBox}%
13045 \expandafter\HyField@SetKeys\expandafter{%
13046 \DefaultOptionsofCheckBox,#1%
13047 }%
13048 \PDFForm@Name
13049 \HyField@FlagsCheckBox
13050 \ifFld@hidden\def\Fld@width{1sp}\fi
13051 \LayoutCheckField{#2}{%
13052 \Hy@escapeform\PDFForm@Check
13053 \pdfstartlink user {\PDFForm@Check}\relax
13054 \MakeCheckField{Fld@width}{Fld@height}%
13055 \pdfendlink
13056 \HyField@AddToFields
13057 }%
13058 \endgroup
13059 }
13060 \def\Hy@FormObjects{%
13061 \pdfobj {%
13062 <<%
13063 /Type/Encoding%
13064 /Differences[%
13065 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13066 /ring/tilde %
13067 39/quotesingle %
13068 96/grave %
13069 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13070 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13071 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13072 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13073 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13074 164/currency %
13075 166/brokenbar %
13076 168/dieresis/copyright/ordfeminine %
13077 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13078 /twosuperior/threesuperior/acute/mu %
13079 183/periodcentered/cedilla/onesuperior/ordmasculine %
13080 188/onequarter/onehalf/threequarters %
13081 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13082 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13083 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13084 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13085 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13086 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13087 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13088 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%

```

```

13089      /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13090      /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13091    ]%
13092  >>%
13093 }%
13094 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
13095 \pdfobj{%
13096   <<%
13097     /Type/Font%
13098     /Subtype/Type1%
13099     /Name/ZaDb%
13100     /BaseFont/ZapfDingbats%
13101   >>%
13102 }%
13103 \xdef\OBJ@ZaDb{\the\pdflastobj}%
13104 \pdfobj{%
13105   <<%
13106     /Type/Font%
13107     /Subtype/Type1%
13108     /Name/Helv%
13109     /BaseFont/Helvetica%
13110     /Encoding \OBJ@pdfdocencoding\space 0 R%
13111   >>%
13112 }%
13113 \xdef\OBJ@Helv{\the\pdflastobj}%
13114 \global\let\Hy@FormObjects\relax
13115 }
13116 </pdfTeX>

```

## 48.5 dvipdfm, xetex

D. P. Story adapted the pdfTeX forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```
13117 < *dvipdfm | xetex>
```

\@Gauge

```

13118 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13119   \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13120 }

```

\@Form

```

13121 \def\@Form[#1]{%
13122   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13123   \kvsetkeys{Form}{#1}%
13124   \Hy@FormObjects
13125   \@pdfm@mark{obj @afields []}%
13126   \@pdfm@mark{obj @corder []}%
13127   \@pdfm@mark{%
13128     obj @aform <<%
13129       /Fields @afields%
13130       /DR<<%
13131       /Font<<%
13132       /ZaDb @OBJZaDb%
13133       /Helv @OBJHelv%
13134     >>%
13135     >>%
13136     /DA(/Helv 10 Tf 0 g)%

```



```

13137 /CO @corder%
13138 \ifHy@pdfa
13139 \else
13140 \ifHyField@NeedAppearances
13141 /NeedAppearances true%
13142 \fi
13143 \fi
13144 >>%
13145 }%
13146 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13147 }

```

\@endForm

```

13148 \def\@endForm{}

```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```

13149 \def\dvipdfm@setdim{%
13150 height \the\ht\pdfm@box\space
13151 width \the\wd\pdfm@box\space
13152 depth \the\dp\pdfm@box\space
13153 }

```

\HyField@AnnotCount

```

13154 \newcount\HyField@AnnotCount
13155 \HyField@AnnotCount=\z@

```

\HyField@AdvanceAnnotCount

```

13156 \def\HyField@AdvanceAnnotCount{%
13157 \global\advance\HyField@AnnotCount\@ne
13158 }

```

\HyField@TheAnnotCount

```

13159 \def\HyField@TheAnnotCount{%
13160 \the\HyField@AnnotCount
13161 }

```

\@TextField

```

13162 \def\@TextField[#1]#2{% parameters, label
13163 \def\Fld@name{#2}%
13164 \def\Fld@default{}%
13165 \let\Fld@value\@empty
13166 \def\Fld@width{\DefaultWidthofText}%
13167 \def\Fld@height{%
13168 \ifFld@multiline
13169 \DefaultHeightofTextMultiline
13170 \else
13171 \DefaultHeightofText
13172 \fi
13173 }%
13174 \begingroup
13175 \expandafter\HyField@SetKeys\expandafter{%
13176 \DefaultOptionsofText,#1%
13177 }%
13178 \PDFForm@Name
13179 \HyField@FlagsText
13180 \ifFld@hidden\def\Fld@width{1sp}\fi

```

```

13181 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13182 \setbox\pdfm@box=\hbox{%
13183   \MakeTextField{\Fld@width}{\Fld@height}%
13184 }%
13185 \HyField@AdvanceAnnotCount
13186 \LayoutTextField{#2}{%
13187   \Hy@escapeform\PDFForm@Text
13188   \@pdfm@mark{%
13189     ann @text\HyField@TheAnnotCount\space
13190     \dvipdfm@setdim << \PDFForm@Text >>%
13191   }%
13192 }%
13193 \unhbox\pdfm@box
13194 \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
13195 % record in @afields array
13196 \endgroup
13197 }

```

\@ChoiceMenu

```

13198 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13199   \def\Fld@name{#2}%
13200   \let\Fld@default\relax
13201   \let\Fld@value\relax
13202   \def\Fld@width{\DefaultWidthofChoiceMenu}%
13203   \def\Fld@height{\DefaultHeightofChoiceMenu}%
13204   \begingroup
13205     \Fld@menulength=0 %
13206     \@tempdima\z@
13207     \@for\@curropt:=#3\do{%
13208       \expandafter\Fld@checkequals\@curropt==\%
13209       \Hy@StepCount\Fld@menulength
13210       \settowidth{\@tempdimb}{\@currDisplay}%
13211       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13212     }%
13213     \advance\@tempdima by 15\p@
13214     \begingroup
13215       \HyField@SetKeys{#1}%
13216     \edef\x{\endgroup
13217       \noexpand\expandafter
13218       \noexpand\HyField@SetKeys
13219       \noexpand\expandafter{%
13220         \expandafter\noexpand\csname DefaultOptionsof%
13221           \ifFld@radio
13222             Radio%
13223           \else
13224             \ifFld@combo
13225               \ifFld@popdown
13226                 PopdownBox%
13227               \else
13228                 ComboBox%
13229             \fi
13230           \else
13231             ListBox%
13232           \fi
13233         \fi
13234       \endcsname
13235     }%

```

```

13236 } \x
13237 \HyField@SetKeys{#1}%
13238 \PDFForm@Name
13239 \ifFld@hidden\def\Fld@width{1sp}\fi
13240 \ifx\Fld@value\relax
13241 \let\Fld@value\Fld@default
13242 \fi
13243 \LayoutChoiceField{#2}{%
13244 \ifFld@radio
13245 \HyField@FlagsRadioButton
13246 \@@Radio{#3}%
13247 \else
13248 \begin{group}
13249 \HyField@FlagsChoice
13250 \ifdim\Fld@width<\@tempdima
13251 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13252 \edef\Fld@width{\the\@tempdima}%
13253 \fi
13254 \ifFld@combo
13255 \else
13256 \@tempdima=\the\Fld@menulength\Fld@charsize
13257 \advance\@tempdima by \Fld@borderwidth bp %
13258 \advance\@tempdima by \Fld@borderwidth bp %
13259 \edef\Fld@height{\the\@tempdima}%
13260 \fi
13261 \@@ListBox{#3}%
13262 \end{group}
13263 \fi
13264 }%
13265 \endgroup
13266 }

```

\@@Radio

```

13267 \def\@@Radio#1{%
13268 \Fld@listcount=0 %
13269 \EdefEscapeName\Fld@default{\Fld@default}%
13270 \setbox\pdfm@box=\hbox{%
13271 \MakeRadioField{\Fld@width}{\Fld@height}%
13272 }%
13273 \for\@curropt:=#1\do{%
13274 \expandafter\Fld@checkequals\@curropt==\%
13275 \EdefEscapeName\@currValue{\@currValue}%
13276 \Hy@StepCount\Fld@listcount
13277 \@currDisplay\space
13278 \leavevmode
13279 \Hy@escapeform\PDFForm@Radio
13280 \ifnum\Fld@listcount=1 %
13281 \HyField@AdvanceAnnotCount
13282 \fi
13283 \@pdfm@mark{%
13284 ann %
13285 \ifnum\Fld@listcount=1 %
13286 @radio\HyField@TheAnnotCount%
13287 \space
13288 \fi
13289 \dvi pdfm@setdim
13290 <<%

```

```

13291     \PDFForm@Radio
13292     /AP<</N<</\@currValue /null>>>>%
13293     >>%
13294 }%
13295 \unhcopy\pdfm@box\space% deliberate space between radio buttons
13296 \ifnum\Fld@listcount=1 %
13297     \@pdfm@mark{%
13298         put @afields @radio\HyField@TheAnnotCount
13299     }%
13300 \fi
13301 }%
13302 }

\Fld@listcount

13303 \newcount\Fld@listcount

@@@Listbox

13304 \def\@@Listbox#1{%
13305     \HyField@PDFChoices{#1}%
13306     \setbox\pdfm@box=\hbox{%
13307         \MakeChoiceField{\Fld@width}{\Fld@height}%
13308     }%
13309     \leavevmode
13310     \Hy@escapeform\PDFForm@List
13311     \HyField@AdvanceAnnotCount
13312     \@pdfm@mark{%
13313         ann @list\HyField@TheAnnotCount\space
13314         \dvipdfm@setdim
13315         <<\PDFForm@List>>%
13316     }%
13317     \unhbox\pdfm@box
13318     \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
13319 }

\@PushButton

13320 \def\@PushButton[#1]#2{% parameters, label
13321     \def\Fld@name{#2}%
13322     \begingroup
13323     \expandafter\HyField@SetKeys\expandafter{%
13324         \DefaultOptionsofPushButton,#1%
13325     }%
13326     \PDFForm@Name
13327     \ifHy@pdfa
13328         \Hy@Error{%
13329             PDF/A: Push button with JavaScript is prohibited%
13330         }\@ehc
13331     \LayoutPushButtonField{%
13332         \leavevmode
13333         \MakeButtonField{#2}%
13334     }%
13335 \else
13336     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13337     \HyField@FlagsPushButton
13338     \ifFld@hidden\def\Fld@width{1sp}\fi
13339     \HyField@AdvanceAnnotCount
13340     \LayoutPushButtonField{%
13341         \leavevmode

```

```

13342 \Hy@escapeform\PDFForm@Push
13343 \@pdfm@mark{%
13344   ann @push\HyField@TheAnnotCount\space
13345   \dvipdfm@setdim
13346   <<\PDFForm@Push>>%
13347 }%
13348 }%
13349 \unhbox\pdfm@box
13350 \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
13351 \fi
13352 \endgroup
13353 }

```

\@Submit

```

13354 \def\@Submit[#1]#2{%
13355   \def\Fld@width{\DefaultWidthofSubmit}%
13356   \def\Fld@height{\DefaultHeightofSubmit}%
13357   \begingroup
13358     \expandafter\HyField@SetKeys\expandafter{%
13359       \DefaultOptionsofSubmit,#1%
13360     }%
13361     \HyField@FlagsPushButton
13362     \HyField@FlagsSubmit
13363     \ifFld@hidden\def\Fld@width{1sp}\fi
13364     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13365     \leavevmode
13366     \Hy@escapeform\PDFForm@Submit
13367     \HyField@AdvanceAnnotCount
13368     \@pdfm@mark{%
13369       ann @submit\HyField@TheAnnotCount\space
13370       \dvipdfm@setdim
13371       <<\PDFForm@Submit>>%
13372     }%
13373     \unhbox\pdfm@box%
13374     \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
13375   \endgroup
13376 }

```

\@Reset

```

13377 \def\@Reset[#1]#2{%
13378   \def\Fld@width{\DefaultWidthofReset}%
13379   \def\Fld@height{\DefaultHeightofReset}%
13380   \begingroup
13381     \expandafter\HyField@SetKeys\expandafter{%
13382       \DefaultOptionsofReset,#1%
13383     }%
13384     \leavevmode
13385     \ifHy@pdfa
13386       \Hy@Error{%
13387         PDF/A: Reset action is prohibited%
13388       }\@ehc
13389       \MakeButtonField{#2}%
13390     \else
13391       \HyField@FlagsPushButton
13392       \ifFld@hidden\def\Fld@width{1sp}\fi
13393       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13394       \Hy@escapeform\PDFForm@Reset

```

```

13395 \HyField@AdvanceAnnotCount
13396 \@pdfm@mark{%
13397   ann @reset\HyField@TheAnnotCount\space
13398   \dvipdfm@setdim
13399   <<\PDFForm@Reset>>%
13400 }%
13401 \unhbox\pdfm@box
13402 \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
13403 \fi
13404 \endgroup
13405 }

```

#### \@CheckBox

```

13406 \def\@CheckBox[#1]#2{% parameters, label
13407   \def\Fld@name{#2}%
13408   \def\Fld@default{0}%
13409   \begingroup
13410     \def\Fld@width{\DefaultWidthofCheckBox}%
13411     \def\Fld@height{\DefaultHeightofCheckBox}%
13412     \expandafter\HyField@SetKeys\expandafter{%
13413       \DefaultOptionsofCheckBox,#1%
13414     }%
13415     \PDFForm@Name
13416     \HyField@FlagsCheckBox
13417     \ifFld@hidden\def\Fld@width{1sp}\fi
13418     \setbox\pdfm@box=\hbox{%
13419       \MakeCheckField{\Fld@width}{\Fld@height}%
13420     }%
13421     \HyField@AdvanceAnnotCount
13422     \LayoutCheckField{#2}{%
13423       \Hy@escapeform\PDFForm@Check
13424       \@pdfm@mark{%
13425         ann @check\HyField@TheAnnotCount\space
13426         \dvipdfm@setdim
13427         <<\PDFForm@Check>>%
13428       }%
13429       \unhbox\pdfm@box
13430       \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
13431     }%
13432   \endgroup
13433 }

13434 \def\Hy@FormObjects{%
13435   \@pdfm@mark{obj @OBJpdfdocencoding%
13436     <<%
13437       /Type/Encoding%
13438       /Differences[
13439         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13440         39/quotesingle %
13441         96/grave %
13442         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13443         /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13444         /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13445         /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13446         /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13447         164/currency %
13448         166/brokenbar %
13449         168/dieresis/copyright/ordfeminine %

```

```

13450 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13451 /twosuperior/threesuperior/acute/mu %
13452 183/periodcentered/cedilla/onesuperior/ordmasculine %
13453 188/onequarter/onehalf/threequarters %
13454 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13455 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13456 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13457 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13458 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13459 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13460 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13461 /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%
13462 /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13463 /thorn/ydieresis%
13464 }%
13465 >>%
13466 }%
13467 \@pdfm@mark{obj @OBJZaDb%
13468 <<%
13469 /Type/Font%
13470 /Subtype/Type1%
13471 /Name/ZaDb%
13472 /BaseFont/ZapfDingbats%
13473 >>%
13474 }%
13475 \@pdfm@mark{obj @OBJHelv%
13476 <<%
13477 /Type/Font%
13478 /Subtype/Type1%
13479 /Name/Helv%
13480 /BaseFont/Helvetica%
13481 /Encoding @OBJpdfdocencoding%
13482 >>%
13483 }%
13484 \global\let\Hy@FormObjects\relax
13485 }
13486 </dvipdfm | xetex>

```

## 48.6 Common forms part

```
13487 <*pdfform>
```

\Hy@escapestring

```

13488 \begingroup\expandafter\expandafter\expandafter\endgroup
13489 \expandafter\ifx\csname pdfescapestring\endcsname\relax
13490 \let\Hy@escapestring\@firstofone
13491 \def\Hy@escapeform#1{%
13492   \ifHy@escapeform
13493     \def\Hy@escapestring##1{%
13494       \noexpand\Hy@escapestring{\noexpand##1}%
13495     }%
13496   \edef\Hy@temp{#1}%
13497   \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13498   \def\Hy@escapestring##1{%
13499     \@ifundefined{Hy@esc@string##1}{%
13500       ##1%
13501       \ThisShouldNotHappen

```

```

13502     }{%
13503     \csname Hy@esc@\string##1\endcsname
13504     }%
13505     }%
13506     \else
13507     \let\Hy@escapestring\@firstofone
13508     \fi
13509   }%
13510 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
13511   \ifx\#3\%
13512   \else
13513     \expandafter
13514     \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13515     \Hy@ReturnAfterFi{%
13516       \Hy@@escapeform#3\@nil
13517     }%
13518     \fi
13519   }%
13520 \else
13521   \def\Hy@escapeform#1{%
13522     \ifHy@escapeform
13523       \let\Hy@escapestring\pdfescapestring
13524     \else
13525       \let\Hy@escapestring\@firstofone
13526     \fi
13527   }%
13528   \Hy@escapeform}%
13529 \fi

```

\PDFForm@Name

```

13530 \def\PDFForm@Name{%
13531   \PDFForm@@Name\Fld@name
13532   \ifx\Fld@altname\relax
13533   \else
13534     \PDFForm@@Name\Fld@altname
13535   \fi
13536   \ifx\Fld@mappingname\relax
13537   \else
13538     \PDFForm@@Name\Fld@mappingname
13539   \fi
13540 }

```

\PDFForm@@Name

```

13541 \def\PDFForm@@Name#1{%
13542   \begingroup
13543   \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
13544     \ifHy@unicode
13545       \Hy@unicodefalse
13546     \fi
13547   \fi
13548   \HyPsd@XeTeXBigCharstrue
13549   \pdfstringdef\Hy@gtemp#1%
13550 \endgroup
13551 \let#1\Hy@gtemp
13552 }

```

\Fld@additionalactions



```

13553 \def\Fld@@additionalactions{%
K input (keystroke) format
13554 \ifx\Fld@keystroke@code\@empty
13555 \else
13556 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13557 \fi
F display format
13558 \ifx\Fld@format@code\@empty
13559 \else
13560 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13561 \fi
V validation
13562 \ifx\Fld@validate@code\@empty
13563 \else
13564 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13565 \fi
C calculation
13566 \ifx\Fld@calculate@code\@empty
13567 \else
13568 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13569 \fi
Fo receiving the input focus
13570 \ifx\Fld@onfocus@code\@empty
13571 \else
13572 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13573 \fi
Bl loosing the input focus (blurred)
13574 \ifx\Fld@onblur@code\@empty
13575 \else
13576 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13577 \fi
D pressing the mouse button (down)
13578 \ifx\Fld@onmousedown@code\@empty
13579 \else
13580 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13581 \fi
U releasing the mouse button (up)
13582 \ifx\Fld@onmouseup@code\@empty
13583 \else
13584 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13585 \fi
E cursor enters the annotation's active area.
13586 \ifx\Fld@onenter@code\@empty
13587 \else
13588 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13589 \fi
X cursor exits the annotation's active area.
13590 \ifx\Fld@onexit@code\@empty
13591 \else
13592 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13593 \fi

```

```

13594 }
13595 \def\Fld@additionalactions{%
13596   \if\Fld@@additionalactions-%
13597   \else
13598     \ifHy@pdfa
13599     \else
13600       /AA<<\Fld@@additionalactions>>%
13601     \fi
13602   \fi
13603 }

```

#### \Fld@annotnames

```

13604 \def\Fld@annotnames{%
13605   /T(\Fld@name)%
13606   \ifx\Fld@altname\relax
13607   \else
13608     /TU(\Fld@altname)%
13609   \fi
13610   \ifx\Fld@mappingname\relax
13611   \else
13612     /TM(\Fld@mappingname)%
13613   \fi
13614 }

```

#### \PDFForm@Check

```

13615 \def\PDFForm@Check{%
13616   /Subtype/Widget%
13617   \Fld@annotflags
13618   \Fld@annotnames
13619   /FT/Btn%
13620   \Fld@flags
13621   /Q \Fld@align
13622   /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13623   /MK<<%
13624     \ifnum\Fld@rotation=\z@
13625     \else
13626       /R \Fld@rotation
13627     \fi
13628     \ifx\Fld@bordercolor\relax
13629     \else
13630       /BC[\Fld@bordercolor]%
13631     \fi
13632     \ifx\Fld@bcolor\relax
13633     \else
13634       /BG[\Fld@bcolor]%
13635     \fi
13636     /CA(\Hy@escapestring{\Fld@cbsymbol})%
13637   >>%
13638   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13639     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13640   /H/P%
13641   \ifFld@checked /V/Yes\else /V/Off\fi
13642   \Fld@additionalactions
13643 }

```

#### \PDFForm@Push

```

13644 \ifHy@pdfa

```

```

13645 \else
13646   \def\PDFForm@Push{%
13647     /Subtype/Widget%
13648     \Fld@annotflags
13649     \Fld@annotnames
13650     /FT/Btn%
13651     \Fld@flags
13652     /H/P%
13653     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13654     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13655       \ifx\Fld@bordercolor\relax\else 1\fi
13656       \space
13657     \else
13658       /MK<<%
13659       \ifnum\Fld@rotation=\z@
13660       \else
13661         /R \Fld@rotation
13662       \fi
13663       \ifx\Fld@bordercolor\relax
13664       \else
13665         /BC[\Fld@bordercolor]%
13666       \fi
13667       >>%
13668     \fi
13669     /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13670     \Fld@additionalactions
13671   }%
13672 \fi

```

\PDFForm@List

```

13673 \def\PDFForm@List{%
13674   /Subtype/Widget%
13675   \Fld@annotflags
13676   \Fld@annotnames
13677   /FT/Ch%
13678   \Fld@flags
13679   /Q \Fld@align
13680   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13681   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13682     \ifx\Fld@bordercolor\relax\else 1\fi
13683     \ifx\Fld@bcolor\relax \else 1\fi
13684     \space
13685   \else
13686     /MK<<%
13687     \ifnum\Fld@rotation=\z@
13688     \else
13689       /R \Fld@rotation
13690     \fi
13691     \ifx\Fld@bordercolor\relax
13692     \else
13693       /BC[\Fld@bordercolor]%
13694     \fi
13695     \ifx\Fld@bcolor\relax
13696     \else
13697       /BG[\Fld@bcolor]%
13698     \fi
13699     >>%

```

```

13700 \fi
13701 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13702 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13703 \Fld@choices
13704 \Fld@additionalactions
13705 }

```

#### \PDFForm@Radio

```

13706 \def\PDFForm@Radio{%
13707 /Subtype/Widget%
13708 \Fld@annotflags
13709 \Fld@annotnames
13710 /FT/Btn%
13711 \Fld@flags
13712 /H/P%
13713 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13714 /MK<<%
13715 \ifnum\Fld@rotation=\z@
13716 \else
13717 /R \Fld@rotation
13718 \fi
13719 \ifx\Fld@bordercolor\relax
13720 \else
13721 /BC[\Fld@bordercolor]%
13722 \fi
13723 \ifx\Fld@bcolor\relax
13724 \else
13725 /BG[\Fld@bcolor]%
13726 \fi
13727 /CA(\Fld@radiosymbol)%
13728 >>%
13729 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13730 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13731 \ifx\@currValue\Fld@default
13732 /V/\Fld@default
13733 /DV/\Fld@default
13734 \else
13735 /V/Off%
13736 /DV/Off%
13737 \fi
13738 \Fld@additionalactions
13739 }

```

#### \PDFForm@Text

```

13740 \def\PDFForm@Text{%
13741 /Subtype/Widget%
13742 \Fld@annotflags
13743 \Fld@annotnames
13744 /FT/Tx%
13745 \Fld@flags
13746 /Q \Fld@align
13747 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
13748 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13749 \ifx\Fld@bordercolor\relax\else 1\fi
13750 \ifx\Fld@bcolor\relax \else 1\fi
13751 \space
13752 \else

```

```

13753 /MK<<%
13754   \ifnum\Fld@rotation=\z@
13755   \else
13756     /R \Fld@rotation
13757   \fi
13758   \ifx\Fld@bordercolor\relax
13759   \else
13760     /BC[\Fld@bordercolor]%
13761   \fi
13762   \ifx\Fld@bcolor\relax
13763   \else
13764     /BG[\Fld@bcolor]%
13765   \fi
13766   >>%
13767 \fi
13768 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13769   \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13770 /DV(\Hy@escapestring{\Fld@default})%
13771 /V(\Hy@escapestring{\Fld@value})%
13772 \Fld@additionalactions
13773 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
13774 }

```

\PDFForm@Submit

```

13775 \def\PDFForm@Submit{%
13776 /Subtype/Widget%
13777 \Fld@annotflags
13778 \Fld@annotnames
13779 /FT/Btn%
13780 \Fld@flags
13781 /H/P%
13782 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13783 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13784   \ifx\Fld@bordercolor\relax\else 1\fi
13785   \space
13786 \else
13787 /MK<<%
13788   \ifnum\Fld@rotation=\z@
13789   \else
13790     /R \Fld@rotation
13791   \fi
13792   \ifx\Fld@bordercolor\relax
13793   \else
13794     /BC[\Fld@bordercolor]%
13795   \fi
13796   >>%
13797 \fi
13798 /A<<%
13799 /S/SubmitForm%
13800 /F<<%
13801 /FS/URL%
13802 /F(\Hy@escapestring{\Form@action})%
13803 >>%
13804 \Fld@submitflags
13805 >>%
13806 \Fld@additionalactions
13807 }

```

\PDFForm@Reset

```

13808 \ifHy@pdfa
13809 \else
13810 \def\PDFForm@Reset{%
13811 /Subtype/Widget%
13812 \Fld@annotflags
13813 \Fld@annotnames
13814 /FT/Btn%
13815 \Fld@flags
13816 /H/P%
13817 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
13818 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13819 \ifx\Fld@bordercolor\relax\else 1\fi
13820 \space
13821 \else
13822 /MK<<%
13823 \ifnum\Fld@rotation=\z@
13824 \else
13825 /R \Fld@rotation
13826 \fi
13827 \ifx\Fld@bordercolor\relax
13828 \else
13829 /BC[\Fld@bordercolor]%
13830 \fi
13831 % /CA (Clear)
13832 % /AC (Done)
13833 >>%
13834 \fi
13835 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13836 /A<</S/ResetForm>>%
13837 \Fld@additionalactions
13838 }%
13839 \fi

13840 </pdfform>
13841 <*package>

```

## 49 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 L<sup>A</sup>T<sub>E</sub>X 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`

```

13842 \def\phantomsection{%
13843 \Hy@MakeCurrentHrefAuto{section*}%
13844 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
13845 }
13846 </package>

```

### 49.1 Bookmarks

```

13847 <*outlines>

```

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See paper.pdf and slides.pdf in the doc directory of hyperref.

When using the right-to-left typesetting based on  $\varepsilon$ -TeX, the order of the \BOOKMARK commands written to the \@outlinefile could appear wrong, because of mis-feature of  $\varepsilon$ -TeX's implementation (that it processes the shipped out lines left-to-right, instead of the order in which they appear in the document). The wrong order will appear when the file contains two bookmarks on the same line typeset right-to-left.

To work around this problem, the bookmark@seq@number counter is used to write the bookmark's sequential number into a comment in the \@outlinefile, which could be used to post-process it to achieve the proper ordering of \BOOKMARK commands in that file.

```

13848 \def\Hy@writebookmark#1#2#3#4#5{%
13849   % section number, text, label, level, file
13850   \ifx\WriteBookmarks\relax%
13851   \else
13852     \ifnum#4>\Hy@bookmarksdepth\relax
13853     \else
13854       \@@writetorep{#1}{#2}{#3}{#4}{#5}%
13855     \fi
13856   \fi
13857 }
13858 \def\Hy@currentbookmarklevel{0}
13859 \def\Hy@numberline#1{#1 }
13860 \def\@@@writetorep#1#2#3#4#5{%
13861   \begingroup
13862     \edef\Hy@tempa{#5}%
13863     \ifx\Hy@tempa\Hy@bookmarkstype
13864       \edef\Hy@level{#4}%
13865       \ifx\Hy@levelcheck Y%
13866         \@tempcnta\Hy@level\relax
13867         \advance\@tempcnta by -1 %
13868         \ifnum\Hy@currentbookmarklevel<\@tempcnta
13869           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
13870           \advance\@tempcnta by 1 %
13871           \Hy@Warning{%
13872             Difference (\the\@tempcnta) between bookmark levels is %
13873             greater \MessageBreak than one, level fixed%
13874           }%
13875           \@tempcnta\Hy@currentbookmarklevel
13876           \advance\@tempcnta by 1 %
13877           \edef\Hy@level{\the\@tempcnta}%
13878         \fi
13879       \else
13880         \global\let\Hy@levelcheck Y%
13881       \fi
13882       \global\let\Hy@currentbookmarklevel\Hy@level
13883       \@tempcnta\Hy@level\relax
13884       \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
13885       \advance\@tempcnta by -1 %
13886       \edef\Hy@tempa{#3}%
13887       \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
13888       \ifx\Hy@tempa\Hy@tempb
13889         \Hy@Warning{%

```

```

13890     The anchor of a bookmark and its parent's must not%
13891     \MessageBreak be the same. Added a new anchor%
13892 }%
13893 \phantomsection
13894 \fi
13895 \ifHy@bookmarksnumbered
13896 \let\numberline\Hy@numberline
13897 \let\booknumberline\Hy@numberline
13898 \let\partnumberline\Hy@numberline
13899 \let\chapternumberline\Hy@numberline
13900 \else
13901 \let\numberline\@gobble
13902 \let\booknumberline\@gobble
13903 \let\partnumberline\@gobble
13904 \let\chapternumberline\@gobble
13905 \fi
13906 \HyPsd@XeTeXBigCharstrue
13907 \pdfstringdef\Hy@tempa{#2}%
13908 \HyPsd@SanitizeForOutFile\Hy@tempa
13909 \if@filesw
13910 \stepcounter{bookmark@seq@number}%
13911 \ifundefined{@outlinefile}{-%
13912 }{%
13913 \protected@write{@outlinefile}{}%
13914 \protect\BOOKMARK
13915 [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
13916 {\Hy@tempa}{\Hy@tempb}%
13917 \@percentchar\space\thebookmark@seq@number
13918 }%
13919 }%
13920 \fi
13921 \fi
13922 \endgroup
13923 }
13924 \newcounter{bookmark@seq@number}

13925 \begingroup
13926 \lccode'('= '{%
13927 \lccode'('= '}%
13928 \lccode'1=\z@
13929 \lccode'2=\z@
13930 \lccode'3=\z@
13931 \lccode'5=\z@
13932 \lccode'7=\z@
13933 \lccode'\#=\z@
13934 \lccode'\='=\z@
13935 \lccode'\{=\z@
13936 \lccode'\}=\z@
13937 \lowercase{%
13938 \endgroup
13939 \def\HyPsd@SanitizeForOutFile#1{%
13940 \@onelevel@sanitize\Hy@tempa
13941 \escapechar'\%
13942 \edef\Hy@tempa{%
13943 \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
13944 }%
13945 \edef\Hy@tempa{%
13946 \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil

```



```

13947 }%
13948 }%
13949 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
13950 #1%
13951 \ifx\#2\%
13952 \expandafter\ltx@gobble
13953 \else
13954 \expandafter\ltx@firstofone
13955 \fi
13956 {%
13957 \string\173%
13958 \HyPsd@SanitizeOut@BraceLeft#2\@nil
13959 }%
13960 }%
13961 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
13962 #1%
13963 \ifx\#2\%
13964 \expandafter\ltx@gobble
13965 \else
13966 \expandafter\ltx@firstofone
13967 \fi
13968 {%
13969 \string\175%
13970 \HyPsd@SanitizeOut@BraceRight#2\@nil
13971 }%
13972 }%
13973 }

```

In the call of `\BOOKMARK` the braces around `#4` are omitted, because it is not likely, that the level number contains `]`.

```

13974 \newcommand{\currentpdfbookmark}{%
13975 \pdfbookmark[\Hy@currentbookmarklevel]%
13976 }
13977 \newcommand{\subpdfbookmark}{%
13978 \@tempcnta\Hy@currentbookmarklevel
13979 \Hy@StepCount\@tempcnta
13980 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
13981 }
13982 \newcommand{\belowpdfbookmark}[2]{%
13983 \@tempcnta\Hy@currentbookmarklevel
13984 \Hy@StepCount\@tempcnta
13985 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
13986 \advance\@tempcnta by -1 %
13987 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
13988 }

```

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.

```

13989 \renewcommand\pdfbookmark[3][0]{%
13990 \Hy@writebookmark}{#2}{#3.#1}{#1}{toc}%
13991 \hyper@anchorstart{#3.#1}\hyper@anchorend
13992 }
13993 \def\BOOKMARK{%
13994 \@ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
13995 }
13996 \def\@BOOKMARK[#1]{%
13997 \@ifnextchar[{\@@BOOKMARK[#1]}\@@BOOKMARK[#1][-]}%

```

13998 }

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the texinfo pdf macros.

#### 49.1.1 Rerun warning

\Hy@OutlineRerunCheck

```
13999 \RequirePackage{rerunfilecheck}[2009/12/10]
14000 \def\Hy@OutlineRerunCheck{%
14001   \RerunFileCheck{\jobname.out}{%
14002     \immediate\closeout\@outlinefile
14003   }{%
14004     Rerun to get outlines right\MessageBreak
14005     or use package 'bookmark'%
14006   }%
14007 }
```

#### 49.1.2 Driver stuff

The VTEX section was written originally by VTEX, but then amended by Denis Girou (denis.girou@idris.fr), then by Taco Hoekwater (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.

14008 \< \*vtex\>

14009 \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.

```
14010 \begingroup
14011   \catcode'\=12 %
14012   \ifnum\Hy@VTeXversion<650 %
14013     \catcode'\=12 %
14014     \gdef\hv@pdf@char#1#2#3{%
14015       \char
14016       \ifcase'#1#2#3 %
14017         "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
14018         \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
14019         \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
14020         \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
14021         \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
14022         \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
14023         \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
14024         \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
14025         \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
14026         \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
14027         \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
14028         \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
14029         \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
14030         \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
14031         \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
14032         \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
14033         \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
14034         \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
14035         \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
14036         \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
```

```

14037 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
14038 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
14039 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
14040 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
14041 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
14042 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
14043 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
14044 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
14045 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
14046 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
14047 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
14048 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
14049 \fi
14050 }%
14051 \else
14052 \gdef\hv@pdf@char{\char'}%
14053 \fi
14054 \endgroup

```

\@@BOOKMARK

```

14055 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14056 \expandafter\edef\csname @count@#3\endcsname{%
14057 \the\@serial@counter
14058 }%
14059 \edef\@mycount{\the\@serial@counter}%
14060 \Hy@StepCount\@serial@counter
14061 \edef\@parcount{%
14062 \expandafter\ifx\csname @count@#5\endcsname\relax
14063 0%
14064 \else
14065 \csname @count@#5\endcsname
14066 \fi
14067 }%
14068 \immediate\special{%
14069 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14070 s=\ifx#2-c\else o\fi,t=#4%
14071 }%
14072 }%

```

\ReadBookmarks

```

14073 \def\ReadBookmarks{%
14074 \begingroup
14075 \def\0{\hv@pdf@char 0}%
14076 \def\1{\hv@pdf@char 1}%
14077 \def\2{\hv@pdf@char 2}%
14078 \def\3{\hv@pdf@char 3}%
14079 \def\{({}%
14080 \def\)}{)%
14081 \def\do##1{%
14082 \ifnum\catcode'##1=\active
14083 \@makeother##1%
14084 \else
14085 \ifnum\catcode'##1=6 %
14086 \@makeother##1%
14087 \fi
14088 \fi
14089 }%

```

```

14090 \dospecials
14091 \Hy@safe@activetrue
14092 \InputIfFileExists{\jobname.out}{-}{-}%
14093 \endgroup
14094 \ifx\WriteBookmarks\relax
14095 \else
14096 \if@filesw
14097 \newwrite\@outlinefile
14098 \Hy@OutlineRerunCheck
14099 \immediate\openout\@outlinefile=\jobname.out\relax
14100 \ifHy@typexml
14101 \immediate\write\@outlinefile{<relaxxml>\relax}%
14102 \fi
14103 \fi
14104 \fi
14105 }

14106 </vtex>
14107 <!*vtex>
14108 \def\ReadBookmarks{%
14109 \pdf@ifdraftmode{-}{-}%
14110 \begingroup
14111 \def\do##1{%
14112 \ifnum\catcode'##1=\active
14113 \@makeother##1%
14114 \else
14115 \ifnum\catcode'##1=6 %
14116 \@makeother##1%
14117 \fi
14118 \fi
14119 }%
14120 \dospecials
14121 \Hy@safe@activetrue
14122 \escapechar='\'%
14123 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14124 \calc@bm@number{##5}%
14125 }%
14126 \InputIfFileExists{\jobname.out}{-}{-}%
14127 \ifx\WriteBookmarks\relax
14128 \global\let\WriteBookmarks\relax
14129 \fi
14130 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14131 \def\Hy@temp{##4}%
14132 <*pdfTex>
14133 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14134 \Hy@OutlineName{}\Hy@pstringName%
14135 ##2\check@bm@number{##3}%
14136 }-%
14137 \expandafter\strip@prefix\meaning\Hy@temp
14138 }%
14139 </pdfTex>
14140 <*pdfmark>
14141 \pdfmark{%
14142 pdfmark=/OUT,%
14143 Count={##2\check@bm@number{##3}},%
14144 Dest={##3},%
14145 Title=\expandafter\strip@prefix\meaning\Hy@temp
14146 }%

```

```

14147 </pdfmark>
14148 <*dvipdfm | xetex>
14149     \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14150     \@pdfm@mark{%
14151         outline \ifHy@DvipdfmxOutlineOpen
14152             [%
14153             \ifnum##21>\z@
14154             \else
14155             -%
14156             \fi
14157             ] %
14158             \fi
14159             ##1<<%
14160             /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14161             /A<<%
14162             /S/GoTo%
14163             /D(\Hy@pstringName)%
14164             >>%
14165             >>%
14166             }%
14167 </dvipdfm | xetex>
14168 }%
14169 \begingroup
14170 \def\WriteBookmarks{0}%
14171 \InputIfFileExists{\jobname.out}{-}{-}%
14172 \endgroup
14173 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
14174 \endgroup
14175 }%
14176 \ifx\WriteBookmarks\relax
14177 \else
14178 \if@filesw
14179 \newwrite\@outlinefile
14180 \Hy@OutlineRerunCheck
14181 \immediate\openout\@outlinefile=\jobname.out\relax
14182 \ifHy@typexml
14183 \immediate\write\@outlinefile{<relaxxml>\relax}%
14184 \fi
14185 \fi
14186 \fi
14187 }
14188 <*pdftex>
14189 \def\Hy@OutlineName#1#2#3#4{%
14190 \pdfoutline goto name{#2}count#3{#4}%
14191 }
14192 </pdftex>
14193 \def\check@bm@number#1{%
14194 \expandafter\ifx\csname B_#1\endcsname\relax
14195 0%
14196 \else
14197 \csname B_#1\endcsname
14198 \fi
14199 }
14200 \def\calc@bm@number#1{%
14201 \@tempcnta=\check@bm@number{#1}\relax
14202 \advance\@tempcnta by 1 %
14203 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%

```

```

14204 }
14205 </!vtex>

14206 \ifHy@implicit
14207 \else
14208   \expandafter\endinput
14209 \fi

14210 </outlines>
14211 <*outlines | hypertex>

14212 \newlength\Hy@SectionHShift
14213 \def\Hy@SectionAnchorHref#1{%
14214   \ifx\protect\@typeset@protect
14215     \Hy@@SectionAnchor{#1}%
14216   \fi
14217 }
14218 \DeclareRobustCommand*{\Hy@@SectionAnchor}[1]{%
14219   \leavevmode
14220   \hbox to 0pt{%
14221     \kern-\Hy@SectionHShift
14222     \Hy@raisedlink{%
14223       \hyper@anchorstart{#1}\hyper@anchorend
14224     }%
14225     \hss
14226   }%
14227 }
14228 \let\H@old@ssect\@ssect
14229 \def\@ssect#1#2#3#4#5{%
14230   \Hy@MakeCurrentHrefAuto{section*}%
14231   \setlength{\Hy@SectionHShift}{#1}%
14232   \begingroup
14233     \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14234     \toks\tw@\expandafter{%
14235       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14236       #5%
14237     }%
14238   \edef\x{\endgroup
14239     \the\toks@\the\toks\tw@}%
14240   }\x
14241 }
14242 \let\H@old@schapter\@schapter
14243 \def\@schapter#1{%
14244   \begingroup
14245     \let\@mkboth\@gobbletwo
14246     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14247     \Hy@raisedlink{%
14248       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14249     }%
14250   \endgroup
14251   \H@old@schapter{#1}%
14252 }

```

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:

```

14253 \ltx@ifundefined{@chapter}{-}{%
14254   \let\Hy@org@chapter\@chapter
14255   \def\@chapter{%

```

```

14256 \def\Hy@next{%
14257   \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14258   \Hy@raisedlink{%
14259     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14260   }%
14261 }%
14262 \ifnum\c@secnumdepth>\m@ne
14263   \ltx@ifundefined{if@mainmatter}%
14264   \iftrue{\csname if@mainmatter\endcsname}%
14265   \let\Hy@next\relax
14266   \fi
14267 \fi
14268 \Hy@next
14269 \Hy@org@chapter
14270 }%
14271 }

14272 \let\H@old@part\@part
14273 \begingroup\expandafter\expandafter\expandafter\endgroup
14274 \expandafter\ifx\csname chapter\endcsname\relax
14275   \let\Hy@secnum@part\z@
14276 \else
14277   \let\Hy@secnum@part\m@ne
14278 \fi
14279 \def\@part{%
14280   \ifnum\Hy@secnum@part>\c@secnumdepth
14281     \phantomsection
14282   \fi
14283   \H@old@part
14284 }

14285 \let\H@old@spart\@spart
14286 \def\@spart#1{%
14287   \Hy@MakeCurrentHrefAuto{part*}%
14288   \Hy@raisedlink{%
14289     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14290   }%
14291   \H@old@spart{#1}%
14292 }

14293 \let\H@old@sect\@sect
14294 \def\@sect#1#2#3#4#5#6[#7]#8{%
14295   \ifnum #2>\c@secnumdepth
14296     \expandafter\@firstoftwo
14297   \else
14298     \expandafter\@secondoftwo
14299   \fi
14300   {%
14301     \Hy@MakeCurrentHrefAuto{section*}%
14302     \setlength{\Hy@SectionHShift}{#3}%
14303     \begingroup
14304       \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14305       \toks\tw@\expandafter{%
14306         \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14307         #8%
14308       }%
14309       \edef\x{\endgroup
14310         \the\toks@{\the\toks\tw@}}%
14311       }\x
14312   }{%

```

```

14313 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[\#7]{#8}%
14314 }%
14315 }

14316 </outlines | hypertex>
14317 <*outlines>

14318 \expandafter\def\csname Parent-4\endcsname{}
14319 \expandafter\def\csname Parent-3\endcsname{}
14320 \expandafter\def\csname Parent-2\endcsname{}
14321 \expandafter\def\csname Parent-1\endcsname{}
14322 \expandafter\def\csname Parent0\endcsname{}
14323 \expandafter\def\csname Parent1\endcsname{}
14324 \expandafter\def\csname Parent2\endcsname{}
14325 \expandafter\def\csname Parent3\endcsname{}
14326 \expandafter\def\csname Parent4\endcsname{}

14327 </outlines>

```

## 50 Compatibility with koma-script classes

```

14328 <*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.

```

14329 \def\Hy@tempa{%
14330 \def\@addchap{##1}##2{%
14331 \typeout{##2}%
14332 \if@twoside
14333 \@mkboth{##1}{}%
14334 \else
14335 \@mkboth{}{##1}%
14336 \fi
14337 \addtocontents{lof}{\protect\addvspace{10\p@}}%
14338 \addtocontents{lot}{\protect\addvspace{10\p@}}%
14339 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14340 \Hy@raisedlink{%
14341 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14342 }%
14343 \if@twocolumn
14344 \@topnewpage[\@makeschapterhead{##2}]%
14345 \else
14346 \@makeschapterhead{##2}%
14347 \@afterheading
14348 \fi
14349 \addcontentsline{toc}{chapter}{##1}%
14350 }%
14351 }

14352 \ifclassloaded{scrbook}{%
14353 \@ifclasslater{scrbook}{2001/01/01}{%
14354 \let\Hy@tempa\@empty
14355 }{}%
14356 }{%
14357 \ifclassloaded{scrreprt}{%
14358 \@ifclasslater{scrreprt}{2001/01/01}{%
14359 \let\Hy@tempa\@empty

```



```

14360 }{}%
14361 }{%
14362 \let\Hy@tempa\@empty
14363 }%
14364 }%
14365 \Hy@tempa
14366 </outlines | hypertext>

```

## 51 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 51.1 PD1 encoding

```

14367 <*pd1enc>
14368 \DeclareFontEncoding{PD1}{-}{-}

Accents
14369 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
14370 \DeclareTextAccent{\'}{PD1}{\textacute}
14371 \DeclareTextAccent{\`}{PD1}{\textasciicircum}
14372 \DeclareTextAccent{\~}{PD1}{\texttilde}
14373 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14374 \DeclareTextAccent{\r}{PD1}{\textring}
14375 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14376 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14377 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14378 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
14379 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14380 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14381 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
14382 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
14383 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciicircum}
14384 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14385 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14386 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
14387 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14388 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14389 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14390 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
14391 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14392 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14393 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}
14394 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
14395 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciicircum}
14396 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14397 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14398 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
14399 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14400 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14401 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14402 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
14403 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14404 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14405 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14406 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14407 \DeclareTextCommand{\newtie}{PD1}[1]{%

```

14408 \TextSymbolUnavailable{\newtie{#1}}#1%  
14409 }

Special white space escape characters not for use in bookmarks but for other PDF strings.

14410 % U+0009 (CHARACTER TABULATION)  
14411 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009  
14412 % U+000A (LINE FEED)  
14413 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A  
14414 % U+000D (CARRIAGE RETURN)  
14415 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

Accent glyph names

14416 % U+02D8 BREVE; breve  
14417 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8  
14418 % U+02C7 CARON; caron  
14419 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7  
14420 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex  
14421 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6  
14422 % U+02D9 DOT ABOVE; dotaccent  
14423 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9  
14424 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
14425 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD  
14426 % U+02DB OGONEK; ogonek  
14427 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB  
14428 % U+02DA RING ABOVE; ring  
14429 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA  
14430 % U+02DC SMALL TILDE; ilde, \*tilde  
14431 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC

\040: U+0020 SPACE; \*space, spacehackarabic

\041: U+0021 EXCLAMATION MARK; exclam

14432 % U+0022 QUOTATION MARK; quotedbl  
14433 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022  
14434 % U+0023 NUMBER SIGN; numbersign  
14435 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
14436 % U+0024 DOLLAR SIGN; dollar  
14437 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
14438 % U+0025 PERCENT SIGN; percent  
14439 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
14440 % U+0026 AMPERSAND; ampersand  
14441 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026

\047: U+0027 APOSTROPHE; quotesingle

14442 % U+0028 LEFT PARENTHESIS; parenleft  
14443 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028  
14444 % U+0029 RIGHT PARENTHESIS; parenright  
14445 \DeclareTextCommand{\textparenright}{PD1}{\string\)% \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

14446 % U+002E FULL STOP; period  
14447 \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  
 14448 % U+003C LESS-THAN SIGN; less  
 14449 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
 \075: U+003D EQUALS SIGN; equal  
 14450 % U+003E GREATER-THAN SIGN; greater  
 14451 \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  
 14452 % U+005C REVERSE SOLIDUS; backslash  
 14453 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 14454 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14455 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
 14456 % U+005F LOW LINE; underscore  
 14457 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
 14458 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 14459 % U+0060 GRAVE ACCENT; grave  
 14460 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
 \141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 14461 % U+0069 LATIN SMALL LETTER I; i  
 14462 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
 \152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 14463 % U+007B LEFT CURLY BRACKET; braceleft  
 14464 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 14465 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14466 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 14467 % U+007D RIGHT CURLY BRACKET; braceright  
 14468 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 14469 % U+007E TILDE; asciitilde  
 14470 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 14471 % U+2022 BULLET; bullet  
 14472 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 14473 % U+2020 DAGGER; dagger  
 14474 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 14475 % U+2021 DOUBLE DAGGER; daggerdbl  
 14476 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 14477 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 14478 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
 14479 % U+2014 EM DASH; emdash  
 14480 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
 14481 % U+2013 EN DASH; endash  
 14482 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
 14483 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 14484 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192

14485 % U+2044 FRACTION SLASH; fraction  
14486 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
14487 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
ingleft  
14488 \DeclareTextCommand{\guilsingleft}{PD1}{\210}% U+2039  
14489 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
ingright  
14490 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A  
14491 % U+2212 MINUS SIGN; minus  
14492 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
14493 % U+2030 PER MILLE SIGN; perthousand  
14494 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
14495 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
14496 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
14497 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
14498 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
14499 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
14500 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
14501 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
14502 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
14503 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
14504 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
14505 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
14506 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
14507 % U+2122 TRADE MARK SIGN; trademark  
14508 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
14509 % U+FB01 LATIN SMALL LIGATURE FI; fi  
14510 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
14511 % U+FB02 LATIN SMALL LIGATURE FL; fl  
14512 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
14513 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14514 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
14515 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
14516 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
14517 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
14518 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
14519 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
14520 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178  
14521 \DeclareTextCommand{\IJ}{PD1}{\230}  
14522 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
14523 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
14524 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
14525 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
14526 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14527 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
14528 % U+0153 LATIN SMALL LIGATURE OE; oe  
14529 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
14530 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
14531 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
14532 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
14533 \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.  
14534 % U+20AC EURO SIGN; \*Euro, euro  
14535 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
14536 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
14537 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1

14538 % U+00A2 CENT SIGN; cent  
 14539 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
 14540 % U+00A3 POUND SIGN; sterling  
 14541 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
 14542 % U+00A4 CURRENCY SIGN; currency  
 14543 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
 14544 % U+00A5 YEN SIGN; yen  
 14545 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
 14546 % U+00A6 BROKEN BAR; brokenbar  
 14547 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
 14548 % U+00A7 SECTION SIGN; section  
 14549 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
 14550 % U+00A8 DIAERESIS; dieresis  
 14551 \DeclareTextCommand{\textasciidiereis}{PD1}{\250}% U+00A8  
 14552 % U+00A9 COPYRIGHT SIGN; copyright  
 14553 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
 14554 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 14555 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
 14556 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
 motleft  
 14557 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
 14558 % U+00AC NOT SIGN; logicalnot  
 14559 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
 14560 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
 No glyph \255 in PDFDocEncoding.  
 14561 % U+00AE REGISTERED SIGN; registered  
 14562 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
 14563 % U+00AF MACRON; \*macron, overscore  
 14564 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
 14565 % U+00B0 DEGREE SIGN; degree  
 14566 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
 14567 % U+00B1 PLUS-MINUS SIGN; plusminus  
 14568 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
 14569 % U+00B2 SUPERSCRRIPT TWO; twosuperior  
 14570 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
 14571 % U+00B3 SUPERSCRRIPT THREE; threesuperior  
 14572 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
 14573 % U+00B4 ACUTE ACCENT; acute  
 14574 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
 14575 % U+00B5 MICRO SIGN; mu, mul  
 14576 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
 14577 % U+00B6 PILCROW SIGN; paragraph  
 14578 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
 14579 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
 14580 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
 14581 % U+00B8 CEDILLA; cedilla  
 14582 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
 14583 % U+00B9 SUPERSCRRIPT ONE; onesuperior  
 14584 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
 14585 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
 14586 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
 14587 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
 motright  
 14588 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
 14589 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 14590 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
 14591 % U+00BD VULGAR FRACTION ONE HALF; onehalf

14592 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14593 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14594 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14595 % U+00BF INVERTED QUESTION MARK; questiondown  
14596 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14597 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14598 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14599 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14600 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14601 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14602 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14603 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14604 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14605 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14606 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14607 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14608 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14609 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14610 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14611 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14612 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14613 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14614 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14615 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14616 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14617 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14618 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14619 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14620 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14621 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14622 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14623 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14624 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14625 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14626 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14627 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14628 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14629 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14630 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14631 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14632 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14633 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14634 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14635 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14636 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14637 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14638 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14639 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14640 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14641 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14642 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14643 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14644 % U+00D7 MULTIPLICATION SIGN; multiply  
14645 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14646 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14647 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14648 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave

14649 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331}% U+00D9  
14650 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14651 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14652 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14653 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14654 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14655 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14656 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14657 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14658 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14659 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14660 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14661 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14662 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14663 \DeclareTextCompositeCommand{\'}{PD1}{a}{\340}% U+00E0  
14664 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14665 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14666 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14667 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14668 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14669 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14670 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14671 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
14672 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14673 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
14674 % U+00E6 LATIN SMALL LETTER AE; ae  
14675 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
14676 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14677 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
14678 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14679 \DeclareTextCompositeCommand{\'}{PD1}{e}{\350}% U+00E8  
14680 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14681 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
14682 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14683 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
14684 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14685 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
14686 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14687 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
14688 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
14689 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14690 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14691 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14692 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14693 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14694 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14695 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14696 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14697 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14698 % U+00F0 LATIN SMALL LETTER ETH; eth  
14699 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
14700 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14701 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
14702 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14703 \DeclareTextCompositeCommand{\'}{PD1}{o}{\362}% U+00F2  
14704 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
14705 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3

14706 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
14707 \DeclareTextCompositeCommand{\~}{PD1}{o}{\364}% U+00F4  
14708 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
14709 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
14710 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
14711 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366}% U+00F6  
14712 % U+00F7 DIVISION SIGN; divide  
14713 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
14714 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
14715 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
14716 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
14717 \DeclareTextCompositeCommand{\'}{PD1}{u}{\371}% U+00F9  
14718 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
14719 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA  
14720 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
14721 \DeclareTextCompositeCommand{\~}{PD1}{u}{\373}% U+00FB  
14722 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
14723 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC  
14724 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
14725 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD  
14726 % U+00FE LATIN SMALL LETTER THORN; thorn  
14727 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
14728 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
14729 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377}% U+00FF  
14730 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

Glyphs that consist of several characters.

14731 \DeclareTextCommand{\SS}{PD1}{SS}  
14732 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

Aliases (german.sty)

14733 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}  
14734 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}  
14735 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}  
14736 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}  
14737 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}  
14738 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}  
14739 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}  
14740 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

Aliases (math names)

14741 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}  
14742 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}  
14743 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}  
14744 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}  
14745 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}  
14746 \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).

14747 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek  
14748 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute  
14749 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek  
14750 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute  
14751 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute  
14752 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute  
14753 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot  
14754 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek  
14755 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute



```

14756 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
14757 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
14758 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
14759 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
14760 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
14761 </pdlenc>

```

## 51.2 PU encoding

```

14762 <*puenc>
14763 \DeclareFontEncoding{PU}{-}{-}

```

### 51.2.1 NFSS2 accents

```

14764 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
14765 \DeclareTextCommand{\`}{PU}[1]{#1\83\000}% U+0300
14766 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
14767 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
14768 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
14769 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
14770 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
14771 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
14772 % U+0304 COMBINING MACRON; macroncmb
14773 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
14774 % U+0306 COMBINING BREVE; brevecmb
14775 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
14776 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
14777 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
14778 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
14779 % U+0308 COMBINING DIAERESIS; dieresiscmb
14780 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
14781 % U+030A COMBINING RING ABOVE; ringcmb
14782 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
14783 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
14784 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
14785 % U+030C COMBINING CARON; caroncmb
14786 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
14787 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
14788 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
14789 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
14790 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
14791 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
14792 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
14793 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
14794 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
14795 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
14796 % U+0327 COMBINING CEDILLA; cedillacmb
14797 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
14798 % U+0328 COMBINING OGONEK; ogonekcmb
14799 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
14800 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb
14801 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
14802 % U+20DD COMBINING ENCLOSING CIRCLE
14803 \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.

```

14804 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textasciigrave}
14805 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}

```

```

14806 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textasciicircum}
14807 \DeclareTextCompositeCommand{\-}{PU}{\@empty}{\texttilde}
14808 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}
14809 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
14810 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}
14811 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
14812 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
14813 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}
14814 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}
14815 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}
14816 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}
14817 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}
14818 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}
14819 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}
14820 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}
14821 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}
14822 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}
14823 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}
14824 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}
14825 \DeclareTextCompositeCommand{\^}{PU}{\ }{\textasciicircum}
14826 \DeclareTextCompositeCommand{\-}{PU}{\ }{\texttilde}
14827 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}
14828 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}
14829 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
14830 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
14831 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
14832 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
14833 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
14834 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
14835 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
14836 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}
14837 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
14838 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
14839 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
14840 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
14841 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

```

Accents for capitals (see encoding TS1)

```

14842 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}
14843 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}
14844 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}
14845 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}
14846 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}
14847 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}
14848 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\\"{#1}}
14849 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}
14850 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}
14851 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}
14852 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}
14853 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}
14854 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}
14855 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}
14856 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

```

## 51.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

```
14857 % U+0009 (CHARACTER TABULATION)
```

14858 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009  
14859 % U+000A (LINE FEED)  
14860 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A  
14861 % U+000D (CARRIAGE RETURN)  
14862 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D  
\80\040: U+0020 SPACE; space, spacehackarabic  
\80\041: U+0021 EXCLAMATION MARK; exclam  
14863 % U+0022 QUOTATION MARK; quotedbl  
14864 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022  
14865 % U+0023 NUMBER SIGN; numbersign  
14866 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023  
14867 % U+0024 DOLLAR SIGN; dollar  
14868 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024  
14869 % U+0025 PERCENT SIGN; percent  
14870 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025  
14871 % U+0026 AMPERSAND; ampersand  
14872 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026  
14873 % U+0027 APOSTROPHE; quotesingle  
14874 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027  
14875 % U+0028 LEFT PARENTHESIS; parenleft  
14876 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
14877 % U+0029 RIGHT PARENTHESIS; parenright  
14878 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
14879 % U+002A ASTERISK; asterisk  
14880 \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  
14881 % U+003C LESS-THAN SIGN; less  
14882 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
\80\075: U+003D EQUALS SIGN; equal  
14883 % U+003E GREATER-THAN SIGN; greater  
14884 \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  
14885 % U+005C REVERSE SOLIDUS; backslash  
14886 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
\80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
14887 % U+005E CIRCUMFLEX ACCENT; asciicircum  
14888 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
14889 % U+005F LOW LINE; underscore  
14890 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F

14891 % U+0060 GRAVE ACCENT; grave  
 14892 \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  
 14893 % U+0069 LATIN SMALL LETTER I; i  
 14894 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069  
 14895 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069  
 \80\152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \80\172: U+007A LATIN SMALL LETTER Z; z  
 14896 % U+007B LEFT CURLY BRACKET; braceleft  
 14897 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
 14898 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14899 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
 14900 % U+007D RIGHT CURLY BRACKET; braceright  
 14901 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
 14902 % U+007E TILDE; asciitilde  
 14903 \DeclareTextCommand{\textasciitilde}{PU}{\80\176}% U+007E

### 51.2.3 Latin-1 Supplement: U+0080 to U+00FF

\80\240: U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace  
 14904 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 14905 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
 14906 % U+00A2 CENT SIGN; cent  
 14907 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
 14908 % U+00A3 POUND SIGN; sterling  
 14909 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
 14910 % U+00A4 CURRENCY SIGN; currency  
 14911 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
 14912 % U+00A5 YEN SIGN; yen  
 14913 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
 14914 % U+00A6 BROKEN BAR; brokenbar  
 14915 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
 14916 % U+00A7 SECTION SIGN; section  
 14917 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
 14918 % U+00A8 DIAERESIS; diaeresis  
 14919 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
 14920 % U+00A9 COPYRIGHT SIGN; copyright  
 14921 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9  
 14922 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 14923 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
 14924 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
 14925 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
 14926 % U+00AC NOT SIGN; logicalnot  
 14927 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
 14928 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
 \80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
 14929 % U+00AE REGISTERED SIGN; registered  
 14930 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
 14931 % U+00AF MACRON; \*macron, overscore  
 14932 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
 14933 % U+00B0 DEGREE SIGN; degree

14934 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
14935 % U+00B1 PLUS-MINUS SIGN; plusminus  
14936 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
14937 % U+00B2 SUPERSCRIPT TWO; twosuperior  
14938 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2  
14939 % U+00B3 SUPERSCRIPT THREE; threesuperior  
14940 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3  
14941 % U+00B4 ACUTE ACCENT; acute  
14942 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
14943 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
14944 % U+00B5 MICRO SIGN; mu, mu1  
14945 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
14946 % U+00B6 PILCROW SIGN; paragraph  
14947 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
14948 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14949 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
14950 % U+00B8 CEDILLA; cedilla  
14951 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
14952 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14953 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
14954 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14955 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
14956 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motright  
14957 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
14958 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14959 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
14960 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14961 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
14962 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14963 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
14964 % U+00BF INVERTED QUESTION MARK; questiondown  
14965 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
14966 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14967 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
14968 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14969 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
14970 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14971 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
14972 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14973 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
14974 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14975 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
14976 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14977 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
14978 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14979 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
14980 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14981 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
14982 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14983 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
14984 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14985 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
14986 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14987 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
14988 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14989 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB

14990 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14991 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
14992 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14993 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
14994 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14995 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
14996 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14997 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
14998 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14999 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
15000 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15001 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
15002 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15003 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
15004 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15005 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
15006 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15007 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
15008 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15009 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
15010 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15011 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
15012 % U+00D7 MULTIPLICATION SIGN; multiply  
15013 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
15014 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15015 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
15016 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15017 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
15018 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15019 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
15020 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15021 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
15022 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15023 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
15024 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15025 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
15026 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
15027 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
15028 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15029 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
15030 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15031 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
15032 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15033 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
15034 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15035 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
15036 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15037 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
15038 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15039 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
15040 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15041 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
15042 % U+00E6 LATIN SMALL LETTER AE; ae  
15043 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15044 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15045 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15046 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave

15047 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}% U+00E8  
15048 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15049 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
15050 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15051 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15052 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15053 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
15054 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15055 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
15056 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
15057 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15058 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15059 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15060 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15061 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15062 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15063 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15064 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15065 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15066 % U+00F0 LATIN SMALL LETTER ETH; eth  
15067 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
15068 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15069 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
15070 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15071 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}% U+00F2  
15072 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15073 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
15074 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15075 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
15076 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15077 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
15078 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15079 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
15080 % U+00F7 DIVISION SIGN; divide  
15081 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
15082 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15083 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
15084 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15085 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}% U+00F9  
15086 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15087 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
15088 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
15089 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
15090 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
15091 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
15092 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
15093 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
15094 % U+00FE LATIN SMALL LETTER THORN; thorn  
15095 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
15096 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
15097 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

#### 51.2.4 Latin Extended-A: U+0080 to U+017F

15098 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
15099 \DeclareTextCompositeCommand{=} {PU}{A}{\81\000}% U+0100  
15100 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron

15101 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
15102 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
15103 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
15104 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
15105 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
15106 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
15107 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
15108 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
15109 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
15110 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
15111 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
15112 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
15113 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
15114 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
15115 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
15116 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
15117 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
15118 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
15119 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
15120 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
15121 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
15122 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
15123 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
15124 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
15125 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
15126 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
15127 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
15128 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
15129 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
15130 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
15131 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
15132 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
15133 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
15134 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15135 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
15136 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15137 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
15138 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15139 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15140 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15141 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15142 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
15143 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15144 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15145 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15146 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15147 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15148 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15149 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
15150 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
15151 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
15152 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
15153 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
15154 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
15155 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
15156 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
15157 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D



15158 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
15159 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
15160 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
15161 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15162 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
15163 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15164 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15165 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
15166 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaaccent  
15167 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
15168 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
15169 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
15170 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
15171 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
15172 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
15173 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
15174 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
15175 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
15176 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
15177 \DeclareTextCommand{\texthslash}{PU}{\81\047}% U+0127  
15178 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
15179 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
15180 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
15181 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15182 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15183 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
15184 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
15185 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
15186 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
15187 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
15188 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
15189 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
15190 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
15191 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15192 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15193 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
15194 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
15195 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
15196 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15197 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15198 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
15199 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
15200 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
15201 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
15202 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
15203 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
15204 % U+0133 LATIN SMALL LIGATURE IJ; ij  
15205 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
15206 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
15207 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
15208 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
15209 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
15210 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
15211 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaaccent  
15212 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136

15213 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
 15214 \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.

15215 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
 15216 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
 15217 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
 15218 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
 15219 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
 15220 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
 15221 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaaccent  
 15222 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
 15223 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
 15224 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
 15225 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
 15226 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
 15227 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
 15228 \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.

15229 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
 15230 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
 15231 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
 15232 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
 15233 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 15234 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
 15235 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 15236 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
 15237 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
 15238 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143  
 15239 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
 15240 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144  
 15241 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent  
 15242 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
 15243 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
 15244 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
 15245 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
 15246 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
 15247 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
 15248 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
 15249 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
 15250 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
 15251 % U+014A LATIN CAPITAL LETTER ENG; Eng  
 15252 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
 15253 % U+014B LATIN SMALL LETTER ENG; eng  
 15254 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
 15255 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
 15256 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
 15257 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
 15258 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
 15259 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
 15260 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E

15261 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
 15262 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
 15263 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odbla-  
 cute, Ohungarumlaut  
 15264 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
 15265 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacute, ohun-  
 garumlaut  
 15266 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
 15267 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 15268 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
 15269 % U+0153 LATIN SMALL LIGATURE OE; oe  
 15270 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
 15271 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
 15272 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
 15273 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
 15274 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
 15275 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaac-  
 cent  
 15276 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
 15277 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
 15278 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
 15279 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
 15280 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
 15281 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
 15282 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
 15283 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
 15284 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
 15285 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
 15286 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
 15287 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
 15288 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
 15289 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
 15290 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
 15291 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
 15292 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
 15293 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
 15294 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
 15295 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 15296 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
 15297 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 15298 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
 15299 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
 cent  
 15300 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
 15301 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
 15302 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
 15303 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
 15304 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
 15305 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
 15306 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
 15307 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
 15308 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
 15309 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
 15310 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
 15311 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
 15312 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
 15313 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde

15314 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
15315 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
15316 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
15317 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
15318 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
15319 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
15320 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
15321 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
15322 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
15323 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
15324 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
15325 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
15326 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
15327 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblac  
cute, Uhungarumlaut  
15328 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
15329 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhun  
garumlaut  
15330 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
15331 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
15332 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
15333 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
15334 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
15335 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
15336 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
15337 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
15338 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
15339 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
15340 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
15341 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
15342 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
15343 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
15344 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
15345 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
15346 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
15347 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
15348 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
15349 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
15350 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
15351 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
15352 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
15353 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
15354 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
15355 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
15356 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
15357 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
15358 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

### 51.2.5 Latin Extended-B: U+0180 to U+024F

15359 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
15360 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
15361 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
15362 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
15363 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
15364 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
15365 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
15366 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF

15367 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
 15368 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15369 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15370 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 15371 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 15372 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
 15373 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 15374 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 15375 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
 15376 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
 15377 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
 15378 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
 15379 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
 15380 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
 15381 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
 15382 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
 15383 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
 15384 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
 15385 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
 15386 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
 15387 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
 15388 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
 15389 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
 15390 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
 15391 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
 15392 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
 15393 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
 15394 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
 15395 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 15396 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 15397 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
 15398 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
 15399 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
 15400 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
 15401 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
 15402 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
 15403 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
 15404 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
 15405 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
 15406 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
 15407 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
 15408 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
 15409 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslashacute, Ostrokeacute  
 15410 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
 15411 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslashacute, ostrokeacute  
 15412 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
 15413 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
 15414 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
 15415 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
 15416 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
 15417 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
 15418 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
 15419 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
 15420 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
 15421 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave

15422 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
 15423 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
 15424 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15425 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15426 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
 15427 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
 15428 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
 15429 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
 15430 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
 15431 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
 15432 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
 15433 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
 15434 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
 15435 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
 15436 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
 15437 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
 15438 % U+021E LATIN CAPITAL LETTER H WITH CARON  
 15439 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
 15440 % U+021F LATIN SMALL LETTER H WITH CARON  
 15441 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
 15442 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
 15443 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 15444 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 15445 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 15446 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 15447 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 15448 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15449 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15450 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15451 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15452 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 15453 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 15454 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 15455 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
 15456 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 15457 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
 15458 % U+0237 LATIN SMALL LETTER DOTLESS J  
 15459 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

### 51.2.6 Spacing Modifier Letters: U+02B0 to U+02FF

15460 % U+02C7 CARON; caron  
 15461 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 15462 % U+02D8 BREVE; breve  
 15463 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 15464 % U+02D9 DOT ABOVE; dotaccent  
 15465 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 15466 % U+02DA RING ABOVE; ring  
 15467 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 15468 % U+02DB OGONEK; ogonek  
 15469 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 15470 % U+02DC SMALL TILDE; ilde, \*tilde  
 15471 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 15472 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 15473 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 15474 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
 15475 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 15476 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5

15477 % U+02F7 MODIFIER LETTER LOW TILDE  
 15478 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

### 51.2.7 Combining Diacritical Marks: U+0300 to U+036F

15479 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 15480 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 15481 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 15482 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 15483 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 15484 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 15485 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 15486 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
 15487 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 15488 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

### 51.2.8 Greek and Coptic: U+0370 to U+03FF

15489 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 15490 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 15491 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 15492 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 15493 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphanos  
 15494 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386  
 15495 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
 15496 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388  
 15497 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
 15498 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389  
 15499 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
 15500 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A  
 15501 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omicrontonos  
 15502 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C  
 15503 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilononos  
 15504 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E  
 15505 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
 15506 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F  
 15507 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; iotadiesistonos  
 15508 \DeclareTextCompositeCommand{\'}{PU}{\textIotadiesis}{\83\220}% U+0390  
 15509 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
 15510 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
 15511 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
 15512 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
 15513 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
 15514 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
 15515 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
 15516 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
 15517 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
 15518 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
 15519 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
 15520 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
 15521 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
 15522 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
 15523 % U+0398 GREEK CAPITAL LETTER THETA; Theta  
 15524 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
 15525 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
 15526 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
 15527 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa

15528 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
15529 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
15530 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
15531 % U+039C GREEK CAPITAL LETTER MU; Mu  
15532 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
15533 % U+039D GREEK CAPITAL LETTER NU; Nu  
15534 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
15535 % U+039E GREEK CAPITAL LETTER XI; Xi  
15536 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E  
15537 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
15538 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
15539 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
15540 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
15541 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
15542 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
15543 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
15544 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
15545 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
15546 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
15547 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
15548 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5  
15549 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
15550 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
15551 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
15552 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
15553 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
15554 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
15555 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
15556 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
15557 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
15558 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
15559 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
15560 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Upsilon  
silonadieresis  
15561 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
15562 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
15563 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}% U+03AC  
15564 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilon  
tonos  
15565 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
15566 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanos  
15567 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
15568 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanos  
15569 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
15570 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; up-  
silonadieresis  
15571 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\260}% U+03B0  
15572 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
15573 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1  
15574 % U+03B2 GREEK SMALL LETTER BETA; beta  
15575 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
15576 % U+03B3 GREEK SMALL LETTER GAMMA; gamma  
15577 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
15578 % U+03B4 GREEK SMALL LETTER DELTA; delta  
15579 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
15580 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
15581 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
15582 % U+03B6 GREEK SMALL LETTER ZETA; zeta



15583 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
15584 % U+03B7 GREEK SMALL LETTER ETA; eta  
15585 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
15586 % U+03B8 GREEK SMALL LETTER THETA; theta  
15587 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
15588 % U+03B9 GREEK SMALL LETTER IOTA; iota  
15589 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
15590 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
15591 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA  
15592 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
15593 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB  
15594 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
15595 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
15596 % U+03BD GREEK SMALL LETTER NU; nu  
15597 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
15598 % U+03BE GREEK SMALL LETTER XI; xi  
15599 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
15600 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
15601 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
15602 % U+03C0 GREEK SMALL LETTER PI; pi  
15603 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0  
15604 % U+03C1 GREEK SMALL LETTER RHO; rho  
15605 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
15606 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
15607 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
15608 % U+03C3 GREEK SMALL LETTER SIGMA; sigma  
15609 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3  
15610 % U+03C4 GREEK SMALL LETTER TAU; tau  
15611 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4  
15612 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon  
15613 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5  
15614 % U+03C6 GREEK SMALL LETTER PHI; phi  
15615 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6  
15616 % U+03C7 GREEK SMALL LETTER CHI; chi  
15617 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7  
15618 % U+03C8 GREEK SMALL LETTER PSI; psi  
15619 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8  
15620 % U+03C9 GREEK SMALL LETTER OMEGA; omega  
15621 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9  
15622 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iotadieresis  
15623 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA  
15624 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-  
silonudieresis  
15625 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB  
15626 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos  
15627 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC  
15628 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos  
15629 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD  
15630 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD  
15631 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos  
15632 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE  
15633 % U+03DA GREEK LETTER STIGMA; Stigmatreek  
15634 \DeclareTextCommand{\textStigmatreek}{PU}{\83\332}% U+03DA  
15635 % U+03DB GREEK SMALL LETTER STIGMA  
15636 \DeclareTextCommand{\textstigmatreek}{PU}{\83\333}% U+03DB  
15637 % U+03DC GREEK LETTER DIGAMMA; Digammagreek  
15638 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC

15639 % U+03DD GREEK SMALL LETTER DIGAMMA  
 15640 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD  
 15641 % U+03DE GREEK LETTER KOPPA; Koppagreek  
 15642 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE  
 15643 % U+03DF GREEK SMALL LETTER KOPPA  
 15644 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF  
 15645 % U+03E0 GREEK LETTER SAMPI; Sampigreek  
 15646 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0  
 15647 % U+03E1 GREEK SMALL LETTER SAMPI  
 15648 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}% U+03E1

## 51.2.9 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names.

15649 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE  
 15650 \DeclareTextCompositeCommand{\'}{PU}{\CYRE}{\84\000}% U+0400  
 15651 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, \*afii10023  
 15652 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401  
 15653 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}% ???  
 15654 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, \*afii10051  
 15655 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402  
 15656 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, \*afii10052  
 15657 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403  
 15658 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, \*afii10053  
 15659 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404  
 15660 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, \*afii10054  
 15661 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
 15662 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyrillic, \*afii10055  
 15663 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
 15664 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
 15665 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
 15666 \DeclareTextCompositeCommand{"}{PU}{\CYRII}{\84\007}% U+0407  
 15667 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
 15668 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
 15669 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
 15670 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
 15671 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
 15672 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
 15673 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
 15674 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
 15675 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
 15676 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
 15677 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
 15678 \DeclareTextCompositeCommand{\'}{PU}{\CYRI}{\84\015}% U+040D  
 15679 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
 15680 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
 15681 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
 15682 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
 15683 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
 15684 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
 15685 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
 15686 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
 15687 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
 15688 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
 15689 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
 15690 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020

15691 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
15692 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
15693 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
15694 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
15695 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
15696 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
15697 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
15698 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
15699 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
15700 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
15701 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
15702 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
15703 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
15704 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
15705 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
15706 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
15707 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
15708 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
15709 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
15710 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
15711 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
15712 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
15713 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
15714 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
15715 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
15716 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
15717 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
15718 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
15719 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
15720 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
15721 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
15722 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
15723 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
15724 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
15725 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
15726 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
15727 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
15728 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
15729 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
15730 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
15731 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
15732 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
15733 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
15734 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
15735 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
15736 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
15737 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
15738 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
15739 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
15740 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
15741 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
15742 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
15743 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
15744 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
15745 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
15746 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
15747 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049

15748 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
 15749 % U+0430 CYRILLIC SMALL LETTER A; acyrillic; \*afii10065  
 15750 \DeclareTextCommand{\cyrA}{PU}{\84\060}% U+0430  
 15751 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
 15752 \DeclareTextCommand{\cyrB}{PU}{\84\061}% U+0431  
 15753 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
 15754 \DeclareTextCommand{\cyrV}{PU}{\84\062}% U+0432  
 15755 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
 15756 \DeclareTextCommand{\cyrG}{PU}{\84\063}% U+0433  
 15757 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
 15758 \DeclareTextCommand{\cyrD}{PU}{\84\064}% U+0434  
 15759 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
 15760 \DeclareTextCommand{\cyrE}{PU}{\84\065}% U+0435  
 15761 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
 15762 \DeclareTextCommand{\cyrZ}{PU}{\84\066}% U+0436  
 15763 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
 15764 \DeclareTextCommand{\cyrZ}{PU}{\84\067}% U+0437  
 15765 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iecyrillic  
 15766 \DeclareTextCommand{\cyrI}{PU}{\84\070}% U+0438  
 15767 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
 15768 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
 15769 \DeclareTextCompositeCommand{\U}{PU}{\cyrI}{\84\071}% U+0439  
 15770 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
 15771 \DeclareTextCommand{\cyrK}{PU}{\84\072}% U+043A  
 15772 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
 15773 \DeclareTextCommand{\cyrL}{PU}{\84\073}% U+043B  
 15774 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
 15775 \DeclareTextCommand{\cyrM}{PU}{\84\074}% U+043C  
 15776 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
 15777 \DeclareTextCommand{\cyrN}{PU}{\84\075}% U+043D  
 15778 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
 15779 \DeclareTextCommand{\cyrO}{PU}{\84\076}% U+043E  
 15780 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
 15781 \DeclareTextCommand{\cyrP}{PU}{\84\077}% U+043F  
 15782 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
 15783 \DeclareTextCommand{\cyrR}{PU}{\84\100}% U+0440  
 15784 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
 15785 \DeclareTextCommand{\cyrS}{PU}{\84\101}% U+0441  
 15786 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
 15787 \DeclareTextCommand{\cyrT}{PU}{\84\102}% U+0442  
 15788 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
 15789 \DeclareTextCommand{\cyrU}{PU}{\84\103}% U+0443  
 15790 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
 15791 \DeclareTextCommand{\cyrF}{PU}{\84\104}% U+0444  
 15792 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
 15793 \DeclareTextCommand{\cyrH}{PU}{\84\105}% U+0445  
 15794 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
 15795 \DeclareTextCommand{\cyrC}{PU}{\84\106}% U+0446  
 15796 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
 15797 \DeclareTextCommand{\cyrCh}{PU}{\84\107}% U+0447  
 15798 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
 15799 \DeclareTextCommand{\cyrSh}{PU}{\84\110}% U+0448  
 15800 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
 15801 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
 15802 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
 15803 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
 15804 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic

15805 \DeclareTextCommand{\cyrrery}{PU}{\84\113}% U+044B  
15806 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
15807 \DeclareTextCommand{\cyrstfn}{PU}{\84\114}% U+044C  
15808 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
15809 \DeclareTextCommand{\cyrrerev}{PU}{\84\115}% U+044D  
15810 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
15811 \DeclareTextCommand{\cyrriu}{PU}{\84\116}% U+044E  
15812 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
15813 \DeclareTextCommand{\cyrria}{PU}{\84\117}% U+044F  
15814 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
15815 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
15816 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
15817 \DeclareTextCommand{\cyrrio}{PU}{\84\121}% U+0451  
15818 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
15819 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
15820 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
15821 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
15822 \DeclareTextCompositeCommand{\'}{PU}{\cyrj}{\84\123}% U+0453  
15823 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
15824 \DeclareTextCommand{\cyrrie}{PU}{\84\124}% U+0454  
15825 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
15826 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
15827 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyrillic  
15828 \DeclareTextCommand{\cyrrii}{PU}{\84\126}% U+0456  
15829 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
15830 \DeclareTextCommand{\cyrri}{PU}{\84\127}% U+0457  
15831 \DeclareTextCompositeCommand{\"}{PU}{\cyrrii}{\84\127}% U+0457  
15832 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
15833 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
15834 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
15835 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
15836 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
15837 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
15838 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
15839 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
15840 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
15841 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
15842 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
15843 \DeclareTextCompositeCommand{\'}{PU}{\cyrri}{\84\135}% U+045D  
15844 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
15845 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
15846 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
15847 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
15848 \DeclareTextCommand{\cyrdze}{PU}{\84\137}% U+045F  
15849 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
15850 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
15851 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
15852 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
15853 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
15854 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
15855 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
15856 \DeclareTextCommand{\cyrjat}{PU}{\84\143}% U+0463  
15857 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
15858 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
15859 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
15860 \DeclareTextCommand{\cyrriote}{PU}{\84\145}% U+0465

15861 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslitlecyrillic  
15862 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
15863 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslitlecyrillic  
15864 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
15865 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslitleioti-  
fiedcyrillic  
15866 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
15867 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslitleioti-  
fiedcyrillic  
15868 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
15869 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigncyrillic  
15870 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
15871 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigncyrillic  
15872 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
15873 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbignotified-  
cyrillic  
15874 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
15875 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbignotifiedcyril-  
lic  
15876 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
15877 % U+046E CYRILLIC CAPITAL LETTER KSI; Kscyrillic  
15878 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
15879 % U+046F CYRILLIC SMALL LETTER KSI; kscyrillic  
15880 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
15881 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psycyrillic  
15882 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
15883 % U+0471 CYRILLIC SMALL LETTER PSI; psycyrillic  
15884 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
15885 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
15886 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
15887 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
15888 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
15889 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
15890 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
15891 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
15892 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
15893 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
CENT; Izhitsadblgravecyrillic  
15894 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
15895 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
CENT; izhitsadblgravecyrillic  
15896 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
15897 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
15898 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
15899 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
15900 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
15901 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyril-  
lic  
15902 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
15903 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
15904 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
15905 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlo-  
cyrillic  
15906 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
15907 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlo-  
cyrillic  
15908 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D

15909 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 15910 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 15911 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 15912 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 15913 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 15914 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 15915 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 15916 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 15917 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 15918 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
 \84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrilliccmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyrilliccmb  
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumatacyrilliccmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyrilliccmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
 15919 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 15920 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 15921 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 15922 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 15923 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 15924 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 15925 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 15926 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 15927 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 15928 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 15929 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 15930 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 15931 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturncyrillic, \*afii10050  
 15932 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 15933 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
 15934 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 15935 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestrokecyrillic  
 15936 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 15937 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 15938 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 15939 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemiddlehookcyrillic  
 15940 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 15941 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemiddlehookcyrillic  
 15942 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 15943 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescendercyrillic  
 15944 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 15945 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescendercyrillic  
 15946 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497

15947 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescendercyrillic  
 15948 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 15949 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 15950 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescendercyrillic  
 15951 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
 15952 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 15953 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic  
 15954 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 15955 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescendercyrillic  
 15956 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 15957 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kaver-ticalstrokecyrillic  
 15958 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 15959 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kaver-ticalstrokecyrillic  
 15960 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 15961 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 15962 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
 15963 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 15964 \DeclareTextCommand{\cyrkhrs}{PU}{\84\237}% U+049F  
 15965 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 15966 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 15967 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 15968 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 15969 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
 15970 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 15971 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
 15972 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 15973 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 15974 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 15975 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 15976 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 15977 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
 15978 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 15979 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
 15980 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 15981 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
 15982 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
 15983 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
 15984 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
 15985 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
 15986 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
 15987 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
 15988 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
 15989 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
 15990 \DeclareTextCompositeCommand{\k}{PU}{\cyrs}{\84\253}% U+04AB



15991 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
 15992 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
 15993 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
 15994 \DeclareTextCommand{\cyrtddsc}{PU}{\84\255}% U+04AD  
 15995 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
 15996 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
 15997 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; usstraightcyrillic  
 15998 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
 15999 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
 16000 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
 16001 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; usstraightstrokecyrillic  
 16002 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
 16003 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadesendercyrillic  
 16004 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
 16005 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
 16006 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
 16007 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
 16008 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
 16009 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
 16010 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
 16011 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescendercyrillic  
 16012 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
 16013 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
 16014 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
 16015 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Chevverticalstrokecyrillic  
 16016 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
 16017 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; chevverticalstrokecyrillic  
 16018 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
 16019 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
 16020 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
 16021 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
 16022 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
 16023 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasiancyrillic  
 16024 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
 16025 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic  
 16026 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
 16027 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic  
 16028 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
 16029 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
 16030 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCENDER; chedescenderabkhasiancyrillic  
 16031 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
 16032 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
 16033 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic

16034 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
16035 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
16036 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
16037 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
16038 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
16039 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
16040 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
16041 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
16042 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
16043 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
16044 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
16045 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
16046 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
16047 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
16048 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
16049 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
16050 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
16051 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassian-  
cyrillic  
16052 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
16053 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
cyrillic  
16054 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
16055 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
16056 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
16057 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
16058 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
16059 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
16060 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
16061 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
16062 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
16063 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyril-  
lic  
16064 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% U+04D2  
16065 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
16066 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% U+04D3  
16067 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
16068 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
16069 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
16070 \DeclareTextCommand{\cyrcae}{PU}{\84\325}% U+04D5  
16071 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevecyrillic  
16072 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
16073 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevecyrillic  
16074 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
16075 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
16076 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
16077 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
16078 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% U+04D9  
16079 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiere-  
siscyrillic  
16080 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
16081 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiere-  
siscyrillic  
16082 \DeclareTextCompositeCommand{"}{PU}{\cyrswa}{\84\333}% U+04DB  
16083 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
siscyrillic

16084 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% U+04DC  
16085 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresiscyrillic  
16086 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% U+04DD  
16087 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresiscyrillic  
16088 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% U+04DE  
16089 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyrillic  
16090 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% U+04DF  
16091 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasiancyrillic  
16092 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
16093 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
16094 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
16095 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
16096 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\342}% U+04E2  
16097 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
16098 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\343}% U+04E3  
16099 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
16100 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% U+04E4  
16101 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
16102 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% U+04E5  
16103 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic  
16104 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
16105 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
16106 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
16107 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
16108 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
16109 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
16110 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
16111 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS; Obarreddieresiscyrillic  
16112 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
16113 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarreddieresiscyrillic  
16114 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
16115 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
16116 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
16117 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
16118 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
16119 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
16120 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\356}% U+04EE  
16121 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
16122 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\357}% U+04EF  
16123 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
16124 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
16125 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
16126 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
16127 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
16128 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2  
16129 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
16130 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3  
16131 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic

16132 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
 16133 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
 16134 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
 16135 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 16136 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 16137 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 16138 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 16139 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
 16140 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
 16141 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
 16142 \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  
 16143 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 16144 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 16145 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 16146 \DeclareTextCommand{\cyrhk}{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

#### 51.2.10 Thai: U+0E00 to U+0E7F

16147 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 16148 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

#### 51.2.11 Latin Extended Additional: U+1E00 to U+1EFF

16149 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 16150 \DeclareTextCompositeCommand{.}{PU}{B}{\9036\002}% U+1E02  
 16151 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 16152 \DeclareTextCompositeCommand{.}{PU}{b}{\9036\003}% U+1E03  
 16153 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 16154 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 16155 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 16156 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 16157 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 16158 \DeclareTextCompositeCommand{.}{PU}{D}{\9036\012}% U+1E0A  
 16159 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 16160 \DeclareTextCompositeCommand{.}{PU}{d}{\9036\013}% U+1E0B  
 16161 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
 16162 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
 16163 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
 16164 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
 16165 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
 16166 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
 16167 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
 16168 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
 16169 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
 16170 \DeclareTextCompositeCommand{.}{PU}{F}{\9036\036}% U+1E1E  
 16171 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
 16172 \DeclareTextCompositeCommand{.}{PU}{f}{\9036\037}% U+1E1F  
 16173 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
 16174 \DeclareTextCompositeCommand{=}{PU}{G}{\9036\040}% U+1E20  
 16175 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron

16176 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
16177 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
16178 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
16179 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
16180 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
16181 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
16182 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
16183 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
16184 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27  
16185 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
16186 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
16187 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
16188 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
16189 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
16190 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
16191 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
16192 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
16193 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
16194 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
16195 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
16196 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
16197 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
16198 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
16199 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
16200 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
16201 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
16202 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
16203 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
16204 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
16205 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
16206 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
16207 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
16208 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
16209 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
16210 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
16211 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
16212 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
16213 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
16214 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
16215 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
16216 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
16217 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
16218 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
16219 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
16220 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
16221 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
16222 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
16223 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
16224 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
16225 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
16226 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
16227 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
16228 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
16229 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
16230 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
16231 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
16232 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F

16233 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
16234 \DeclareTextCompositeCommand{.}{PU}{S}{\9036\140}% U+1E60  
16235 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
16236 \DeclareTextCompositeCommand{.}{PU}{s}{\9036\141}% U+1E61  
16237 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
16238 \DeclareTextCompositeCommand{b}{PU}{T}{\9036\156}% U+1E6E  
16239 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
16240 \DeclareTextCompositeCommand{b}{PU}{t}{\9036\157}% U+1E6F  
16241 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
16242 \DeclareTextCompositeCommand{~}{PU}{V}{\9036\174}% U+1E7C  
16243 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
16244 \DeclareTextCompositeCommand{~}{PU}{v}{\9036\175}% U+1E7D  
16245 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
16246 \DeclareTextCompositeCommand{`}{PU}{W}{\9036\200}% U+1E80  
16247 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
16248 \DeclareTextCompositeCommand{`}{PU}{w}{\9036\201}% U+1E81  
16249 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
16250 \DeclareTextCompositeCommand{'}{PU}{W}{\9036\202}% U+1E82  
16251 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
16252 \DeclareTextCompositeCommand{'}{PU}{w}{\9036\203}% U+1E83  
16253 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
16254 \DeclareTextCompositeCommand{"}{PU}{W}{\9036\204}% U+1E84  
16255 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
16256 \DeclareTextCompositeCommand{"}{PU}{w}{\9036\205}% U+1E85  
16257 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
16258 \DeclareTextCompositeCommand{.}{PU}{W}{\9036\206}% U+1E86  
16259 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
16260 \DeclareTextCompositeCommand{.}{PU}{w}{\9036\207}% U+1E87  
16261 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
16262 \DeclareTextCompositeCommand{.}{PU}{X}{\9036\212}% U+1E8A  
16263 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
16264 \DeclareTextCompositeCommand{.}{PU}{x}{\9036\213}% U+1E8B  
16265 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
16266 \DeclareTextCompositeCommand{"}{PU}{X}{\9036\214}% U+1E8C  
16267 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
16268 \DeclareTextCompositeCommand{"}{PU}{x}{\9036\215}% U+1E8D  
16269 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
16270 \DeclareTextCompositeCommand{.}{PU}{Y}{\9036\216}% U+1E8E  
16271 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
16272 \DeclareTextCompositeCommand{.}{PU}{y}{\9036\217}% U+1E8F  
16273 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
16274 \DeclareTextCompositeCommand{^}{PU}{Z}{\9036\220}% U+1E90  
16275 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
16276 \DeclareTextCompositeCommand{^}{PU}{z}{\9036\221}% U+1E91  
16277 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
16278 \DeclareTextCompositeCommand{b}{PU}{Z}{\9036\224}% U+1E94  
16279 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
16280 \DeclareTextCompositeCommand{b}{PU}{z}{\9036\225}% U+1E95  
16281 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
16282 \DeclareTextCompositeCommand{b}{PU}{h}{\9036\226}% U+1E96  
16283 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
16284 \DeclareTextCompositeCommand{"}{PU}{t}{\9036\227}% U+1E97  
16285 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
16286 \DeclareTextCompositeCommand{r}{PU}{w}{\9036\230}% U+1E98  
16287 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
16288 \DeclareTextCompositeCommand{r}{PU}{y}{\9036\231}% U+1E99

16289 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotaccent  
 16290 \DeclareTextCompositeCommand{\~}{PU}{\textlongs}{\9036\233}% U+1E9B  
 16291 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
 16292 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
 16293 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
 16294 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
 16295 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 16296 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
 16297 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 16298 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
 16299 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 16300 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
 16301 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 16302 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

### 51.2.12 General Punctuation: U+2000 to U+206F

16303 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
 16304 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 16305 % U+2013 EN DASH; endash  
 16306 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 16307 % U+2014 EM DASH; emdash  
 16308 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 16309 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 16310 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 16311 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 16312 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 16313 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 16314 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 16315 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 16316 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 16317 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 16318 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 16319 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 16320 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 16321 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 16322 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 16323 % U+2020 DAGGER; dagger  
 16324 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
 16325 % U+2021 DOUBLE DAGGER; daggerdbl  
 16326 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 16327 % U+2022 BULLET; bullet  
 16328 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022  
 16329 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 16330 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 16331 % U+2030 PER MILLE SIGN; perthousand  
 16332 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 16333 % U+2031 PER TEN THOUSAND SIGN  
 16334 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 16335 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guillemetleft  
 16336 \DeclareTextCommand{\guillemetleft}{PU}{\9040\071}% U+2039  
 16337 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guillemetright  
 16338 \DeclareTextCommand{\guillemetright}{PU}{\9040\072}% U+203A  
 16339 % U+203B REFERENCE MARK; referencemark  
 16340 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B

16341 % U+203D INTERROBANG  
16342 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
16343 % U+2044 FRACTION SLASH; fraction  
16344 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
16345 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
16346 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
16347 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
16348 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
16349 % U+2052 COMMERCIAL MINUS SIGN  
16350 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

### 51.2.13 Superscripts and Subscripts: U+2070 to U+209F

16351 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
16352 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
16353 % U+2074 SUPERSCRIPT FOUR; foursuperior  
16354 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
16355 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
16356 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
16357 % U+2076 SUPERSCRIPT SIX; sixsuperior  
16358 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
16359 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
16360 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077  
16361 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
16362 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
16363 % U+2079 SUPERSCRIPT NINE; ninesuperior  
16364 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
16365 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
16366 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
16367 % U+207B SUPERSCRIPT MINUS  
16368 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
16369 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
16370 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}  
16371 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
16372 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
16373 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
16374 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
16375 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
16376 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}  
16377 % U+2080 SUBSCRIPT ZERO; zeroinferior  
16378 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
16379 % U+2081 SUBSCRIPT ONE; oneinferior  
16380 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
16381 % U+2082 SUBSCRIPT TWO; twoinferior  
16382 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
16383 % U+2083 SUBSCRIPT THREE; threeinferior  
16384 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}% U+2083  
16385 % U+2084 SUBSCRIPT FOUR; fourinferior  
16386 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
16387 % U+2085 SUBSCRIPT FIVE; fiveinferior  
16388 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
16389 % U+2086 SUBSCRIPT SIX; sixinferior  
16390 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086  
16391 % U+2087 SUBSCRIPT SEVEN; seveninferior  
16392 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
16393 % U+2088 SUBSCRIPT EIGHT; eightinferior  
16394 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
16395 % U+2089 SUBSCRIPT NINE; nineinferior



16396 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
 16397 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
 16398 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
 16399 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
 16400 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

#### 51.2.14 Currency Symbols: U+20A0 to U+20CF

16401 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 16402 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 16403 % U+20A4 LIRA SIGN; afii08941, \*lira  
 16404 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 16405 % U+20A6 NAIRA SIGN  
 16406 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 16407 % U+20A7 PESETA SIGN; peseta  
 16408 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 16409 % U+20A9 WON SIGN; won  
 16410 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 16411 % U+20AB DONG SIGN; dong  
 16412 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 16413 % U+20AC EURO SIGN; \*Euro, euro  
 16414 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 16415 % U+20B1 PESO SIGN  
 16416 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 16417 % U+20B2 GUARANI SIGN  
 16418 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

#### 51.2.15 Letterlike Symbols: U+2100 to U+214F

16419 % U+2103 DEGREE CELSIUS; centigrade  
 16420 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 16421 % U+2116 NUMERO SIGN; \*afii61352, numero  
 16422 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 16423 % U+2117 SOUND RECORDING COPYRIGHT  
 16424 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 16425 % U+211E PRESCRIPTION TAKE; prescription  
 16426 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 16427 % U+2120 SERVICE MARK  
 16428 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 16429 % U+2122 TRADE MARK SIGN; trademark  
 16430 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 16431 % U+2126 OHM SIGN; Ohm, Omega  
 16432 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 16433 % U+2127 INVERTED OHM SIGN  
 16434 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
 16435 % U+212B ANGSTROM SIGN; angstrom  
 16436 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 16437 % U+212E ESTIMATED SYMBOL; estimated  
 16438 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 16439 % U+2135 ALEF SYMBOL; aleph  
 16440 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

#### 51.2.16 Arrows: U+2190 to U+21FF

16441 % U+2190 LEFTWARDS ARROW; arrowleft  
 16442 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
 16443 % U+2191 UPWARDS ARROW; arrowup  
 16444 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
 16445 % U+2192 RIGHTWARDS ARROW; arrowright  
 16446 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192

16447 % U+2193 DOWNWARDS ARROW; arrowdown  
 16448 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

### 51.2.17 Mathematical Operators: U+2200 to U+22FF

16449 % U+2212 MINUS SIGN; minus  
 16450 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
 16451 % U+221A SQUARE ROOT; radical  
 16452 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

### 51.2.18 Miscellaneous Technical: U+2300 to U+23FF

16453 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
 16454 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
 16455 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
 16456 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

### 51.2.19 Control Pictures: U+2400 to U+243F

16457 % U+2422 BLANK SYMBOL  
 16458 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 16459 % U+2423 OPEN BOX; blank  
 16460 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

### 51.2.20 Enclosed Alphanumerics: U+2460 to U+24FF

16461 % U+2460 CIRCLED DIGIT ONE; onecircle  
 16462 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 16463 % U+2461 CIRCLED DIGIT TWO; twocircle  
 16464 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 16465 % U+2462 CIRCLED DIGIT THREE; threecircle  
 16466 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 16467 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 16468 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 16469 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
 16470 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 16471 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 16472 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 16473 % U+2466 CIRCLED DIGIT SEVEN; sevendigit  
 16474 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
 16475 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
 16476 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
 16477 % U+2468 CIRCLED DIGIT NINE; ninecircle  
 16478 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
 16479 % U+2469 CIRCLED NUMBER TEN; tencircle  
 16480 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
 16481 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
 16482 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
 16483 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
 16484 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
 16485 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
 16486 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
 16487 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
 16488 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
 16489 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
 16490 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
 16491 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
 16492 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
 16493 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
 16494 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
 16495 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle

16496 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
16497 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
16498 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
16499 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
16500 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
16501 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
16502 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
16503 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
16504 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
16505 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
16506 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
16507 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
16508 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
16509 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
16510 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
16511 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
16512 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
16513 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
16514 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
16515 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
16516 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
16517 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
16518 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
16519 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
16520 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
16521 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
16522 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
16523 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
16524 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
16525 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
16526 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
16527 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
16528 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
16529 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
16530 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
16531 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
16532 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
16533 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
16534 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
16535 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
16536 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
16537 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
16538 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
16539 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
16540 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
16541 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
16542 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
16543 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
16544 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
16545 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
16546 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
16547 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
16548 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
16549 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
16550 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
16551 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
16552 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF

16553 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
 16554 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
 16555 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
 16556 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
 16557 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
 16558 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
 16559 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 16560 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 16561 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
 16562 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 16563 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 16564 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 16565 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 16566 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 16567 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 16568 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 16569 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 16570 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 16571 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 16572 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 16573 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 16574 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 16575 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 16576 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 16577 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 16578 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 16579 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 16580 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 16581 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 16582 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 16583 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 16584 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 16585 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 16586 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 16587 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 16588 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 16589 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 16590 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 16591 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 16592 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 16593 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 16594 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 16595 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 16596 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 16597 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 16598 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 16599 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 16600 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 16601 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 16602 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 16603 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 16604 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 16605 % U+24EA CIRCLED DIGIT ZERO  
 16606 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

### 51.2.21 Box Drawing: U+2500 to U+257F

16607 % U+25E6 WHITE BULLET; \*openbullet, whitebullet

```

16608 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6
16609 % U+25EF LARGE CIRCLE; largecircle
16610 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

```

### 51.2.22 Miscellaneous Symbols: U+2600 to U+26FF

```

16611 % U+266A EIGHTH NOTE; musicalnote
16612 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A
16613 % U+26AD MARRIAGE SYMBOL
16614 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD
16615 % U+26AE DIVORCE SYMBOL
16616 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

```

### 51.2.23 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

```

16617 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET
16618 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6
16619 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET
16620 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

```

### 51.2.24 Alphabetic Presentation Forms: U+FB00 to U+FB4F

```

16621 % U+FB01 LATIN SMALL LIGATURE FI; fi
16622 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01
16623 % U+FB02 LATIN SMALL LIGATURE FL; fl
16624 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

```

### 51.2.25 Miscellaneous

```

16625 \DeclareTextCommand{\SS}{PU}{SS}

```

### 51.2.26 Aliases

Aliases (german.sty)

```

16626 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
16627 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
16628 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
16629 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
16630 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
16631 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
16632 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
16633 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

16634 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
16635 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
16636 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
16637 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
16638 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

```

16639 </puenc>

```

## 51.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

16640 <*puvnenc>

```

```

16641 \DeclareTextCommand{\abreve}{PU}{\81\003}
16642 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
16643 \DeclareTextCommand{\dj}{PU}{\81\021}
16644 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
16645 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}

```

16646 \DeclareTextCommand{\ohorn}{PU}{\81\241}  
16647 \DeclareTextCommand{\uhorn}{PU}{\81\260}  
16648 \DeclareTextCommand{\ABREVE}{PU}{\81\002}  
16649 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}  
16650 \DeclareTextCommand{\DJ}{PU}{\81\020}  
16651 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}  
16652 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}  
16653 \DeclareTextCommand{\OHORN}{PU}{\81\240}  
16654 \DeclareTextCommand{\UHORN}{PU}{\81\257}  
  
16655 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}  
16656 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}  
16657 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}  
16658 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}  
16659 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}  
16660 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}  
16661 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}  
16662 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}  
16663 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}  
16664 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}  
16665 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}  
16666 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}  
16667 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}  
16668 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
16669 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}  
16670 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
16671 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
16672 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
16673 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
16674 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
16675 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
16676 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
16677 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
16678 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
16679 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
16680 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
16681 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
16682 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
16683 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
16684 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
16685 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
16686 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
16687 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
16688 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
16689 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
16690 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
16691 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
16692 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
16693 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
16694 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
16695 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
16696 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
16697 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
16698 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
16699 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
16700 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
16701 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
16702 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}

16703 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
16704 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
16705 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
16706 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
16707 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
16708 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
16709 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
16710 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
16711 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
16712 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
16713 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
16714 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
16715 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
16716 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
16717 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
16718 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
16719 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
16720 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
16721 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
16722 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
16723 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
16724 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}  
16725 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}  
16726 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}  
16727 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}  
16728 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}  
16729 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}  
16730 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}  
16731 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}  
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16752 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}  
16753 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}  
16754 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}  
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16756 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}  
16757 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}  
16758 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}  
16759 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}

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16760 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
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16762 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}
16763 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
16764 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
16765 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}
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16769 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
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16773 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
16774 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
16775 </puvnenc>

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## 51.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

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16776 <*puarenc>
16777 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LET-
    TER HAMZA
16778 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LET-
    TER ALEF WITH MADDA ABOVE
16779 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LET-
    TER ALEF WITH HAMZA ABOVE
16780 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afii57412;ARABIC LET-
    TER WAW WITH HAMZA ABOVE
16781 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LET-
    TER ALEF WITH HAMZA BELOW
16782 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LET-
    TER YEH WITH HAMZA ABOVE
16783 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF
16784 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH
16785 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA
16786 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH
16787 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LET-
    TER THEH
16788 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LET-
    TER JEEM
16789 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH
16790 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH
16791 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL
16792 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL
16793 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH
16794 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN
16795 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN
16796 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LET-
    TER SHEEN
16797 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD
16798 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD
16799 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH
16800 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH
16801 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN

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16802 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afi57434;ARABIC LET-  
 TER GHAIN  
 16803 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afi57440;ARABIC TATWHEEL  
 16804 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afi57441;ARABIC LETTER FEH  
 16805 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afi57442;ARABIC LETTER QAF  
 16806 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afi57443;ARABIC LETTER KAF  
 16807 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afi57444;ARABIC LETTER LAM  
 16808 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afi57445;ARABIC LET-  
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 16809 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afi57446;ARABIC LETTER NOON  
 16810 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afi57470;ARABIC LETTER HEH  
 16811 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afi57448;ARABIC LETTER WAW  
 16812 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afi57449;ARABIC LET-  
 TER ALEF MAKSURA  
 16813 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afi57450;ARABIC LETTER YEH  
 16814 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afi57451;ARABIC FATHATAN  
 16815 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afi57452;ARABIC DAMMATAN  
 16816 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afi57453;ARABIC KASRATAN  
 16817 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afi57454;ARABIC FATHA  
 16818 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afi57455;ARABIC DAMMA  
 16819 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afi57456;ARABIC KASRA  
 16820 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afi57457;ARABIC SHADDA  
 16821 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afi57458;ARABIC SUKUN  
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 16822 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afi57506;ARABIC LETTER PEH  
 16823 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afi57507;ARABIC LET-  
 TER TCHEH  
 16824 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afi57508;ARABIC LETTER JEH  
 16825 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afi????;FARSI LET-  
 TER KAF  
 16826 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afi57509;ARABIC LETTER GAF  
 16827 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afi????;FARSI LET-  
 TER YEH  
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 16829 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ  
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 16833 \begin{document}  
 16834 \end{document}  
 16835 \check)

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