

# 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  $\LaTeX$  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  $\LaTeX$ '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 `\Hy@nc@noopt` of the `\HyC@newcommand` chain.

```

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

```

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

```

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

```

```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

\Hy@RestoreCatcodes

```

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

```

```

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

```

```
231 \Hy@SetCatcodes
```

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

```

232 \RequirePackage{ltxcmds}[2010/03/09]
233 \RequirePackage{keyval}[1997/11/10]
234 \RequirePackage{kvsetkeys}[2007/09/29]
235 \RequirePackage{pdfescape}[2007/11/11]
236 \RequirePackage{ifpdf}[2006/02/20]
237 \RequirePackage{ifvtex}
238 \RequirePackage{ifxetex}[2006/08/21]
239 \RequirePackage{hycolor}
240 \RequirePackage{letltxmacro}[2008/06/13]
241 \def\Hy@Warning#1{\PackageWarning{hyperref}{#1}}
242 \def\Hy@WarningNoLine#1{\PackageWarningNoLine{hyperref}{#1}}
243 \def\Hy@Info#1{\PackageInfo{hyperref}{#1}}

```

## 4.2 Compatibility with format dumps

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

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

```

244 \@ifundefined{AfterBeginDocument}{%
245 \def\AfterBeginDocument{\AtBeginDocument}%
246 }{}%

```

`\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.

```

247 \def\Hy@AtBeginDocument{%
248 \ltx@LocalAppendToMacro\Hy@AtBeginDocumentHook
249 }

```

`\Hy@AtEndOfPackage`

```
250 \def\Hy@AtEndOfPackage{%
```

```

251 \ltx@LocalAppendToMacro\Hy@AtEndOfPackageHook
252 }

```

\Hy@AtBeginDocumentHook

```

253 \def\Hy@AtBeginDocumentHook{}

```

\Hy@AtEndOfPackageHook

```

254 \def\Hy@AtEndOfPackageHook{}

```

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

```

255 \AtEndOfPackage{%
256 \Hy@AtEndOfPackageHook
257 \let\Hy@AtEndOfPackageHook\@undefined
258 \AfterBeginDocument{%
259 \Hy@AtBeginDocumentHook}%
260 \let\Hy@AtBeginDocumentHook\@undefined
261 }%
262 }

```

### 4.3 Switches

```

263 \newif\ifHy@typexml
264 \newif\ifHy@activeanchor
265 \newif\ifHy@backref
266 \newif\ifHy@bookmarks
267 \newif\ifHy@bookmarksnumbered
268 \newif\ifHy@bookmarksopen
269 \newif\ifHy@breaklinks
270 \newif\ifHy@centerwindow
271 \newif\ifHy@CJKbookmarks
272 \newif\ifHy@colorlinks
273 \newif\ifHy@draft
274 \let\Hy@finaltrue\Hy@draftfalse
275 \let\Hy@finalfalse\Hy@drafttrue
276 \newif\ifHy@escapeform
277 \newif\ifHy@figures
278 \newif\ifHy@fitwindow
279 \newif\ifHy@frenchlinks
280 \newif\ifHy@hyperfootnotes
281 \newif\ifHy@hyperindex
282 \newif\ifHy@hypertextnames
283 \newif\ifHy@implicit
284 \newif\ifHy@linktocpage
285 \newif\ifHy@localanchorname
286 \newif\ifHy@menubar
287 \newif\ifHy@naturalnames
288 \newif\ifHy@nesting
289 \newif\ifHy@newwindowset
290 \newif\ifHy@newwindow
291 \newif\ifHy@ocgcolorlinks
292 \newif\ifHy@pageanchor
293 \newif\ifHy@pagelabels
294 \newif\ifHy@pdfpagehidden
295 \newif\ifHy@pdfstring
296 \newif\ifHy@plainpages
297 \newif\ifHy@psize
298 \newif\ifHy@raiselinks

```

```

299 \newif\ifHy@seminarslides
300 \newif\ifHy@setpagesize
301 \newif\ifHy@texht
302 \newif\ifHy@toolbar
303 \newif\ifHy@unicode
304 \newif\ifHy@usetitle
305 \newif\ifHy@verbose
306 \newif\ifHy>windowui
307 \newif\ifHy@displaydoctitle
308 \newif\ifHy@pdfa

```

Defaults for the switches are now set.

```

309 \Hy@backreffalse
310 \Hy@bookmarksnumberedfalse
311 \Hy@bookmarksopenfalse
312 \Hy@bookmarkstrue
313 \Hy@breaklinksfalse
314 \Hy@centerwindowfalse
315 \Hy@CJKbookmarksfalse
316 \Hy@escapeformfalse
317 \Hy@figuresfalse
318 \Hy@fitwindowfalse
319 \Hy@hyperfootnotetrue
320 \Hy@hyperindextrue
321 \Hy@hypertextnamestrue
322 \Hy@implicittrue
323 \Hy@linktocpagefalse
324 \Hy@localanchornamefalse
325 \Hy@menubartrue
326 \Hy@naturalnamesfalse
327 \Hy@nestingfalse
328 \Hy@newwindowsetfalse
329 \Hy@newwindowfalse
330 \Hy@pageanchortrue
331 \Hy@pagelabelstrue
332 \Hy@pdfpagehiddenfalse
333 \Hy@pdfstringfalse
334 \Hy@plainpagesfalse
335 \Hy@raiselinksfalse
336 \Hy@setpagesizetrue
337 \Hy@texhtfalse
338 \Hy@toolbartrue
339 \Hy@typexmlfalse
340 \Hy@unicodefalse
341 \Hy@usetitlefalse
342 \Hy@verbosefalse
343 \Hy>windowuitrue
344 \Hy@displaydoctitlefalse
345 \Hy@pdfafalse

```

## 5 Common help macros

`\Hy@StepCount`

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

`\Hy@GlobalStepCount`

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

```

348 \newdimen\@linkdim
349 \let\Hy@driver\@empty
350 \let\MaybeStopEarly\relax
351 \newcount\Hy@linkcounter
352 \newcount\Hy@pagecounter
353 \Hy@linkcounter0
354 \Hy@pagecounter0

```

## 5.1 Macros for recursions

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

```

355 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
356 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

357 \let\Hy@ReturnEnd\@empty
358 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
359 \long\def\Hy@ReturnAfterElseFiFiEnd#1\else#2\Hy@ReturnEnd{\fi\fi#1}

```

## 5.2 Babel's protection of shorthand characters

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

```

360 \def\Hy@safe@activestru{\csname @safe@activestru\endcsname}
361 \def\Hy@safe@activesfalse{\csname @safe@activesfalse\endcsname}

```

## 5.3 Coordinate transformations

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

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

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

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

Example (TeX):

```

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

```

`\hypercalcbp`

```
362 \begingroup\expandafter\expandafter\expandafter\endgroup
363 \expandafter\ifx\csname dimexpr\endcsname\relax
364 \def\hypercalcbpdef#1#2{%
365   \begingroup
366     \toks@{%
367       \HyCal@scan#2\hypercalcbp\@nil
368     \expandafter\endgroup
369     \expandafter\def\expandafter#1\expandafter{\the\toks@}%
370   }%
371 \def\HyCal@scan#1\hypercalcbp#2\@nil{%
372   \toks@\expandafter{\the\toks@ #1}%
373   \ifx\#2\%
374     \else
375     \Hy@ReturnAfterFi{%
376       \HyCal@do#2\@nil
377     }%
378   \fi
379 }%
380 \def\HyCal@do#1#2\@nil{%
381   \ifpackageloaded{calc}{-}{%
382     \Hy@Warning{%
383       For calculations \string\hypercalcbp\space needs\MessageBreak
384       package calc or e-TeX%
385     }%
386   }%
387   \setlength{\dimen@}{#1}%
388   \setlength{\dimen@}{0.99626401\dimen@}%
389   \edef\x{%
390     \toks@{%
391       \the\toks@
392       \strip@pt\dimen@
393     }%
394   }\x
395   \HyCal@scan#2\@nil
396 }%
397 \else
398 \def\hypercalcbp#1{%
399   \strip@pt\dimexpr 0.99626401\dimexpr #1\relax\relax
400 }%
401 \def\hypercalcbpdef{\def}%
402 \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  $\TeX$ '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  $\TeX$  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  $\TeX$  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 processed by  $\TeX$ , because the tokens have only catcodes 10 until 12.

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

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

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

```
404 \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.

```
405 \escapechar'\%
```

From the view of T<sub>E</sub>X 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.

```
406 \edef\0{\string\0}%
407 \edef\1{\string\1}%
408 \edef\2{\string\2}%
409 \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.

```
410 \ifHy@unicode
411 \edef\8{\string\8}%
412 \edef\9{\string\9}%
413 \fontencoding{PU}%
414 \HyPsd@UTFviii
415 \def\ifpdfstringunicode###1##2{##1}%
416 \else
417 \fontencoding{PD1}%
418 \def\ifpdfstringunicode###1##2{##2}%
419 \fi
420 \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).

```
421 \@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).

```
422 \let\@inmathwarn\HyPsd@inmathwarn
```

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

```
423 \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.

```
424 \let\{\textbraceleft
425 \let\}\textbraceright
426 \let\\\textbackslash
427 \let#\textnumbersign
428 \let$\textdollar
```

```

429 \let%\textpercent
430 \let&\textampersand
431 % \let~\textasciitilde
432 \let\_ \textunderscore
433 \let\P\textparagraph
434 \let\ldots\textellipsis
435 \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.

```

436 \def\{\pdfstringdefWarn\}%
437 \def\newline{\pdfstringdefWarn\newline}%

```

**Logos.** Because the box shifting used in the T<sub>E</sub>X logo does not work while writing to a file, the standard T<sub>E</sub>X logos are redefined.

```

438 \def\TeX{\TeX}%
439 \def\LaTeX{\LaTeX}%
440 \def\LaTeXe{\LaTeX2e}%
441 \def\eTeX{e-TeX}%
442 \def\SliTeX{\SliTeX}%
443 \def\MF{Metafont}%
444 \def\MP{Metapost}%

```

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

```

445 \let\fontencoding@gobble
446 \let\fontfamily@gobble
447 \let\fontseries@gobble
448 \let\fontshape@gobble
449 \let\fontsize@gobbletwo
450 \let\selectfont@empty
451 \let\usefont@gobblefour
452 \let\emph@firstofone
453 \let\textnormal@firstofone
454 \let\textrm@firstofone
455 \let\textsf@firstofone
456 \let\texttt@firstofone
457 \let\textbf@firstofone
458 \let\textmd@firstofone
459 \let\textit@firstofone
460 \let\textsc@firstofone
461 \let\textsl@firstofone
462 \let\textup@firstofone
463 \let\normalfont@empty
464 \let\rmfamily@empty
465 \let\sfamily@empty

```

```

466 \let\ttfamily\@empty
467 \let\bfseries\@empty
468 \let\mdseries\@empty
469 \let\itshape\@empty
470 \let\scshape\@empty
471 \let\slshape\@empty
472 \let\upshape\@empty
473 \let\em\@empty
474 \let\rm\@empty
475 \let\Huge\@empty
476 \let\LARGE\@empty
477 \let\Large\@empty
478 \let\footnotesize\@empty
479 \let\huge\@empty
480 \let\large\@empty
481 \let\normalsize\@empty
482 \let\scriptsize\@empty
483 \let\small\@empty
484 \let\tiny\@empty
485 \let\mathversion\@gobble
486 \let\phantom\@gobble
487 \let\vphantom\@gobble
488 \let\hphantom\@gobble

```

**Package color.**

```

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

```

**Upper- and lowercase.**

```

490 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
491 \def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}%

```

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

```

492 \let\textlatin\@firstofone
493 \ltx@ifundefined{language@group}{\@firstofone}%
494 \csname HyPsd@babel@language@group\endcsname
495 }%
496 \HyPsd@GreekPatch
497 \HyPsd@SpanishPatch
498 \HyPsd@RussianPatch
499 \HyPsd@BabelPatch
500 \let\@safe@activetrue\relax
501 \let\@safe@activesfalse\relax

```

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

```

502 \let\cyr\relax

```

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

```

503 \let\es@roman\@Roman

```

**Package german.**

```

504 \let\glqq\textglqq
505 \let\grqq\textgrqq
506 \let\glq\textglq

```

```

507 \let\grq\textgrq
508 \let\flqq\textflqq
509 \let\frqq\textfrqq
510 \let\flq\textflq
511 \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}
512 \let\if@mid@expandable\@firstoftwo

```

**AMS classes.**

```

513 \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.

```

514 \let\hspace\HyPsd@hspace

```

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

```

515 \let\label\@gobble
516 \let\index\@gobble
517 \let\glossary\@gobble
518 \let\href\@secondoftwo
519 \let\@mkboth\@gobbletwo

```

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

```

520 \let\ref\HyPsd@ref
521 \let\pageref\HyPsd@pageref
522 \let\nameref\HyPsd@nameref
523 \let\autoref\HyPsd@autoref

```

**Miscellaneous commands.**

```

524 \let\leavevmode\@empty
525 \let\mbox\@empty

```

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

```

526 \def\halign{\pdfstringdefWarn\halign\@gobble}%
527 \let\ignorespaces\HyPsd@ignorespaces
528 \let\Hy@SectionAnchorHref\@gobble

```

**Patch for cjk bookmarks.**

```

529 \HyPsd@CJKhook

```

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

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

```
530 \Hy@pdfstringtrue
531 \pdfstringdefPreHook
```

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

```
532 \HyPsd@LetUnexpandableSpace\space
533 \HyPsd@LetUnexpandableSpace\ %
534 \HyPsd@LetUnexpandableSpace~%
535 \HyPsd@LetUnexpandableSpace\nobreakspace
```

**Package `xspace`.**

```
536 \ltx@ifundefined{@xspace}{%
537 \let\xspace\HyPsd@ITALCORR
538 }{%
539 \let\xspace\HyPsd@XSPACE
540 }%
541 \let/\HyPsd@ITALCORR
542 \let\bgroup\/%
543 \let\egroup\/%
```

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

```
544 \let\discretionary\@gobbletwo
```

`\@ifstar` is defined in  $\LaTeX$  as follows:

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

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

A mimicry of `\@ifnextchar` only with 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:

```
545 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
546 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
547 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
548 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'xargs':

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

## 6.2.2 Expansion

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

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

**\csname:** First the string is expanded within a `\csname` and `\endcsname`. Then the command name is converted to characters with catcode 12 by `\string` and the first escape character removed by `\@gobble`. This method has the great *advantage* that stomach tokens that aren't allowed in PDF strings are detected by  $\TeX$  and reported as errors in order to force the user to write correct things. So he get no wrong results by forgetting the proofreading of his text. But the *disadvantage* is that old wrong code cannot processed without errors. Mainly the error message is very cryptic and for the normal user hard to understand.  $\TeX$  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  $\LaTeX$ '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  $\LaTeX$  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).

```
550 \begingroup
551 \let\GenericError\@gobblefour
552 \let\GenericWarning\@gobbletwo
553 \let\GenericInfo\@gobbletwo
```

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

```
554 \ifx\nofrenchguillemets\@undefined
555 \else
556 \nofrenchguillemets
557 \fi
```

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

```
558 \let\Hy@temp\xdef
559 \let\def\HyPsd@DefCommand
560 \let\gdef\HyPsd@DefCommand
561 \let\edef\HyPsd@DefCommand
562 \let\xdef\HyPsd@DefCommand
563 \let\futurelet\HyPsd@LetCommand
564 \let\let\HyPsd@LetCommand
565 \Hy@temp#1{#2}%
566 \endgroup
```

### 6.2.3 Postprocessing

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

```
567 \ifx#1\@empty
568 \else
```

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

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

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

```
569 \HyPsd@ProtectSpaces#1%
570 \let\HyPsd@String\@empty
571 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
572 \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.

```
573 \let\HyPsd@SPACEOPTI\relax
574 {%
575 \let\HyPsd@String\@empty
576 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
577 \global\let#1\HyPsd@String
578 }%
579 \expandafter\HyPsd@RemoveMask\expandafter
580 \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.

```
581 \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
582 \let\HyPsd@String\@empty
583 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
584 \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.

```
585 \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.

```
586 \ifHy@unicode
587 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
588 \HyPsd@SPACEOPTI#1%
589 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
590 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
591 {\HyPsd@SPACEOPTI\80\273}#1%
592 \else
593 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
594 \expandafter\HyPsd@Subst\expandafter{%
595 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
596 \string\273}{\HyPsd@SPACEOPTI\273}#1%
597 \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.

```
598 \ifHy@unicode
599 \HyPsd@StringSubst{\)}{\80\051}#1%
600 \HyPsd@Subst){\80\051}#1%
601 \let\HyPsd@empty\relax
602 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
603 {\HyPsd@empty\80\051}#1%
604 \else
605 \HyPsd@StringSubst{\)}{\051}#1%
606 \HyPsd@Subst){\051}#1%
607 \let\HyPsd@empty\relax
```

```

608     \HyPsd@StringSubst{\051}{\HyPsd@empty\string\)}#1%
609     \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`.

```

610     \expandafter\HyPsd@Subst\expandafter{\}\HyPsd@empty#1%
611     \ltx@ifundefined{@xspace}{%
612     }{%
613         \let\HyPsd@xspace\relax
614         \expandafter\HyPsd@Subst\expandafter
615         {\HyPsd@XSPACE}\HyPsd@xspace#1%
616         \let\HyPsd@xspace\HyPsd@doxspace
617     }%
618     \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.

```

619     \HyPsd@Subst{---}\textemdash#1%
620     \HyPsd@Subst{--}\textendash#1%
621 %     \HyPsd@Subst{fi}\textfi#1%
622 %     \HyPsd@Subst{fl}\textfl#1%
623     \HyPsd@Subst{!'}\textexclamdown#1%
624     \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

625     \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.

```

626     \ifHy@unicode
627     \HyPsd@StringSubst{\(\textparenleft#1%
628     \HyPsd@Subst(\textparenleft#1%
629     \else

```

```

630 \HyPsd@StringSubst\({\050}#1%
631 \HyPsd@Subst({\050}#1%
632 \HyPsd@StringSubst{\050}{\string\{ }#1%
633 \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.

```

634 \ifHy@unicode
635 \edef\HyPsd@SPACEOPTI{\80\040}%
636 \else
637 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
638 \fi
639 \xdef#1{#1\@empty}%
640 \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.

```

641 \endgroup
642 \begingroup
643 \ifHy@unicode
644 \HyPsd@ConvertToUnicode#1%

```

**Try conversion back to PDFDocEncoding.**

```

645 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
646 \ltx@ifundefined{StringEncodingConvertTest}{%
647 }{%
648 \EdefUnescapeString\HyPsd@temp#1%
649 \ifxetex
650 \let\HyPsd@UnescapedString\HyPsd@temp
651 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
652 {utf16be}{ascii-print}{%
653 \EdefEscapeString\HyPsd@temp\HyPsd@temp
654 \global\let#1\HyPsd@temp
655 \HyPsd@EscapeTeX#1%
656 \Hy@unicodedefalse
657 }{%
658 \HyPsd@ToBigChars#1%
659 }%
660 \else
661 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
662 {utf16be}{pdfdoc}{%
663 \EdefEscapeString\HyPsd@temp\HyPsd@temp
664 \global\let#1\HyPsd@temp
665 \HyPsd@EscapeTeX#1%
666 \Hy@unicodedefalse
667 }{ }%
668 \fi
669 }%
670 \fi
671 \fi
672 \HyPsd@XeTeXBigCharsfalse

```

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

```
673 \pdfstringdefPostHook#1%
674 \endgroup
675 }
```

`\Hy@pdfstringdef`

```
676 \def\Hy@pdfstringdef#1#2{%
677 \pdfstringdef\Hy@gtemp{#2}%
678 \let#1\Hy@gtemp
679 }
```

## 6.3 Encodings

### 6.3.1 XeTeX

```
680 \edef\Hy@temp{\catcode0=\the\catcode0\relax}
681 \catcode\z@=12 %
682 \ifxetex
683 \expandafter\@firstofone
684 \else
685 \let\HyPsd@XeTeXBigCharstrue\@empty
686 \let\HyPsd@XeTeXBigCharsfalse\@empty
687 \expandafter\@gobble
688 \fi
689 {%
690 \newif\ifHyPsd@XeTeXBigChars
691 \def\HyPsd@XeTeXBigCharsfalse{%
692 \global\let\ifHyPsd@XeTeXBigChars\iffalse
693 }%
694 \def\HyPsd@XeTeXBigCharstrue{%
695 \global\let\ifHyPsd@XeTeXBigChars\iftrue
696 }%
697 \def\HyPsd@ToBigChars#1{%
698 \ifHyPsd@XeTeXBigChars
699 \EdefEscapeHex\HyPsd@UnescapedString{%
700 \expandafter\@gobbletwo\HyPsd@UnescapedString
701 }%
702 \begingroup
703 \toks@{%
704 \escapechar=92\relax
705 \let\x\HyPsd@ToBigChar
706 \expandafter\HyPsd@ToBigChar\HyPsd@UnescapedString
707 \relax\relax\relax\relax\relax\relax\relax
708 \edef\x{%
709 \endgroup
710 \gdef\noexpand#1{\the\toks@}%
711 }%
712 \x
713 \fi
714 }%
715 \def\HyPsd@ToBigChar#1#2#3#4{%
716 \ifx\relax#1\relax
717 \let\x\relax
718 \else
719 \count@=#1#2#3#4\relax
720 \let\y\@empty
```

```

721 \lccode\z@=\count@
722 \ifnum\count@=40 % (
723 \let\y\@backslashchar
724 \else
725 \ifnum\count@=41 % )
726 \let\y\@backslashchar
727 \else
728 \ifnum\count@=92 % backslash
729 \let\y\@backslashchar
730 \else
731 \ifnum\count@=10 % newline
732 \edef\y###1{\string\n}%
733 \else
734 \ifnum\count@=13 % carriage return
735 \edef\y###1{\string\r}%
736 \fi
737 \fi
738 \fi
739 \fi
740 \fi
741 \lowercase{%
742 \toks@\expandafter{%
743 \the\expandafter\toks@
744 \y
745 ^^@%
746 }%
747 }%
748 \fi
749 \x
750 }%
751 }
752 \Hy@temp

```

### 6.3.2 Workaround for package linguex

```

753 \@ifpackageloaded{linguex}{%
754 \let\HyLinguex@OrgB\b
755 \let\HyLinguex@OrgC\c
756 \let\HyLinguex@OrgD\d
757 \def\HyLinguex@Restore{%
758 \let\b\HyLinguex@OrgB
759 \let\c\HyLinguex@OrgC
760 \let\d\HyLinguex@OrgD
761 }%
762 \Hy@AtEndOfPackage{%
763 \pdfstringdefDisableCommands{%
764 \ltx@ifundefined{oldb}{\let\b\oldb}%
765 \ltx@ifundefined{oldc}{\let\c\oldc}%
766 \ltx@ifundefined{oldd}{\let\d\oldd}%
767 }%
768 }%
769 }{%
770 \let\HyLinguex@Restore\relax
771 }%

```

### 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 inter-

preting by the PDF reader, the glyphs of the PD1 encoding are implemented to be safely written to a file (PDF output file, .out file).

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

```
772 \ifundefined{T@PD1}{%
773 \input{pd1enc.def}%
774 \HyLinguex@Restore
775 }{}
776 \DeclareFontFamily{PD1}{pdf}{}
777 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
778 \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.

```
779 \def\HyPsd@InitUnicode{%
780 \ifundefined{T@PU}{%
781 \input{puenc.def}%
782 \HyLinguex@Restore
783 }{}%
784 \DeclareFontFamily{PU}{pdf}{}%
785 \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
786 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
787 \let\HyPsd@InitUnicode\relax
788 }
```

## 6.4 Additional user commands

### 6.4.1 `\texorpdfstring`

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

```
789 \def\texorpdfstring{%
790 \ifHy@pdfstring
791 \expandafter\@secondoftwo
792 \else
793 \expandafter\@firstoftwo
794 \fi
795 }
```

### 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`.

```
796 \@ifundefined{pdfstringdefPreHook}{}%
797 \let\pdfstringdefPreHook\@empty
798 }{}%
```

```

799 \@ifundefined{pdfstringdefPostHook}{%
800   \let\pdfstringdefPostHook\@gobble
801 }{}

```

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

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

```

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

```

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

```

802 \def\pdfstringdefDisableCommands{%
803   \begingroup
804   \makeatletter
805   \HyPsd@DisableCommands
806 }

```

`\HyPsd@DisableCommands`

```

807 \long\def\HyPsd@DisableCommands#1{%
808   \toks0=\expandafter{\pdfstringdefPreHook}%
809   \toks1={#1}%
810   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
811   \endgroup
812 }

```

`\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`.

```

813 \def\pdfstringdefWarn#1{%
814   \expandafter\noexpand\csname<>-\string#1\endcsname
815 }

```

## 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.

```

816 \begingroup

```

```

817 \catcode0=12 %
818 \def\x{\endgroup
819 \def\HyPsd@ignorespaces{%
820 \romannumeral\expandafter'\expandafter^^@%
821 \romannumeral'^^@%
822 }%
823 }%
824 \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`.

```

825 \def\HyPsd@BabelPatch{%
826 \let\HyOrg@languageshorthands\languageshorthands
827 \let\languageshorthands\HyPsd@LanguageShorthands
828 }
829 \RequirePackage{pdftexcmds}[2009/04/10]
830 \begingroup\expandafter\expandafter\expandafter\endgroup
831 \expandafter\ifx\csname pdf@strcmp\endcsname\relax
832 \let\HyPsd@langshort@system\@empty
833 \def\HyPsd@LanguageShorthands#1{%
834 \expandafter\ifx\csname HyPsd@langshort@#1\endcsname
835 \HyPsd@langshort@system
836 \expandafter\@gobble
837 \else
838 \expandafter\@firstofone
839 \fi
840 {%
841 \HyOrg@languageshorthands{#1}%
842 }%
843 }%
844 \else
845 \def\HyPsd@LanguageShorthands#1{%
846 \ifnum\pdf@strcmp{#1}{system}=\z@
847 \expandafter\@gobble
848 \else
849 \expandafter\@firstofone
850 \fi
851 {%
852 \HyOrg@languageshorthands{#1}%
853 }%
854 }%
855 \fi
856 \def\Hy@temp{%
857 \@ifpackageloaded{babel}{%
858 \@ifpackagelater{babel}{2008/03/16}{%
859 \let\Hy@temp\@empty
860 }{%

```



```

861 \def\HyPsd@BabelPatch{%
862 \let\HyOrg@languageshorthands\languageshorthands
863 }%
864 }%
865 }{}%
866 }
867 \Hy@temp
868 \expandafter\Hy@AtBeginDocument\expandafter{\Hy@temp}
869 \newif\ifHy@next

Nothing to do for english.
870 \ltx@ifundefined{danish@sh@"@sel}{}{}%
871 \def\HyPsd@babel@danish{%
872 \declare@shorthand{danish}{"}{}%
873 \declare@shorthand{danish}{"-"}{}%
874 }%
875 }
876 \ltx@ifundefined{dutch@sh@"@sel}{}{}%
877 \def\HyPsd@babel@dutch{%
878 \declare@shorthand{dutch}{"}{}%
879 \declare@shorthand{dutch}{"-"}{}%
880 }%
881 }
882 \ltx@ifundefined{finnish@sh@"@sel}{}{}%
883 \def\HyPsd@babel@finnish{%
884 \declare@shorthand{finnish}{"}{}%
885 }%
886 }
887 \ltx@ifundefined{french@sh@:@sel}{}{}%
888 \def\HyPsd@babel@frenchb{%
889 \def\guill@spacing{ }%
890 }%
891 }
892 \ltx@ifundefined{german@sh@"@sel}{}{}%
893 \def\HyPsd@babel@german{%
894 \declare@shorthand{german}{"}{}%
895 \declare@shorthand{german}{"}{}%
896 \declare@shorthand{german}{"-"}{}%
897 }%
898 }
899 \ltx@ifundefined{macedonian@sh@"@sel}{}{}%
900 \def\HyPsd@babel@macedonian{%
901 \declare@shorthand{macedonian}{"}{}%
902 \declare@shorthand{macedonian}{"-"}{}%
903 }%
904 }{}
905 \ltx@ifundefined{ngerman@sh@"@sel}{}{}%
906 \def\HyPsd@babel@ngerman{%
907 \declare@shorthand{ngerman}{"}{}%
908 \declare@shorthand{ngerman}{"-"}{}%
909 }%
910 }
911 \ltx@ifundefined{portuges@sh@"@sel}{}{}%
912 \def\HyPsd@babel@portuges{%
913 \declare@shorthand{portuges}{"}{}%
914 }%
915 }

```

```

916 \ltx@ifundefined{russian@sh@"@sel}{-}{-%
917   \def\HyPsd@babel@russian{%
918     \declare@shorthand{russian}{"|}{-}%
919     \declare@shorthand{russian}{"~}{-}%
920   }%
921 }
922 \ltx@ifundefined{slovene@sh@"@sel}{-}{-%
923   \def\HyPsd@babel@slovene{%
924     \declare@shorthand{slovene}{"|}{-}%
925   }%
926 }

```

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

```

927 \ltx@ifundefined{spanish@sh@>@sel}{-}{-%
928   \def\HyPsd@babel@spanish{%
929     \declare@shorthand{spanish}{<<}{\guillemotleft}%
930     \declare@shorthand{spanish}{>>}{\guillemotright}%
931     \declare@shorthand{spanish}{"=}{-}%
932     \declare@shorthand{spanish}{"~}{-}%
933     \declare@shorthand{spanish}{"!}{\textexclamdown}%
934     \declare@shorthand{spanish}{"?}{\textquestiondown}%
935   }%
936 }
937 \ltx@ifundefined{swedish@sh@"@sel}{-}{-%
938   \def\HyPsd@babel@swedish{%
939     \declare@shorthand{swedish}{"|}{-}%
940     \declare@shorthand{swedish}{"~}{-}%
941   }%
942 }
943 \ltx@ifundefined{ukrainian@sh@"@sel}{-}{-%
944   \def\HyPsd@babel@ukrainian{%
945     \declare@shorthand{ukrainian}{"|}{-}%
946     \declare@shorthand{ukrainian}{"~}{-}%
947   }%
948 }
949 \ltx@ifundefined{usorbian@sh@"@sel}{-}{-%
950   \def\HyPsd@babel@usorbian{%
951     \declare@shorthand{usorbian}{"f}{f}%
952     \declare@shorthand{usorbian}{"|}{-}%
953   }%
954 }
955 \ltx@ifundefined{greek@sh@\string~@sel}{-}{-%
956   \let\HyPsd@GreekPatch\@empty
957 }{%
958   \def\HyPsd@GreekPatch{%
959     \let\greeknumeral\HyPsd@greeknumeral
960     \let\Greeknatural\HyPsd@greeknumeral
961   }%
962 }
963 \def\HyPsd@greeknumeral#1{%
964   \HyPsd@GreekNum\@firstoftwo{#1}%
965 }
966 \def\HyPsd@Greeknumeral#1{%
967   \HyPsd@GreekNum\@secondoftwo{#1}%
968 }
969 \def\HyPsd@GreekNum#1#2{%
970   \ifHy@unicode
971     \ifnum#2<\@ne

```

```

972 \@arabic{#2}%
973 \else
974 \ifnum#2<1000000 %
975 \HyPsd@@GreekNum#1{#2}%
976 \else
977 \@arabic{#2}%
978 \fi
979 \fi
980 \else
981 \@arabic{#2}%
982 \fi
983 }
984 \def\HyPsd@@GreekNum#1#2{%
985 \ifnum#2<\@m
986 \ifnum#2<10 %
987 \expandafter\HyPsd@GreekNumI
988 \expandafter\@gobble\expandafter#1\number#2%
989 \else
990 \ifnum#2<100 %
991 \expandafter\HyPsd@GreekNumII
992 \expandafter\@gobble\expandafter#1\number#2%
993 \else
994 \expandafter\HyPsd@GreekNumIII
995 \expandafter\@gobble\expandafter#1\number#2%
996 \fi
997 \fi
998 \ifnum#2>\z@
999 \textnumeralsigngreek
1000 \fi
1001 \else
1002 \ifnum#2<\@M
1003 \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
1004 \else
1005 \ifnum#2<100000 %
1006 \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
1007 \else
1008 \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
1009 \fi
1010 \fi
1011 \fi
1012 }
1013 \def\HyPsd@GreekNumI#1#2#3{%
1014 #1{%
1015 \ifnum#3>\z@
1016 \textnumeralsignlowergreek
1017 \fi
1018 }%
1019 \expandafter#2%
1020 \ifcase#3 %
1021 {}{}%
1022 \or\textalpha\textAlpha
1023 \or\textbeta\textBeta
1024 \or\textgamma\textGamma
1025 \or\textdelta\textDelta
1026 \or\textepsilon\textEpsilon
1027 \or\textstigmagreek\textStigmagreek
1028 \or\textzeta\textZeta

```

```

1029 \or\texteta\textEta
1030 \or\texttheta\textTheta
1031 \else
1032   {}{}%
1033 \fi
1034 }
1035 \def\HyPsd@GreekNumII#1#2#3#4{%
1036   #1{%
1037     \ifnum#3>\z@
1038       \textnumeralsignlowergreek
1039       \fi
1040   }%
1041   \expandafter#2%
1042   \ifcase#3 %
1043     {}{}%
1044     \or\textiota\textIota
1045     \or\textkappa\textKappa
1046     \or\textlambda\textLambda
1047     \or\textmu\textMu
1048     \or\textnu\textNu
1049     \or\textxi\textXi
1050     \or\textomicron\textOmicron
1051     \or\textpi\textPi
1052     \or\textkoppagreek\textKoppagreek
1053     \else
1054       {}{}%
1055     \fi
1056   \HyPsd@GreekNumI#1#2#4%
1057 }
1058 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
1059   #1{%
1060     \ifnum#3>\z@
1061       \textnumeralsignlowergreek
1062       \fi
1063     }%
1064     \expandafter#2%
1065     \ifcase#3 %
1066       {}{}%
1067       \or\textrho\textRho
1068       \or\textsigma\textSigma
1069       \or\texttau\textTau
1070       \or\textupsilon\textUpsilon
1071       \or\textphi\textPhi
1072       \or\textchi\textChi
1073       \or\textpsi\textPsi
1074       \or\textomega\textOmega
1075       \or\textsampigreek\textSampigreek
1076       \else
1077         {}{}%
1078       \fi
1079     \HyPsd@GreekNumII#1#2#4#5%
1080 }
1081 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
1082   \HyPsd@GreekNumI\@firstofone#1#2%
1083   \HyPsd@@GreekNum#1{#3#4#5}%
1084 }
1085 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%

```

```

1086 \HyPsd@GreekNumII\@firstofone#1#2#3%
1087 \HyPsd@@GreekNum#1{#4#5#6}%
1088 }
1089 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
1090 \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
1091 \HyPsd@@GreekNum#1{#5#6#7}%
1092 }

1093 \def\HyPsd@SpanishPatch{%
1094 \ltx@ifundefined{es@save@dot}{%
1095 }{%
1096 \let\.\es@save@dot
1097 }%
1098 }

```

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

```

1099 \def\HyPsd@RussianPatch{%
1100 \ltx@ifundefined{russian@sh@"@-@}{%
1101 }{%
1102 \@namedef{russian@sh@"@-@}{-}%
1103 }%
1104 }

```

### 6.5.3 CJK patch

```
1105 \RequirePackage{intcalc}[2007/09/27]
```

\HyPsd@CJKhook

```

1106 \def\HyPsd@CJKhook{%
1107 \ltx@ifpackageloaded{CJK}{%
1108 \let\CJK@kern\relax
1109 \let\CJKkern\relax
1110 \let\CJK@CJK\relax
1111 \ifHy@CJKbookmarks
1112 \HyPsd@CJKhook@bookmarks
1113 \fi
1114 \HyPsd@CJKhook@unicode
1115 }{%
1116 }

```

### 6.5.4 CJK bookmarks

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

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

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

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

```

1117 \begingroup
1118 \catcode"7F=\active
1119 \toks@{%
1120 \let\CJK@ignorespaces\empty
1121 \def\CJK@char#1{\@gobbletwo}%

```

```

1122 \let\CJK@charx\@gobblefour
1123 \let\CJK@punctchar\@gobblefour
1124 \def\CJK@punctcharx#1{\@gobblefour}%
1125 \catcode"7F=\active
1126 \def^^7f#1^^7f#2^^7f{%
1127   \string #1\HyPsd@DecimalToOctal{#2}%
1128 }%
1129 % ... ?
1130 \ifHy@unicode
1131   \def\Hy@cjku{\80}%
1132 \else
1133   \let\Hy@cjku\@empty
1134 \fi
1135 \HyPsd@CJKActiveChars
1136 }%
1137 \count@=127 %
1138 \@whilenum\count@<255 \do{%
1139   \advance\count@ by 1 %
1140   \lccode'\~=\count@
1141   \lowercase{%
1142     \toks@\expandafter{\the\toks@ ~}%
1143   }%
1144 }%
1145 \toks@\expandafter{\the\toks@ !}%
1146 \xdef\HyPsd@CJKhook@bookmarks{%
1147   \the\toks@
1148 }%
1149 \endgroup

```

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

```

1150 \def\HyPsd@CJKActiveChars#1{%
1151   \ifx#1!%
1152     \let\HyPsd@CJKActiveChars\relax
1153   \else
1154     \edef#1{\noexpand\Hy@cjku\string#1}%
1155   \fi
1156   \HyPsd@CJKActiveChars
1157 }

```

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

```

1158 \def\HyPsd@DecimalToOctal#1{%
1159   \ifcase #1 %
1160     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1161     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1162     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1163     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1164     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1165     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1166     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1167     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
1168     \or @\or A\or B\or C\or D\or E\or F\or G%
1169     \or H\or I\or J\or K\or L\or M\or N\or O%
1170     \or P\or Q\or R\or S\or T\or U\or V\or W%
1171     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
1172     \or \140\or a\or b\or c\or d\or e\or f\or g%
1173     \or h\or i\or j\or k\or l\or m\or n\or o%

```

```

1174 \or p\or q\or r\or s\or t\or u\or v\or w%
1175 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
1176 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1177 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1178 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1179 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1180 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1181 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1182 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1183 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1184 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1185 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1186 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1187 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1188 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1189 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1190 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1191 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1192 \fi
1193 }

```

### 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

1194 \def\HyPsd@CJKhook@unicode{%
1195 \let\Unicode\HyPsd@CJK@Unicode
1196 \let\CJKnumber\HyPsd@CJKnumber
1197 \let\CJKdigits\HyPsd@CJKdigits
1198 }

```

\HyPsd@CJK@Unicode

```

1199 \def\HyPsd@CJK@Unicode#1#2{%
1200 \ifnum#1<256 %
1201 \HyPsd@DecimalToOctalFirst{#1}%
1202 \HyPsd@DecimalToOctalSecond{#2}%
1203 \else
1204 \933%
1205 \expandafter\expandafter\expandafter\HyPsd@HighA
1206 \intcalcDiv{#1}{4}!%
1207 \933%
1208 \ifcase\intcalcMod{#1}{4} %
1209 4\or 5\or 6\or 7%
1210 \fi
1211 \HyPsd@DecimalToOctalSecond{#2}%
1212 \fi
1213 }

1214 \def\HyPsd@HighA#1!{%
1215 \expandafter\expandafter\expandafter\HyPsd@HighB
1216 \IntCalcDiv#1!64!!%
1217 \expandafter\expandafter\expandafter\HyPsd@HighD
1218 \IntCalcMod#1!64!!%
1219 }
1220 \def\HyPsd@HighB#1!{%
1221 \expandafter\expandafter\expandafter\HyPsd@HighC
1222 \IntCalcDec#1!!%
1223 }

```

```

1224 \def\HyPsd@HighC#1!{%
1225 \IntCalcDiv#1!4!%
1226 \@backslashchar
1227 \IntCalcMod#1!4!%
1228 }
1229 \def\HyPsd@HighD#1!{%
1230 \ifcase\IntCalcDiv#1!8! %
1231 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1232 \fi
1233 \ifcase\IntCalcMod#1!8! %
1234 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1235 \fi
1236 }
1237 \def\HyPsd@DecimalToOctalFirst#1{%
1238 \9%
1239 \ifcase#1 %
1240 000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1241 \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%
1242 \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1243 \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1244 \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1245 \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1246 \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1247 \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1248 \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1249 \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1250 \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1251 \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1252 \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1253 \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1254 \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
1255 \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1256 \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1257 \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1258 \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1259 \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1260 \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1261 \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1262 \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1263 \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1264 \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1265 \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1266 \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1267 \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1268 \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1269 \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1270 \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1271 \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1272 \fi
1273 }
1274 \def\HyPsd@DecimalToOctalSecond#1{%
1275 \ifcase #1 %
1276 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1277 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1278 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1279 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1280 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%

```



```

1281 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1282 \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1283 \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1284 \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1285 \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1286 \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1287 \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1288 \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1289 \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1290 \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1291 \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1292 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1293 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1294 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1295 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1296 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1297 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1298 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1299 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1300 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1301 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1302 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1303 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1304 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1305 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1306 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1307 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1308 \fi
1309 }

1310 \def\HyPsd@CJKnumber#1{%
1311 \ifnum#1<\z@
1312 \CJK@minus
1313 \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1314 \else
1315 \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1316 \fi
1317 }

1318 \def\HyPsd@@CJKnumber#1{%
1319 \ifcase#1 %
1320 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1321 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1322 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1323 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1324 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1325 \CJK@ten\CJK@nine
1326 \else
1327 \ifnum#1<10000 %
1328 \HyPsd@CJKnumberFour#1!\@empty{20}%
1329 \@empty
1330 \else
1331 \ifnum#1<100000000 %
1332 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1333 \IntCalcDiv#1!10000!%
1334 !}{20}%
1335 \CJK@tenthousand
1336 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1337 \IntCalcMod#1!10000!%

```

```

1338     !\CJK@zero{10}%
1339     \@empty
1340     \else
1341     \expandafter\HyPsd@CJKnumberLarge
1342     \number\IntCalcDiv#1!10000000!\expandafter!%
1343     \number\IntCalcMod#1!10000000!!%
1344     \fi
1345     \fi
1346 \fi
1347 }
1348 \def\HyPsd@CJKnumberLarge#1!#2!{%
1349 \HyPsd@CJKnumberFour#1!{}{20}%
1350 \CJK@hundredmillion
1351 \ifnum#2=\z@
1352 \else
1353 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1354 \IntCalcDiv#2!10000!%
1355 !\CJK@zero{10}%
1356 \CJK@tenthousand
1357 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1358 \IntCalcMod#2!10000!%
1359 !\CJK@zero{10}%
1360 \@empty
1361 \fi
1362 }
1363 \def\HyPsd@CJKnumberFour#1!#2#3{%
1364 \ifnum#1=\z@
1365 \expandafter\@gobble
1366 \else
1367 \ifnum#1<1000 %
1368 #2%
1369 \HyPsd@CJKnumberThree#1!{}{3}%
1370 \else
1371 \HyPsd@@CJKnumber{\IntCalcDiv#1!1000!}%
1372 \CJK@thousand
1373 \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1374 \IntCalcMod#1!1000!%
1375 !\CJK@zero{10}%
1376 \fi
1377 \fi
1378 }
1379 \def\HyPsd@CJKnumberThree#1!#2#3{%
1380 \ifnum#1=\z@
1381 \else
1382 \ifnum#1<100 %
1383 #2%
1384 \HyPsd@CJKnumberTwo#1!{}{3}%
1385 \else
1386 \HyPsd@@CJKnumber{\IntCalcDiv#1!100!}%
1387 \CJK@hundred
1388 \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1389 \IntCalcMod#1!100!%
1390 !\CJK@zero{10}%
1391 \fi
1392 \fi
1393 }
1394 \def\HyPsd@CJKnumberTwo#1!#2#3{%

```

```

1395 \ifnum#1=\z@
1396 \else
1397 \ifnum#1<#3 %
1398 #2%
1399 \HyPsd@@CJKnumber{#1}%
1400 \else
1401 \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1402 \CJK@ten
1403 \ifnum\IntCalcMod#1!10!=\z@
1404 \else
1405 \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1406 \fi
1407 \fi
1408 \fi
1409 }

1410 \def\HyPsd@CJKdigits#1{%
1411 \ifx*#1\relax
1412 \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1413 \else
1414 \HyPsd@@CJKdigits\CJK@null{#1}%
1415 \fi
1416 }

1417 \def\HyPsd@@CJKdigits#1#2{%
1418 \ifx\#2\%
1419 \else
1420 \HyPsd@@@CJKdigits#1#2\@nil
1421 \fi
1422 }%

1423 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1424 \HyPsd@CJKdigit#1{#2}%
1425 \ifx\#3\%
1426 \expandafter\@gobble
1427 \else
1428 \expandafter\@firstofone
1429 \fi
1430 {#3}%
1431 \HyPsd@@@CJKdigits#1#3\@nil
1432 }%
1433 }

1434 \def\HyPsd@CJKdigit#1#2{%
1435 \ifcase#2 %
1436 #1\or
1437 \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1438 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1439 \fi
1440 }

```

### 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  $\LaTeX 2_\epsilon$  versions [1998/06/01] and [1998/12/01]. I expect that versions below [1995/12/01] don't work.

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

```

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

1441 \def\HyPsd@inmathwarn#1#2{%
1442   \ifx#2\expandafter
1443     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1444       \HyPsd@GLYPHERR
1445       \expandafter\@gobble\string#1%
1446       >%
1447       \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1448     \else
1449       \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1450     \fi
1451   \else
1452     \expandafter#2%
1453   \fi
1454 }
1455 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1456 \def\HyPsd@EndWithElse#1\else{\else}

```

\HyPsd@add@accent

```

1457 \def\HyPsd@add@accent#1#2{%
1458   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1459   #2%
1460 }%

```

### 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`.

```
1461 \def\HyPsd@LetUnexpandableSpace#1{%
1462   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1463 }
```

`\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.

```
1464 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace
```

### 6.5.8 Marker for commands

`\HyPsd@XSPACE` Some commands and information 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.

`\HyPsd@ITALCORR`  
`\HyPsd@GLYPHERR`

```
1465 \edef\HyPsd@XSPACE{\string#\string X}
1466 \edef\HyPsd@ITALCORR{\string#\string I}
1467 \edef\HyPsd@GLYPHERR{\string#\string G}
```

### 6.5.9 \hspace fix

`\HyPsd@hspace`

```
1468 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}
```

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

```
1469 \def\HyPsd@@hspace#1*#2\END{%
1470   \ifx\#2\%
1471     \HyPsd@hspacetest{#1}%
1472   \else
1473     \expandafter\HyPsd@hspacetest
1474   \fi
1475 }
```

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

```
1476 \def\HyPsd@hspacetest#1{\ifdim#1>\z@\space\fi}
```

### 6.5.10 Fix for AMS classes

```
1477 \ltx@ifundefined{tocsection}{%
1478   \let\HyPsd@AMSClassfix\relax
1479 }{%
1480   \def\HyPsd@AMSClassfix{%
1481     \let\tocpart\HyPsd@tocsection
1482     \let\tocchapter\HyPsd@tocsection
1483     \let\tocappendix\HyPsd@tocsection
```

```

1484 \let\tocsection\HyPsd@tocsection
1485 \let\tocsubsection\HyPsd@tocsection
1486 \let\tocsubsubsection\HyPsd@tocsection
1487 \let\tocparagraph\HyPsd@tocsection
1488 }%
1489 \def\HyPsd@tocsection#1#2#3{%
1490 \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1491 #3%
1492 }%
1493 }

```

### 6.5.11 Reference commands

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

```
1494 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%
```

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

```

1495 \def\HyPsd@@ref#1*#2\END{%
1496 \ifx\#2\%
1497 \HyPsd@@@ref{#1}%
1498 \else
1499 \expandafter\HyPsd@@@ref
1500 \fi
1501 }%

```

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

```

1502 \def\HyPsd@@@ref#1{%
1503 \expandafter\ifx\csname r@#1\endcsname\relax
1504 ??%
1505 \else
1506 \expandafter\expandafter\expandafter
1507 \@car\csname r@#1\endcsname\@nil
1508 \fi
1509 }

```

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

```
1510 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}
```

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

```

1511 \def\HyPsd@@pageref#1*#2\END{%
1512 \ifx\#2\%
1513 \HyPsd@@@pageref{#1}%
1514 \else
1515 \expandafter\HyPsd@@@pageref
1516 \fi
1517 }

```

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

```

1518 \def\HyPsd@@@pageref#1{%
1519 \expandafter\ifx\csname r@#1\endcsname\relax
1520 ??%
1521 \else
1522 \expandafter\expandafter\expandafter\expandafter
1523 \expandafter\expandafter\expandafter\@car
1524 \expandafter\expandafter\expandafter\@gobble

```

```

1525 \csname r@#1\endcsname{}\@nil
1526 \fi
1527 }

```

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

```

1528 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}

```

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

```

1529 \def\HyPsd@@nameref#1*#2\END{%
1530 \ifx\#2\%
1531 \HyPsd@@@nameref{#1}%
1532 \else
1533 \expandafter\HyPsd@@@nameref
1534 \fi
1535 }

```

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

```

1536 \def\HyPsd@@@nameref#1{%
1537 \expandafter\ifx\csname r@#1\endcsname\relax
1538 ??%
1539 \else
1540 \expandafter\expandafter\expandafter\expandafter
1541 \expandafter\expandafter\expandafter\@car
1542 \expandafter\expandafter\expandafter\@gobbletwo
1543 \csname r@#1\endcsname{}\@nil
1544 \fi
1545 }

```

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

```

1546 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}

```

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

```

1547 \def\HyPsd@@autoref#1*#2\END{%
1548 \ifx\#2\%
1549 \HyPsd@@@autoref{#1}%
1550 \else
1551 \expandafter\HyPsd@@@autoref
1552 \fi
1553 }

```

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

```

1554 \def\HyPsd@@@autoref#1{%
1555 \expandafter\ifx\csname r@#1\endcsname\relax
1556 ??%
1557 \else
1558 \expandafter\expandafter\expandafter\HyPsd@autorefname
1559 \csname r@#1\endcsname{}\@nil
1560 \expandafter\expandafter\expandafter
1561 \@car\csname r@#1\endcsname\@nil
1562 \fi
1563 }

```

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

```

1564 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%

```

```

1565 \ifx\#4\%
1566 \else
1567 \HyPsd@@autorefname#4.\@nil
1568 \fi
1569 }

```

`\HyPsd@@autorefname`

```

1570 \def\HyPsd@@autorefname#1.#2\@nil{%
1571 \ltx@ifundefined{#1autorefname}{%
1572 \ltx@ifundefined{#1name}{%
1573 }{%
1574 \csname#1name\endcsname\space
1575 }%
1576 }{%
1577 \csname#1autorefname\endcsname\space
1578 }%
1579 }

```

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

`\HyPsd@DefCommand`

`\HyPsd@LetCommand`

```

1580 \begingroup
1581 \def\x#1#2{%
1582 \endgroup
1583 \let#1\def
1584 \def\HyPsd@DefCommand##1##2###{%
1585 #1%
1586 \expandafter\noexpand

```



```

1587     \csname\expandafter\@gobble\string##1\@empty\endcsname
1588     \@gobble
1589   }%
1590   \let#2\let
1591   \def\HyPsd@@LetCommand##1{%
1592     \expandafter\ifx\csname##1\expandafter\endcsname
1593       \csname iftrue\endcsname
1594     \pdfstringdefWarn\let
1595     \expandafter\@gobble
1596   \else
1597     \expandafter\ifx\csname##1\expandafter\endcsname
1598       \csname iffalse\endcsname
1599     \pdfstringdefWarn\let
1600     \expandafter\expandafter\expandafter\@gobble
1601   \else
1602     #2%
1603     \expandafter\noexpand
1604     \csname##1\expandafter\expandafter\expandafter\endcsname
1605   \fi
1606   \fi
1607 }%
1608 }%
1609 \expandafter\x\csname <def>-command\expandafter\endcsname
1610     \csname <let>-command\endcsname
1611 \def\HyPsd@LetCommand#1{%
1612 \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1613 \expandafter\expandafter\expandafter{%
1614 \expandafter\@gobble\string#1\@empty
1615 }%
1616 }

```

### 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).

```

1617 \def\HyPsd@ifnextchar#1{%
1618 \pdfstringdefWarn#1%
1619 \expandafter\@gobbletwo\@gobble
1620 }

```

### 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`.

```

1621 \def\HyPsd@protected@testopt#1{%

```

```

1622 \pdfstringdefWarn#1%
1623 \@gobbletwo
1624 }

```

## 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:

```

1625 \def\HyPsd@Warning#1{%
1626 \begingroup
1627 \def\space{ }%
1628 \Hy@Warning{#1}%
1629 \endgroup
1630 }

```

### 6.6.2 Protecting spaces

```

1631 \RequirePackage{etexcmds}[2007/09/09]
1632 \ifetex@unexpanded
1633 \expandafter\@secondoftwo
1634 \else
1635 \expandafter\@firstoftwo
1636 \fi
1637 {%

```

`\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`.

```

1638 \def\HyPsd@ProtectSpaces#1{%
1639 \iftrue
1640 \expandafter\HyPsd@@ProtectSpacesFi
1641 \expandafter|\expandafter\@empty#1|\HyPsd@End#1%
1642 \fi
1643 }%

```

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

```

1644 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1645 \fi
1646 \ifx\scrollmode#2\scrollmode
1647 \HyPsd@RemoveMask#1\HyPsd@End#3%
1648 \else
1649 \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1650 \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1651 \fi
1652 }%

```

### 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.

```

1653 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1654 \toks@\expandafter{#1}%
1655 \xdef#2{\the\toks@}%
1656 }%

```

```

1657 }{%
1658 \let\HyPsd@fi\fi
1659 \def\HyPsd@ProtectSpaces#1{%
1660 \xdef#1{%
1661 \iftrue
1662 \expandafter\HyPsd@@ProtectSpacesFi
1663 \expandafter|\expandafter\@empty#1| %
1664 \HyPsd@fi
1665 }%
1666 \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1667 }%
1668 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1669 \fi
1670 \etex@unexpanded{#1}%
1671 \ifx\scrollmode#2\scrollmode
1672 \else
1673 \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1674 \HyPsd@fi
1675 }%
1676 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1677 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1678 }%
1679 }

```

### 6.6.3 Remove grouping braces

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

```

1680 \def\HyPsd@RemoveBraces#1{%
1681 \ifx\scrollmode#1\scrollmode
1682 \else
1683 \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1684 \fi
1685 }

```

`\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`.

```

1686 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1687 \fi
1688 \def\Hy@temp@A{#1#2}%
1689 \def\Hy@temp@B{#3}%
1690 \ifx\Hy@temp@A\Hy@temp@B
1691 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1692 \HyPsd@String#1%
1693 }%
1694 \ifx\scrollmode#2\scrollmode
1695 \else
1696 \Hy@ReturnAfterFiFiEnd{%
1697 \HyPsd@RemoveBraces{#2}%
1698 }%

```

```

1699 \fi
1700 \else
1701 \def\Hy@temp@A{#1}%
1702 \HyPsd@AppendItalcorr\HyPsd@String
1703 \ifx\Hy@temp@A\@empty
1704 \Hy@ReturnAfterElseFiFiEnd{%
1705 \HyPsd@RemoveBraces{#2}%
1706 }%
1707 \else
1708 \HyPsd@ProtectSpaces\Hy@temp@A
1709 \HyPsd@AppendItalcorr\Hy@temp@A
1710 \Hy@ReturnAfterFiFiEnd{%
1711 \expandafter\HyPsd@RemoveBraces\expandafter
1712 {\Hy@temp@A#2}%
1713 }%
1714 \fi
1715 \fi
1716 \Hy@ReturnEnd
1717 }

```

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

```

1718 \def\HyPsd@AppendItalcorr#1{%
1719 \expandafter\HyPsd@@AppendItalcorr\expandafter{/}#1%
1720 }
1721 \def\HyPsd@@AppendItalcorr#1#2{%
1722 \expandafter\def\expandafter#2\expandafter{#2#1}%
1723 }

```

#### 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).

```

1724 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1725 \global\let\HyPsd@Rest\relax
1726 \ifcat\relax\noexpand#1\relax
1727 \ifx#1\protect
1728 \else
1729 \ifx#1\penalty
1730 \setbox\z@=\hbox{%
1731 \afterassignment\HyPsd@AfterCountRemove
1732 \count@=#2\HyPsd@End
1733 }%
1734 \else
1735 \ifx#1\kern
1736 \setbox\z@=\hbox{%
1737 \afterassignment\HyPsd@AfterDimenRemove

```

```

1738     \dimen@=#2\HyPsd@End
1739     }%
1740 \else
1741   \ifx#1\hskip
1742     \setbox\z@=\hbox{%
1743       \afterassignment\HyPsd@AfterSkipRemove
1744       \skip@=#2\HyPsd@End
1745     }%
1746   \else
1747     \HyPsd@CatcodeWarning{#1}%
1748   \fi
1749 \fi
1750 \fi
1751 \fi
1752 \else
1753 \ifcat#1A% letter
1754   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1755     \HyPsd@String#1%
1756   }%
1757 \else
1758 \ifcat#1 % SPACE
1759   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1760     \HyPsd@String\HyPsd@SPACEOPTI
1761   }%
1762 \else
1763 \ifcat$#1%
1764   \HyPsd@CatcodeWarning{math shift}%
1765 \else
1766 \ifcat&#1%
1767   \HyPsd@CatcodeWarning{alignment tab}%
1768 \else
1769 \ifcat^#1%
1770   \HyPsd@CatcodeWarning{superscript}%
1771 \else
1772 \ifcat_#1%
1773   \HyPsd@CatcodeWarning{subscript}%
1774 \else
1775   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1776     \HyPsd@String#1%
1777   }%
1778   \fi
1779   \fi
1780   \fi
1781   \fi
1782 \fi
1783 \fi
1784 \fi
1785 \ifx\HyPsd@Rest\relax
1786   \ifx\scrollmode#2\scrollmode
1787   \else
1788     \Hy@ReturnAfterFiFiEnd{%
1789       \HyPsd@CheckCatcodes#2\HyPsd@End
1790     }%
1791   \fi
1792 \else
1793   \ifx\HyPsd@Rest\@empty
1794   \else

```

```

1795 \Hy@ReturnAfterFiFiEnd{%
1796 \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1797 }%
1798 \fi
1799 \fi
1800 \Hy@ReturnEnd
1801 }

```

### Remove counts, dimens, skips.

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

```

1802 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1803 \gdef\HyPsd@Rest{#1}%
1804 }

```

`\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.

```

1805 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1806 \ifdim\ifx\HyPsd@String@empty\z@else\dimen@>\fi>1ex %
1807 \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1808 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1809 \else
1810 \ifdim\dimen@=\z@
1811 \else
1812 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1813 \fi
1814 \gdef\HyPsd@Rest{#1}%
1815 \fi
1816 }

```

`\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).

```

1817 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1818 \ifdim\ifx\HyPsd@String@empty\z@else\skip@>\fi>1ex %
1819 \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1820 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1821 \else
1822 \ifdim\skip@=\z@
1823 \else
1824 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1825 \fi
1826 \gdef\HyPsd@Rest{#1}%
1827 \fi
1828 }

```

### Catcode warnings.

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

```

1829 \def\HyPsd@CatcodeWarning#1{%
1830 \HyPsd@Warning{%
1831 Token not allowed in a PDF string (%
1832 \ifHy@unicode
1833 Unicode%
1834 \else

```

```

1835 PDFDocEncoding%
1836 \fi
1837 ):%
1838 \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1839 }%
1840 }
1841 \beginingroup
1842 \catcode'\|=0 %
1843 \catcode'\|=12 %
1844 |gdef|HyPsd@RemoveCmdPrefix#1{%
1845 |expandafter|HyPsd@@RemoveCmdPrefix
1846 |string#1|@empty\<-|@empty|@empty
1847 }%
1848 |gdef|HyPsd@@RemoveCmdPrefix#1\<-#2|@empty#3|@empty{#1#2}%
1849 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

1850 \def\HyPsd@RemoveSpaceWarning#1{%
1851 \HyPsd@Warning{%
1852 Token not allowed in a PDF string (%
1853 \ifHy@unicode
1854 Unicode%
1855 \else
1856 PDFDocEncoding%
1857 \fi
1858 ):%
1859 \MessageBreak #1\MessageBreak
1860 removed%
1861 }%
1862 }

```

\HyPsd@ReplaceSpaceWarning

```

1863 \def\HyPsd@ReplaceSpaceWarning#1{%
1864 \HyPsd@Warning{%
1865 Token not allowed in a PDF string (%
1866 \ifHy@unicode
1867 Unicode%
1868 \else
1869 PDFDocEncoding%
1870 \fi
1871 ):%
1872 \MessageBreak #1\MessageBreak
1873 replaced by space%
1874 }%
1875 }

```

### 6.6.5 Check for wrong glyphs

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

```

1876 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1877 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1878 \HyPsd@String#1%
1879 }%
1880 \ifx\|#2\| %
1881 \else
1882 \Hy@ReturnAfterFi{%

```

```

1883 \HyPsd@GlyphProcessWarning#2\@empty
1884 }%
1885 \fi
1886 }
1887 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1888 \HyPsd@@GlyphProcessWarning#1++>%
1889 \HyPsd@GlyphProcess#2\@empty
1890 }
1891 \def\HyPsd@@GlyphProcessWarning#1+#2+#3>{%
1892 \ifx\#2\%
1893 \HyPsd@Warning{%
1894 Glyph not defined in %
1895 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1896 removing \@backslashchar#1'%
1897 }%
1898 \else
1899 \HyPsd@Warning{%
1900 Composite letter \@backslashchar#1+#2'\MessageBreak
1901 not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
1902 \MessageBreak
1903 removing \@backslashchar#1'%
1904 }%
1905 \fi
1906 }

```

## 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`.

```

1907 \def\HyPsd@spaceopti#1{ % first space
1908 \ifx\HyPsd@spaceopti#1%
1909 \040%
1910 \else
1911 #1%
1912 \fi
1913 }%

```

### 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.
1914 \def\HyPsd@Subst#1#2#3{%
1915 \def\HyPsd@@ReplaceFi##1##2\END\fi{%
1916 \fi
1917 ##1%
1918 \ifx\scrollmode##2\scrollmode
1919 \else
1920 #2%
1921 \HyPsd@@ReplaceFi##2\END
1922 \fi
1923 }%

```



```

1924 \xdef#3{%
1925   \iftrue
1926     \expandafter\HyPsd@@ReplaceFi#3#1\END
1927   \fi
1928 }%
1929 }

```

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

```

1930 \def\HyPsd@StringSubst#1{%
1931   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1932 }

```

`\HyPsd@EscapeTeX`

```

1933 \begingroup
1934 \lccode'\!='\%%
1935 \lccode'\|='\%%
1936 \lccode'\(='\{%
1937 \lccode'\)='\}%
1938 \lccode'0='\ltx@zero
1939 \lccode'1='\ltx@zero
1940 \lccode'3='\ltx@zero
1941 \lccode'4='\ltx@zero
1942 \lccode'5='\ltx@zero
1943 \lccode'7='\ltx@zero
1944 \lowercase{\endgroup
1945 \def\HyPsd@EscapeTeX#1{%
1946   \HyPsd@Subst!{|045}#1%
1947   \HyPsd@Subst({|173}#1%
1948   \HyPsd@Subst){|175}#1%
1949 }%
1950 }

```

### 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.

```

1951 \def\HyPsd@doxspace#1{%
1952   \ifx#1\relax\else
1953     \ifx#1.\else
1954       \ifx#1:\else
1955         \ifx#1,\else
1956           \ifx#1;\else
1957             \ifx#1!\else
1958               \ifx#1?\else
1959                 \ifx#1/\else
1960                   \ifx#1-\else
1961                     \ifx#1'\else
1962                       \HyPsd@SPACEOPTI
1963                     \fi
1964                   \fi
1965                 \fi
1966               \fi
1967             \fi
1968           \fi

```

```

1969 \fi
1970 \fi
1971 \fi
1972 \fi
1973 #1%
1974 }%

```

### 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.

```

1975 \begingroup
1976 \catcode'\|=0 %
1977 \catcode'\|=12 %

```

\HyPsd@ConvertToUnicode

```

1978 |gdef|HyPsd@ConvertToUnicode#1{%
1979 |xdef#1{%
1980 |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1981 }%
1982 |ifx#1|@empty
1983 |else
1984 |xdef#1{%
1985 \376\377%
1986 #1%
1987 }%
1988 |fi
1989 }%

```

\HyPsd@DoConvert

```

1990 |gdef|HyPsd@DoConvert#1{%
1991 |ifx#1|@empty
1992 |else
1993 |Hy@ReturnAfterFi{%
1994 |ifx#1\%%
1995 \%%
1996 |expandafter|HyPsd@DoEscape
1997 |else
1998 |HyPsd@Char{#1}%
1999 |expandafter|HyPsd@DoConvert
2000 |fi
2001 }%
2002 |fi
2003 }%

```

\HyPsd@DoEscape

```

2004 |gdef|HyPsd@DoEscape#1{%
2005 |ifx#19%
2006 |expandafter|HyPsd@GetTwoBytes
2007 |else
2008 |Hy@ReturnAfterFi{%
2009 |ifx#18%
2010 00%
2011 |expandafter|HyPsd@GetTwoBytes
2012 |else

```

```

2013     #1%
2014     |expandafter|HyPsd@GetOneByte
2015     |fi
2016     }%
2017     |fi
2018     }%

```

`\HyPsd@GetTwoBytes`

```

2019 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
2020 #1\#2#3#4%
2021 |HyPsd@DoConvert
2022 }%

```

`\HyPsd@GetOneByte`

```

2023 |gdef|HyPsd@GetOneByte#1#2{%
2024 #1#2%
2025 |HyPsd@DoConvert
2026 }%
2027 |endgroup

```

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

```

2028 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
2029 \xdef#4{#4#1#2}%
2030 \HyPsd@@ConvertToUnicode#3\END#4%
2031 }

```

`\HyPsd@Char`

```

2032 \begingroup
2033 \catcode0=9 %
2034 \catcode'\^=7 %
2035 \catcode'\^^=12 %
2036 \def\x{^^^0000}%
2037 \expandafter\endgroup
2038 \ifx\x\@empty
2039 \def\HyPsd@Char#1{%
2040 \ifnum'#1<128 %
2041 \@backslashchar 000#1%
2042 \else
2043 \ifnum'#1<65536 %
2044 \expandafter\HyPsd@CharTwoByte\number'#1!%
2045 \else
2046 \expandafter\expandafter\expandafter\HyPsd@CharSurrogate
2047 \intcalcSub{'#1}{65536}!%
2048 \fi
2049 \fi
2050 }%
2051 \def\HyPsd@CharTwoByte#1!{%
2052 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2053 \IntCalcDiv#1!256!!%
2054 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2055 \IntCalcMod#1!256!!%
2056 }%
2057 \def\HyPsd@CharOctByte#1!{%
2058 \@backslashchar
2059 \IntCalcDiv#1!64!%
2060 \intcalcDiv{\IntCalcMod#1!64!}{8}%
2061 \IntCalcMod#1!8!%

```

```

2062 }%
2063 \def\HyPsd@CharSurrogate#1!{%
2064 \@backslashchar 33%
2065 \IntCalcDiv#1!262144!%
2066 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2067 \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
2068 \@backslashchar 33%
2069 \expandafter\expandafter\expandafter\IntCalcAdd
2070 \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
2071 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2072 \IntCalcMod#1!256!!%
2073 }%
2074 \else
2075 \def\HyPsd@Char#1{%
2076 \@backslashchar 000#1%
2077 }%
2078 \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`

```

2079 \begingroup\expandafter\expandafter\expandafter\endgroup
2080 \expandafter\ifx\csname numexpr\endcsname\relax
2081 \let\HyPsd@UTFviii\relax
2082 \else
2083 \begingroup
2084 \lccode'\~='^^f4\relax
2085 \lowercase{\endgroup
2086 \def\HyPsd@UTFviii{%
2087 \let\UTFviii@two@octets\HyPsd@UTFviii@two
2088 \let\UTFviii@three@octets\HyPsd@UTFviii@three
2089 \let\UTFviii@four@octets\HyPsd@UTFviii@four
2090 \ifx~\HyPsd@UTFviii@ccxliv@undef
2091 \let~\HyPsd@UTFviii@ccxliv@def
2092 \fi
2093 \let\unichar\HyPsd@unichar
2094 }%
2095 }%
2096 \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
2097 \edef\HyPsd@UTFviii@ccxliv@def{%
2098 \noexpand\UTFviii@four@octets\string ^^f4%
2099 }%

```

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.

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

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

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

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

$$\tag{5}$$

```

2100 \def\HyPsd@UTFviii@two#1#2{%
2101 \expandafter\HyPsd@UTFviii@@two
2102 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter| %
2103 \number'#1\expandafter| %
2104 \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter| %
2105 \number'#2 \@nil
2106 }%
2107 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
2108 \expandafter\8%
2109 \number\numexpr #1-48\expandafter\relax
2110 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
2111 \number\numexpr #3-8*%
2112 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
2113 \number\numexpr #4-8*#3\relax
2114 }%

```

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

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

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

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

$$d := B - 4 * (B/4) \tag{9}$$

$$e := C/8 - 16 \tag{10}$$

$$f := C - 8 * (C/8) \tag{11}$$

$$\tag{12}$$

```

2115 \def\HyPsd@UTFviii@three#1#2#3{%
2116 \expandafter\HyPsd@UTFviii@@three
2117 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter| %
2118 \number'#1\expandafter| %
2119 \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter| %
2120 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter| %
2121 \number'#2\expandafter| %
2122 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter| %
2123 \number'#3 \@nil
2124 }%
2125 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
2126 \expandafter\9%
2127 \number\numexpr #1-56\expandafter\relax
2128 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
2129 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
2130 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
2131 \number\numexpr #6-16\expandafter\relax
2132 \number\numexpr #7-8*#6\relax
2133 }%

```

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

UTF-8: 11110uuu 10uuzzzz 10yyyyyy 10xxxxxx

www = uuuuu - 1  
 UTF-16: 110110ww wwzzzzyy 110111yy yyxxxxxx  
 octal: 011 011 0ww 0ww zzz zyy 011 011 1yy 0yy xxx xxx

```

2134 \def\HyPsd@UTFviii@four#1#2{%
2135 \expandafter\HyPsd@@UTFviii@four\number
2136 \numexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
2137 \expandafter|\number
2138 \numexpr'#2-16*\dimexpr.0625\dimexpr'#2sp| %
2139 }%
2140 \def\HyPsd@@UTFviii@four#1|#2|#3{%
2141 \933\number\dimexpr.25\dimexpr#1sp\relax\relax
2142 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
2143 \ifodd#2 %
2144 \number\numexpr(#2-1)/2\relax
2145 \else
2146 \number\numexpr#2/2\relax
2147 \fi
2148 \number\numexpr\ifodd#2 4+\fi
2149 \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
2150 \933%
2151 \expandafter\HyPsd@@@UTFviii@four\number
2152 \numexpr'#3-16*\dimexpr.0625\dimexpr'#3sp| %
2153 }%
2154 \def\HyPsd@@@UTFviii@four#1|#2{%
2155 \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
2156 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
2157 \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
2158 \number\numexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
2159 }%
  
```

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

```

2160 \def\HyPsd@unichar#1{%
2161 \ifHy@unicode
2162 \ifnum#1>"10FFFF %
2163 \HyPsd@UnicodeReplacementCharacter % illegal
2164 \else
2165 \ifnum#1>"FFFF %
  
```

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

```

2166 \expandafter\HyPsd@unichar\expandafter{%
2167 \number\numexpr 55296+%
2168 \dimexpr.0009765625\dimexpr\number#1sp-\p@
2169 \relax\relax\relax
2170 }%
  
```

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

```

2171 \expandafter\HyPsd@unichar\expandafter{%
2172 \number\numexpr#1-9216%
2173 -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
2174 \relax\relax\relax
2175 }%
2176 \else
2177 \ifnum#1>"7FF %
2178 \9%
2179 \expandafter\HyPsd@unichar@first@byte\expandafter{%
2180 \number
2181 \dimexpr.00390625\dimexpr\number#1sp\relax\relax
  
```

```

2182     }%
2183     \else
2184     \8%
2185     \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
2186     \fi
2187     \expandafter\HyPsd@unichar@second@byte\expandafter{%
2188     \number
2189     \numexpr#1-256*\number
2190     \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
2191     }%
2192     \fi
2193     \fi
2194     \else
2195     .% unsupported (Unicode -> PDF Doc Encoding)
2196     \fi
2197 }%
2198 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
2199 \def\HyPsd@unichar@first@byte#1{%
2200 \number\dimexpr.015625\dimexpr#1sp\relax\relax
2201 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2202 \number
2203 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2204 \relax\relax\relax
2205 }%
2206 }%
2207 \def\HyPsd@unichar@second@byte#1{%
2208 \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2209 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2210 \number
2211 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2212 \relax\relax\relax
2213 }%
2214 }%
2215 \def\HyPsd@unichar@octtwo#1{%
2216 \number\dimexpr.125\dimexpr#1sp\relax\relax
2217 \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2218 \relax\relax\relax
2219 }%
2220 \fi

```

## 7 Support of other packages

### 7.1 Class memoir

```

2221 \@ifclassloaded{memoir}{%
2222 \Hy@AtEndOfPackage{\RequirePackage{memhfixc}}%
2223 }{}

```

### 7.2 Package subfigure

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

```

2224 \@ifpackageloaded{subfigure}{%
2225 \ltx@ifundefined{sub@label}{%
2226 \Hy@hypertexnamesfalse
2227 }{%
2228 \renewcommand*{\sub@label}[1]{%
2229 \@bsphack

```

```

2230 \subfig@oldlabel{#1}%
2231 \if@filesw
2232 \beginingroup
2233 \edef\@currentlabstr{%
2234 \expandafter\strip@prefix\meaning\@currentlabelname
2235 }%
2236 \protected@write\@auxout{}{%
2237 \string\newlabel{sub@#1}{%
2238 {\@nameuse{@@thesub\@capttype}}%
2239 {\thepage}%
2240 }%
2241 \expandafter\strip@period\@currentlabstr
2242 \relax.\relax\@@@%
2243 }%
2244 {\@currentHref}%
2245 {}%
2246 }%
2247 }%
2248 \endgroup
2249 \fi
2250 \@esphack
2251 }%
2252 \ifpackagelater{subfigure}{2002/03/26}{%
2253 \providecommand*\toclevel@subfigure{1}%
2254 \providecommand*\toclevel@subtable{1}%
2255 }%
2256 }%
2257 }{}

```

### 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:

```

2258 \ltx@ifundefined{XR@addURL}{%
2259 }%

```

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.

```

2260 \def\XR@addURL#1{\XR@dURL#1{}{}{}\\}%
2261 \def\XR@dURL#1#2#3#4#5\{%
2262 {#1}{#2}%
2263 \if!#4!%
2264 \else
2265 {#3}{#4}{\XR@URL}%
2266 \fi
2267 }%
2268 }

```

```

2269 \def\Hy@true{true}
2270 \def\Hy@false{false}

```

Providing dummy definitions.

```

2271 \let\literalps@out\@gobble
2272 \newcommand\pdfbookmark[3]{}
2273 \def\Acrobatmenu#1#2{\leavevmode#2}
2274 \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

```
2275 \let\HyperRaiseLinkHook\@empty
2276 \def\HyperRaiseLinkDefault{\baselineskip}
```

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

```
2277 \def\Hy@raisedlink#1{%
2278   \ifvmode
2279     #1%
2280   \else
2281     \penalty\@M
2282     \smash{%
2283       \begingroup
2284         \let\HyperRaiseLinkLength\@tempdima
2285         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2286         \HyperRaiseLinkHook
2287       \expandafter\endgroup
2288       \expandafter\raise\the\HyperRaiseLinkLength\hbox{#1}%
2289     }%
2290   \fi
2291 }
```

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

```
2292 \def\Hy@SaveLastskip{%
2293   \let\Hy@RestoreLastskip\relax
2294   \ifvmode
2295     \ifdim\lastskip=\z@
2296       \let\Hy@RestoreLastskip\nobreak
2297     \else
2298       \begingroup
2299         \skip@=-\lastskip
2300       \edef\x{%
2301         \endgroup
2302         \def\noexpand\Hy@RestoreLastskip{%
2303           \noexpand\ifvmode
2304             \noexpand\nobreak
2305             \vskip\the\skip@
2306             \vskip\the\lastskip\relax
2307           \noexpand\fi
2308         }%
2309       }%
2310     \x
2311   \fi
2312 \else
2313   \ifhmode
2314     \ifdim\lastskip=\z@
```

```

2315     \let\Hy@RestoreLastskip\nobreak
2316     \else
2317     \begingroup
2318     \skip@=-\lastskip
2319     \edef\x{%
2320     \endgroup
2321     \def\noexpand\Hy@RestoreLastskip{%
2322     \noexpand\ifhmode
2323     \noexpand\nobreak
2324     \hskip\the\skip@
2325     \hskip\the\lastskip\relax
2326     \noexpand\fi
2327     }%
2328     }%
2329     \x
2330     \fi
2331     \fi
2332     \fi
2333 }%

```

## 9 Options

### 9.1 Help macros

\Hy@boolkey

```

2334 \def\Hy@boolkey{@dblarg\Hy@@boolkey}
2335 \def\Hy@@boolkey[#1]#2#3{%
2336 \edef\Hy@tempa{#3}%
2337 \lowercase\expandafter{%
2338 \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2339 }%
2340 \ifx\Hy@tempa\@empty
2341 \let\Hy@tempa\Hy@true
2342 \fi
2343 \ifx\Hy@tempa\Hy@true
2344 \else
2345 \ifx\Hy@tempa\Hy@false
2346 \else
2347 \let\Hy@tempa\relax
2348 \fi
2349 \fi
2350 \ifx\Hy@tempa\relax
2351 \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
2352 \else
2353 \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
2354 \csname Hy@#2\Hy@tempa\endcsname
2355 \fi
2356 }

```

\Hy@WarnOptionValue

```

2357 \def\Hy@WarnOptionValue#1#2#3{%
2358 \Hy@Warning{%
2359 Unexpected value ‘#1’\MessageBreak
2360 of option ‘#2’ instead of\MessageBreak
2361 #3%
2362 }%

```

2363 }

\Hy@DisableOption

```
2364 \def\Hy@DisableOption#1{%
2365   \@ifundefined{KV@Hyp@#1@default}{%
2366     \define@key{Hyp}{#1}%
2367   }{%
2368     \define@key{Hyp}{#1}[]%
2369   }%
2370   {\Hy@WarnOptionDisabled{#1}}%
2371 }
```

\Hy@WarnOptionDisabled

```
2372 \def\Hy@WarnOptionDisabled#1{%
2373   \Hy@Warning{%
2374     Option '#1' has already been used,\MessageBreak
2375     setting the option has no effect%
2376   }%
2377 }
```

\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.

```
2378 \def\Hy@CheckOptionValue#1#2#3{%
2379   \begingroup
2380   \edef\x{#1}%
2381   \@onelevel@sanitize\x
2382   \let\y=y%
2383   \def\do##1##2{%
2384     \def\z{##1}%
2385     \@onelevel@sanitize\z
2386     \ifx\x\z
2387       \let\y=n%
2388       \let\do@gobbletwo
2389     \fi
2390   }%
2391   #3%
2392   \ifx\y y%
2393     \def\do##1##2{%
2394       *'##1'%
2395       \ifx\##2\else\space(##2)\fi
2396     \MessageBreak
2397   }%
2398   \Hy@Warning{%
2399     Values of option '#2':\MessageBreak
2400     #3%
2401     * An empty value disables the option.\MessageBreak
2402     Unknown value '\x'%
2403   }%
2404   \fi
2405   \endgroup
2406 }
```

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

```
2407 \def\Hy@DefNameKey#1{%
```

```

2408 \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
2409 }

```

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

```

2410 \def\Hy@@DefNameKey#1#2#3{%
2411 \define@key{Hyp}{#2}{%
2412 \edef#1{##1}%
2413 \ifx#1\@empty
2414 \else
2415 \Hy@CheckOptionValue{##1}{#2}{#3}%
2416 \fi
2417 }%
2418 \let#1\@empty
2419 }

```

\Hy@UseNameKey

```

2420 \def\Hy@UseNameKey#1#2{%
2421 \ifx#2\@empty
2422 \else
2423 /#1/#2%
2424 \fi
2425 }

```

## 9.2 Defining the options

```

2426 \define@key{Hyp}{implicit}[true]{%
2427 \Hy@boolkey{implicit}{#1}%
2428 }
2429 \define@key{Hyp}{draft}[true]{%
2430 \Hy@boolkey{draft}{#1}%
2431 }
2432 \define@key{Hyp}{final}[true]{%
2433 \Hy@boolkey{final}{#1}%
2434 }
2435 \let\KV@Hyp@nolinks\KV@Hyp@draft
2436 \def\Hy@ObsoletePaperOption#1{%
2437 \Hy@WarningNoLine{%
2438 Option '#1' is no longer used%
2439 }%
2440 \define@key{Hyp}{#1}[true]{}%
2441 }
2442 \def\Hy@temp#1{%
2443 \define@key{Hyp}{#1}[true]{%
2444 \Hy@ObsoletePaperOption{#1}%
2445 }%
2446 }
2447 \Hy@temp{a4paper}
2448 \Hy@temp{a5paper}
2449 \Hy@temp{b5paper}
2450 \Hy@temp{letterpaper}
2451 \Hy@temp{legalpaper}
2452 \Hy@temp{executivepaper}
2453 \define@key{Hyp}{setpagesize}[true]{%
2454 \Hy@boolkey{setpagesize}{#1}%

```

```

2455 }
2456 \define@key{Hyp}{debug}[true]{%
2457 \Hy@boolkey[debug]{verbose}{#1}%
2458 }
2459 \define@key{Hyp}{linktopage}[true]{%
2460 \Hy@boolkey[linktopage]{#1}%
2461 \ifHy@linktopage
2462 \let\Hy@linktoc\Hy@linktoc@page
2463 \else
2464 \let\Hy@linktoc\Hy@linktoc@section
2465 \fi
2466 }
2467 \chardef\Hy@linktoc@none=0 %
2468 \chardef\Hy@linktoc@section=1 %
2469 \chardef\Hy@linktoc@page=2 %
2470 \chardef\Hy@linktoc@all=3 %
2471 \ifHy@linktopage
2472 \let\Hy@linktoc\Hy@linktoc@page
2473 \else
2474 \let\Hy@linktoc\Hy@linktoc@section
2475 \fi
2476 \define@key{Hyp}{linktoc}{%
2477 \@ifundefined{Hy@linktoc@#1}{%
2478 \Hy@Warning{%
2479 Unexpected value '#1' of\MessageBreak
2480 option 'linktoc' instead of 'none',\MessageBreak
2481 'section', 'page' or 'all'%
2482 }%
2483 }{%
2484 \expandafter\let\expandafter\Hy@linktoc
2485 \csname Hy@linktoc@#1\endcsname
2486 }%
2487 }
2488 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2489 \let\XR@ext\relax
2490 \define@key{Hyp}{verbose}[true]{%
2491 \Hy@boolkey[verbose]{#1}%
2492 }
2493 \define@key{Hyp}{typexml}[true]{%
2494 \Hy@boolkey[typexml]{#1}%
2495 }

```

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.

```

2496 \define@key{Hyp}{raiselinks}[true]{%
2497 \Hy@boolkey[raiselinks]{#1}%
2498 }

```

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

```

2499 \def\Hy@setbreaklinks#1{%
2500 \csname breaklinks#1\endcsname
2501 }
2502 \def\Hy@breaklinks@unsupported{%
2503 \ifx\Hy@setbreaklinks\@gobble
2504 \ifHy@breaklinks
2505 \Hy@WarningNoLine{%

```

```

2506     You have enabled option 'breaklinks'.\MessageBreak
2507     But driver '\Hy@driver.def' does not support this.\MessageBreak
2508     Expect trouble with the link areas of broken links%
2509   }%
2510   \fi
2511 \fi
2512 }

2513 \define@key{Hyp}{breaklinks}[true]{%
2514   \Hy@boolkey{breaklinks}{#1}%
2515   \let\Hy@setbreaklinks@gobble
2516 }

2517 \define@key{Hyp}{localanchorname}[true]{%
2518   \Hy@boolkey{localanchorname}{#1}%
2519 }

Determines whether an automatic anchor is put on each page
2520 \define@key{Hyp}{pageanchor}[true]{%
2521   \Hy@boolkey{pageanchor}{#1}%
2522 }

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.
2523 \define@key{Hyp}{plainpages}[true]{%
2524   \Hy@boolkey{plainpages}{#1}%
2525 }

Are the names for anchors made as per the HyperTeX system, or do they simply use what
LATEX provides?
2526 \define@key{Hyp}{naturalnames}[true]{%
2527   \Hy@boolkey{naturalnames}{#1}%
2528 }

Completely ignore the names as per the HyperTeX system, and use unique counters.
2529 \define@key{Hyp}{hypertexnames}[true]{%
2530   \Hy@boolkey{hypertexnames}{#1}%
2531 }

Currently, dvips doesn't allow anchors nested within targets, so this option tries to stop
that happening. Other processors may be able to cope.
2532 \define@key{Hyp}{nesting}[true]{%
2533   \Hy@boolkey{nesting}{#1}%
2534 }

2535 \define@key{Hyp}{unicode}[true]{%
2536   \Hy@boolkey{unicode}{#1}%
2537   \ifHy@unicode
2538     \def\HyPsd@pdfencoding{unicode}%
2539     \HyPsd@LoadUnicode
2540   \else
2541     \def\HyPsd@pdfencoding{pdfdoc}%
2542   \fi
2543 }
2544 \def\HyPsd@LoadUnicode{%
2545   \@ifundefined{T@PU}{%
2546     \input{puenc.def}%
2547     \HyLinguex@Restore
2548   }{}%
2549   \DeclareFontFamily{PU}{pdf}{}%
2550   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
2551   \DeclareFontSubstitution{PU}{pdf}{m}{n}%

```

```

2552 \global\let\HyPsd@LoadUnicode\relax
2553 }
2554 \Hy@AtBeginDocument{%
2555   \ifx\HyPsd@LoadUnicode\relax
2556   \else
2557   \def\HyPsd@LoadUnicode{%
2558     \PackageError{hyperref}{%
2559       Unicode support for bookmarks is not available.\MessageBreak
2560       Activate unicode support by using one of the options\MessageBreak
2561       'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
2562       in the preamble%
2563     }\@ehc
2564   \global\let\HyPsd@LoadUnicode\relax
2565   \global\Hy@unicodedefalse
2566   \global\let\Hy@unicodetrue\Hy@unicodedefalse
2567   }%
2568 \fi
2569 }

2570 \define@key{Hyp}{pdfencoding}{%
2571 \edef\HyPsd@temp{#1}%
2572 \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2573 \let\HyPsd@pdfencoding\HyPsd@temp
2574 \Hy@unicodedefalse
2575 \else
2576 \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2577 \z@
2578 \else
2579 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2580 \z@
2581 \else
2582 \@one
2583 \fi
2584 \fi
2585 \let\HyPsd@pdfencoding\HyPsd@temp
2586 \hypersetup{unicode}%
2587 \ifHy@unicode
2588 \def\HyPsd@pdfencoding{#1}%
2589 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2590 \HyPsd@LoadStringEncoding
2591 \fi
2592 \else
2593 \Hy@Warning{Cannot switch to unicode bookmarks}%
2594 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2595 \fi
2596 \else
2597 \@onelevel@sanitize\HyPsd@temp
2598 \Hy@Warning{%
2599   Values of option 'pdfencoding':\MessageBreak
2600   'pdfdoc', 'unicode', 'auto'.\MessageBreak
2601   Ignoring unknown value '\HyPsd@temp'%
2602   }%
2603 \fi
2604 \fi
2605 }
2606 \def\HyPsd@pdfencoding@auto{auto}
2607 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2608 \def\HyPsd@pdfencoding@unicode{unicode}

```

```

2609 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
2610 \def\HyPsd@LoadStringEnc{%
2611   \RequirePackage{stringenc}[2009/12/15]%
2612   \let\HyPsd@LoadStringEnc\relax
2613 }
2614 \Hy@AtBeginDocument{%
2615   \ifpackageloaded{stringenc}{%
2616     \let\HyPsd@LoadStringEnc\relax
2617   }{%
2618     \def\HyPsd@LoadStringEnc{%
2619       \Hy@WarningNoLine{%
2620         Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak
2621         in the preamble or load the package there%
2622       }%
2623     }%
2624   }%
2625 }

2626 \newif\ifHy@setpdfversion
2627 \define@key{Hyp}{pdfversion}{%
2628   \ifundefined{Hy@pdfversion@#1}{%
2629     \PackageWarning{hyperref}{%
2630       Unsupported PDF version '#1'\MessageBreak
2631       Valid values: 1.2 until 1.9%
2632     }%
2633   }{%
2634     \Hy@setpdfversiontrue
2635     \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
2636   }%
2637 }
2638 \@namedef{Hy@pdfversion@1.2}{2}%
2639 \@namedef{Hy@pdfversion@1.3}{3}%
2640 \@namedef{Hy@pdfversion@1.4}{4}%
2641 \@namedef{Hy@pdfversion@1.5}{5}%
2642 \@namedef{Hy@pdfversion@1.6}{6}%
2643 \@namedef{Hy@pdfversion@1.7}{7}%
2644 \@namedef{Hy@pdfversion@1.8}{8}%
2645 \@namedef{Hy@pdfversion@1.9}{9}%
2646 \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

2647 \define@key{Hyp}{hyperref}[true]{}
2648 \define@key{Hyp}{tex4ht}[true]{}%
2649 \Hy@texhttrue
2650 \setkeys{Hyp}{colorlinks=true}%
2651 \def\BeforeTeXIVht{\usepackage{color}}%
2652 \def\Hy@driver{htex4ht}%
2653 \def\MaybeStopEarly{%
2654   \typeout{Hyperref stopped early}%
2655   \Hy@AtBeginDocument{%
2656     \PDF@FinishDoc
2657     \gdef\PDF@FinishDoc{}%
2658   }%
2659   \endinput
2660 }%
2661 }
2662 \define@key{Hyp}{pdftex}[true]{}

```



```

2663 \def\Hy@driver{hpdfTeX}%
2664 }
2665 \define@key{Hyp}{nativepdf}[true]{%
2666 \def\Hy@driver{hdvips}%
2667 }
2668 \define@key{Hyp}{dvipdfm}[true]{%
2669 \def\Hy@driver{hdvipdfm}%
2670 }
2671 \define@key{Hyp}{dvipdfmx}[true]{%
2672 \def\Hy@driver{hdvipdfm}%
2673 }
2674 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2675 \expandafter\ifx\csname if#1\expandafter\endcsname
2676 \csname iftrue\endcsname
2677 \chardef\SpecialDvipdfmxOutlineOpen\@ne
2678 \else
2679 \chardef\SpecialDvipdfmxOutlineOpen\z@
2680 \fi
2681 }
2682 \define@key{Hyp}{xetex}[true]{%
2683 \def\Hy@driver{hxetex}%
2684 }
2685 \define@key{Hyp}{pdfmark}[true]{%
2686 \def\Hy@driver{hdvips}%
2687 }
2688 \define@key{Hyp}{dvips}[true]{%
2689 \def\Hy@driver{hdvips}%
2690 }
2691 \define@key{Hyp}{hypertex}[true]{%
2692 \def\Hy@driver{hypertex}%
2693 }
2694 \let\Hy@MaybeStopNow\relax
2695 \define@key{Hyp}{vtex}[true]{%
2696 \begingroup\expandafter\expandafter\expandafter\endgroup
2697 \expandafter\ifx\csname OpMode\endcsname\relax
2698 \@latex@error{Non-VTeX processor}{}%
2699 \global\let\Hy@MaybeStopNow\endinput
2700 \endinput
2701 \else
2702 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2703 \def\Hy@driver{hvtex}%
2704 \else
2705 \ifnum\OpMode=10\relax
2706 \def\Hy@driver{hvtexhtm}%
2707 \def\MaybeStopEarly{%
2708 \typeout{Hyperref stopped early}%
2709 \Hy@AtBeginDocument{%
2710 \PDF@FinishDoc
2711 \gdef\PDF@FinishDoc{}%
2712 }%
2713 \endinput
2714 }%
2715 \else
2716 \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2717 \global\let\Hy@MaybeStopNow\endinput
2718 \endinput
2719 \fi

```

```

2720 \fi
2721 \fi
2722 }
2723 \define@key{Hyp}{vtexpdfmark}[true]{%
2724 \begingroup\expandafter\expandafter\expandafter\endgroup
2725 \expandafter\ifx\cscname OpMode\endcsname\relax
2726 \@latex@error{Non-VTeX processor}{}%
2727 \let\Hy@MaybeStopNow\endinput
2728 \endinput
2729 \else
2730 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2731 \def\Hy@driver{hvtexmrk}%
2732 \else
2733 \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2734 \let\Hy@MaybeStopNow\endinput
2735 \endinput
2736 \fi
2737 \fi
2738 }
2739 \define@key{Hyp}{dviwindo}[true]{%
2740 \def\Hy@driver{hdviwind}%
2741 \setkeys{Hyp}{colorlinks}%
2742 \ifpdf
2743 \else
2744 \ifxetex
2745 \else
2746 \PassOptionsToPackage{dviwindo}{color}%
2747 \fi
2748 \fi
2749 }
2750 \define@key{Hyp}{dvipsone}[true]{%
2751 \def\Hy@driver{hdvipson}%
2752 }
2753 \define@key{Hyp}{textures}[true]{%
2754 \def\Hy@driver{htexture}%
2755 }
2756 \define@key{Hyp}{latex2html}[true]{%
2757 \Hy@AtBeginDocument{\@@latextohtmlX}%
2758 }

```

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

```

2759 \define@key{Hyp}{ps2pdf}[true]{%
2760 \def\Hy@driver{hdvips}%
2761 \providecommand*\@pdfborder{0 0 1}%
2762 }

```

## 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.

```

2763 \define@key{Hyp}{hyperfigures}[true]{%
2764 \Hy@boolkey[hyperfigures]{figures}{#1}%
2765 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

2766 \define@key{Hyp}{hyperfootnotes}[true]{%
2767 \Hy@boolkey[hyperfootnotes]{#1}%
2768 }

```

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

```

2769 \def\back@none{none}
2770 \def\back@section{section}
2771 \def\back@page{page}
2772 \def\back@slide{slide}
2773 \define@key{Hyp}{backref}[section]{%
2774 \lowercase{\def\Hy@tempa{#1}}}%
2775 \ifx\Hy@tempa\@empty
2776 \let\Hy@tempa\back@section
2777 \fi
2778 \ifx\Hy@tempa\Hy@false
2779 \let\Hy@tempa\back@none
2780 \fi
2781 \ifx\Hy@tempa\back@slide
2782 \let\Hy@tempa\back@section
2783 \fi
2784 \ifx\Hy@tempa\back@page
2785 \PassOptionsToPackage{hyperpageref}{backref}%
2786 \Hy@backreftrue
2787 \else
2788 \ifx\Hy@tempa\back@section
2789 \PassOptionsToPackage{hyperref}{backref}%
2790 \Hy@backreftrue
2791 \else
2792 \ifx\Hy@tempa\back@none
2793 \Hy@backreffalse
2794 \else
2795 \Hy@WarnOptionValue{#1}{backref}{%
2796 'section', 'slide', 'page', 'none',\MessageBreak
2797 or 'false'}%
2798 \fi
2799 \fi
2800 \fi
2801 }
2802 \define@key{Hyp}{pagebackref}[true]{%
2803 \edef\Hy@tempa{#1}}%
2804 \lowercase\expandafter{%
2805 \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2806 }%
2807 \ifx\Hy@tempa\@empty
2808 \let\Hy@tempa\Hy@true
2809 \fi
2810 \ifx\Hy@tempa\Hy@true
2811 \PassOptionsToPackage{hyperpageref}{backref}%
2812 \Hy@backreftrue
2813 \else
2814 \ifx\Hy@tempa\Hy@false
2815 \Hy@backreffalse
2816 \else
2817 \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
2818 \fi
2819 \fi
2820 }

```

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

```

2821 \define@key{Hyp}{hyperindex}[true]{%
2822 \Hy@boolkey{hyperindex}{#1}}%

```

2823 }

Configuration of encap char.

2824 \define@key{Hyp}{encap}{\|}{%

2825 \def\HyInd@EncapChar{#1}%

2826 }

## 12 Language options

The \autoref feature depends on the language.

2827 \def\HyLang@afrikaans{%

2828 \def\equationautorefname{Vergelyking}%

2829 \def\footnoteautorefname{Voetnota}%

2830 \def\itemautorefname{Item}%

2831 \def\figureautorefname{Figuur}%

2832 \def\tableautorefname{Tabel}%

2833 \def\partautorefname{Deel}%

2834 \def\appendixautorefname{Bylae}%

2835 \def\chapterautorefname{Hoofstuk}%

2836 \def\sectionautorefname{Afdeling}%

2837 \def\subsectionautorefname{Subafdeling}%

2838 \def\subsubsectionautorefname{Subsubafdeling}%

2839 \def\paragraphautorefname{Paragraaf}%

2840 \def\subparagraphautorefname{Subparagraaf}%

2841 \def\FancyVerbLineautorefname{Lyn}%

2842 \def\theoremautorefname{Teorema}%

2843 \def\pageautorefname{Bladsy}%

2844 }

2845 \def\HyLang@english{%

2846 \def\equationautorefname{Equation}%

2847 \def\footnoteautorefname{footnote}%

2848 \def\itemautorefname{item}%

2849 \def\figureautorefname{Figure}%

2850 \def\tableautorefname{Table}%

2851 \def\partautorefname{Part}%

2852 \def\appendixautorefname{Appendix}%

2853 \def\chapterautorefname{chapter}%

2854 \def\sectionautorefname{section}%

2855 \def\subsectionautorefname{subsection}%

2856 \def\subsubsectionautorefname{subsubsection}%

2857 \def\paragraphautorefname{paragraph}%

2858 \def\subparagraphautorefname{subparagraph}%

2859 \def\FancyVerbLineautorefname{line}%

2860 \def\theoremautorefname{Theorem}%

2861 \def\pageautorefname{page}%

2862 }

2863 \def\HyLang@french{%

2864 \def\equationautorefname{\'Equation}%

2865 \def\footnoteautorefname{note}%

2866 \def\itemautorefname{item}%

2867 \def\figureautorefname{Figure}%

2868 \def\tableautorefname{Tableau}%

2869 \def\partautorefname{Partie}%

2870 \def\appendixautorefname{Appendice}%

2871 \def\chapterautorefname{chapitre}%

2872 \def\sectionautorefname{section}%

2873 \def\subsectionautorefname{sous-section}%

```

2874 \def\subsubsectionautorefname{sous-sous-section}%
2875 \def\paragraphautorefname{paragraphe}%
2876 \def\subparagraphautorefname{sous-paragraphe}%
2877 \def\FancyVerbLineautorefname{ligne}%
2878 \def\theoremautorefname{Th\'eor\`eme}%
2879 \def\pageautorefname{page}%
2880 }
2881 \def\HyLang@german{%
2882 \def\equationautorefname{Gleichung}%
2883 \def\footnoteautorefname{Fu\ss note}%
2884 \def\itemautorefname{Punkt}%
2885 \def\figureautorefname{Abbildung}%
2886 \def\tableautorefname{Tabelle}%
2887 \def\partautorefname{Teil}%
2888 \def\appendixautorefname{Anhang}%
2889 \def\chapterautorefname{Kapitel}%
2890 \def\sectionautorefname{Abschnitt}%
2891 \def\subsectionautorefname{Unterabschnitt}%
2892 \def\subsubsectionautorefname{Unterunterabschnitt}%
2893 \def\paragraphautorefname{Absatz}%
2894 \def\subparagraphautorefname{Unterabsatz}%
2895 \def\FancyVerbLineautorefname{Zeile}%
2896 \def\theoremautorefname{Theorem}%
2897 \def\pageautorefname{Seite}%
2898 }
2899 \def\HyLang@italian{%
2900 \def\equationautorefname{Equazione}%
2901 \def\footnoteautorefname{nota}%
2902 \def\itemautorefname{punto}%
2903 \def\figureautorefname{Figura}%
2904 \def\tableautorefname{Tabella}%
2905 \def\partautorefname{Parte}%
2906 \def\appendixautorefname{Appendice}%
2907 \def\chapterautorefname{Capitolo}%
2908 \def\sectionautorefname{sezione}%
2909 \def\subsectionautorefname{sottosezione}%
2910 \def\subsubsectionautorefname{sottosottosezione}%
2911 \def\paragraphautorefname{paragrafo}%
2912 \def\subparagraphautorefname{sottoparagrafo}%
2913 \def\FancyVerbLineautorefname{linea}%
2914 \def\theoremautorefname{Teorema}%
2915 \def\pageautorefname{Pag.\@}%
2916 }
2917 \def\HyLang@magyar{%
2918 \def\equationautorefname{Egyenlet}%
2919 \def\footnoteautorefname{l'abjegyzet}%
2920 \def\itemautorefname{Elem}%
2921 \def\figureautorefname{\`Abra}%
2922 \def\tableautorefname{T'abl'azat}%
2923 \def\partautorefname{R'esz}%
2924 \def\appendixautorefname{F"uggel\`ek}%
2925 \def\chapterautorefname{fejezet}%
2926 \def\sectionautorefname{szakasz}%
2927 \def\subsectionautorefname{alszakasz}%
2928 \def\subsubsectionautorefname{alalszakasz}%
2929 \def\paragraphautorefname{bekezd'es}%
2930 \def\subparagraphautorefname{albekezd'es}%

```

```

2931 \def\FancyVerbLineautorefname{sor}%
2932 \def\theoremautorefname{T'\etel}%
2933 \def\pageautorefname{oldal}%
2934 }
2935 \def\HyLang@portuges{%
2936 \def\equationautorefname{Equa\c c\~ao}%
2937 \def\footnoteautorefname{Nota de rodap'e}%
2938 \def\itemautorefname{Item}%
2939 \def\figureautorefname{Figura}%
2940 \def\tableautorefname{Tabela}%
2941 \def\partautorefname{Parte}%
2942 \def\appendixautorefname{Ap\^endice}%
2943 \def\chapterautorefname{Cap\itulo}%
2944 \def\sectionautorefname{Se\c c\~ao}%
2945 \def\subsectionautorefname{Subse\c c\~ao}%
2946 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
2947 \def\paragraphautorefname{par\ 'agrafo}%
2948 \def\subparagraphautorefname{subpar\ 'agrafo}%
2949 \def\FancyVerbLineautorefname{linha}%
2950 \def\theoremautorefname{Teorema}%
2951 \def\pageautorefname{P\ 'agina}%
2952 }

```

Next commented section for Russian is provided by Olga Lapko.

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

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

```

2953 \def\HyLang@russian{%

```

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

```

2954 \def\equationautorefname{\cyr\cyrv\cyrery\cyrr.}%

```

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

```

2955 % \def\equationautorefname{%
2956 % \cyr\cyrv\cyrery\cyrr\cyra\cyrzh\cyre\cyrn\cyri\cyre
2957 % }%

```

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

```

2958 \def\footnoteautorefname{%
2959 \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrm.%
2960 }%

```

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

```

2961 % \def\footnoteautorefname{%
2962 % \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
2963 % \cyrp\cyrr\cyri\cyrm\cyre\cyrch\cyra\cyrn\cyri\cyre
2964 % }%

```

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

```
2965 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
2966 % \def\Accfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyru}%
```

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

```
2967 \def\itemautorefname{\cyr\cyrp.}%
2968 % \def\itemautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
```

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

```
2969 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
2970 \def\tableautorefname{\cyr\cyrt\cyra\cyrb\cyrl.}%
```

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

```
2971 \def\partautorefname{\cyr\cyrch.}%
2972 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
2973 \def\sectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
```

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

```
2974 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
2975 % \def\appendixautorefname{%
2976 %   \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrz\cyre\cyrn\cyri\cyre
2977 % }%
```

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.

```
2978 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
2979 \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.

```
2980 \def\paragraphautorefname{\cyr\cyrp.}%
2981 \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.

```
2982 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
2983 % \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.

```
2984 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%
```

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

```
2985 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
2986 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
2987 % \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 ...

```
2988 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
2989 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
```

```
2990 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
2991 \def\pageautorefname{\cyr\cyrs.}%
```

```
2992 }
```

```
2993 \def\HyLang@spanish{%
```

```
2994 \def\equationautorefname{Ecuaci'on}%
```

```
2995 \def\footnoteautorefname{Nota a pie de p'agina}%
```

```
2996 \def\itemautorefname{Elemento}%
```

```
2997 \def\figureautorefname{Figura}%
```

```
2998 \def\tableautorefname{Tabla}%
```

```
2999 \def\partautorefname{Parte}%
```

```
3000 \def\appendixautorefname{Ap'endice}%
```

```
3001 \def\chapterautorefname{Cap'itulo}%
```

```
3002 \def\sectionautorefname{Secci'on}%
```

```
3003 \def\subsectionautorefname{Subsecci'on}%
```

```
3004 \def\subsubsectionautorefname{Subsubsecci'on}%
```

```
3005 \def\paragraphautorefname{P'arrafo}%
```

```
3006 \def\subparagraphautorefname{Subp'arrafo}%
```

```
3007 \def\FancyVerbLineautorefname{L'inea}%
```

```
3008 \def\theoremautorefname{Teorema}%
```

```
3009 \def\pageautorefname{P'agina}%
```

```
3010 }
```

```
3011 \def\HyLang@vietnamese{%
```

```
3012 \def\equationautorefname{Ph\uhorn{ }\ohorn{ }ng tr'inh}%
```

```
3013 \def\footnoteautorefname{Ch'u th'ich}%
```

```
3014 \def\itemautorefname{m\d{u}c}%
```

```
3015 \def\figureautorefname{H'inh}%
```

```
3016 \def\tableautorefname{B'h{a}ng}%
```

```
3017 \def\partautorefname{Ph'\acircumflex{n}}%
```

```
3018 \def\appendixautorefname{Ph\d{u} l\d{u}c}%
```

```
3019 \def\chapterautorefname{ch\uhorn{ }\ohorn{ }ng}%
```

```
3020 \def\sectionautorefname{m\d{u}c}%
```

```
3021 \def\subsectionautorefname{m\d{u}c}%
```

```
3022 \def\subsubsectionautorefname{m\d{u}c}%
```

```
3023 \def\paragraphautorefname{\dj{ }o\d{a}n}%
```

```
3024 \def\subparagraphautorefname{\dj{ }o\d{a}n}%
```

```
3025 \def\FancyVerbLineautorefname{d'ong}%
```

```
3026 \def\theoremautorefname{\DJ{ }\d{i}nh l'y}%
```

```
3027 \def\pageautorefname{Trang}%
```

```
3028 }
```

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

```
3029 \def\HyLang@addto#1#2{%
```

```
3030 #2%
```

```
3031 \@temptokena{#2}%
```

```
3032 \ifx#1\relax
```

```
3033 \let#1\@empty
```

```
3034 \fi
```

```
3035 \ifx#1\@undefined
```



```

3036 \edef#1{\the\@temptokena}%
3037 \else
3038 \toks@\expandafter{#1}%
3039 \edef#1{\the\toks@\the\@temptokena}%
3040 \fi
3041 \@temptokena{}\toks@\@temptokena
3042 }

3043 \def\HyLang@DeclareLang#1#2#3{%
3044 \ifpackagewith{babel}{#1}{%
3045 \expandafter\HyLang@addto
3046 \csname extras#1\expandafter\endcsname
3047 \csname HyLang@#2\endcsname
3048 #3%
3049 \@namedef{HyLang@#1@done}{}%
3050 }{}%
3051 \begingroup
3052 \edef\x##1##2{%
3053 \noexpand\ifx##2\relax
3054 \errmessage{No definitions for language #2' found!}%
3055 \noexpand\fi
3056 \endgroup
3057 \noexpand\define@key{Hyp}{#1}[]{}%
3058 \noexpand\@ifundefined{HyLang@#1@done}{%
3059 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3060 #3%
3061 \noexpand\@namedef{HyLang@#1@done}{}%
3062 }{}%
3063 }%
3064 }%
3065 \expandafter\x\csname extras#1\expandafter\endcsname
3066 \csname HyLang@#2\endcsname
3067 }

3068 \HyLang@DeclareLang{english}{english}{}
3069 \HyLang@DeclareLang{UKenglish}{english}{}
3070 \HyLang@DeclareLang{british}{english}{}
3071 \HyLang@DeclareLang{USenglish}{english}{}
3072 \HyLang@DeclareLang{american}{english}{}
3073 \HyLang@DeclareLang{german}{german}{}
3074 \HyLang@DeclareLang{austrian}{german}{}
3075 \HyLang@DeclareLang{ngerman}{german}{}
3076 \HyLang@DeclareLang{naustrian}{german}{}
3077 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3078 \HyLang@DeclareLang{brazil}{portuges}{}
3079 \HyLang@DeclareLang{brazilian}{portuges}{}
3080 \HyLang@DeclareLang{portuguese}{portuges}{}
3081 \HyLang@DeclareLang{spanish}{spanish}{}
3082 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3083 \HyLang@DeclareLang{french}{french}{}
3084 \HyLang@DeclareLang{frenchb}{french}{}
3085 \HyLang@DeclareLang{français}{french}{}
3086 \HyLang@DeclareLang{acadian}{french}{}
3087 \HyLang@DeclareLang{canadien}{french}{}
3088 \HyLang@DeclareLang{italian}{italian}{}
3089 \HyLang@DeclareLang{magyar}{magyar}{}
3090 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

3091 \define@key{Hyp}{vietnamese}[]{}%
3092 \HyLang@addto\extravietnamese\HyLang@vietnamese
3093 \Hy@AtEndOfPackage{%
3094   \@ifundefined{T@PU}{}{}%
3095   \input{puvnenc.def}%
3096   }%
3097 }%
3098 }
3099 \define@key{Hyp}{vietnam}[]{}%
3100 \HyLang@addto\extravietnam\HyLang@vietnamese
3101 \Hy@AtEndOfPackage{%
3102   \@ifundefined{T@PU}{}{}%
3103   \input{puvnenc.def}%
3104   }%
3105 }%
3106 }

```

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

```

3107 \define@key{Hyp}{arabic}[]{}%
3108 \Hy@AtEndOfPackage{%
3109   \@ifundefined{T@PU}{}{}%
3110   \input{puarenc.def}%
3111   }%
3112 }%
3113 }

```

## 13 Options to change appearance of links

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

```

3114 \define@key{Hyp}{colorlinks}[true]{}%
3115 \Hy@boolkey{colorlinks}{#1}%
3116 }
3117 \define@key{Hyp}{ocgcolorlinks}[true]{}%
3118 \Hy@boolkey{ocgcolorlinks}{#1}%
3119 }
3120 \Hy@AtBeginDocument{%
3121   \begingroup
3122   \@ifundefined{OBJ@OCG@view}{}%
3123   \ifHy@ocgcolorlinks
3124     \Hy@Warning{%
3125       Driver does not support 'ocgcolorlinks',\MessageBreak
3126       using 'colorlinks' instead%
3127     }%
3128   \fi
3129 }{}%
3130 \endgroup
3131 }
3132 \define@key{Hyp}{frenchlinks}[true]{}%
3133 \Hy@boolkey{frenchlinks}{#1}%
3134 }

```

## 14 Bookmarking

```

3135 \begingroup\expandafter\expandafter\expandafter\endgroup
3136 \expandafter\ifx\cscname chapter\endcscname\relax

```

```

3137 \def\toclevel@part{0}%
3138 \else
3139 \def\toclevel@part{-1}%
3140 \fi
3141 \def\toclevel@chapter{0}
3142 \def\toclevel@section{1}
3143 \def\toclevel@subsection{2}
3144 \def\toclevel@subsubsection{3}
3145 \def\toclevel@paragraph{4}
3146 \def\toclevel@subparagraph{5}
3147 \def\toclevel@figure{0}
3148 \def\toclevel@table{0}
3149 \@ifpackageloaded{listings}{%
3150 \providecommand*\theHlstlisting{\thelstlisting}%
3151 \providecommand*\toclevel@lstlisting{0}%
3152 }{}
3153 \@ifpackageloaded{listing}{%
3154 \providecommand*\theHlisting{\thelisting}%
3155 \providecommand*\toclevel@listing{0}%
3156 }{}

3157 \define@key{Hyp}{bookmarks}[true]{%
3158 \Hy@boolkey{bookmarks}{#1}%
3159 }

3160 \define@key{Hyp}{bookmarksopen}[true]{%
3161 \Hy@boolkey{bookmarksopen}{#1}%
3162 }

```

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.

```

3163 \let\Hy@bookmarksdepth\c@tocdepth
3164 \define@key{Hyp}{bookmarksdepth}[]{}%
3165 \begingroup
3166 \edef\x{#1}%
3167 \ifx\x\empty
3168 \global\let\Hy@bookmarksdepth\c@tocdepth
3169 \else
3170 \@ifundefined{toclevel@\x}{%
3171 \@onelevel@sanitize\x
3172 \edef\y{\expandafter\@car\x\@nil}%
3173 \ifcase 0\expandafter\ifx\y-1\fi
3174 \expandafter\ifnum\expandafter\y>47 %
3175 \expandafter\ifnum\expandafter\y<58 1\fi\fi\relax
3176 \Hy@Warning{Unknown document division name (\x)}%
3177 \else
3178 \setbox\z@=\hbox{%
3179 \count@=\x
3180 \xdef\Hy@bookmarksdepth{\the\count@}%
3181 }%

```

```

3182     \fi
3183   }{%
3184     \setbox\z@=\hbox{%
3185       \count@=\csname toplevel@\x\endcsname
3186       \xdef\Hy@bookmarksdepth{\the\count@}%
3187     }%
3188   }%
3189   \fi
3190 \endgroup
3191 }

```

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

```

3192 \define@key{Hyp}{bookmarksopenlevel}{%
3193   \def\@bookmarksopenlevel{#1}%
3194 }
3195 \def\@bookmarksopenlevel{\maxdimen}
3196 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
3197 \define@key{Hyp}{bookmarkstype}{%
3198   \def\Hy@bookmarkstype{#1}%
3199 }
3200 \def\Hy@bookmarkstype{toc}

```

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

```

3201 \define@key{Hyp}{bookmarksnumbered}[true]{%
3202   \Hy@boolkey{bookmarksnumbered}{#1}%
3203 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

3204 \define@key{Hyp}{CJKbookmarks}[true]{%
3205   \Hy@boolkey{CJKbookmarks}{#1}%
3206 }

3207 \def\Hy@temp#1{%
3208   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3209 }
3210 \def\Hy@@temp#1#2#3{%
3211   \define@key{Hyp}{#2color}{%
3212     \HyColor@HyperrefColor{##1}#1%
3213   }%
3214   \def#1{#3}%
3215 }
3216 \Hy@temp{link}{red}
3217 \Hy@temp{anchor}{black}
3218 \Hy@temp{cite}{green}
3219 \Hy@temp{file}{cyan}
3220 \Hy@temp{url}{magenta}
3221 \Hy@temp{menu}{red}
3222 \Hy@temp{run}{\@filecolor}
3223 \define@key{Hyp}{pagecolor}{%
3224   \Hy@WarningPageColor
3225 }
3226 \def\Hy@WarningPageColor{%
3227   \Hy@WarningNoLine{Option ‘pagecolor’ is not available anymore}%
3228   \global\let\Hy@WarningPageColor\relax
3229 }

3230 \def\hyperbaseurl#1{\def\@baseurl{#1}}
3231 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
3232 \let\@baseurl\@empty

```

```

3233 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
3234 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
3235 \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.

```

3236 \let\@pdfpagetransition\relax
3237 \define@key{Hyp}{pdfpagetransition}{\def\@pdfpagetransition{#1}}

```

`\@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.

```

3238 \let\@pdfpageduration\relax
3239 \define@key{Hyp}{pdfpageduration}{\def\@pdfpageduration{#1}}

```

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.

```

3240 \newif\ifHy@useHidKey
3241 \Hy@useHidKeyfalse
3242 \define@key{Hyp}{pdfpagehidden}[true]{%
3243   \Hy@boolkey{pdfpagehidden}{#1}%
3244   \ifHy@pdfpagehidden
3245     \global\Hy@useHidKeytrue
3246   \fi
3247 }

```

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).

```

3248 \def\Hy@ColorList{cite,file,link,menu,run,url}
3249 \@for\Hy@temp:=\Hy@ColorList\do{%
3250   \edef\Hy@temp{%
3251     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
3252       \noexpand\HyColor@HyperrefBorderColor
3253       {##1}%
3254       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
3255       {hyperref}%
3256       {\Hy@temp bordercolor}%
3257     }%
3258   }%
3259   \Hy@temp
3260 }
3261 \define@key{Hyp}{pagebordercolor}{%
3262   \Hy@WarningPageBorderColor
3263 }
3264 \def\Hy@WarningPageBorderColor{%
3265   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%

```

```

3266 \global\let\Hy@WarningPageBorderColor\relax
3267 }

3268 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
3269 \Hy@DefNameKey{pdfhighlight}{%
3270 \do{/I}{Invert}%
3271 \do{/N}{None}%
3272 \do{/O}{Outline}%
3273 \do{/P}{Push}%
3274 }

3275 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
3276 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
3277 \def\Hy@setpdfborder{%
3278 \ifx\@pdfborder\@empty
3279 \else
3280 /Border[\@pdfborder]%
3281 \fi
3282 \ifx\@pdfborderstyle\@empty
3283 \else
3284 /BS<<\@pdfborderstyle>>%
3285 \fi
3286 }

3287 \Hy@DefNameKey{pdfpagemode}{%
3288 \do{UseNone}{}%
3289 \do{UseOutlines}{}%
3290 \do{UseThumbs}{}%
3291 \do{FullScreen}{}%
3292 \do{UseOC}{PDF 1.5}%
3293 \do{UseAttachments}{PDF 1.6}%
3294 }

3295 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3296 \do{UseNone}{}%
3297 \do{UseOutlines}{}%
3298 \do{UseThumbs}{}%
3299 \do{FullScreen}{}%
3300 \do{UseOC}{PDF 1.5}%
3301 \do{UseAttachments}{PDF 1.6}%
3302 }

3303 \Hy@DefNameKey{pdfdirection}{%
3304 \do{L2R}{Left to right}%
3305 \do{R2L}{Right to left}%
3306 }

3307 \Hy@DefNameKey{pdfviewarea}{%
3308 \do{MediaBox}{}%
3309 \do{CropBox}{}%
3310 \do{BleedBox}{}%
3311 \do{TrimBox}{}%
3312 \do{ArtBox}{}%
3313 }

3314 \Hy@DefNameKey{pdfviewclip}{%
3315 \do{MediaBox}{}%
3316 \do{CropBox}{}%
3317 \do{BleedBox}{}%
3318 \do{TrimBox}{}%
3319 \do{ArtBox}{}%
3320 }

3321 \Hy@DefNameKey{pdfprintarea}{%
3322 \do{MediaBox}{}%

```

```

3323 \do{CropBox}{}%
3324 \do{BleedBox}{}%
3325 \do{TrimBox}{}%
3326 \do{ArtBox}{}%
3327 }
3328 \Hy@DefNameKey{pdfprintclip}{%
3329 \do{MediaBox}{}%
3330 \do{CropBox}{}%
3331 \do{BleedBox}{}%
3332 \do{TrimBox}{}%
3333 \do{ArtBox}{}%
3334 }
3335 \Hy@DefNameKey{pdfprintscaling}{%
3336 \do{AppDefault}{}%
3337 \do{None}{}%
3338 }
3339 \Hy@DefNameKey{pdfduplex}{%
3340 \do{Simplex}{}%
3341 \do{DuplexFlipShortEdge}{}%
3342 \do{DuplexFlipLongEdge}{}%
3343 }
3344 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3345 \do{true}{}%
3346 \do{false}{}%
3347 }
3348 \define@key{Hyp}{pdfprintpagerange}{%
3349 \def\@pdfprintpagerange{#1}%
3350 }
3351 \Hy@DefNameKey{pdfnumcopies}{%
3352 \do{2}{two copies}%
3353 \do{3}{three copies}%
3354 \do{4}{four copies}%
3355 \do{5}{five copies}%
3356 }
3357 \define@key{Hyp}{pdfusetitle}[true]{%
3358 \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
3359 }
3360 \def\HyXeTeX@CheckUnicode{%
3361 \ifxetex
3362 \ifHy@unicode
3363 \else
3364 \Hy@WarningNoLine{%
3365 XeTeX driver only supports unicode.\MessageBreak
3366 Enabling option 'unicode'%
3367 }%
3368 \setkeys{Hyp}{unicode}%
3369 \fi
3370 \else
3371 \let\HyXeTeX@CheckUnicode\relax
3372 \fi
3373 }
3374 \def\HyPsd@PrerenderUnicode#1{%
3375 \begingroup
3376 \expandafter\ifx\csname PrerenderUnicode\endcsname\relax
3377 \else
3378 \sbox0{%
3379 \let\GenericInfo@gobbletwo

```

```

3380     \let\GenericWarning\@gobbletwo
3381     \let\GenericError\@gobblefour
3382     \PrerenderUnicode{#1}%
3383     }%
3384     \fi
3385 \endgroup
3386 }
3387 \define@key{Hyp}{pdftitle}{%
3388 \HyXeTeX@CheckUnicode
3389 \HyPsd@XeTeXBigCharstrue
3390 \HyPsd@PrerenderUnicode{#1}%
3391 \pdfstringdef\@pdftitle{#1}%
3392 }
3393 \define@key{Hyp}{pdfauthor}{%
3394 \HyXeTeX@CheckUnicode
3395 \HyPsd@XeTeXBigCharstrue
3396 \HyPsd@PrerenderUnicode{#1}%
3397 \pdfstringdef\@pdfauthor{#1}%
3398 }
3399 \define@key{Hyp}{pdfproducer}{%
3400 \HyXeTeX@CheckUnicode
3401 \HyPsd@XeTeXBigCharstrue
3402 \HyPsd@PrerenderUnicode{#1}%
3403 \pdfstringdef\@pdfproducer{#1}%
3404 }
3405 \define@key{Hyp}{pdfcreator}{%
3406 \HyXeTeX@CheckUnicode
3407 \HyPsd@XeTeXBigCharstrue
3408 \HyPsd@PrerenderUnicode{#1}%
3409 \pdfstringdef\@pdfcreator{#1}%
3410 }
3411 \define@key{Hyp}{pdfcreationdate}{%
3412 \begingroup
3413 \Hy@unicodedefalse
3414 \pdfstringdef\@pdfcreationdate{#1}%
3415 \endgroup
3416 }
3417 \define@key{Hyp}{pdfmoddate}{%
3418 \begingroup
3419 \Hy@unicodedefalse
3420 \pdfstringdef\@pdfmoddate{#1}%
3421 \endgroup
3422 }
3423 \define@key{Hyp}{pdfsubject}{%
3424 \HyXeTeX@CheckUnicode
3425 \HyPsd@XeTeXBigCharstrue
3426 \HyPsd@PrerenderUnicode{#1}%
3427 \pdfstringdef\@pdfsubject{#1}%
3428 }
3429 \define@key{Hyp}{pdfkeywords}{%
3430 \HyXeTeX@CheckUnicode
3431 \HyPsd@XeTeXBigCharstrue
3432 \HyPsd@PrerenderUnicode{#1}%
3433 \pdfstringdef\@pdfkeywords{#1}%
3434 }
3435 \define@key{Hyp}{pdftrapped}{%
3436 \lowercase{\edef\Hy@temp{#1}}%

```



```

3437 \ifx\Hy@temp\HyInfo@trapped@true
3438 \def\@pdftrapped{True}%
3439 \else
3440 \ifx\Hy@temp\HyInfo@trapped@false
3441 \def\@pdftrapped{False}%
3442 \else
3443 \ifx\Hy@temp\HyInfo@trapped@unknown
3444 \def\@pdftrapped{Unknown}%
3445 \else
3446 \ifx\Hy@temp\@empty
3447 \else
3448 \Hy@Warning{%
3449   Unsupported value '#1'\MessageBreak
3450   for option 'pdftrapped'%
3451 }%
3452 \fi
3453 \def\@pdftrapped{}%
3454 \fi
3455 \fi
3456 \fi
3457 }
3458 \def\HyInfo@trapped@true{true}
3459 \def\HyInfo@trapped@false{false}
3460 \def\HyInfo@trapped@unknown{unknown}
3461 \def\HyInfo@TrappedUnsupported{%
3462 \ifx\@pdftrapped\@empty
3463 \else
3464 \Hy@WarningNoLine{'pdftrapped' is not supported by this driver}%
3465 \gdef\HyInfo@TrappedUnsupported{}%
3466 \fi
3467 }
3468 \define@key{Hyp}{pdfinfo}{%
3469 \kvsetkeys{pdfinfo}{#1}%
3470 }
3471 \def\Hy@temp#1{%
3472 \lowercase{\Hy@temp@A{#1}}{#1}%
3473 }
3474 \def\Hy@temp@A#1#2{%
3475 \define@key{pdfinfo}{#2}{%
3476 \hypersetup{pdf#1={##1}}%
3477 }%
3478 }
3479 \Hy@temp{Title}
3480 \Hy@temp{Author}
3481 \Hy@temp{Keywords}
3482 \Hy@temp{Subject}
3483 \Hy@temp{Creator}
3484 \Hy@temp{Producer}
3485 \Hy@temp{CreationDate}
3486 \Hy@temp{ModDate}
3487 \Hy@temp{Trapped}
3488 \newif\ifHyInfo@AddonUnsupported
3489 \kv@set@family@handler{pdfinfo}{%
3490 \HyInfo@AddonHandler{#1}{#2}%
3491 }
3492 \let\HyInfo@do\relax
3493 \def\HyInfo@AddonHandler#1#2{%

```

```

3494 \ifx\kv@value\relax
3495   \Hy@Warning{%
3496     Option 'pdfinfo': ignoring key '\kv@key' without value%
3497   }%
3498 \else
3499   \EdefEscapeName\HyInfo@KeyEscaped{\kv@key}%
3500   \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3501   \expandafter\ifx\csname KV@pdfinfo@\HyInfo@Key\endcsname\relax
3502   \ifHyInfo@AddonUnsupported
3503     \Hy@Warning{%
3504       This driver does not support additional\MessageBreak
3505       information entries, therefore\MessageBreak
3506       '\kv@key' is ignored%
3507     }%
3508   \else
3509     \define@key{pdfinfo}{\HyInfo@Key}{%
3510       \HyXeTeX@CheckUnicode
3511       \HyPsd@XeTeXBigCharstrue
3512       \HyPsd@PrerenderUnicode{##1}%
3513       \pdfstringdef\HyInfo@Value{##1}%
3514       \expandafter\let\csname HyInfo@Value@\HyInfo@Key\endcsname
3515         \HyInfo@Value
3516     }%
3517   \edef\HyInfo@AddonList{%
3518     \HyInfo@AddonList
3519     \HyInfo@do{\HyInfo@Key}%
3520   }%
3521   \kv@parse@normalized{%
3522     \HyInfo@Key={#2}%
3523   }{%
3524     \kv@processor@default{pdfinfo}%
3525   }%
3526   \fi
3527 \else
3528   \kv@parse@normalized{%
3529     \HyInfo@Key={#2}%
3530   }{%
3531     \kv@processor@default{pdfinfo}%
3532   }%
3533   \fi
3534 \fi
3535 }
3536 \def\HyInfo@GenerateAddons{%
3537 \ifHyInfo@AddonUnsupported
3538 \def\HyInfo@Addons{}%
3539 \else
3540 \begingroup
3541 \toks@{}%
3542 \def\HyInfo@do##1{%
3543 \EdefEscapeName\HyInfo@Key{##1}%
3544 \edef\x{%
3545 \toks@{%
3546 \the\toks@
3547 /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
3548 }%
3549 }%
3550 \x

```

```

3551 }%
3552 \HyInfo@AddonList
3553 \edef\x{\endgroup
3554 \def\noexpand\HyInfo@Addons{\the\toks@}%
3555 }%
3556 \x
3557 \fi
3558 }
3559 \def\HyInfo@AddonList{}

3560 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}
3561 \define@key{Hyp}{pdfinkmargin}{\setpdfinkmargin{#1}}
3562 \let\setpdfinkmargin@gobble
3563 \def\calculate@pdfview#1 #2\}%
3564 \def\@pdfview{#1}%
3565 \ifx\#2\}%
3566 \def\@pdfviewparams{-32768}%
3567 \else
3568 \def\@pdfviewparams{#2}%
3569 \fi
3570 }
3571 \begingroup\expandafter\expandafter\expandafter\endgroup
3572 \expandafter\ifx\csname numexpr\endcsname\relax
3573 \def\Hy@number#1{%
3574 \expandafter\@firstofone\expandafter{\number#1}%
3575 }%
3576 \else
3577 \def\Hy@number#1{%
3578 \the\numexpr#1\relax
3579 }%
3580 \fi
3581 \define@key{Hyp}{pdfstartpage}{%
3582 \ifx\#1\}%
3583 \def\@pdfstartpage{}%
3584 \else
3585 \edef\@pdfstartpage{\Hy@number{#1}}%
3586 \fi
3587 }%
3588 \define@key{Hyp}{pdfstartview}{%
3589 \ifx\#1\}%
3590 \def\@pdfstartview{}%
3591 \else
3592 \hypercalscbpdef\@pdfstartview{/#1}%
3593 \fi
3594 }
3595 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
3596 \define@key{Hyp}{pdftoolbar}[true]{%
3597 \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
3598 }
3599 \define@key{Hyp}{pdfmenubar}[true]{%
3600 \Hy@boolkey[pdfmenubar]{menubar}{#1}%
3601 }
3602 \define@key{Hyp}{pdfwindowui}[true]{%
3603 \Hy@boolkey[pdfwindowui]{windowui}{#1}%
3604 }
3605 \define@key{Hyp}{pdffitwindow}[true]{%
3606 \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
3607 }

```

```

3608 \define@key{Hyp}{pdfcenterwindow}[true]{%
3609 \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
3610 }
3611 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
3612 \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
3613 }
3614 \define@key{Hyp}{pdfa}[true]{%
3615 \Hy@boolkey[pdfa]{#1}%
3616 }
3617 \define@key{Hyp}{pdfnewwindow}[true]{%
3618 \def\Hy@temp{#1}%
3619 \ifx\Hy@temp\@empty
3620 \Hy@newwindowsetfalse
3621 \else
3622 \Hy@newwindowsettrue
3623 \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
3624 \fi
3625 }
3626 \def\Hy@SetNewWindow{%
3627 \ifHy@newwindowset
3628 /NewWindow %
3629 \ifHy@newwindow true\else false\fi
3630 \fi
3631 }
3632 \Hy@DefNameKey{pdfpagelayout}{%
3633 \do{SinglePage}{}%
3634 \do{OneColumn}{}%
3635 \do{TwoColumnLeft}{}%
3636 \do{TwoColumnRight}{}%
3637 \do{TwoPageLeft}{PDF 1.5}%
3638 \do{TwoPageRight}{PDF 1.5}%
3639 }
3640 \define@key{Hyp}{pdflang}{%
3641 \def\@pdflang{#1}%
3642 }
3643 \define@key{Hyp}{pdfpagelabels}[true]{%
3644 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
3645 }
3646 \define@key{Hyp}{pdfescapeform}[true]{%
3647 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
3648 }

```

Default values:

```

3649 \def\@linkbordercolor{1 0 0}
3650 \def\@urlbordercolor{0 1 1}
3651 \def\@menubordercolor{1 0 0}
3652 \def\@filebordercolor{0 .5 .5}
3653 \def\@runbordercolor{0 .7 .7}
3654 \def\@citebordercolor{0 1 0}
3655 \def\@pdfhighlight{/I}
3656 \def\@pdftitle{}
3657 \def\@pdfauthor{}
3658 \let\@pdfproducer\relax
3659 \def\@pdfcreator{LaTeX with hyperref package}
3660 \def\@pdfcreationdate{}
3661 \def\@pdfmoddate{}
3662 \def\@pdfsubject{}
3663 \def\@pdfkeywords{}

```

```

3664 \def\@pdftrapped{}
3665 \def\@pdfpagescrop{}
3666 \def\@pdfstartview{ /Fit }
3667 \def\@pdfstartpage{1}
3668 \def\@pdfprintpagerange{}
3669 \def\@pdflang{}
3670 \let\PDF@SetupDoc\@empty
3671 \let\PDF@FinishDoc\@empty
3672 \let\phantomsection\@empty
3673 \let\special@paper\@empty
3674 \def\HyperDestNameFilter#1{#1}
3675 \Hy@AtBeginDocument{%
3676   \begingroup
3677   \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
3678   \dimen@=\x\relax
3679   \ifdim\dimen@>\z@
3680     \else
3681     \dimen@=11in\relax
3682     \Hy@WarningNoLine{%
3683       Height of page (\expandafter\string\x) %
3684       is invalid (\the\x),\MessageBreak
3685       using 11in%
3686     }%
3687     \fi
3688     \dimen@=0.99626401\dimen@
3689     \xdef\Hy@pageheight{\strip@pt\dimen@}%
3690   \endgroup
3691 }
3692 \def\HyInd@EncapChar{\|}
3693 \def\hypersetup{\setkeys{Hyp}}

```

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.

```

3694 \let\hyper@normalise\ExecuteOptions
3695 \let\ExecuteOptions\hypersetup
3696 \Hy@RestoreCatcodes
3697 \InputIfFileExists{hyperref.cfg}{-}{-}
3698 \Hy@SetCatcodes
3699 \let\ExecuteOptions\hyper@normalise
3700 \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.

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

```

3701 \RequirePackage{kvoptions}[2009/07/21]
3702 \SetupKeyvalOptions{family=Hyp}
3703 \DeclareLocalOptions{%
3704   a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
3705 }

```

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

```

3706 \@ifpackageloaded{tex4ht}{%
3707   \@ifpackagewith{hyperref}{tex4ht}{-}{-}%
3708   \PassOptionsToPackage{tex4ht}{hyperref}%
3709 }%
3710 }{-}

```

```

3711 \let\ReadBookmarks\relax
3712 \ProcessKeyvalOptions{Hyp}

    After processing options.

3713 \Hy@AtBeginDocument{%
3714   \ifHy@draft
3715     \let\hyper@@anchor@gobble
3716     \gdef\hyper@link#1#2#3{#3}%
3717     \let\hyper@anchorstart@gobble
3718     \let\hyper@anchorend@empty
3719     \let\hyper@linkstart@gobbletwo
3720     \let\hyper@linkend@empty
3721     \def\hyper@linkurl#1#2{#1}%
3722     \def\hyper@linkfile#1#2#3{#1}%
3723     \def\hyper@link@[#1]#2#3{}%
3724     \def\Acrobatmenu#1#2{\leavevmode#2}%
3725     \let\PDF@SetupDoc@empty
3726     \let\PDF@FinishDoc@empty
3727     \let\@fifthoffive\@secondoftwo
3728     \let\@secondoffive\@secondoftwo
3729     \let\ReadBookmarks\relax
3730     \let\WriteBookmarks\relax
3731     \Hy@WarningNoLine{ draft mode on}%
3732   \fi
3733   \Hy@DisableOption{draft}%
3734   \Hy@DisableOption{nolinks}%
3735   \Hy@DisableOption{final}%
3736 }

```

## 15.1 PDF/A

```

3737 \Hy@DisableOption{pdfa}

3738 \ifHy@pdfa
3739   \setkeys{Hyp}{pdfversion=1.4}%
3740   \def\Hy@Acrobatmenu#1#2{%
3741     \leavevmode
3742     \begingroup
3743     \edef\x{#1}%
3744     \@onelevel@sanitize\x
3745     \ifx\x\Hy@NextPage
3746       \let\y=Y%
3747     \else
3748       \ifx\x\Hy@PrevPage
3749         \let\y=Y%
3750       \else
3751         \ifx\x\Hy@FirstPage
3752           \let\y=Y%
3753         \else
3754           \ifx\x\Hy@LastPage
3755             \let\y=Y%
3756           \else
3757             \let\y=N%
3758           \fi
3759         \fi
3760       \fi
3761     \fi
3762   \expandafter\endgroup

```

```

3763 \ifx\y Y%
3764 \else
3765 \PackageError{hyperref}{%
3766 PDF/A: Named action '#1' is not permitted%
3767 }\@ehc
3768 {#2}%
3769 \expandafter\@gobble
3770 \fi
3771 }%
3772 \def\Hy@temp#1{%
3773 \expandafter\def\csname Hy@#1\endcsname{#1}%
3774 \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
3775 }%
3776 \Hy@temp{NextPage}%
3777 \Hy@temp{PrevPage}%
3778 \Hy@temp{FirstPage}%
3779 \Hy@temp{LastPage}%
3780 \else
3781 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
3782 \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.

```

3783 \Hy@nextfalse
3784 \ltx@ifundefined{spanish@sh@}{\Hy@nexttrue}
3785 \ltx@ifundefined{galician@sh@}{\Hy@nexttrue}
3786 \ltx@ifundefined{estonian@sh@}{\Hy@nexttrue}
3787 \ifHy@next
3788 \let\texttilde\~%
3789 \fi

3790 \ifHy@figures
3791 \Hy@Info{Hyper figures ON}%
3792 \else
3793 \Hy@Info{Hyper figures OFF}%
3794 \fi

3795 \ifHy@nesting
3796 \Hy@Info{Link nesting ON}%
3797 \else
3798 \Hy@Info{Link nesting OFF}%
3799 \fi

3800 \ifHy@hyperindex
3801 \Hy@Info{Hyper index ON}%
3802 \else
3803 \Hy@Info{Hyper index OFF}%
3804 \fi

3805 \ifHy@plainpages
3806 \Hy@Info{Plain pages ON}%
3807 \else
3808 \Hy@Info{Plain pages OFF}%
3809 \fi

3810 \ifHy@backref
3811 \Hy@Info{Backreferencing ON}%
3812 \else
3813 \Hy@Info{Backreferencing OFF}%
3814 \fi

```

```

3815 \ifHy@typexml
3816   \Hy@AtEndOfPackage{%
3817     \RequirePackage{color}%
3818     \RequirePackage{nameref}%
3819   }%
3820 \fi
3821 \Hy@DisableOption{typexml}
3822 \ifHy@implicit
3823   \typeout{Implicit mode ON; LaTeX internals redefined}%
3824 \else
3825   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
3826   \def\MaybeStopEarly{%
3827     \typeout{Hyperref stopped early}%
3828     \Hy@AtBeginDocument{%
3829       \PDF@FinishDoc
3830       \gdef\PDF@FinishDoc{}%
3831     }%
3832   \endinput
3833 }%
3834 \Hy@AtBeginDocument{%
3835   \let\autoref\ref
3836   \let\autopageref\pageref
3837   \ifx\@pdfpagemode\@empty
3838     \gdef\@pdfpagemode{UseNone}%
3839   \fi
3840   \global\Hy@backreffalse
3841 }%
3842 \Hy@AtEndOfPackage{%
3843   \global\let\ReadBookmarks\relax
3844   \global\let\WriteBookmarks\relax
3845 }%
3846 \fi
3847 \Hy@DisableOption{implicit}

```

### 15.2.1 Driver loading

```

3848 \Hy@AtEndOfPackage{%
3849   \@ifpackageloaded{tex4ht}{%
3850     \def\Hy@driver{htex4ht}%
3851     \Hy@texhttrue
3852   }{}%

```

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.

```

3853   \ifx\Hy@driver\@empty
3854   \else
3855     \def\Hy@temp{hpdfTeX}%
3856     \ifpdf
3857       \ifx\Hy@driver\Hy@temp
3858       \else
3859         \Hy@WarningNoLine{%
3860           Wrong driver ‘\Hy@driver.def’;\MessageBreak
3861           pdfTeX is running in PDF mode.\MessageBreak
3862           Forcing driver ‘\Hy@temp.def’%
3863         }%
3864       \let\Hy@driver\Hy@temp
3865     \fi
3866   \else

```



```

3867 \ifx\Hy@driver\Hy@temp
3868 \Hy@WarningNoLine{%
3869   Wrong driver '\Hy@driver.def';\MessageBreak
3870   pdfTeX is not running in PDF mode.\MessageBreak
3871   Using default driver%
3872 }%
3873 \let\Hy@driver\@empty
3874 \fi
3875 \fi
3876 \fi
3877 \ifx\Hy@driver\@empty
3878 \else
3879 \def\Hy@temp{hxtex}%
3880 \ifxetex
3881 \ifx\Hy@driver\Hy@temp
3882 \else
3883 \Hy@WarningNoLine{%
3884   Wrong driver '\Hy@driver.def';\MessageBreak
3885   XeTeX is running.\MessageBreak
3886   Forcing driver '\Hy@temp.def' for XeTeX%
3887 }%
3888 \let\Hy@driver\Hy@temp
3889 \fi
3890 \fi
3891 \fi
3892 \ifx\Hy@driver\@empty
3893 \else
3894 \def\Hy@temp{hvtexhtm}%
3895 \ifvtexhtml
3896 \ifx\Hy@driver\Hy@temp
3897 \else
3898 \Hy@WarningNoLine{%
3899   Wrong driver '\Hy@driver.def';\MessageBreak
3900   VTeX is running in HTML mode.\MessageBreak
3901   Forcing driver '\Hy@temp.def'%
3902 }%
3903 \let\Hy@driver\Hy@temp
3904 \fi
3905 \else
3906 \ifx\Hy@driver\Hy@temp
3907 \Hy@WarningNoLine{%
3908   Wrong driver '\Hy@driver.def';\MessageBreak
3909   VTeX is not running in HTML mode.\MessageBreak
3910   Using default driver%
3911 }%
3912 \let\Hy@driver\@empty
3913 \fi
3914 \fi
3915 \fi

```

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

```

3916 \ifx\Hy@driver\@empty
3917 \providecommand*{\Hy@defaultdriver}{hypertex}%
3918 \ifpdf
3919 \def\Hy@driver{hpdfTeX}%
3920 \else
3921 \ifxetex
3922 \def\Hy@driver{hxtex}%

```

```

3923 \else
3924 \ifvtexhtml
3925 \def\Hy@driver{hvtexhtm}%
3926 \def\MaybeStopEarly{%
3927 \typeout{Hyperref stopped early}%
3928 \Hy@AtBeginDocument{%
3929 \PDF@FinishDoc
3930 \gdef\PDF@FinishDoc{}}%
3931 }%
3932 \endinput
3933 }%
3934 \else
3935 \ifvtexpdf
3936 \def\Hy@driver{hvtex}%
3937 \else
3938 \ifvtexps
3939 \def\Hy@driver{hvtex}%
3940 \else
3941 \let\Hy@driver\Hy@defaultdriver
3942 \fi
3943 \fi
3944 \fi
3945 \fi
3946 \fi
3947 \ifx\Hy@driver\Hy@defaultdriver
3948 \def\Hy@temp{hdvwind}%
3949 \ifx\Hy@temp\Hy@driver
3950 \setkeys{Hyp}{colorlinks}%
3951 \PassOptionsToPackage{dviwindo}{color}%
3952 \fi
3953 \fi
3954 \typeout{* hyperref using default driver \Hy@driver\ltx@space*}%
3955 \else
3956 \typeout{* hyperref using driver \Hy@driver\ltx@space*}%
3957 \fi
3958 \input{\Hy@driver.def}%
3959 \let\@unprocessedoptions\relax
3960 \Hy@RestoreCatcodes
3961 }

```

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

```

3962 \newif\ifHy@DvipdfmxOutlineOpen
3963 \ifxetex
3964 \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
3965 \else
3966 \Hy@DvipdfmxOutlineOpentruer
3967 \fi
3968 \fi
3969 \begingroup\expandafter\expandafter\expandafter\endgroup
3970 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
3971 \else
3972 \ifnum\SpecialDvipdfmxOutlineOpen>\z@
3973 \Hy@DvipdfmxOutlineOpentruer
3974 \fi
3975 \fi
3976 \Hy@DisableOption{tex4ht}

```

```

3977 \Hy@DisableOption{pdftex}
3978 \Hy@DisableOption{nativepdf}
3979 \Hy@DisableOption{dvipdfm}
3980 \Hy@DisableOption{dvipdfmx}
3981 \Hy@DisableOption{dvipdfmx-outline-open}
3982 \Hy@DisableOption{pdfmark}
3983 \Hy@DisableOption{dvips}
3984 \Hy@DisableOption{hypertex}
3985 \Hy@DisableOption{vtex}
3986 \Hy@DisableOption{vtexpdfmark}
3987 \Hy@DisableOption{dviwindo}
3988 \Hy@DisableOption{dvipsone}
3989 \Hy@DisableOption{textures}
3990 \Hy@DisableOption{latex2html}
3991 \Hy@DisableOption{ps2pdf}
3992 \Hy@DisableOption{xetex}
3993 \Hy@AtEndOfPackage{%
3994 \Hy@DisableOption{pdfversion}%
3995 }

```

### 15.2.2 Bookmarks

```

3996 \def\WriteBookmarks{0}
3997 \def\@bookmarkopenstatus#1{%
3998 \ifHy@bookmarksopen

```

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

```

3999 \ifnum#1<\expandafter\@firstofone\expandafter
4000     {\number\@bookmarksopenlevel} % explicit space
4001 \else
4002 -%
4003 \fi
4004 \else
4005 -%
4006 \fi
4007 }
4008 \ifHy@bookmarks
4009 \Hy@Info{Bookmarks ON}%
4010 \ifx\@pdfpagemode\@empty
4011 \def\@pdfpagemode{UseOutlines}%
4012 \fi
4013 \else
4014 \def\@bookmarkopenstatus#1{%
4015 \Hy@Info{Bookmarks OFF}%
4016 \Hy@AtEndOfPackage{%
4017 \global\let\ReadBookmarks\relax
4018 \global\let\WriteBookmarks\relax
4019 }%
4020 \ifx\@pdfpagemode\@empty
4021 \def\@pdfpagemode{UseNone}%
4022 \fi
4023 \fi
4024 \Hy@DisableOption{bookmarks}

```

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

```

4025 \def\Hy@CatcodeWrapper#1{%
4026 \def\Hy@endWrap{}%
4027 \def\TMP@EnsureCode##1##2{%
4028 \edef\Hy@endWrap{%

```

```

4029   \Hy@EndWrap
4030   \catcode##1 \the\catcode##1\relax
4031   }%
4032   \catcode##1 ##2\relax
4033   }%
4034   \TMP@EnsureCode{10}{12}% ^^J
4035   \TMP@EnsureCode{33}{12}% !
4036   \TMP@EnsureCode{34}{12}% "
4037   \TMP@EnsureCode{36}{3}% $ (math)
4038   \TMP@EnsureCode{38}{4}% & (alignment)
4039   \TMP@EnsureCode{39}{12}% '
4040   \TMP@EnsureCode{40}{12}% (
4041   \TMP@EnsureCode{41}{12}% )
4042   \TMP@EnsureCode{42}{12}% *
4043   \TMP@EnsureCode{43}{12}% +
4044   \TMP@EnsureCode{44}{12}% ,
4045   \TMP@EnsureCode{45}{12}% -
4046   \TMP@EnsureCode{46}{12}% .
4047   \TMP@EnsureCode{47}{12}% /
4048   \TMP@EnsureCode{58}{12}% :
4049   \TMP@EnsureCode{59}{12}% ;
4050   \TMP@EnsureCode{60}{12}% <
4051   \TMP@EnsureCode{61}{12}% =
4052   \TMP@EnsureCode{62}{12}% >
4053   \TMP@EnsureCode{63}{12}% ?
4054   \TMP@EnsureCode{91}{12}% [
4055   \TMP@EnsureCode{93}{12}% ]
4056   \TMP@EnsureCode{94}{7}% ^ (superscript)
4057   \TMP@EnsureCode{95}{8}% _ (subscript)
4058   \TMP@EnsureCode{96}{12}% `
4059   \TMP@EnsureCode{124}{12}% |
4060   \TMP@EnsureCode{126}{13}% ~ (active)
4061   #1\relax
4062   \Hy@EndWrap
4063 }

```

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

```

4064 \Hy@AtBeginDocument{%
4065   \ifHy@ocgcolorlinks
4066     \setkeys{Hyp}{colorlinks}%
4067     \ifHy@pdfa
4068       \Hy@Warning{%
4069         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4070         using 'colorlinks' instead of 'ocgcolorlinks'%
4071       }%
4072     \Hy@ocgcolorlinksfalse
4073   \fi
4074 \fi
4075 \ifHy@ocgcolorlinks
4076 \else
4077   \Hy@DisableOption{ocgcolorlinks}%
4078 \fi
4079 \ifHy@colorlinks
4080   \def\pdfborder{0 0 0}%
4081   \let\pdfborderstyle\@empty
4082 \ifHy@typexml
4083 \else

```

```

4084 \Hy@CatcodeWrapper{%
4085 \RequirePackage{color}%
4086 }%
4087 \fi
4088 \def\Hy@colorlink#1{%
4089 \begingroup
4090 \HyColor@UseColor#1%
4091 }%
4092 \def\Hy@endcolorlink{\endgroup}%
4093 \Hy@Info{Link coloring ON}%
4094 \else
4095 \ifHy@frenchlinks
4096 \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
4097 \def\Hy@endcolorlink{\endgroup}%
4098 \Hy@Info{French linking ON}%
4099 \else
for grouping consistency:
4100 \def\Hy@colorlink#1{\begingroup}%
4101 \def\Hy@endcolorlink{\endgroup}%
4102 \Hy@Info{Link coloring OFF}%
4103 \fi
4104 \fi
4105 \Hy@DisableOption{colorlinks}%
4106 \Hy@DisableOption{frenchlinks}%
4107 \ifHy@texht
4108 \long\def\@firstoffive#1#2#3#4#5{#1}%
4109 \long\def\@secondoffive#1#2#3#4#5{#2}%
4110 \long\def\@thirdoffive#1#2#3#4#5{#3}%
4111 \long\def\@fourthoffive#1#2#3#4#5{#4}%
4112 \long\def\@fifthoffive#1#2#3#4#5{#5}%
4113 \providecommand*\@safe@activestruer{}%
4114 \providecommand*\@safe@activesfalse{}%
4115 \def\T@ref#1{%
4116 \Hy@safe@activestruer
4117 \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
4118 \Hy@safe@activesfalse
4119 }%
4120 \def\T@pageref#1{%
4121 \Hy@safe@activestruer
4122 \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
4123 \Hy@safe@activesfalse
4124 }%
4125 \else
4126 \ifHy@typexml
4127 \else
4128 \Hy@CatcodeWrapper{%
4129 \RequirePackage{nameref}%
4130 }%
4131 \fi
4132 \fi
4133 \DeclareRobustCommand\ref{%
4134 \@ifstar\@refstar\T@ref
4135 }%
4136 \DeclareRobustCommand\pageref{%
4137 \@ifstar\@pagerefstar\T@pageref
4138 }%
4139 % \ifclassloaded{memoir}{%

```

```

4140 % \ltx@ifundefined{@mem@titlerefno link}\ltx@secondoftwo{%
4141 % \ltx@ifundefined{@mem@titleref}\ltx@secondoftwo\ltx@firstoftwo
4142 % }%
4143 % }\ltx@secondoftwo
4144 % {%
4145 % \DeclareRobustCommand*{\nameref}{%
4146 % \@ifstar\@mem@titlerefno link\@mem@titleref
4147 % }%
4148 % }{%
4149 \DeclareRobustCommand*{\nameref}{%
4150 \@ifstar\@namerefstar\T@nameref
4151 }%
4152 % }%
4153 }
4154 \Hy@AtBeginDocument{%
4155 \ifHy@texht
4156 \else
4157 \Hy@CatcodeWrapper{%
4158 \ReadBookmarks
4159 }%
4160 \fi
4161 }
4162 \ifHy@backref
4163 \RequirePackage{backref}%
4164 \else
4165 \let\Hy@backout\@gobble
4166 \fi
4167 \Hy@DisableOption{backref}
4168 \Hy@DisableOption{pagebackref}
4169 \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`.

```

4170 \begingroup
4171 \endlinechar=-1 %
4172 \catcode'\^^A=14 %
4173 \catcode'\^^M\active
4174 \catcode'\%\active
4175 \catcode'\#\active
4176 \catcode'\_\active
4177 \catcode'\$\active
4178 \catcode'\&\active
4179 \gdef\hyper@normalise{^^A
4180 \begingroup
4181 \catcode'\^^M\active
4182 \def^^M{ }^^A
4183 \catcode'\%\active
4184 \let%\@percentchar
4185 \let%\@percentchar
4186 \catcode'\#\active

```

```

4187 \def#\hyper@hash}^^A
4188 \def\#\hyper@hash}^^A
4189 \@makeother\&^^A
4190 \edef&{\string&}^^A
4191 \edef\&{\string&}^^A
4192 \edef\textunderscore{\string_}^^A
4193 \let\_ \textunderscore
4194 \catcode'\_ \active
4195 \let\_ \textunderscore
4196 \let~\hyper@tilde
4197 \let~\hyper@tilde
4198 \let\textasciitilde\hyper@tilde
4199 \let\\ \@backslashchar
4200 \edef$\string$}^^A
4201 \Hy@safe@activetrue
4202 \hyper@n@rmalise
4203 }^^A
4204 \catcode'\#=6 ^^A
4205 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4206 \gdef\hyper@n@rmalise#1#2{^^A
4207 \def\Hy@tempa{#2}^^A
4208 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4209 \Hy@ReturnAfterElseFi{^^A
4210 \hyper@@normalise{#1}^^A
4211 }^^A
4212 \else
4213 \Hy@ReturnAfterFi{^^A
4214 \hyper@@normalise{#1}{#2}^^A
4215 }^^A
4216 \fi
4217 }^^A
4218 \gdef\hyper@@normalise#1#2{^^A
4219 \edef\Hy@tempa{^^A
4220 \endgroup
4221 \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4222 }^^A
4223 \Hy@tempa
4224 }^^A
4225 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4226 #1^^A
4227 \ifx\limits#2\limits
4228 \else
4229 \Hy@ReturnAfterFi{^^A
4230 \Hy@RemovePercentCr #2\@nil
4231 }^^A
4232 \fi
4233 }^^A
4234 \endgroup
4235 \providecommand*\hyper@chars{%
4236 \let\#\hyper@hash
4237 \let%\@percentchar
4238 \Hy@safe@activetrue
4239 }

4240 \def\hyperlink#1#2{%
4241 \hyper@@link{#1}{#2}%
4242 }

4243 \def\Hy@VerboseLinkStart#1#2{%

```

```

4244 \ifHy@verbose
4245   \begingroup
4246     \Hy@safe@activestruue
4247     \xdef\Hy@VerboseGlobalTemp{(#1) ‘#2’}%
4248     \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4249     \xdef\Hy@VerboseGlobalTemp{%
4250       \Hy@VerboseGlobalTemp, %
4251       line \the\inputlineno
4252     }%
4253   \endgroup
4254   \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4255   \@onelevel@sanitize\Hy@VerboseLinkInfo
4256 \fi
4257 }

4258 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4259 \def\Hy@VerboseLinkStop{%
4260 \ifHy@verbose
4261   \begingroup
4262     \edef\x{\endgroup
4263       \write\m@ne{%
4264         Package ‘hyperref’ Info: %
4265         End of reference \Hy@VerboseLinkInfo.%
4266       }%
4267     }%
4268   \x
4269 \fi
4270 }

4271 \def\Hy@VerboseAnchor#1{%
4272 \ifHy@verbose
4273   \begingroup
4274     \Hy@safe@activestruue
4275     \Hy@Info{Anchor ‘\HyperDestNameFilter{#1}’}%
4276   \endgroup
4277 \fi
4278 }

4279 \def\Hy@AllowHyphens{%
4280 \relax
4281 \ifhmode
4282   \penalty\@M
4283   \hskip\z@skip
4284 \fi
4285 }

4286 \DeclareRobustCommand*{\href}{%
4287   \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4288 }
4289 \def\Hy@href#1{%
4290   \hyper@normalise\href@
4291 }
4292 \begingroup
4293   \catcode'\$=6 %
4294   \catcode'\#=12 %
4295   \gdef\href@#1{\expandafter\href@split$1##\}%
4296   \gdef\href@split$1#$2#$3\{\%
4297     \hyper@link{#1}{#2}%
4298   }%
4299 \endgroup

```



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

```

4300 \RequirePackage{url}
4301 \let\HyOrg@url\url
4302 \def\Hurl{\begingroup \Url}
4303 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
4304 \def\nolinkurl@#1{\Hurl{#1}}
4305 \DeclareRobustCommand*\url{\hyper@normalise\url@}
4306 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

4307 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
4308 \providecommand\hyper@image[2]{#2}

4309 \def\hypertarget#1#2{%
4310   \ifHy@nesting
4311     \hyper@@anchor{#1}{#2}%
4312   \else
4313     \hyper@@anchor{#1}{\relax}#2%
4314   \fi
4315 }

```

\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 L<sup>A</sup>T<sub>E</sub>X label which can be used in a short form of \hyperref later, to avoid remembering the name and category.

```

4316 \DeclareRobustCommand*\hyperref{%
4317   \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref
4318 }
4319 \def\Hy@babelnormalise#1[#2]{%
4320   \begingroup
4321     \Hy@safe@activetrue
4322     \edef\Hy@tempa{%
4323       \endgroup
4324       \noexpand#1[#2]}%
4325   }%
4326   \Hy@tempa
4327 }
4328 \def\@hyperref{\hyper@normalise\@hyperref}
4329 \def\@hyperref#1#2#3{%
4330   \edef\ref@one{\ifx\#2\\\else#2.\fi#3}%
4331   \expandafter\tryhyper@link\ref@one\{#1}%
4332 }
4333 \def\tryhyper@link#1\#2{%
4334   \hyper@@link{#2}{#1}%
4335 }

4336 \def\hyperdef{\@ifnextchar{\label@hyperdef}\@hyperdef}
4337 \def\@hyperdef#1#2#3{%, category, name, text
4338   \ifx\#1\%
4339     \def\Hy@AnchorName{#2}%
4340   \else
4341     \def\Hy@AnchorName{#1.#2}%
4342   \fi
4343   \ifHy@nesting
4344     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4345   \else
4346     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4347   \fi

```

4348 }

We also have a need to give a L<sup>A</sup>T<sub>E</sub>X *label* to a hyper reference, to ease the pain of referring to it later.

```
4349 \def\label@hyperref[#1]{%
4350   \expandafter\label@hyperref\csname r@#1\endcsname{#1}%
4351 }%
4352 \def\label@hyperref#1#2#3{%
4353   \ifx#1\relax
4354     \protect\G@refundefinedtrue
4355     \@latex@warning{%
4356       Hyper reference ‘#2’ on page \thepage \space undefined%
4357     }%
4358     \hyper@@link{}{??}{#3}%
4359   \else
4360     \hyper@@link{\expandafter\@fifthoffive#1}%
4361     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
4362   \fi
4363 }
4364 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
4365                               % anchor text
4366   \@bsphack
4367   \ifx\#2\%
4368     \def\Hy@AnchorName{#3}%
4369   \else
4370     \def\Hy@AnchorName{#2.#3}%
4371   \fi
4372   \if@filesw
4373     \protected@write\@auxout{}{%
4374       \string\newlabel{#1}{\@empty}{\Hy@AnchorName}{}}%
4375   }%
4376   \fi
4377   \@esphack
4378   \ifHy@nesting
4379     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
4380   \else
4381     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}{#4}%
4382   \fi
4383 }
```

## 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.

```
4384 \def\hyper@@link{\let\Hy@reserved@a\relax
4385   \@ifnextchar{\hyper@link@}{\hyper@link@[link]}%
4386 }
4387 \def\hyper@link@[#1]#2#3#4{%
4388   \begingroup
4389   \protected@edef\Hy@tempa{#2}%
4390   \Hy@safe@activestrue
4391   \edef\x{#3}%
4392   \ifx\Hy@tempa\@empty
4393     \toks0{\hyper@link{#1}}%
```

```

4394 \else
4395 \toks0{\expandafter\hyper@readexternallink#2\{\#1}}%
4396 \fi
4397 \toks2{%
4398 \Hy@safe@activesfalse
4399 #4%
4400 }%
4401 \edef\Hy@tempa{\the\toks2}%
4402 \edef\x{\endgroup
4403 \ifx\Hy@tempa\@empty
4404 \noexpand\Hy@Warning{Suppressing empty link}%
4405 \else
4406 \the\toks0 {\x}{\the\toks2}}%%
4407 \fi
4408 }%
4409 \x
4410 }

```

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.

```

4411 \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.

```

4412 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1::\{\#1}%
4413 }

```

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

```

4414 \def\@pdftempwordfile{file}%
4415 \def\@pdftempwordrun{run}%
4416 \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:

```

4417 \ifx\#6\%
4418 \expandafter\@hyper@linkfile file:#7\{\#3}{#2}%
4419 \else
4420 \ifx\#4\%
4421 \expandafter\@hyper@linkfile file:#7\{\#3}{#2}%
4422 \else

```

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

```

4423 \def\@pdftempa{#4}%

```

```

4424 \ifx\@pdftempa\@pdftempwordfile
4425 \expandafter\@hyper@linkfile#7\{\#3}\#2}%
4426 \else

```

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

```

4427 \ifx\@pdftempa\@pdftempwordrun
4428 \ifHy@pdfa
4429 \PackageError{hyperref}{%
4430 PDF/A: Launch action is prohibited%
4431 }\@ehc
4432 \begingroup
4433 \leavevmode
4434 #2%
4435 \endgroup
4436 \else
4437 \expandafter\@hyper@launch#7\{\#3}\#2}%
4438 \fi
4439 \else

```

otherwise its a URL

```

4440 \hyper@linkurl{\#3}\#7\ifx\#2\else\hyper@hash#2\fi}%
4441 \fi
4442 \fi
4443 \fi
4444 \fi
4445 }

```

By default, turn run: into file:

```

4446 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
4447 \hyper@linkurl{\#2}\#1%
4448 \Hy@linkfileprefix
4449 #1%
4450 \ifx\#3\%
4451 \else
4452 \hyper@hash
4453 #3%
4454 \fi
4455 }%
4456 }

```

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

```

4457 \def\@hyper@linkfile file:#1\#2#3{%
4458 %file url,link string, name
4459 \filename@parse{\#1}%
4460 \ifx\filename@ext\relax
4461 \edef\filename@ext{\XR@ext}%
4462 \fi
4463 \def\use@file{\filename@area\filename@base.\filename@ext}%
4464 \Hy@ifStringEndsWith\filename@ext\XR@ext{%
4465 \hyper@linkfile{\#2}\use@file{\#3}%
4466 }{%
4467 \ifx\@baseurl\@empty
4468 \hyper@linkurl{\#2}\#1%
4469 \Hy@linkfileprefix\use@file\ifx\#3\else\hyper@hash#3\fi
4470 }%
4471 \else
4472 \hyper@linkurl{\#2}\use@file\ifx\#3\else\hyper@hash#3\fi}%
4473 \fi

```

```

4474 }%
4475 }
4476 \def\Hy@ifStringEndsWith#1#2{%
4477 \begingroup
4478 \edef\x{#1}%
4479 \@onelevel@sanitize\x
4480 \edef\x{.\x$}%
4481 \edef\y{#2}%
4482 \@onelevel@sanitize\y
4483 \edef\y{.\y$}%
4484 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
4485 \endgroup
4486 \ifx\relax##2\relax
4487 \expandafter\ltx@secondoftwo
4488 \else
4489 \expandafter\ltx@firstoftwo
4490 \fi
4491 }%
4492 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
4493 }

```

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.

```

4494 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
4495 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
4496 \ifx\#1\%
4497 #2\Hy@Warning{Ignoring empty anchor}%
4498 \else
4499 \def\anchor@spot{#2#3}%
4500 \let\put@me@back\@empty
4501 \ifx\relax#2\relax
4502 \else
4503 \ifHy@nesting
4504 \else
4505 \ifcat a\noexpand#2\relax
4506 \else
4507 \ifcat 0\noexpand#2 \relax
4508 \else
4509 % \typeout{Anchor start is not alphanumeric %
4510 % on input line\the\inputlineno%
4511 % }%
4512 \let\anchor@spot\@empty
4513 \def\put@me@back{#2#3}%
4514 \fi
4515 \fi
4516 \fi
4517 \fi
4518 \ifHy@activeanchor
4519 \anchor@spot
4520 \else
4521 \hyper@anchor{#1}%
4522 \fi

```

```

4523 \expandafter\put@me@back
4524 \fi
4525 \let\anchor@spot\@empty
4526 }

```

## 18 Compatibility with the *L<sup>A</sup>T<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.

```

4527 \let\htmladdimg\hyperimage
4528 \def\htmladdnormallink#1#2{\href{#2}{#1}}
4529 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
4530 \def\htmlref#1#2{% anchor text, label
4531 \label@hyperref[#{#2}]{#1}%
4532 }

```

This is really too much. The *L<sup>A</sup>T<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.

```

4533 \def\@latextohtmlX{%
4534 \let\hhyperref\hyperref
4535 \def\hyperref##1##2##3##4{% anchor text for HTML
4536 % text to print before label in print
4537 % label
4538 % post-label text in print
4539 ##2\ref{##4}##3%
4540 }%
4541 }

```

## 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.

```

4542 \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

```

```

4543 \def\HyField@NewFlag#1#2{%
4544   \lowercase{\HyField@NewOption{#2}}%
4545   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
4546 }

```

\HyField@NewFlagOnly

```

4547 \def\HyField@NewFlagOnly#1#2{%
4548   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
4549 }

```

\HyField@NewOption #1: option name

```

4550 \def\HyField@NewOption#1{%
4551   \expandafter\newif\csname ifFld@#1\endcsname
4552   \define@key{Field}{#1}[true]{%
4553     \lowercase{\Field@boolkey{##1}}{#1}%
4554   }%
4555 }

```

\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

```

4556 \def\HyField@NewBitsetFlag#1#2#3#4{%
4557   \begingroup
4558   \count@=#4\relax
4559   \advance\count@\m@ne
4560   \def\x##1{%
4561     \endgroup
4562     \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
4563     \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
4564       \expandafter\edef\csname HyField@#3@##1\endcsname{%
4565         (\number#4) #2%
4566       }%
4567     \else
4568       \expandafter\edef\csname HyField@#3@##1\endcsname{%
4569         \csname HyField@#3@##1\endcsname
4570         /#2%
4571       }%
4572     \fi
4573   }%
4574   \expandafter\x\expandafter{\the\count@}%
4575 }

```

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

```

4576 \def\HyField@UseFlag#1#2{%
4577   \lowercase{\HyField@@UseFlag{#2}}{#1}%
4578 }

```

\HyField@@UseFlag

```

4579 \def\HyField@@UseFlag#1#2{%
4580   \bitsetSetValue{HyField@#2}{%
4581     \csname HyField@#2@#1\endcsname
4582   }{%
4583     \csname ifFld@#1\endcsname 1\else 0\fi
4584   }%
4585 }

```

```

\HyField@SetFlag The bit set is HyField@#1
4586 \def\HyField@SetFlag#1#2{%
4587 \lowercase{\HyField@@SetFlag{#2}}{#1}%
4588 }

\HyField@@SetFlag
4589 \def\HyField@@SetFlag#1#2{%
4590 \bitsetSetValue{HyField@#2}{%
4591 \csname HyField@#2@#1\endcsname
4592 }{1}%
4593 }

\HyField@PrintFlags
4594 \def\HyField@PrintFlags#1#2{%
4595 \ifHy@verbose
4596 \begingroup
4597 \let\Hy@temp\@empty
4598 \let\MessageBreak\relax
4599 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
4600 \bitsetGetSetBitList{HyField@#1}\do{%
4601 \edef\Hy@temp{%
4602 \Hy@temp
4603 \csname HyField@#1@\x\endcsname\MessageBreak
4604 }%
4605 }%
4606 \edef\x{\endgroup
4607 \noexpand\Hy@Info{%
4608 Field flags: %
4609 \expandafter\ifx\@car#1\@nil S\else/\fi
4610 #1 %
4611 \bitsetGetDec{HyField@#1} %
4612 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
4613 \Hy@temp
4614 for #2%
4615 }%
4616 }\x
4617 \fi
4618 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

4619 \HyField@NewFlag{Ff}{ReadOnly}{1}
4620 \HyField@NewFlag{Ff}{Required}{2}
4621 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

4622 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
4623 \HyField@NewFlag{Ff}{Radio}{16}
4624 \HyField@NewFlag{Ff}{Pushbutton}{17}
4625 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

4626 \HyField@NewFlag{Ff}{Multiline}{13}
4627 \HyField@NewFlag{Ff}{Password}{14}
4628 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
4629 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4

```



4630 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4  
 4631 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4  
 4632 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

“Table 8.79 field flags specific to choice fields”

4633 \HyField@NewFlag{Ff}{Combo}{18}  
 4634 \HyField@NewFlag{Ff}{Edit}{19}  
 4635 \HyField@NewFlag{Ff}{Sort}{20}  
 4636 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4  
 4637 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4  
 4638 \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.

```
4639 \newif\ifFld@popdown
4640 \define@key{Field}{popdown}[true]{%
4641   \lowercase{\Field@boolkey{#1}}{popdown}%
4642 }
```

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.

```
4643 \HyField@NewFlag{F}{Invisible}{1}
4644 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
4645 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
4646 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
4647 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
4648 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
4649 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
4650 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
4651 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

4652 \ifHy@pdfa
4653   \def\HyField@PDFAFlagWarning#1#2{%
4654     \Hy@Warning{%
4655       PDF/A: Annotation flag ‘#1’ must\MessageBreak
4656       be set to ‘#2’%
4657     }%
4658   }%
4659   \Fld@invisiblefalse
4660   \def\Fld@invisibletrue{%
4661     \HyField@PDFAFlagWarning{invisible}{false}%
4662   }%
4663   \Fld@hiddenfalse
4664   \def\Fld@hiddentrue{%
4665     \HyField@PDFAFlagWarning{hidden}{false}%
4666   }%
4667   \Fld@printtrue
4668   \def\Fld@printfalse{%
4669     \HyField@PDFAFlagWarning{print}{true}%
4670   }%
4671   \Fld@nozoomtrue
4672   \def\Fld@nozoomfalse{%
4673     \HyField@PDFAFlagWarning{nozoom}{true}%
4674   }%
4675   \Fld@norotatetrue
```

```

4676 \def\Fld@norotatefalse{%
4677 \HyField@PDFAFldWarning{norotate}{true}%
4678 }%
4679 \Fld@noviewfalse
4680 \def\Fld@noviewtrue{%
4681 \HyField@PDFAFldWarning{noview}{false}%
4682 }%
4683 \fi

```

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

```

4684 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
4685 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
4686 \HyField@NewFlag{Submit}{GetMethod}{4}
4687 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
4688 \HyField@NewFlagOnly{Submit}{XFDF}{6}
4689 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
4690 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
4691 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
4692 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
4693 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
4694 \HyField@NewFlag{Submit}{ExclFKey}{12}
4695 \HyField@NewFlag{Submit}{EmbedForm}{14}

4696 \define@key{Field}{export}{%
4697 \lowercase{\def\Hy@temp{#1}}%
4698 \@ifundefined{Fld@export@\Hy@temp}{%
4699 \@onelevel@sanitize\Hy@temp
4700 \PackageError{hyperref}{%
4701 Unknown export format '\Hy@temp'.\MessageBreak
4702 Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
4703 }\@ehc
4704 }{%
4705 \let\Fld@export\Hy@temp
4706 }%
4707 }
4708 \def\Fld@export{fdf}
4709 \@namedef{Fld@export@fdf}{0}%
4710 \@namedef{Fld@export@html}{1}%
4711 \@namedef{Fld@export@xdf}{2}%
4712 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

4713 \def\HyField@FlagsSubmit{%
4714 \bitsetReset{HyField@Submit}%
4715 \ifcase\@nameuse{Fld@export@\Fld@export} %
4716 % FDF
4717 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
4718 \HyField@UseFlag{Submit}{SubmitCoordinates}%
4719 \HyField@UseFlag{Submit}{IncludeAppendSaves}%
4720 \HyField@UseFlag{Submit}{IncludeAnnotations}%
4721 \HyField@UseFlag{Submit}{CanonicalFormat}%
4722 \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
4723 \HyField@UseFlag{Submit}{ExclFKey}%
4724 \HyField@UseFlag{Submit}{EmbedForm}%
4725 \or % HTML
4726 \HyField@SetFlag{Submit}{ExportFormat}%

```

```

4727 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
4728 \HyField@UseFlag{Submit}{GetMethod}%
4729 \HyField@UseFlag{Submit}{SubmitCoordinates}%
4730 \HyField@UseFlag{Submit}{CanonicalFormat}%
4731 \or % XFDF
4732 \HyField@SetFlag{Submit}{XFDF}%
4733 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
4734 \HyField@UseFlag{Submit}{SubmitCoordinates}%
4735 \HyField@UseFlag{Submit}{CanonicalFormat}%
4736 \or % PDF
4737 \HyField@SetFlag{Submit}{SubmitPDF}%
4738 \HyField@UseFlag{Submit}{GetMethod}%
4739 \fi
4740 \HyField@PrintFlags{Submit}{submit button field}%
4741 \bitsetIsEmpty{HyField@Submit}{%
4742 \def\Fld@submitflags{%
4743 }{%
4744 \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}}%
4745 }%
4746 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

4747 \def\HyField@FlagsAnnot#1{%
4748 \bitsetReset{HyField@F}%
4749 \HyField@UseFlag{F}{Invisible}%
4750 \HyField@UseFlag{F}{Hidden}%
4751 \HyField@UseFlag{F}{Print}%
4752 \HyField@UseFlag{F}{NoZoom}%
4753 \HyField@UseFlag{F}{NoRotate}%
4754 \HyField@UseFlag{F}{NoView}%
4755 \HyField@UseFlag{F}{Locked}%
4756 \HyField@UseFlag{F}{ToggleNoView}%
4757 \HyField@UseFlag{F}{LockedContents}%
4758 \HyField@PrintFlags{F}{#1}%
4759 \bitsetIsEmpty{HyField@F}{%
4760 \def\Fld@annotflags{%
4761 }{%
4762 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}}%
4763 }%
4764 }

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

4765 \def\HyField@FlagsPushButton{%
4766 \HyField@FlagsAnnot{push button field}%
4767 \bitsetReset{HyField@Ff}%
4768 \HyField@UseFlag{Ff}{ReadOnly}%
4769 \HyField@UseFlag{Ff}{Required}%
4770 \HyField@UseFlag{Ff}{NoExport}%
4771 \HyField@SetFlag{Ff}{PushButton}%
4772 \HyField@PrintFlags{Ff}{push button field}%
4773 \bitsetIsEmpty{HyField@Ff}{%
4774 \def\Fld@flags{%

```

```

4775 }{%
4776   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
4777 }%
4778 }

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

4779 \def\HyField@FlagsCheckBox{%
4780   \HyField@FlagsAnnot{check box field}%
4781   \bitsetReset{HyField@Ff}%
4782   \HyField@UseFlag{Ff}{ReadOnly}%
4783   \HyField@UseFlag{Ff}{Required}%
4784   \HyField@UseFlag{Ff}{NoExport}%
4785   \HyField@PrintFlags{Ff}{check box field}%
4786   \bitsetIsEmpty{HyField@Ff}{%
4787     \def\Fld@flags{}%
4788   }{%
4789     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
4790   }%
4791 }

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

4792 \def\HyField@FlagsRadioButton{%
4793   \HyField@FlagsAnnot{radio button field}%
4794   \bitsetReset{HyField@Ff}%
4795   \HyField@UseFlag{Ff}{ReadOnly}%
4796   \HyField@UseFlag{Ff}{Required}%
4797   \HyField@UseFlag{Ff}{NoExport}%
4798   \HyField@UseFlag{Ff}{NoToggleToOff}%
4799   \HyField@SetFlag{Ff}{Radio}%
4800   \HyField@UseFlag{Ff}{RadiosInUnison}%
4801   \HyField@PrintFlags{Ff}{radio button field}%
4802   \bitsetIsEmpty{HyField@Ff}{%
4803     \def\Fld@flags{}%
4804   }{%
4805     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
4806   }%
4807 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

4808 \def\HyField@FlagsText{%
4809   \HyField@FlagsAnnot{text field}%
4810   \bitsetReset{HyField@Ff}%
4811   \HyField@UseFlag{Ff}{ReadOnly}%
4812   \HyField@UseFlag{Ff}{Required}%
4813   \HyField@UseFlag{Ff}{NoExport}%
4814   \HyField@UseFlag{Ff}{Multiline}%
4815   \HyField@UseFlag{Ff}{Password}%
4816   \HyField@UseFlag{Ff}{FileSelect}%
4817   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
4818   \HyField@UseFlag{Ff}{DoNotScroll}%

```

```

4819 \ifFld@comb
4820 \ifcase0\ifFld@multiline
4821     \else\ifFld@password
4822     \else\ifFld@fileselect
4823     \else 1\fi\fi\fi\relax
4824 \PackageError{hyperref}{%
4825   Field option 'comb' cannot used together with\MessageBreak
4826   'multiline', 'password', or 'fileselect'%
4827 } \@ehc
4828 \else
4829 \HyField@UseFlag{Ff}{Comb}%
4830 \fi
4831 \fi
4832 \HyField@UseFlag{Ff}{RichText}%
4833 \HyField@PrintFlags{Ff}{text field}%
4834 \bitsetIsEmpty{HyField@Ff}{%
4835   \def\Fld@flags{}%
4836 }{%
4837   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
4838 }%
4839 }

```

### 19.1.8 Choice fields

`\HyField@FlagsChoice`

```

4840 \def\HyField@FlagsChoice{%
4841 \HyField@FlagsAnnot{choice field}%
4842 \bitsetReset{HyField@Ff}%
4843 \HyField@UseFlag{Ff}{ReadOnly}%
4844 \HyField@UseFlag{Ff}{Required}%
4845 \HyField@UseFlag{Ff}{NoExport}%
4846 \HyField@UseFlag{Ff}{Combo}%
4847 \ifFld@combo
4848   \HyField@UseFlag{Ff}{Edit}%
4849 \fi
4850 \HyField@UseFlag{Ff}{Sort}%
4851 \HyField@UseFlag{Ff}{MultiSelect}%
4852 \ifFld@combo
4853   \ifFld@edit
4854     \HyField@UseFlag{Ff}{DoNotSpellCheck}%
4855   \fi
4856 \fi
4857 \HyField@UseFlag{Ff}{CommitOnSelChange}%
4858 \HyField@PrintFlags{Ff}{choice field}%
4859 \bitsetIsEmpty{HyField@Ff}{%
4860   \def\Fld@flags{}%
4861 }{%
4862   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
4863 }%
4864 }

```

## 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`.

```

4865 \def\HyField@PDFChoices#1{%
4866   \begingroup
4867   \gdef\Fld@choices{}%
4868   \def\HyTmp@optlist{}%
4869   \let\HyTmp@optitem\relax
4870   \count@=0 %
4871   \kv@parse{#1}{%
4872     \Hy@pdfstringdef\kv@key\kv@key
4873     \ifx\kv@value\relax
4874       \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
4875         \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
4876       \else
4877         \xdef\Fld@choices{\Fld@choices(\kv@key)}%
4878       \fi
4879     \else
4880       \Hy@pdfstringdef\kv@value\kv@value
4881       \xdef\Fld@choices{\Fld@choices[(\kv@value)(\kv@key)]}%
4882     \fi
4883     \edef\HyTmp@optlist{%
4884       \HyTmp@optlist
4885       \HyTmp@optitem{\the\count@}{\kv@key}0%
4886     }%
4887     \advance\count@ by 1 %
4888     \@gobbletwo
4889   }%
4890   \xdef\Fld@choices{/Opt[\Fld@choices]}%
4891   \ifFld@multiselect
4892     \HyField@@PDFChoices{DV}\Fld@default
4893     \HyField@@PDFChoices{V}\Fld@value
4894   \else
4895     \ifx\Fld@default\relax
4896     \else
4897       \pdfstringdef\Hy@gtemp\Fld@default
4898       \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
4899     \fi
4900     \ifx\Fld@value\relax
4901     \else
4902       \pdfstringdef\Hy@gtemp\Fld@value
4903       \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
4904     \fi
4905   \fi
4906 \endgroup
4907 }

```

\HyField@@PDFChoices

```

4908 \def\HyField@@PDFChoices#1#2{%
4909   \ifx#2\relax
4910   \else
4911     \count@=0 %
4912     \def\HyTmp@optitem##1##2##3{%
4913       \def\HyTmp@key{##2}%
4914       \ifx\HyTmp@key\Hy@gtemp
4915         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
4916           \HyTmp@optlist
4917           \HyTmp@optitem{##1}{##2}1%
4918         }%
4919       \let\HyTmp@found=Y%

```

```

4920 \else
4921 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
4922 \HyTmp@optlist
4923 \HyTmp@optitem{##1}{##2}##3%
4924 }%
4925 \fi
4926 }%
4927 \expandafter\comma@parse\expandafter{#2}{%
4928 \pdfstringdef\Hy@temp\comma@entry
4929 \let\HyTmp@found=N %
4930 \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
4931 \HyTmp@optlist
4932 \ifx\HyTmp@found Y%
4933 \advance\count@ by 1 %
4934 \else
4935 \@onelevel@sanitize\comma@entry
4936 \PackageWarning{hyperref}{%
4937 \string\ChoiceBox: Ignoring value '\comma@entry',%
4938 \MessageBreak
4939 it cannot be found in the choices%
4940 }%
4941 \fi
4942 \@gobble
4943 }%
4944 \def\HyTmp@optitem##1##2##3{%
4945 \ifnum##3=1 %
4946 (##2)%
4947 \fi
4948 }%
4949 \ifcase\count@
4950 \or
4951 \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
4952 \else
4953 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
4954 \ifx#1V%
4955 \def\HyTmp@optitem##1##2##3{%
4956 \ifnum##3=1 %
4957 \@firstofone{ ##1}%
4958 \fi
4959 }%
4960 \edef\HyTmp@optlist{\HyTmp@optlist}%
4961 \xdef\Fld@choices{%
4962 \Fld@choices
4963 /I[\expandafter\@firstofone\HyTmp@optlist]%
4964 }%
4965 \fi
4966 \fi
4967 \fi
4968 }

```

### 19.3 Forms

\HyField@SetKeys

```

4969 \def\HyField@SetKeys{%
4970 \setkeys{Field}%
4971 }

```

```

4972 \newif\ifFld@checked
4973 \newif\ifFld@disabled
4974 \Fld@checkedfalse
4975 \Fld@disabledfalse
4976 \newcount\Fld@menulength
4977 \newdimen\Field@Width
4978 \newdimen\Fld@charsize
4979 \Fld@charsize=10\p@
4980 \def\Fld@maxlen{0}
4981 \def\Fld@align{0}
4982 \def\Fld@color{0 0 0 rg}
4983 \def\Fld@bcolor{1 1 1}
4984 \def\Fld@bordercolor{1 0 0}
4985 \def\Fld@bordersep{1\p@}
4986 \def\Fld@borderwidth{1}
4987 \def\Fld@borderstyle{S}
4988 \def\Fld@cbsymbol{4}
4989 \def\Fld@radiosymbol{H}
4990 \def\Fld@rotation{0}
4991 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
4992 \def\endForm{\@endForm}
4993 \newif\ifForm@html
4994 \Form@htmlfalse
4995 \def\Form@boolkey#1#2{%
4996   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
4997 }
4998 \define@key{Form}{action}{%
4999   \hyper@normalise\Hy@DefFormAction{#1}%
5000 }
5001 \def\Hy@DefFormAction{\def\Form@action}
5002 \def\enc@@html{html}
5003 \define@key{Form}{encoding}{%
5004   \def\Hy@tempa{#1}%
5005   \ifx\Hy@tempa\enc@@html
5006     \Form@htmltrue
5007     \def\Fld@export{html}%
5008   \else
5009     \Hy@Warning{%
5010       Form 'encoding' key with \MessageBreak
5011       unknown value '#1'%
5012     }%
5013     \Form@htmlfalse
5014   \fi
5015 }
5016 \define@key{Form}{method}{%
5017   \lowercase{\def\Hy@temp{#1}}%
5018   \@ifundefined{Form@method@\Hy@temp}{%
5019     \@onelevel@sanitize\Hy@temp
5020     \PackageError{hyperref}{%
5021       Unknown method '\Hy@temp'.\MessageBreak
5022       Known values are 'post' and 'get'%
5023     }\@ehc
5024   }{%
5025     \let\Form@method\Hy@temp
5026     \ifcase\@nameuse{Form@method@\Hy@temp} %
5027       \Fld@getmethodfalse
5028     \else

```



```

5029   \Fld@getmethodtrue
5030   \fi
5031 }%
5032 }
5033 \def\Fld@method{}
5034 \@namedef{Form@method@post}{0}
5035 \@namedef{Form@method@get}{1}
5036 \def\Fld@boolkey#1#2{%
5037   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5038 }
5039 \newtoks\Fld@toks
5040 \Fld@toks={ }%
5041 \def\Fld@addtoks#1#2{%
5042   \edef\@processme{\Fld@toks{\the\Fld@toks\space #1="#2"}}%
5043   \@processme
5044 }
5045 \def\Fld@checkequals#1=#2=#3\{\%
5046   \def\@currDisplay{#1}%
5047   \ifx\#2\%
5048     \def\@currValue{#1}%
5049   \else
5050     \def\@currValue{#2}%
5051   \fi
5052 }
5053 \define@key{Field}{loc}{%
5054   \def\Fld@loc{#1}%
5055 }
5056 \define@key{Field}{checked}[true]{%
5057   \lowercase{\Fld@boolkey{#1}}{checked}%
5058 }
5059 \define@key{Field}{disabled}[true]{%
5060   \lowercase{\Fld@boolkey{#1}}{disabled}%
5061 }
5062 \define@key{Field}{accesskey}{%
5063   \Fld@addtoks{accesskey}{#1}%
5064 }
5065 \define@key{Field}{tabkey}{%
5066   \Fld@addtoks{tabkey}{#1}%
5067 }
5068 \define@key{Field}{name}{%
5069   \def\Fld@name{#1}%
5070 }
5071 \define@key{Field}{width}{%
5072   \def\Fld@width{#1}%
5073   \Fld@Width#1\setbox0=\hbox{m}%
5074 }
5075 \define@key{Field}{maxlen}{%
5076   \def\Fld@maxlen{#1}%
5077 }
5078 \define@key{Field}{menulength}{%
5079   \Fld@menulength=#1\relax
5080 }
5081 \define@key{Field}{height}{%
5082   \def\Fld@height{#1}%
5083 }
5084 \define@key{Field}{charsize}{%
5085   \Fld@charsize#1%

```

```

5086 }
5087 \define@key{Field}{borderwidth}{%
5088   \def\Fld@borderwidth{#1}%
5089 }
5090 \define@key{Field}{borderstyle}{%
5091   \def\Fld@borderstyle{#1}%
5092 }
5093 \define@key{Field}{bordersep}{%
5094   \def\Fld@bordersep{#1}%
5095 }
5096 \define@key{Field}{default}{%
5097   \def\Fld@default{#1}%
5098 }
5099 \define@key{Field}{align}{%
5100   \def\Fld@align{#1}%
5101 }
5102 \define@key{Field}{value}{%
5103   \def\Fld@value{#1}%
5104 }
5105 \define@key{Field}{checkboxsymbol}{%
5106   \Fld@DingDef\Fld@cbsymbol{#1}%
5107 }
5108 \define@key{Field}{radiosymbol}{%
5109   \Fld@DingDef\Fld@radiosymbol{#1}%
5110 }
5111 \def\Fld@DingDef#1#2{%
5112   \def\Fld@temp{}}%
5113   \Fld@@DingDef#2\ding{ }\@nil
5114   \let#1\Fld@temp
5115 }
5116 \def\Fld@@DingDef#1\ding#2#3\@nil{%
5117   \expandafter\def\expandafter\Fld@temp\expandafter{%
5118     \Fld@temp
5119     #1%
5120   }%
5121   \ifx\#3\%
5122     \expandafter\@gobble
5123   \else
5124     \begingroup
5125     \lccode'0=#2\relax
5126     \lowercase{\endgroup
5127       \expandafter\def\expandafter\Fld@temp\expandafter{%
5128         \Fld@temp
5129         0%
5130       }%
5131     }%
5132     \expandafter\@firstofone
5133   \fi
5134   {%
5135     \Fld@@DingDef#3\@nil
5136   }%
5137 }

5138 \define@key{Field}{rotation}{%
5139   \def\Fld@rotation{#1}%
5140 }

5141 \define@key{Field}{backgroundcolor}{%
5142   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%

```

```

5143 }
5144 \define@key{Field}{bordercolor}{%
5145   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
5146 }
5147 \define@key{Field}{color}{%
5148   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
5149 }

5150 \def\Fld@onclick@code{}
5151 \def\Fld@format@code{}
5152 \def\Fld@validate@code{}
5153 \def\Fld@calculate@code{}
5154 \def\Fld@keystroke@code{}
5155 \def\Fld@onfocus@code{}
5156 \def\Fld@onblur@code{}
5157 \def\Fld@onmousedown@code{}
5158 \def\Fld@onmouseup@code{}
5159 \def\Fld@onenter@code{}
5160 \def\Fld@onexit@code{}
5161 \def\Hy@temp#1{%
5162   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
5163 }
5164 \def\Hy@@temp#1#2{%
5165   \ifHy@pdfa
5166     \define@key{Field}{#2}{%
5167       \PackageError{hyperref}{%
5168         PDF/A: Additional action ‘#2’ is prohibited%
5169       }\@ehc
5170     }%
5171   \else
5172     \define@key{Field}{#2}{%
5173       \def#1{##1}%
5174     }%
5175   \fi
5176 }
5177 \Hy@temp{keystroke}
5178 \Hy@temp{format}
5179 \Hy@temp{validate}
5180 \Hy@temp{calculate}
5181 \Hy@temp{onfocus}
5182 \Hy@temp{onblur}
5183 \Hy@temp{onenter}
5184 \Hy@temp{onexit}
5185 \def\Hy@temp#1{%
5186   \define@key{Field}{#1}{%
5187     \Field@addtoks{#1}{##1}%
5188   }%
5189 }
5190 \Hy@temp{onselect}
5191 \Hy@temp{onchange}
5192 \Hy@temp{ondblclick}
5193 \Hy@temp{onmousedown}
5194 \Hy@temp{onmouseup}
5195 \Hy@temp{onmouseover}
5196 \Hy@temp{onmousemove}
5197 \Hy@temp{onmouseout}
5198 \Hy@temp{onkeypress}
5199 \Hy@temp{onkeydown}

```

```

5200 \Hy@temp{onkeyup}
5201 \ifHy@pdfa
5202   \define@key{Field}{onclick}{%
5203     \PackageError{hyperref}{%
5204       PDF/A: Action 'onclick' is prohibited%
5205     }\@ehc
5206   }%
5207 \else
5208   \define@key{Field}{onclick}{%
5209     \def\Fld@onclick@code{#1}%
5210     \Field@addtoks{onclick}{#1}%
5211   }%
5212 \fi

5213 \DeclareRobustCommand\TextField{%
5214   \ifnextchar[{\@TextField}{\@TextField[]}%
5215 }
5216 \DeclareRobustCommand\ChoiceMenu{%
5217   \ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
5218 }
5219 \DeclareRobustCommand\CheckBox{%
5220   \ifnextchar[{\@CheckBox}{\@CheckBox[]}%
5221 }
5222 \DeclareRobustCommand\PushButton{%
5223   \ifnextchar[{\@PushButton}{\@PushButton[]}%
5224 }
5225 \DeclareRobustCommand\Gauge{%
5226   \ifnextchar[{\@Gauge}{\@Gauge[]}%
5227 }
5228 \DeclareRobustCommand\Submit{%
5229   \ifnextchar[{\@Submit}{\@Submit[]}%
5230 }
5231 \DeclareRobustCommand\Reset{%
5232   \ifnextchar[{\@Reset}{\@Reset[]}%
5233 }
5234 \def\LayoutTextField#1#2{% label, field
5235   #1 #2%
5236 }
5237 \def\LayoutChoiceField#1#2{% label, field
5238   #1 #2%
5239 }
5240 \def\LayoutCheckField#1#2{% label, field
5241   #1 #2%
5242 }
5243 \def\LayoutPushButtonField#1{% button
5244   #1%
5245 }
5246 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5247 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5248 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5249 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5250 \def\MakeButtonField#1{%
5251   \sbox0{%
5252     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
5253   }%
5254   \@tempdima\ht0 %
5255   \advance\@tempdima by \Fld@borderwidth bp %
5256   \advance\@tempdima by \Fld@borderwidth bp %

```

```

5257 \ht0\@tempdima
5258 \@tempdima\dp0 %
5259 \advance\@tempdima by \Fld@borderwidth bp %
5260 \advance\@tempdima by \Fld@borderwidth bp %
5261 \dp0\@tempdima
5262 \box0\relax
5263 }
5264 \def\DefaultHeightofSubmit{14pt}
5265 \def\DefaultWidthofSubmit{2cm}
5266 \def\DefaultHeightofReset{14pt}
5267 \def\DefaultWidthofReset{2cm}
5268 \def\DefaultHeightofCheckBox{\baselineskip}
5269 \def\DefaultWidthofCheckBox{\baselineskip}
5270 \def\DefaultHeightofChoiceMenu{\baselineskip}
5271 \def\DefaultWidthofChoiceMenu{\baselineskip}
5272 \def\DefaultHeightofText{\baselineskip}
5273 \def\DefaultHeightofTextMultiline{4\baselineskip}
5274 \def\DefaultWidthofText{3cm}
5275 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
5276 \def\DefaultOptionsofReset{print,name=Reset,noexport}
5277 \def\DefaultOptionsofPushButton{print}
5278 \def\DefaultOptionsofCheckBox{print}
5279 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

5280 \def\DefaultOptionsofListBox{print}
5281 \def\DefaultOptionsofComboBox{print,edit,sort}
5282 \def\DefaultOptionsofPopdownBox{print}
5283 \def\DefaultOptionsofRadio{print,notoggetooff}

```

## 20 Setup

```

5284 \ifHy@figures
5285 \Hy@Info{Hyper figures ON}%
5286 \else
5287 \Hy@Info{Hyper figures OFF}%
5288 \fi
5289 \ifHy@nesting
5290 \Hy@Info{Link nesting ON}%
5291 \else
5292 \Hy@Info{Link nesting OFF}%
5293 \fi
5294 \ifHy@hyperindex
5295 \Hy@Info{Hyper index ON}%
5296 \else
5297 \Hy@Info{Hyper index OFF}%
5298 \fi
5299 \ifHy@backref
5300 \Hy@Info{backreferencing ON}%
5301 \else
5302 \Hy@Info{backreferencing OFF}%
5303 \fi
5304 \ifHy@colorlinks
5305 \Hy@Info{Link coloring ON}%
5306 \else
5307 \Hy@Info{Link coloring OFF}%
5308 \fi

```

```

5309 \ifHy@ocgcolorlinks
5310 \Hy@Info{Link coloring with OCG ON}%
5311 \else
5312 \Hy@Info{Link coloring with OCG OFF}%
5313 \fi
5314 \ifHy@pdfa
5315 \Hy@Info{PDF/A mode ON}%
5316 \else
5317 \Hy@Info{PDF/A mode OFF}%
5318 \fi

```

## 21 Low-level utility macros

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

```

5319 \edef\hyper@hash{\string#}
5320 \edef\hyper@tilde{\string~}
5321 \edef\hyper@quote{\string"}

```

Support \label before \begin{document}.

```

5322 \def\@currentHref{Doc-Start}
5323 \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.

```

5324 \Hy@AtBeginDocument{%
5325 \Hy@pdfstringtrue
5326 \PDF@SetupDoc
5327 \let\PDF@SetupDoc\@empty
5328 \Hy@DisableOption{pdfpagescrop}%
5329 \Hy@DisableOption{pdfpagemode}%
5330 \Hy@DisableOption{pdfnonfullscreenpagemode}%
5331 \Hy@DisableOption{pdfdirection}%
5332 \Hy@DisableOption{pdfviewarea}%
5333 \Hy@DisableOption{pdfviewclip}%
5334 \Hy@DisableOption{pdfprintarea}%
5335 \Hy@DisableOption{pdfprintclip}%
5336 \Hy@DisableOption{pdfprintscaling}%
5337 \Hy@DisableOption{pdfduplex}%
5338 \Hy@DisableOption{pdfpicktraybypdfsize}%
5339 \Hy@DisableOption{pdfprintpagerange}%
5340 \Hy@DisableOption{pdfnumcopies}%
5341 \Hy@DisableOption{pdfstartview}%
5342 \Hy@DisableOption{pdfstartpage}%
5343 \Hy@DisableOption{pdftoolbar}%
5344 \Hy@DisableOption{pdfmenubar}%
5345 \Hy@DisableOption{pdfwindowui}%
5346 \Hy@DisableOption{pdfitwindow}%
5347 \Hy@DisableOption{pdfcenterwindow}%
5348 \Hy@DisableOption{pdfdisplaydoctitle}%
5349 \Hy@DisableOption{pdfpagelayout}%
5350 \Hy@DisableOption{pdflang}%
5351 \Hy@DisableOption{baseurl}%
5352 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
5353 \Hy@pdfstringfalse
5354 }

```

Ignore star from referencing macros:

```

5355 \LetLtxMacro\NoHy@OrgRef\ref

```

```

5356 \DeclareRobustCommand*{\ref}{%
5357   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
5358 }
5359 \LetLtxMacro\NoHy@OrgPageRef\pageref
5360 \DeclareRobustCommand*{\pageref}{%
5361   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
5362 }

```

## 22 Localized nullifying of package

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

```

5363 \def\NoHyper{%
5364   \def\hyper@link@{##1}##2##3##4{##4}%
5365   \def\hyper@@anchor##1{}%
5366   \global\let\hyper@livelink\hyper@link
5367   \gdef\hyper@link##1##2##3{##3}%
5368   \def\hyper@anchor##1{}%
5369   \def\hyper@anchorstart##1{}%
5370   \let\hyper@anchorend\@empty
5371   \def\hyper@linkstart##1##2{}%
5372   \let\hyper@linkend\@empty
5373   \def\hyper@linkurl##1##2{##1}%
5374   \def\hyper@linkfile##1##2##3{##1}%
5375   \def\hyper@link@{##1}##2##3{}%
5376   \let\Hy@backout\@gobble
5377 }
5378 \def\stop@hyper{%
5379   \def\hyper@link@{##1}##2##3##4{##4}%
5380   \let\Hy@backout\@gobble
5381   \def\hyper@@anchor##1{}%
5382   \def\hyper@link##1##2##3{##3}%
5383   \def\hyper@anchor##1{}%
5384   \def\hyper@anchorstart##1{}%
5385   \let\hyper@anchorend\@empty
5386   \def\hyper@linkstart##1##2{}%
5387   \let\hyper@linkend\@empty
5388   \def\hyper@linkurl##1##2{##1}%
5389   \def\hyper@linkfile##1##2##3{##1}%
5390   \def\hyper@link@{##1}##2##3{}%
5391 }
5392 \def\endNoHyper{%
5393   \global\let\hyper@link\hyper@livelink
5394 }
5395 \</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:

```
5396 <*nohyperref>
5397 \RequirePackage{letltxmacro}[2008/06/13]
5398 \let\hyper@@anchor\@gobble
5399 \def\hyper@link#1#2#3{#3}%
5400 \let\hyper@anchorstart\@gobble
5401 \let\hyper@anchorend\@empty
5402 \let\hyper@linkstart\@gobbletwo
5403 \let\hyper@linkend\@empty
5404 \def\hyper@linkurl#1#2{#1}%
5405 \def\hyper@linkfile#1#2#3{#1}%
5406 \def\hyper@link@[#1]#2#3{#3}%
5407 \let\PDF@SetupDoc\@empty
5408 \let\PDF@FinishDoc\@empty
5409 \def\nohyperpage#1{#1}
```

Some top-level commands:

```
5410 \def\Acrobatmenu#1#2{\leavevmode#2}
5411 \let\pdfstringdefDisableCommands\@gobbletwo
5412 \let\texorpdfstring\@firstoftwo
5413 \let\pdfbookmark\@undefined
5414 \newcommand\pdfbookmark[3]{}
5415 \let\phantomsection\@empty
5416 \let\hypersetup\@gobble
5417 \let\hyperbaseurl\@gobble
5418 \let\href\@gobble
5419 \let\hyperdef\@gobbletwo
5420 \let\hyperlink\@gobble
5421 \let\hypertarget\@gobble
5422 \def\hyperref{%
5423   \@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
5424 }
5425 \long\def\@gobbleopt[#1]{}
5426 \let\hyperpage\@empty
```

Ignore star from referencing macros:

```
5427 \LetLtxMacro\NoHy@OrgRef\ref
5428 \DeclareRobustCommand*\ref}{%
5429   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
5430 }
5431 \LetLtxMacro\NoHy@OrgPageRef\pageref
5432 \DeclareRobustCommand*\pageref}{%
5433   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
5434 }
5435 </nohyperref>
```

## 24 The Mangling Of Aux and Toc Files

Some extra tests so that the hyperref package may be removed or added to a document without having to remove .aux and .toc files (this section is by David Carlisle) All the code is delayed to `\begin{document}`

```
5436 <*package>
5437 \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.

```

5438 \if@filesw
5439 \ifHy@typexml
5440 \immediate\closeout\@mainaux
5441 \immediate\openout\@mainaux\jobname.aux\relax
5442 \immediate\write\@auxout{<relaxxml>\relax}%
5443 \fi
5444 \immediate\write\@auxout{%
5445 \string\providecommand\string\HyperFirstAtBeginDocument{%
5446 \string\AtBeginDocument}^^J%
5447 \string\HyperFirstAtBeginDocument{%
5448 \string\ifx\string\hyper@anchor\string\@undefined^^J%
5449 \string\global\string\let\string\oldcontentsline\string\contentsline^^J%
5450 \string\gdef\string\contentsline%
5451 \string#1\string#2\string#3\string#4{%
5452 \string\oldcontentsline%
5453 {\string#1}{\string#2}{\string#3}^^J%
5454 \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
5455 \string\gdef\string\newlabel\string#1\string#2{%
5456 \string\newlabelxx{\string#1}\string#2}^^J%
5457 \string\gdef\string\newlabelxx%
5458 \string#1\string#2\string#3\string#4\string#5\string#6{%
5459 \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.

```

5460 \string\AtEndDocument{%
5461 \string\ifx\string\hyper@anchor\string\@undefined^^J%
5462 \string\let\string\contentsline\string\oldcontentsline^^J%
5463 \string\let\string\newlabel\string\oldnewlabel^^J%
5464 \string\fi%
5465 }^^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.

```

5466 \string\fi%
5467 }^^J%
5468 \string\global\string\let\string\hyper@last\relax^^J%
5469 \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
5470 }%
5471 \fi
5472 \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.

```

5473 \ifx\hyper@last\@undefined
5474 \def\@starttoc#1{%
5475 \begingroup
5476 \makeatletter
5477 \IfFileExists{\jobname.#1}{%
5478 \Hy@WarningNoLine{%
5479 old #1 file detected, not used; run LaTeX again%
5480 }%

```

```

5481   }-{}%
5482   \if@filesw
5483     \expandafter\newwrite\csname tf@#1\endcsname
5484     \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
5485     \fi
5486     \@nobreakfalse
5487   \endgroup
5488 }%
5489 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
5490 \fi
5491 }

```

## 25 Title strings

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

```

5492 \ifHy@usetitle
5493   \let\HyOrg@title\title
5494   \let\HyOrg@author\author
5495   \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
5496   \def\Hy@scanopttitle[#1]{%
5497     \gdef\Hy@title{#1}%
5498     \HyOrg@title{#1}%
5499   }%
5500   \def\Hy@scantitle#1{%
5501     \gdef\Hy@title{#1}%
5502     \HyOrg@title{#1}%
5503   }%
5504   \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
5505   \def\Hy@scanoptauthor[#1]{%
5506     \gdef\Hy@author{#1}%
5507     \HyOrg@author{#1}%
5508   }%
5509   \def\Hy@scanauthor#1{%
5510     \gdef\Hy@author{#1}%
5511     \HyOrg@author{#1}%
5512   }%

```

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.

```

5513 \begingroup
5514 \def\process@me#1\@nil#2{%
5515   \expandafter\let\expandafter\x\csname @#2\endcsname
5516   \edef\y{\expandafter\strip@prefix\meaning\x}%
5517   \def\c##1#1##2\@nil{%
5518     \ifx\##1\%
5519       \else
5520         \expandafter\gdef\csname Hy@#2\expandafter\endcsname
5521           \expandafter{x}%
5522       \fi
5523     }%
5524   \expandafter\c\y\relax#1\@nil
5525 }%
5526 \expandafter\process@me\string\@latex@\@nil{title}%
5527 \expandafter\process@me\string\@latex@\@nil{author}%
5528 \endgroup

```

```
5529 \fi
5530 \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.

```
5531 \def\Hy@UseMaketitleString#1{%
5532 \ltx@ifundefined{Hy@#1}{-}{%
5533 \begingroup
5534 \let\Hy@saved@hook\pdfstringdefPreHook
5535 \pdfstringdefDisableCommands{%
5536 \expandafter\let\expandafter\\csname Hy@newline@#1\endcsname
5537 \let\newline\\%
5538 }%
5539 \expandafter\ifx\csname @pdf#1\endcsname\@empty
5540 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
5541 \csname Hy@#1\endcsname\@empty
5542 }%
5543 \fi
5544 \global\let\pdfstringdefPreHook\Hy@saved@hook
5545 \endgroup
5546 }%
5547 }
5548 \def\Hy@newline@title#1{ #1}
5549 \def\Hy@newline@author#1{, #1}
5550 \def\Hy@UseMaketitleInfos{%
5551 \Hy@UseMaketitleString{title}%
5552 \Hy@UseMaketitleString{author}%
5553 }
```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```
5554 \RequirePackage{atbegshi}[2007/09/09]
5555 \def\Hy@EveryPageHook{}
5556 \def\Hy@EveryPageBoxHook{}
5557 \def\Hy@FirstPageHook{}
5558 \AtBeginShipout{%
5559 \Hy@EveryPageHook
5560 \ifx\Hy@EveryPageBoxHook\@empty
5561 \else
5562 \setbox\AtBeginShipoutBox=\vbox{%
5563 \offinterlineskip
5564 \Hy@EveryPageBoxHook
5565 \box\AtBeginShipoutBox
5566 }%
```

```

5567 \fi
5568 }
5569 \AtBeginShipoutFirst{%
5570 \Hy@FirstPageHook
5571 }
5572 \g@addto@macro\Hy@FirstPageHook{%
5573 \PDF@FinishDoc
5574 \gdef\PDF@FinishDoc{}}%
5575 }

```

## 27.1 PDF /PageLabels

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

```

5576 \ifHy@pagelabels
5577 \begingroup\expandafter\expandafter\expandafter\endgroup
5578 \expandafter\ifx\csname thepage\endcsname\relax
5579 \Hy@pagelabelsfalse
5580 \Hy@WarningNoLine{%
5581 Option 'pdfpagelabels' is turned off\MessageBreak
5582 because \string\thepage\space is undefined%
5583 }%
5584 \csname fi\endcsname
5585 \csname iffalse\expandafter\endcsname
5586 \fi

```

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

```

5587 \def\thispdfpagelabel#1{%
5588 \gdef\HyPL@thisLabel{#1}%
5589 }%
5590 \global\let\HyPL@thisLabel\relax

```

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

```

5591 \def\HyPL@Labels{}%

```

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

```

5592 \newcount\Hy@abspage
5593 \Hy@abspage=0 %

```

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

```

5594 \def\HyPL@LastType{init}%
5595 \def\HyPL@LastNumber{0}%
5596 \def\HyPL@LastPrefix{}%

```

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

```

5597 \def\HyPL@arabic{D}%
5598 \def\HyPL@Roman{R}%
5599 \def\HyPL@roman{r}%
5600 \def\HyPL@Alph{A}%
5601 \def\HyPL@alph{a}%

```

`\HyPL@EveryPage` If a page is shipout and the page number is known, `\HyPL@EveryPage` has to be called. It stores the current page label.

```

5602 \def\HyPL@EveryPage{%
5603 \begingroup
5604 \ifx\HyPL@thisLabel\relax
5605 \let\HyPL@page\thepage

```

```

5606 \else
5607 \let\HyPL@page\HyPL@thisLabel
5608 \global\let\HyPL@thisLabel\relax
5609 \fi
5610 \let\HyPL@Type\relax
5611 \ifnum\the\c@page>0 %
5612 \expandafter\HyPL@CheckThePage\HyPL@page\@nil
5613 \fi
5614 \let\Hy@temp Y%
5615 \ifx\HyPL@Type\HyPL@LastType
5616 \else
5617 \let\Hy@temp N%
5618 \fi
5619 \ifx\HyPL@Type\relax
5620 \pdfstringdef\HyPL@Prefix{\HyPL@page}%
5621 \else
5622 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
5623 \fi
5624 \ifx\HyPL@Prefix\HyPL@LastPrefix
5625 \else
5626 \let\Hy@temp N%
5627 \fi
5628 \if Y\Hy@temp
5629 \advance\c@page by -1 %
5630 \ifnum\HyPL@LastNumber=\the\c@page\relax
5631 \else
5632 \let\Hy@temp N%
5633 \fi
5634 \Hy@StepCount\c@page
5635 \fi
5636 \if N\Hy@temp
5637 \ifx\HyPL@Type\relax
5638 \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
5639 \else
5640 \HyPL@StorePageLabel{%
5641 \ifx\HyPL@Prefix\@empty
5642 \else
5643 /P(\HyPL@Prefix)%
5644 \fi
5645 /S/\csname HyPL\HyPL@Type\endcsname
5646 \ifnum\the\c@page=1 %
5647 \else
5648 \space/St \the\c@page
5649 \fi
5650 }%
5651 \fi
5652 \fi
5653 \xdef\HyPL@LastNumber{\the\c@page}%
5654 \global\let\HyPL@LastType\HyPL@Type
5655 \global\let\HyPL@LastPrefix\HyPL@Prefix
5656 \endgroup
5657 \Hy@GlobalStepCount\Hy@abspage
5658 }%

```

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

```

5659 \def\HyPL@CheckThePage#1\@nil{%
5660 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil

```

5661 }%

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

```
5662 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
5663   \def\Hy@tempa{#4}%
5664   \def\Hy@tempb{\csname\endcsname\c@page}%
5665   \ifx\Hy@tempa\Hy@tempb
5666     \expandafter\ifx\csname HyPL#3\endcsname\relax
5667     \else
5668       \def\HyPL@Type{#3}%
5669       \def\HyPL@Prefix{#2}%
5670       \fi
5671     \else
5672       \begingroup
5673         \let\Hy@next\endgroup
5674         \let\HyPL@found\@undefined
5675         \def\arabic{\HyPL@Format{arabic}}%
5676         \def\Roman{\HyPL@Format{Roman}}%
5677         \def\roman{\HyPL@Format{roman}}%
5678         \def\Alph{\HyPL@Format{Alph}}%
5679         \def\alph{\HyPL@Format{alph}}%
5680         \protected@edef\Hy@temp{#1}%
5681         \ifx\HyPL@found\relax
5682           \toks@{\expandafter{\Hy@temp}}%
5683           \edef\Hy@next{\endgroup
5684             \noexpand\HyPL@@@CheckThePage\the\toks@
5685             \noexpand\HyPL@found\relax\noexpand\@nil
5686           }%
5687         \fi
5688       \Hy@next
5689     \fi
5690 }%
```

`\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`.

```
5691 \def\HyPL@Format#1#2{%
5692   \ifx\HyPL@found\@undefined
5693     \expandafter\ifx\csname c@#2\endcsname\c@page
5694       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
5695     \else
5696       \expandafter\noexpand\csname#1\endcsname{#2}%
5697     \fi
5698   \else
5699     \expandafter\noexpand\csname#1\endcsname{#2}%
5700   \fi
5701 }%
```

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

```
5702 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
5703   \def\Hy@tempa{#3}%
5704   \def\Hy@tempb{\HyPL@found\relax}%

```

```

5705 \ifx\Hy@tempa\Hy@tempb
5706 \def\HyPL@Type{##2}%
5707 \def\HyPL@Prefix{#1}%
5708 \fi
5709 }%

```

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

```

5710 \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`.

```

5711 \def\HyPL@Useless{0<</S/D>>}%
5712 \@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.

```

5713 \def\HyPL@SetPageLabels{%
5714 \@onelevel@sanitize\HyPL@Labels
5715 \ifx\HyPL@Labels\empty
5716 \else
5717 \ifx\HyPL@Labels\HyPL@Useless
5718 \else
5719 \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
5720 \fi
5721 \fi
5722 }%

```

```

5723 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
5724 \fi

```

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

```

5725 \Hy@DisableOption{pdfpagelabels}
5726 </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`

```

5727 <pdfTeX>\let\Hy@PutCatalog\pdfcatalog

```

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

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

```

5728 <*vTeX>
5729 \providecommand*\XR@ext{-pdf}
5730 \edef\Hy@VTeXversion{%
5731 \ifx\VTeXversion\@undefined
5732 \z@
5733 \else
5734 \ifx\VTeXversion\relax
5735 \z@
5736 \else
5737 \VTeXversion

```

```

5738 \fi
5739 \fi
5740 }
5741 \begingroup
5742 \ifnum\Hy@VTeXversion<660 %
5743 \gdef\Hy@PutCatalog#1{%
5744 \Hy@WarningNoLine{%
5745 VTeX 6.59g or above required for pdfpagelabels%
5746 }%
5747 }%
5748 \else
5749 \gdef\Hy@PutCatalog#1{%
5750 \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
5751 }%
5752 \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
5753 \ifx\#2\%
5754 \else
5755 \immediate\special{!pdfpagelabels #2}%
5756 \fi
5757 }%
5758 \fi
5759 \endgroup
5760 </vtex>

5761 <*pdftex | vtex>

```

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

```

5762 \ifHy@pagelabels
5763 \def\HyPL@StorePageLabel#1{%
5764 \toks@\expandafter{\HyPL@Labels}%
5765 \xdef\HyPL@Labels{%
5766 \the\toks@
5767 \the\Hy@abspage<<#1>>%
5768 }%
5769 }%

```

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.

```

5770 \RequirePackage{atveryend}[2009/12/07]%
5771 \AtVeryEndDocument{%
5772 \HyPL@SetPageLabels
5773 }%

5774 \fi
5775 </pdftex | vtex>

```

### 27.1.2 xetex

```

5776 <*xetex>
5777 \HyPsd@LoadUnicode
5778 \Hy@unicodetrue
5779 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
5780 \else
5781 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
5782 \fi
5783 \HyPsd@LoadStringEnc
5784 \define@key{Hyp}{unicode}[true]{%

```



```

5785 \Hy@boolkey{unicode}{#1}%
5786 \ifHy@unicode
5787 \else
5788 \Hy@Warning{%
5789 XeTeX driver only supports 'unicode=true'.\MessageBreak
5790 Ignoring option setting 'unicode=false'%
5791 }%
5792 \Hy@unicodetrue
5793 \fi
5794 }
5795 \define@key{Hyp}{pdfencoding}{%
5796 \edef\HyPsd@temp{#1}%
5797 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
5798 \let\HyPsd@pdfencoding\HyPsd@temp
5799 \else
5800 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
5801 \let\HyPsd@pdfencoding\HyPsd@temp
5802 \else
5803 \Hy@Warning{%
5804 XeTeX driver only supports\MessageBreak
5805 'pdfencoding=unicode|auto'. Ignoring option\MessageBreak
5806 setting 'pdfencoding=\HyPsd@temp'%
5807 }%
5808 \fi
5809 \fi
5810 }
5811 \let\HyXeTeX@CheckUnicode\relax
5812 </xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

5813 <*pdfmarkbase>
5814 \begingroup
5815 \@ifundefined{headerps@out}{-}{%
5816 \toks@\expandafter{\Hy@FirstPageHook}%
5817 \xdef\Hy@FirstPageHook{%
5818 \noexpand\headerps@out{%
5819 systemdict /pdfmark known%
5820 {%
5821 userdict /?pdfmark systemdict /exec get put%
5822 }{%
5823 userdict /?pdfmark systemdict /pop get put %
5824 userdict /pdfmark systemdict /cleartomark get put%
5825 }%
5826 ifelse%
5827 }%
5828 \the\toks@
5829 }%
5830 }%
5831 \endgroup
5832 </pdfmarkbase>

```

\Hy@PutCatalog

```

5833 <dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfm@mark{docview << #1 >>}}
5834 <*pdfmarkbase>
5835 \def\Hy@PutCatalog#1{%
5836 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
5837 }
5838 </pdfmarkbase>

```

```
5839 <*pdfmarkbase | dvipdfm | xetex>
5840 \ifHy@pagelabels
```

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

```
5841 \def\HyPL@StorePageLabel#1{%
5842   \if@filesw
5843   \begingroup
5844     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
5845     \immediate\write\@mainaux{%
5846       \string\HyPL@Entry{\Hy@tempa}%
5847     }%
5848   \endgroup
5849   \fi
5850 }%
```

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.

```
5851 \Hy@AtBeginDocument{%
5852   \if@filesw
5853     \immediate\write\@mainaux{%
5854       \string\providecommand\string*\string\HyPL@Entry[1]{}%
5855     }%
5856   \fi
5857   \ifx\HyPL@Labels\@empty
5858     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
5859   \else
5860     \HyPL@SetPageLabels
5861   \fi
5862   \let\HyPL@Entry\@gobble
5863 }%
```

`\HyPL@Entry`

```
5864 \def\HyPL@Entry#1{%
5865   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
5866     \HyPL@Labels
5867     #1%
5868   }%
5869 }%

5870 \fi
5871 </pdfmarkbase | dvipdfm | xetex>

5872 <*package>
5873 \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

```

5874 \def\Hy@CounterExists#1{%
5875   \begingroup\expandafter\expandafter\expandafter\endgroup
5876   \expandafter\ifx\csname c@#1\endcsname\relax
5877   \expandafter\@gobble
5878   \else
5879   \begingroup\expandafter\expandafter\expandafter\endgroup
5880   \expandafter\ifx\csname the#1\endcsname\relax
5881   \expandafter\expandafter\expandafter\@gobble
5882   \else
5883   \expandafter\expandafter\expandafter\@firstofone
5884   \fi
5885   \fi
5886 }
5887 \Hy@CounterExists{section}{%
5888   \newcommand\theHequation{\theHsection.\arabic{equation}}%
5889 }
5890 \Hy@CounterExists{part}{%
5891   \newcommand\theHpart{\arabic{part}}%
5892 }
5893 \ltx@ifundefined{thechapter}{%
5894   \newcommand\theHsection   {\arabic{section}}%
5895   \newcommand\theHfigure    {\arabic{figure}}%
5896   \newcommand\theHtable     {\arabic{table}}%
5897 }{%
5898   \newcommand\theHchapter   {\arabic{chapter}}%
5899   \newcommand\theHfigure    {\theHchapter.\arabic{figure}}%
5900   \newcommand\theHtable     {\theHchapter.\arabic{table}}%
5901   \newcommand\theHsection   {\theHchapter.\arabic{section}}%
5902 }
5903 \newcommand\theHsubsection  {\theHsection.\arabic{subsection}}
5904 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
5905 \newcommand\theHparagraph   {\theHsubsubsection.\arabic{paragraph}}
5906 \newcommand\theHsubparagraph{\theHparagraph.\arabic{subparagraph}}
5907 \newcommand\theHtheorem     {\theHsection.\arabic{theorem}}
5908 \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.

```

5909 \let\H@item\item
5910 \newcounter{Item}
5911 \def\theHItem{\arabic{Item}}
5912 \def\item{%
5913   \@hyper@itemfalse
5914   \if@nmbbrlist\@hyper@itemtrue\fi
5915   \H@item
5916 }
5917 \newcommand\theHenumi   {\theHItem}
5918 \newcommand\theHenumii {\theHItem}
5919 \newcommand\theHenumiii {\theHItem}

```

```

5920 \newcommand\theHenumiv {\theHItem}
5921 \newcommand\theHHfootnote {\arabic{Hfootnote}}
5922 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
5923 \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.

```

5924 \let\H@refstepcounter\refstepcounter
5925 \edef\name@of@eq{equation}%
5926 \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.

```

5927 \newif\if@hyper@item
5928 \newif\if@skiphyperref
5929 \@hyper@itemfalse
5930 \@skiphyperreffalse
5931 \def\refstepcounter#1{%
5932   \ifHy@pdfstring
5933   \else
5934     \H@refstepcounter{#1}%
5935     \edef\This@name{#1}%
5936     \ifx\This@name\name@of@slide
5937     \else
5938       \if@skiphyperref
5939       \else
5940         \if@hyper@item
5941         \stepcounter{Item}%
5942         \hyper@refstepcounter{Item}%
5943         \@hyper@itemfalse
5944         \else
5945         \hyper@refstepcounter{#1}%
5946         \fi
5947       \fi
5948     \fi
5949   \fi
5950 }

```

AMSL<sup>A</sup>T<sub>E</sub>X 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.

```

5951 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

5952 \def\hyper@refstepcounter#1{%
5953   \edef\This@name{#1}%
5954   \ifx\This@name\name@of@eq
5955   \@ifundefined{theHequation}{%
5956     \make@stripped@name{\theequation}%
5957     \let\theHequation\newname
5958   }{}%
5959   \fi
5960   \@ifundefined{theH#1}{%
5961     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
5962   }{}%
5963   \hyper@makecurrent{#1}%
5964   \ifmeasuring@

```

```

5965 \else
5966   \Hy@raisedlink{%
5967     \hyper@anchorstart{\@currentHref}\hyper@anchorend
5968   }%
5969 \fi
5970 }

```

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`.

```

5971 \begingroup\expandafter\expandafter\expandafter\endgroup
5972 \expandafter\ifx\csname chapter\endcsname\relax
5973 \def\Hy@chapterstring{section}%
5974 \else
5975 \def\Hy@chapterstring{chapter}%
5976 \fi
5977 \def\Hy@appendixstring{appendix}
5978 \def\Hy@chapapp{\Hy@chapterstring}
5979 \let\HyOrg@appendix\appendix
5980 \def\appendix{%
5981 \ltx@ifundefined{chapter}%
5982   {\gdef\theHsection{\Alph{section}}}%
5983   {\gdef\theHchapter{\Alph{chapter}}}%
5984 \xdef\Hy@chapapp{\Hy@appendixstring}%
5985 \HyOrg@appendix
5986 }

```

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

```

5987 \def\hyper@makecurrent#1{%
5988 \begingroup
5989 \edef\Hy@param{#1}%
5990 \ifx\Hy@param\Hy@chapterstring
5991 \let\Hy@param\Hy@chapapp
5992 \fi
5993 \ifHy@hypertextnames
5994 \let\@number\@firstofone
5995 \@ifundefined{latin@Alph}{}{%
5996 \ifx\@Alph\greek@Alph
5997 \def\@Alph{Alph\@arabic}%
5998 \fi
5999 }%
6000 \ifx\@Alph\@Alph@bul
6001 \def\@Alph{Alph\@arabic}%
6002 \fi
6003 \ifx\@alph\@alph@bul
6004 \def\@alph{alph\@arabic}%
6005 \fi
6006 \ifHy@naturalnames
6007 \let\textlatin\@firstofone
6008 \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
6009 \else
6010 \xdef\HyperGlobalCurrentHref{%
6011 \csname

```

```

6012         the%
6013         \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
6014         #1%
6015     \endcsname
6016 }%
6017 \fi
6018 \xdef\HyperGlobalCurrentHref{%
6019     \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
6020 }%
6021 \else
6022     \Hy@GlobalStepCount\Hy@linkcounter
6023     \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
6024 \fi
6025 \endgroup
6026 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6027 \ifHy@localanchorname
6028     \let\@currentHref\HyperLocalCurrentHref
6029 \else
6030     \global\let\@currentHref\HyperGlobalCurrentHref
6031 \fi
6032 }

```

\Hy@MakeCurrentHref

```

6033 \def\Hy@MakeCurrentHref#1{%
6034     \edef\HyperLocalCurrentHref{#1}%
6035     \@onelevel@sanitize\HyperLocalCurrentHref
6036     \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
6037     \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6038     \ifHy@localanchorname
6039         \let\@currentHref\HyperLocalCurrentHref
6040     \else
6041         \global\let\@currentHref\HyperGlobalCurrentHref
6042     \fi
6043 }

```

\Hy@MakeCurrentHrefAuto

```

6044 \def\Hy@MakeCurrentHrefAuto#1{%
6045     \Hy@GlobalStepCount\Hy@linkcounter
6046     \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
6047 }

```

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

```

6048 \def\@currentHlabel{\@currentHref}

6049 \@ifpackageloaded{fancyvrb}{%
6050     \@ifpackagelater{fancyvrb}{1998/05/20}{-}{-}%
6051     \def\FV@StepLineNo{%
6052         \FV@SetLineNo
6053         \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
6054         \FV@SetLineNo
6055     }%
6056 }%
6057 }{-}

```

## 29 Package lastpage support

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

`\lastpage@putlabel`

```

6058 \Hy@AtBeginDocument{%
6059   \ifclassloaded{revtex4}{%
6060     \@namedef{ver@lastpage.sty}{1994/06/25}%
6061   }{}%
6062 \ifpackageloaded{lastpage}{%
6063   \ifHy@pageanchor
6064   \else
6065     \Hy@WarningNoLine{%
6066       The \string\pageref{LastPage} link doesn't work\MessageBreak
6067       with disabled option 'pageanchor'%
6068     }%
6069   \fi
6070 \def\lastpage@putlabel{%
6071   \addtocounter{page}{-1}%
6072   \if@filesw
6073     \begingroup
6074       \let\@number\@firstofone
6075       \ifHy@pageanchor
6076         \ifHy@hypertextnames
6077           \ifHy@plainpages
6078             \def\Hy@temp{\arabic{page}}%
6079           \else
6080             \Hy@unicodefalse
6081             \pdfstringdef\Hy@temp{\thepage}%
6082           \fi
6083         \else
6084           \def\Hy@temp{\the\Hy@pagecounter}%
6085         \fi
6086       \fi
6087       \immediate\write\@auxout{%
6088         \string\newlabel
6089         {LastPage}{\thepage}{\thepage}{\thepage}{\thepage}{\thepage}%
6090         \ifHy@pageanchor page.\Hy@temp\fi}}%
6091     }%
6092   \endgroup
6093   \fi
6094   \addtocounter{page}{1}%
6095 }%
6096 \ifclassloaded{revtex4}{%
6097   \begingroup
6098     \toks@\expandafter{\lastpage@putlabel}%
6099   \edef\x{\endgroup
6100     \def\noexpand\lastpage@putlabel{%
6101       \noexpand\stepcounter{page}%
6102       \the\toks@
6103     \noexpand\addtocounter{page}\noexpand\m@ne

```

```

6104     }%
6105     }%
6106     \x
6107     }{}%
6108     }{}%
6109 }
6110 </package>
6111 <*check>
6112 \checkpackage{lastpage}[1994/06/25]
6113 \checkcommand\def\lastpage@putlabel{%
6114   \addtocounter{page}{-1}%
6115   \immediate\write\@auxout{%
6116     \string\newlabel{LastPage}{\the\thepage}}%
6117   }%
6118   \addtocounter{page}{1}%
6119 }
6120 </check>
6121 <*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.

```

6122 \def\hypergetref#1{\getrefbykeydefault{#1}{}{??}}
6123 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

### 31 Package titlesec and titletoc support

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

Package titlesec support:

```

6124 \@ifpackageloaded{titlesec}{%
6125   \def\ttl@Hy@steplink#1{%
6126     \Hy@MakeCurrentHrefAuto{#1*}%
6127     \edef\ttl@Hy@saveanchor{%
6128       \noexpand\Hy@raisedlink{%
6129         \noexpand\hyper@anchorstart{\@currentHref}%
6130         \noexpand\hyper@anchorend
6131         \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
6132         \noexpand\ttl@Hy@PatchSaveWrite
6133       }%
6134     }%
6135   }%
6136   \def\ttl@Hy@PatchSaveWrite{%
6137     \begingroup
6138     \toks@\expandafter{\ttl@savewrite}%
6139     \edef\x{\endgroup
6140       \def\noexpand\ttl@savewrite{%
6141         \let\noexpand\@currentHref
6142         \noexpand\ttl@Hy@SavedCurrentHref
6143         \the\toks@
6144       }%
6145     }%
6146     \x

```



```

6147 }%
6148 \def\ttl@Hy@refstepcounter#1{%
6149 \let\ttl@b\Hy@raisedlink
6150 \def\Hy@raisedlink##1{%
6151 \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
6152 }%
6153 \refstepcounter{#1}%
6154 \let\Hy@raisedlink\ttl@b
6155 }%
6156 }{}

Package titletoc support:
6157 \@ifpackageloaded{titletoc}{%
6158 \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
6159 }{}

```

## 32 Package varioref support

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

```

6160 \def\Hy@varioref@undefined{???-??-}-{}{}
6161 \@ifpackageloaded{varioref}{%
6162 \def\vref@pagenum#1#2{%
6163 \ifundefined{r@#2}{%
6164 \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
6165 }{}%
6166 \edef#1{\getpagerefnnumber{#2}}%
6167 }%
6168 }{}

```

## 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

```

6169 \@ifpackageloaded{longtable}{%
6170 \begingroup
6171 \def\y{\LT@array}%
6172 \@ifundefined{scr@LT@array}{%
6173 \ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
6174 }{\def\y{\scr@LT@array}}%
6175 \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
6176 \expandafter\endgroup
6177 \expandafter\def\y[##1]##2{%
6178 \H@refstepcounter{#1}%
6179 \hyper@makecurrent{table}%
6180 \let\Hy@LT@currentHref\@currentHref
6181 #2\@sharp###4%
6182 }%
6183 }%
6184 \expandafter\expandafter\expandafter\x\y[##1][##2]\@nil

```

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

```

6185 \begingroup
6186 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
6187 \endgroup
6188 \def\LT@start{%
6189 #1%
6190 \ifvoid\LT@foot#2\fi
6191 \let\@currentHref\Hy@LT@currentHref
6192 \Hy@raisedlink{%
6193 \hyper@anchorstart{\@currentHref}\hyper@anchorend
6194 }%
6195 #3%
6196 }%
6197 }%
6198 \expandafter\x\LT@start\@nil
6199 }{}

```

## 34 Equations

We want to make the whole equation a target anchor. Overload equation, temporarily reverting to original `\refstepcounter`. If, however, it is in AMS math, we do not do anything, as the tag mechanism is used there (see section 41). The exception is that we move the equation incrementation inside the math environment to avoid specials outside and a wrong vertical spacing of equation environments.

```

6200 \let\new@refstepcounter\refstepcounter
6201 \let\H@equation\equation
6202 \let\H@endequation\endequation
6203 \@ifpackageloaded{amsmath}{%
6204 \long\def\Hy@temp{%
6205 \incr@eqnum
6206 \mathdisplay@push
6207 \st@rredfalse \global\@eqnswtrue
6208 \mathdisplay{equation}%
6209 }%
6210 \ifx\Hy@temp\equation
6211 \expandafter\ifx\csname if@fleqn\expandafter\endcsname
6212 \csname iftrue\endcsname
6213 \else
6214 \long\def\equation{%
6215 \mathdisplay@push
6216 \st@rredfalse \global\@eqnswtrue
6217 \mathdisplay{equation}%
6218 \incr@eqnum
6219 }%
6220 \fi
6221 \fi
6222 }{}%
6223 \def\equation{%
6224 \let\refstepcounter\H@refstepcounter
6225 \H@equation
6226 \@ifundefined{theHequation}{%
6227 \make@stripped@name{\theequation}%
6228 \let\theHequation\newname
6229 }{}%
6230 \hyper@makecurrent{equation}%
6231 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%

```

```

6232 \let\refstepcounter\new@refstepcounter
6233 }%
6234 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
6235 }

```

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.

```

6236 \newif\if@eqnstar
6237 \@eqnstarfalse
6238 \let\H@eqnarray\eqnarray
6239 \let\H@endeqnarray\endeqnarray
6240 \def\eqnarray{%
6241 \let\Hy@reserved@a\relax
6242 \def\@currentHref{}%
6243 \H@eqnarray
6244 \if@eqnstar
6245 \else
6246 \ifx\\ \@currentHref\\ %
6247 \else
6248 \@ifundefined{theHequation}{%
6249 \make@stripped@name{\theequation}%
6250 \let\theHequation\newname
6251 }{}%
6252 \hyper@makecurrent{equation}%
6253 \hyper@anchorstart{\@currentHref}{\hyper@anchorend
6254 \fi
6255 \fi
6256 }
6257 \def\endeqnarray{%
6258 \H@endeqnarray
6259 }

```

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.

```

6260 \@namedef{eqnarray*}{%
6261 \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
6262 }
6263 \@namedef{endeqnarray*}{%
6264 \nonumber\endeqnarray\@eqnstarfalse
6265 }

```

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

```

6266 \ltx@ifundefined{subeqnarray}{}{%
6267 \let\H@subeqnarray\subeqnarray
6268 \let\H@endsubeqnarray\endsubeqnarray
6269 \def\subeqnarray{%
6270 \let\Hy@reserved@a\relax
6271 \H@subeqnarray
6272 \@ifundefined{theHequation}{%
6273 \make@stripped@name{\theequation}%
6274 \let\theHequation\newname
6275 }{}%
6276 \hyper@makecurrent{equation}%
6277 \hyper@anchorstart{\@currentHref}{\hyper@anchorend
6278 }%

```

```

6279 \def\endsubeqnarray{%
6280   \H@endsubeqnarray
6281 }%
6282 \newcommand\theHsubequation{\theHequation\alph{subequation}}%
6283 }

```

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

```

6284 \def\make@stripped@name#1{%
6285   \begingroup
6286   \escapechar\m@ne
6287   \global\let\newname\@empty
6288   \protected@edef\Hy@tempa{#1}%
6289   \edef\@tempb{%
6290     \noexpand\@tfor\noexpand\Hy@tempa:=%
6291     \expandafter\strip@prefix\meaning\Hy@tempa
6292   }%
6293   \@tempb\do{%
6294     \if{\Hy@tempa\else
6295       \if}\Hy@tempa\else
6296       \xdef\newname{\newname\Hy@tempa}%
6297     \fi
6298   \fi
6299   }%
6300 \endgroup
6301 }

```

Support for amsmath's subequations:

```

6302 \begingroup\expandafter\expandafter\expandafter\endgroup
6303 \expandafter\ifx\csname subequations\endcsname\relax
6304 \else
6305   \let\HyOrg@subequations\subequations
6306   \def\subequations{%
6307     \stepcounter{equation}%
6308     \protected@edef\theHparentequation{%
6309       \ifundefined{theHequation}\theequation\theHequation
6310     }%
6311     \addtocounter{equation}{-1}%
6312     \HyOrg@subequations
6313     \def\theHequation{\theHparentequation\alph{equation}}%
6314     \ignorespaces
6315   }%
6316 \fi

```

Support for package amsthm (Daniel Müllner):

```

6317 \ifpackageloaded{amsthm}{%
6318   \def\@thm#1#2#3{%
6319     \ifhmode
6320       \unskip\unskip\par
6321     \fi
6322     \normalfont
6323     \trivlist
6324     \let\thmheadnl\relax
6325     \let\thm@swap\@gobble
6326     \thm@notefont{\fontseries\mddefault\upshape}%
6327     \thm@headpunct{.}% add period after heading
6328     \thm@headsep 5\p@ plus\p@ minus\p@\relax
6329     \thm@space@setup
6330     #1% style overrides

```

```

6331 \@topsep \thm@preskip          % used by thm head
6332 \@topsepadd \thm@postskip     % used by \@endparenv
6333 \def\dth@counter{#2}%
6334 \ifx\@empty\dth@counter
6335   \def\@tempa{%
6336     \@oparg{\@begintheorem{#3}{}}[]%
6337   }%
6338 \else
6339   \H@refstepcounter{#2}%
6340   \hyper@makecurrent{#2}%
6341   \let\Hy@dth@currentHref\@currentHref
6342   \def\@tempa{%
6343     \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}[]%
6344   }%
6345 \fi
6346 \@tempa
6347 }%
6348 \dth@everypar={%
6349   \@minipagefalse
6350   \global\@newlistfalse
6351   \@noparitemfalse
6352   \if@inlabel
6353     \global\@inlabelfalse
6354   \begingroup
6355     \setbox\z@\lastbox
6356     \ifvoid\z@
6357       \kern-\itemindent
6358     \fi
6359   \endgroup
6360   \ifx\@empty\dth@counter
6361   \else
6362     \Hy@raisedlink{%
6363       \hyper@anchorstart{%
6364         \ltx@ifundefined{Hy@dth@currentHref}%
6365         \@currentHref\Hy@dth@currentHref
6366       }\hyper@anchorend
6367     }%
6368   \fi
6369   \unhbox\@labels
6370 \fi
6371 \if@nobreak
6372   \@nobreakfalse \clubpenalty\@M
6373 \else
6374   \clubpenalty\@clubpenalty \everypar{}%
6375 \fi
6376 }%
6377 }{}

```

## 35 Footnotes

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

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

```
6378 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}

```

```

6379 \ifHy@hyperfootnotes
6380   \newcounter{Hfootnote}%
6381   \let\H@@footnotetext\@footnotetext
6382   \let\H@@footnotemark\@footnotemark
6383   \def\@xfootnotenext[#1]{%
6384     \begingroup
6385       \csname c@\@mpfn\endcsname #1\relax
6386       \unrestored@protected@xdef\@thefnmark{\thempfn}%
6387     \endgroup
6388     \ifx\@footnotetext\@mpfootnotetext
6389       \expandafter\H@@mpfootnotetext
6390     \else
6391       \expandafter\H@@footnotetext
6392     \fi
6393   }%
6394   \def\@xfootnotemark[#1]{%
6395     \begingroup
6396       \c@footnote #1\relax
6397       \unrestored@protected@xdef\@thefnmark{\thefootnote}%
6398     \endgroup
6399     \H@@footnotemark
6400   }%
6401   \let\H@@mpfootnotetext\@mpfootnotetext
6402   \long\def\@mpfootnotetext#1{%
6403     \H@@mpfootnotetext{%
6404       \ifHy@nesting
6405         \expandafter\hyper@@anchor\expandafter{%
6406           \Hy@footnote@currentHref
6407         }{#1}%
6408       \else
6409         \Hy@raisedlink{%
6410           \expandafter\hyper@@anchor\expandafter{%
6411             \Hy@footnote@currentHref
6412           }{\relax}%
6413         }#1%
6414       \fi
6415     }%
6416   }%
6417   \long\def\@footnotetext#1{%
6418     \H@@footnotetext{%
6419       \ifHy@nesting
6420         \expandafter\hyper@@anchor\expandafter{%
6421           \Hy@footnote@currentHref
6422         }{#1}%
6423       \else
6424         \Hy@raisedlink{%
6425           \expandafter\hyper@@anchor\expandafter{%
6426             \Hy@footnote@currentHref
6427           }{\relax}%
6428         }%
6429       \let\@currentHref\Hy@footnote@currentHref
6430       \let\@currentlabelname\@empty
6431       #1%
6432     \fi
6433   }%
6434 }%

```

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.

```

6435 \def\@footnotemark{%
6436 \leavevmode
6437 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
6438 \stepcounter{Hfootnote}%
6439 \global\let\Hy@saved@currentHref\@currentHref
6440 \hyper@makecurrent{Hfootnote}%
6441 \global\let\Hy@footnote@currentHref\@currentHref
6442 \global\let\@currentHref\Hy@saved@currentHref
6443 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
6444 \@makefnmark
6445 \hyper@linkend
6446 \ifhmode\spacefactor\@x@sf\fi
6447 \relax
6448 }%

```

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

```

6449 \ifpackageloaded{longtable}{%
6450 \CheckCommand*\LT@p@ftntext}[1]{%
6451 \edef\@tempa{%
6452 \the\LT@p@ftn
6453 \noexpand\footnotetext[\the\c@footnote]%
6454 }%
6455 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
6456 }%
6457 \long\def\LT@p@ftntext#1{%
6458 \edef\@tempa{%
6459 \the\LT@p@ftn
6460 \begingroup
6461 \noexpand\c@footnote=\the\c@footnote\relax
6462 \noexpand\protected@xdef
6463 \noexpand\@thefnmark{\noexpand\thempfn}%
6464 \noexpand\protected@xdef\noexpand\@thefnmark{%
6465 \noexpand\thempfn
6466 }%
6467 \expandafter\noexpand\expandafter\Hy@LT@footnotetext
6468 \expandafter{%
6469 \Hy@footnote@currentHref
6470 }%
6471 }%
6472 \global\LT@p@ftn\expandafter{%
6473 \@tempa{#1}%
6474 \endgroup
6475 }%
6476 }%
6477 \long\def\Hy@LT@footnotetext#1#2{%
6478 \H@@footnotetext{%
6479 \ifHy@nesting
6480 \hyper@@anchor{#1}{#2}%
6481 \else
6482 \Hy@raisedlink{%
6483 \hyper@@anchor{#1}{\relax}%

```

```

6484     }%
6485     \def\@currentHref{#1}%
6486     \let\@currentlabelname\@empty
6487     #2%
6488     \fi
6489     }%
6490     }%
6491     }{}%

```

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

```

6492 \ifpackageloaded{fancyvrb}{%
6493 \def\V@@footnotetext{%
6494 \insert\footins\bgroup
6495 \csname reset@font\endcsname
6496 \footnotesize
6497 \interlinepenalty\interfootnotelinepenalty
6498 \splittopskip\footnotesep
6499 \splitmaxdepth\dp\strutbox
6500 \floatingpenalty \@MM
6501 \hsize\columnwidth
6502 \@parboxrestore
6503 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
6504 \@makefnmark{}%
6505 \rule{\z@}{\footnotesep}%
6506 \bgroup
6507 \aftergroup\V@@@footnotetext
6508 \Hy@raisedlink{%
6509 \expandafter\hyper@@anchor\expandafter{%
6510 \Hy@footnote@currentHref
6511 }{\relax}}%
6512 }%
6513 \let\@currentHref\Hy@footnote@currentHref
6514 \let\@currentlabelname\@empty
6515 \ignorespaces
6516 }%
6517 }{}%

```

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

```

6518 \def\Hy@temp#1{%
6519 \begingroup
6520 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
6521 \endgroup
6522 \@footnotemark
6523 }%
6524 \ifx\Hy@temp\footref
6525 \def\footref#1{%
6526 \begingroup
6527 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
6528 \endgroup
6529 \H@@@footnotemark
6530 }%
6531 \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.

```

6532 \let\HyOrg@maketitle\maketitle
6533 \def\maketitle{%
6534 \let\Hy@saved@footnotemark\@footnotemark

```



```

6535 \let\Hy@saved@footnotetext\@footnotetext
6536 \let\@footnotemark\H@@footnotemark
6537 \let\@footnotetext\H@@footnotetext
6538 \@ifnextchar[\Hy@maketitle@optarg{% ]
6539   \HyOrg@maketitle
6540   \Hy@maketitle@end
6541 }%
6542 }%
6543 \def\Hy@maketitle@optarg[#1]{%
6544   \HyOrg@maketitle{#1}%
6545   \Hy@maketitle@end
6546 }%
6547 \def\Hy@maketitle@end{%
6548   \ifx\@footnotemark\H@@footnotemark
6549     \let\@footnotemark\Hy@saved@footnotemark
6550   \fi
6551   \ifx\@footnotetext\H@@footnotetext
6552     \let\@footnotetext\Hy@saved@footnotetext
6553   \fi
6554 }%

```

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

```

6555 \def\realfootnote{%
6556   \@ifnextchar[\@xfootnote{%
6557     \stepcounter{\@mpfn}%
6558     \protected@xdef\@thefnmark{\thempfn}%
6559     \H@@footnotemark\H@@footnotetext
6560   }%
6561 }%

6562 \fi
6563 \Hy@DisableOption{hyperfootnotes}

6564 </package>
6565 <*check>
6566 \checklatex
6567 \checkcommand\def\@xfootnotenext[#1]{%
6568   \begingroup
6569     \csname c@\@mpfn\endcsname #1\relax
6570     \unrestored@protected@xdef\@thefnmark{\thempfn}%
6571   \endgroup
6572   \@footnotetext
6573 }
6574 \checkcommand\def\@xfootnotemark[#1]{%
6575   \begingroup
6576     \c@footnote #1\relax
6577     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
6578   \endgroup
6579   \@footnotemark
6580 }
6581 \checkcommand\def\@footnotemark{%
6582   \leavevmode
6583   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
6584   \@makefnmark
6585   \ifhmode\spacefactor\@x@sf\fi
6586   \relax
6587 }
6588 </check>

```

6589  $\langle$ \*package $\rangle$

## 36 Float captions

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

```
6590 \def\caption{%
6591   \ifx\@capttype\@undefined
6592     \@latex@error{\noexpand\caption outside float}\@ehd
6593     \expandafter\@gobble
6594   \else
6595     \H@refstepcounter\@capttype
6596     \let\Hy@tempa\@caption
6597     \@ifundefined{float@caption}{%
6598       }{%
6599         \expandafter\ifx\csname @float@c@\@capttype\endcsname
6600           \float@caption
6601         \let\Hy@tempa\Hy@float@caption
6602         \fi
6603       }%
6604     \expandafter\@firstofone
6605   \fi
6606   {\@dblarg{\Hy@tempa\@capttype}}%
6607 }
6608 \long\def\@caption#1[#2]#3{%
6609   \expandafter\ifx\csname if@capstart\expandafter\endcsname
6610     \csname iftrue\endcsname
6611     \global\let\@currentHref\hc@currentHref
6612   \else
6613     \hyper@makecurrent{\@capttype}%
6614   \fi
6615   \@ifundefined{NR@gettitle}{%
6616     \def\@currentlabelname{#2}%
6617   }{%
6618     \NR@gettitle{#2}%
6619   }%
6620   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
6621     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
6622   }%
6623   \begingroup
6624     \@parboxrestore
6625     \if@minipage
6626       \setminipage
6627     \fi
6628     \normalsize
6629     \expandafter\ifx\csname if@capstart\expandafter\endcsname
6630       \csname iftrue\endcsname
6631       \global\@capstartfalse
6632       \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
6633     \else
6634       \@makecaption{\csname fnum@#1\endcsname}{%
6635         \ignorespaces
```

If we cannot have nesting, the anchor is empty.

```
6636     \ifHy@nesting
6637       \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
```

```

6638     \else
6639     \Hy@raisedlink{%
6640     \expandafter\hyper@@anchor\expandafter{%
6641     \@currentHref
6642     }{\relax}%
6643     }%
6644     #3%
6645     \fi
6646     }%
6647     \fi
6648     \par
6649     \endgroup
6650 }

```

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.

```

6651 \let\Hy@float@caption\caption
6652 \@ifpackageloaded{float}{%
6653 \def\Hy@float@caption{%
6654 \ifx\Hy@float@currentHref\undefined
6655 \hyper@makecurrent{\@cuptype}%
6656 \global\let\Hy@float@currentHref\currentHref
6657 \else
6658 \let\currentHref\Hy@float@currentHref
6659 \fi
6660 \float@caption
6661 }%
6662 \let\HyOrg@float@makebox\float@makebox
6663 \renewcommand{\float@makebox}[1]{%
6664 \HyOrg@float@makebox{%
6665 #1\relax
6666 \ifx\Hy@float@currentHref\undefined
6667 \else
6668 \expandafter\hyper@@anchor\expandafter{%
6669 \Hy@float@currentHref
6670 }{\relax}%
6671 \global\let\Hy@float@currentHref\undefined
6672 \fi
6673 }%
6674 }%
6675 }{}

6676 </package>
6677 <*check>
6678 \checklatex[1999/06/01 - 2000/06/01]
6679 \checkcommand\def\caption{%
6680 \ifx\@cuptype\undefined
6681 \@latex@error{\noexpand\caption outside float}\@ehd
6682 \expandafter@gobble
6683 \else
6684 \refstepcounter\@cuptype
6685 \expandafter\@firstofone
6686 \fi
6687 {\@dblarg{\@caption\@cuptype}}%
6688 }
6689 \checkcommand\long\def\caption#1[#2]#3{%
6690 \par
6691 \addcontentsline{\c@name ext@#1\endc@name}{#1}{%

```

```

6692 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
6693 }%
6694 \begingroup
6695 \parboxrestore
6696 \if@minipage
6697 \setminipage
6698 \fi
6699 \normalsize
6700 \@makecaption{\csname fnum#1\endcsname}{\ignorespaces #3}\par
6701 \endgroup
6702 }
6703 </check>
6704 <*package>

```

## 37 Bibliographic references

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

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

```

6705 \def\hyper@natlinkstart#1{%
6706 \Hy@backout{#1}%
6707 \hyper@linkstart{cite}{cite.#1}%
6708 \def\hyper@nat@current{#1}%
6709 }
6710 \def\hyper@natlinkend{%
6711 \hyper@linkend
6712 }
6713 \def\hyper@natlinkbreak#1#2{%
6714 \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
6715 }
6716 \def\hyper@natanchorstart#1{%
6717 \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
6718 }
6719 \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.

```

6720 \ltx@ifundefined{NAT@parse}{%
6721 \providecommand*\@extra@binfo{}%
6722 \providecommand*\@extra@b@citeb{}%
6723 \def\bibcite#1#2{%
6724 \@newl@bel{b}{#1\@extra@binfo}{%
6725 \hyper@link{cite}{cite.#1\@extra@b@citeb}{#2}%
6726 }%
6727 }%
6728 \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.”.

```

6729 \let\Hy@bibtote\bibcite
6730 \begingroup
6731 \ifundefined{bbl@cite@choice}{}%
6732   \g@addto@macro\bbl@cite@choice{%
6733     \let\bibcite\Hy@bibtote
6734   }%
6735 }%
6736 \endgroup

\@BIBLABEL is working around a ‘feature’ of RevTeX.
6737 \providecommand*\@BIBLABEL{\@biblabel}%
6738 \def\@bibitem[#1]#2{%
6739   \skiphyperreftrue
6740   \H@item{%
6741     \ifx\Hy@raisedlink\@empty
6742       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
6743       \@BIBLABEL{#1}%
6744       \hyper@anchorend
6745     \else
6746       \Hy@raisedlink{%
6747         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
6748       }%
6749       \@BIBLABEL{#1}%
6750     \fi
6751     \hfill
6752   }%
6753   \skiphyperreffalse
6754   \if@filesw
6755     \begingroup
6756     \let\protect\noexpand
6757     \immediate\write\@auxout{%
6758       \string\bibcite{#2}{#1}%
6759     }%
6760     \endgroup
6761   \fi
6762   \ignorespaces
6763 }%

Since \bibitem is doing its own labelling, call the raw version of \item, to avoid extra
spurious labels
6764 \def\@bibitem#1{%
6765   \skiphyperreftrue\H@item\skiphyperreffalse
6766   \Hy@raisedlink{%
6767     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
6768   }%
6769   \if@filesw
6770     \begingroup
6771     \let\protect\noexpand
6772     \immediate\write\@auxout{%
6773       \string\bibcite{#1}{\the\value{\@listctr}}%
6774     }%
6775     \endgroup
6776   \fi
6777   \ignorespaces
6778 }%
6779 }-}

6780 \end{package}
6781 \end{check}

```

```

6782 \checklatex
6783 \checkcommand\def\@bibitem[#1]#2{%
6784 \item[\@biblabel{#1}\hfill]%
6785 \if@filesw
6786   {%
6787     \let\protect\noexpand
6788     \immediate\write\@auxout{%
6789       \string\bibcite{#2}{#1}%
6790     }%
6791   }%
6792 \fi
6793 \ignorespaces
6794 }
6795 \checkcommand\def\@bibitem#1{%
6796 \item
6797 \if@filesw
6798 \immediate\write\@auxout{%
6799 \string\bibcite{#1}{\the\value{\@listctr}}%
6800 }%
6801 \fi
6802 \ignorespaces
6803 }
6804 </check>
6805 <*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.

```

6806 \@ifclassloaded{revtex}{%
6807 \Hy@Info{*** compatibility with revtex **** }%
6808 \def\revtex@checking#1#2{%
6809 \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
6810 \expandafter\def\csname b@#1\endcsname{#2}%
6811 \@SetMaxRnhefLabel{#1}%
6812 \expandafter\let\csname b@#1\endcsname\T@temp
6813 }%

```

Tanmoy provided this replacement for CITE<sub>X</sub>. Lord knows what it does. For chapterbib added: `extra@b@citeb`

```

6814 \@ifundefined{CITE}{\def\CITE{\@cite}}{}%
6815 \providecommand*{\extra@b@citeb}{}%
6816 \def\CITE[#1]#2{%
6817 \let\@citea\@empty
6818 \leavevmode
6819 \unskip
6820 $\sim$%
6821 \scriptstyle
6822 \@CITE{%
6823 \@for\@citeb:=#2\do{%
6824 \@citea
6825 \def\@citea{\penalty\@m} }%
6826 \edef\@citeb{\expandafter\@firstofone\@citeb}%
6827 \if@filesw
6828 \immediate\write\@auxout{\string\citation{\@citeb}}%
6829 \fi
6830 \@ifundefined{b@\@citeb\extra@b@citeb}{}%
6831 \mbox{\reset@font\bfseries ?}%
6832 \G@refundefinedtrue

```

```

6833     \latex@warning{%
6834       Citation ‘\@citeb’ on page \thepage \space undefined%
6835     }%
6836   }{%
6837     {\csname b@\@citeb\@extra@b@citeb\endcsname}%
6838   }%
6839 }%
6840 }{#1}%
6841 }$%
6842 }%

```

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.

```

6843 \def\@citex[#1]#2{%
6844   \let\@citea\@empty
6845   \@cite{%
6846     \@for\@citeb:=#2\do{%
6847       \@citea
6848       \def\@citea{,\penalty\@m\ }%
6849       \edef\@citeb{\expandafter\@firstofone\@citeb}%
6850       \if@filesw
6851         \immediate\write\@auxout{\string\citation{\@citeb}}%
6852       \fi
6853       \@ifundefined{b@\@citeb\@extra@b@citeb}{%
6854         \mbox{\reset@font\bfseries ?}%
6855         \G@refundefinedtrue
6856         \latex@warning{%
6857           Citation ‘\@citeb’ on page \thepage \space undefined%
6858         }%
6859       }{%
6860         \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
6861       }%
6862     }%
6863   }{#1}%
6864 }%
6865 }{}

```

### 37.1 Package harvard

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

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

```

6866 \@ifpackageloaded{harvard}{%
6867   \Hy@AtBeginDocument{%
6868     \Hy@Info{*** compatibility with harvard **** }%
6869     \Hy@raiselinksfalse
6870     \def\harvardcite#1#2#3#4{%
6871       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{#1}{#2}}%
6872       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{#1}{#3}}%
6873       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{#1}{#4}}%
6874       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
6875     }%
6876     \def\HAR@citetoaux#1{%
6877       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%

```

```

6878 \ifHy@backref
6879 \ifx\@empty\@currentlabel
6880 \else
6881 \@bsphack
6882 \if@filesw
6883 \protected@write\@auxout{}{%
6884 \string\@writefile{brf}{%
6885 \string\backcite{#1}{%
6886 {\thepage}{\@currentlabel}{\@currentHref}%
6887 }%
6888 }%
6889 }%
6890 \fi
6891 \@esphack
6892 \fi
6893 \fi
6894 }%
6895 \def\harvarditem{%
6896 \@ifnextchar{\@harvarditem}{\@harvarditem[\null]}%
6897 }%
6898 \def\@harvarditem[#1]#2#3#4#5\par{%
6899 \item[]%
6900 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
6901 \if@filesw
6902 \begingroup
6903 \def\protect##1{\string ##1\space}%
6904 \ifthenelse{\equal{#1}{\null}}%
6905 {\def\next{{#4}{#2}{#2}{#3}}}%
6906 {\def\next{{#4}{#2}{#1}{#3}}}%
6907 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
6908 \endgroup
6909 \fi
6910 \protect\hspace*{-\labelwidth}%
6911 \protect\hspace*{-\labelsep}%
6912 \ignorespaces
6913 #5%
6914 \ifHy@backref
6915 \newblock
6916 \backref{\csname br@#4\endcsname}%
6917 \fi
6918 \par
6919 }%

```

\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:

```

6920 \long\def\HAR@checkcitations#1#2#3#4{%
6921 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
6922 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
6923 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
6924 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
6925 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
6926 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
6927 \else
6928 \@tempwatrue
6929 \fi
6930 \else

```



```

6931     \@tempswatruue
6932     \fi
6933     \else
6934     \@tempswatruue
6935     \fi
6936   }%
6937 }%

6938 }{}

```

## 37.2 Package chicago

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

```
6939 \@ifpackageloaded{chicago}{%
```

`\citeN`

```

6940 \def\citeN{%
6941   \def\@citeseppen{-1000}%
6942   \def\@cite##1##2{##1}%
6943   \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
6944   \@citedata@opt
6945 }%

```

`\shortciteN`

```

6946 \def\shortciteN{%
6947   \def\@citeseppen{-1000}%
6948   \def\@cite##1##2{##1}%
6949   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
6950   \@citedata@opt
6951 }%

```

`\@citedata@opt`

```

6952 \def\@citedata@opt{%
6953   \let\@cite@opt\@empty
6954   \@ifnextchar [{%
6955     \@tempswatruue
6956     \@citedatax@opt
6957   }{%
6958     \@tempswafalse
6959     \@citedatax[]%
6960   }%
6961 }%

```

`\@citedatax@opt`

```

6962 \def\@citedatax@opt[#1]{%
6963   \def\@cite@opt{, #1}%
6964   \@citedatax[{#1}]%
6965 }%

6966 }{}

```

## 38 Page numbers

The last page should not contain a `/Dur` key, because there is no page after the last page. Therefore at the last page there should be a command `\hypersetup{pdfpageduration={}}`.

This can be set with `\AtEndDocument`, but it can be too late, if the last page is already finished, or too early, if lots of float pages will follow. Therefore currently nothing is done by `hyperref`.

This where we supply a destination for each page.

```

6967 \def\Hy@EveryPageAnchor{%
6968   \Hy@DistillerDestFix
6969   \ifHy@pageanchor
6970     \ifHy@hypertextnames
6971       \ifHy@plainpages
6972         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
6973       \else
6974         \begingroup
6975           \let\@number\@firstofone
6976           \Hy@unicodedefalse
6977           \pdfstringdef\@the@H@page{\thepage}%
6978         \endgroup
6979         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
6980       \fi
6981     \else
6982       \Hy@GlobalStepCount\Hy@pagecounter
6983       \def\Hy@TempPageAnchor{%
6984         \hyper@@anchor{page.\the\Hy@pagecounter}%
6985       }%
6986     \fi
6987   \vbox to 0pt{%
6988     \kern\voffset
6989     \kern\topmargin
6990     \kern-1bp\relax
6991     \hbox to 0pt{%
6992       \kern\hoffset
6993       \kern\ifodd\value{page}%
6994         \oddsidemargin
6995       \else
6996         \evensidemargin
6997       \fi
6998     \kern-1bp\relax
6999     \Hy@TempPageAnchor
7000     \hss
7001   }%
7002   \vss
7003 }%
7004 \fi
7005 }
7006 \g@addto@macro\Hy@EveryPageBoxHook{%
7007   \Hy@EveryPageAnchor
7008 }

```

## 39 Table of contents

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

```

7009 \def\addcontentsline#1#2#3{% toc extension, type, tag
7010   \begingroup
7011     \let\label\@gobble

```

```

7012 \ifx\@currentHref\@empty
7013 \Hy@Warning{%
7014   No destination for bookmark of \string\addcontentsline,%
7015   \MessageBreak destination is added%
7016 }%
7017 \phantomsection
7018 \fi
7019 \expandafter\ifx\csname toclevel@#2\endcsname\relax
7020 \begingroup
7021 \def\Hy@tempa{#1}%
7022 \ifx\Hy@tempa\Hy@bookmarkstype
7023 \Hy@WarningNoLine{%
7024   bookmark level for unknown #2 defaults to 0%
7025 }%
7026 \else
7027 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7028 \fi
7029 \endgroup
7030 \expandafter\gdef\csname toclevel@#2\endcsname{0}%
7031 \fi
7032 \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
7033 \Hy@writebookmark{\csname the#2\endcsname}%
7034 {#3}%
7035 {\@currentHref}%
7036 {\Hy@toclevel}%
7037 {#1}%
7038 \ifHy@verbose
7039 \begingroup
7040 \def\Hy@tempa{#3}%
7041 \@onelevel@sanitize\Hy@tempa
7042 \let\temp@online\on@line
7043 \let\on@line\@empty
7044 \Hy@Info{%
7045   bookmark\temp@online:\MessageBreak
7046   thecounter {\csname the#2\endcsname}\MessageBreak
7047   text {\Hy@tempa}\MessageBreak
7048   reference {\@currentHref}\MessageBreak
7049   toclevel {\Hy@toclevel}\MessageBreak
7050   type {#1}%
7051 }%
7052 \endgroup
7053 \fi
7054 \addtocontents{#1}{%
7055 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
7056 }%
7057 \endgroup
7058 }
7059 \def\contentsline#1#2#3#4{%
7060 \ifx\\#4\\%
7061 \csname l@#1\endcsname{#2}{#3}%
7062 \else
7063 \ifcase\Hy@linktoc % none
7064 \csname l@#1\endcsname{#2}{#3}%
7065 \or % section
7066 \csname l@#1\endcsname{%
7067 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7068 }{#3}%

```

```

7069 \or % page
7070 \csname l@#1\endcsname{#{#2}}{%
7071 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7072 }%
7073 \else % all
7074 \csname l@#1\endcsname{%
7075 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7076 }{%
7077 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7078 }%
7079 \fi
7080 \fi
7081 }

7082 \end{package}
7083 \end{check}
7084 \end{checklatex}
7085 \checkcommand\def\addcontentsline#1#2#3{%
7086 \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
7087 }
7088 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
7089 \end{check}
7090 \end{package}

```

## 40 New counters

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

```

7091 \let\H@definecounter\@definecounter
7092 \def\@definecounter#1{%
7093 \H@definecounter{#1}%
7094 \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
7095 }

```

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.

```

7096 \let\H@newctr\@newctr
7097 \def\@newctr#1[#2]{%
7098 \H@newctr#1[#{#2}]%
7099 \expandafter\def\csname theH#1\endcsname{%
7100 \csname the\@ifundefined{theH#2}{}{H}#2\endcsname.\arabic{#1}}%
7101 }%
7102 }

```

## 41 AMS $\LaTeX$ compatibility

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

Version 6.77p uses a patch by Ross Moore.

```

7103 \ifpackageloaded{amsmath}{%
7104 \def\Hy@make@anchor{%
7105 \Hy@MakeCurrentHrefAuto{AMS}}%

```

```

7106 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7107 }%
7108 \def\Hy@make@df@tag@@#1{%
7109 \gdef\df@tag{%
7110 \maketag@@@{\Hy@make@anchor#1}%
7111 \def\@currentlabel{#1}%
7112 }%
7113 }%
7114 \def\Hy@make@df@tag@@@#1{%
7115 \gdef\df@tag{%
7116 \tagform@{\Hy@make@anchor#1}%
7117 \toks@\@xp{\p@equation{#1}}%
7118 \edef\@currentlabel{\the\toks@}%
7119 }%
7120 }%
7121 \let\HyOrg@make@df@tag@@\make@df@tag@@
7122 \let\HyOrg@make@df@tag@@@\make@df@tag@@@
7123 \let\make@df@tag@@\Hy@make@df@tag@@
7124 \let\make@df@tag@@@\Hy@make@df@tag@@@
7125 }{}

```

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

```

7126 \@ifpackagewith{hyperref}{pdfTeX}{%
7127 \let\H@seteqlabel\@seteqlabel
7128 \def\@seteqlabel#1{%
7129 \H@seteqlabel{#1}%
7130 \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
7131 \Hy@raisedlink{%
7132 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7133 }%
7134 }%
7135 }{}

```

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

```

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

```

#### 41.1 `\@addtoreset` and `\numberwithin` patches

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

```

7136 \let\HyOrg@addtoreset\@addtoreset
7137 \def\@addtoreset#1#2{%
7138 \HyOrg@addtoreset{#1}{#2}%
7139 \expandafter\xdef\csname theH#1\endcsname{%
7140 \expandafter\noexpand
7141 \csname the\@ifundefined{theH#2}{-}H#2\endcsname
7142 .\noexpand\the\noexpand\value{#1}%
7143 }%
7144 }

```

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

```

7145 </package>
7146 <*check>
7147 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
7148 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
7149   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
7150     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
7151       \@addtoreset{#2}{#3}%
7152       \xp\xdef\csname the#2\endcsname{%
7153         \xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7154       }%
7155     }%
7156   }%
7157 }%
7158 </check>
7159 <*package>
7160 \@ifpackageloaded{amsmath}{%
7161   \@ifpackagelater{amsmath}{1999/12/14}{%
7162     \renewcommand*{\numberwithin}[3][\arabic]{%
7163       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
7164         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
7165           \HyOrg@addtoreset{#2}{#3}%
7166           \xp\xdef\csname the#2\endcsname{%
7167             \xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7168           }%
7169           \xp\xdef\csname theH#2\endcsname{%
7170             \xp\@nx
7171             \csname the\@ifundefined{theH#3}{H#3}\endcsname
7172             .\@nx#1{#2}%
7173           }%
7174         }%
7175       }%
7176     }%
7177   }{%
7178     \Hy@WarningNoLine{%
7179       \string\numberwithin\space of package 'amsmath' %
7180       only fixed\MessageBreak
7181       for version 2000/06/06 v2.12 or newer%
7182     }%
7183   }%
7184 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

7185 \ifHy@figures
7186 \let\Hy@Gin@setfile\Gin@setfile
7187 \def\Gin@setfile#1#2#3{%
7188   \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
7189 }%
7190 \fi
7191 \Hy@DisableOption{hyperfigures}

```

## 43 hyperindex entries

Internal command names are prefixed with `\HyInd@`.

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

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

```
7192 \ifHy@hyperindex
7193   \def\HyInd@ParenLeft{()}%
7194   \def\HyInd@ParenRight{()}%
7195   \def\hyperindexformat#1#2{%
7196     \let\HyOrg@hyperpage\hyperpage
7197     \let\hyperpage\@firstofone
7198     #1{\HyOrg@hyperpage{#2}}%
7199     \let\hyperpage\HyOrg@hyperpage
7200   }%
7201   \Hy@nextfalse
7202   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
7203   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
7204   \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
7205   \begingroup
7206     \lccode'\|=\expandafter'\HyInd@EncapChar\relax
7207     \lccode'\|/\='\\\relax
7208   \lowercase{\endgroup
7209     \ifHy@next
7210       \let\HyInd@org@wrindex\@wrindex
7211       \def\@wrindex#1#2{\HyInd@\@wrindex{#1}#2|\\}%
7212       \def\HyInd@\@wrindex#1#2|#3|#4\\{%
7213         \ifx\\#3\\%
7214           \HyInd@org@wrindex{#1}{#2|hyperpage}%
7215         \else
7216           \HyInd@\@wrindex{#1}{#2}#3\\%
7217         \fi
7218       }%
7219       \def\HyInd@\@wrindex#1#2#3#4\\{%
7220         \def\Hy@temp@A{#3}%
7221         \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7222           \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7223         \relax
7224         \HyInd@org@wrindex{#1}{%
7225           #2|hyperindexformat{/#3#4}%
7226         }%
7227       \else
7228         \ifx\\#4\\%
7229           \ifx\Hy@temp@A\HyInd@ParenRight
7230             \HyInd@org@wrindex{#1}{#2|#3}%
7231           \else
7232             \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
7233           \fi
7234         \else
7235           \HyInd@org@wrindex{#1}{%
7236             #2|#3hyperindexformat{/#4}%
```

```

7237     }%
7238     \fi
7239     \fi
7240     }%
7241     \else
7242     \def\@wrindex#1{\@wrindex#1||\}%
7243     \def\@wrindex#1|#2|#3\{\%
7244     \if@filesw
7245     \ifx\|#2\%
7246     \protected@write\@indexfile{}\%
7247     \string\indexentry{#1|hyperpage}\thepage}%
7248     }%
7249     \else
7250     \HyInd@@@wrindex{#1}#2\%
7251     \fi
7252     \fi
7253     \endgroup
7254     \@esphack
7255     }%
7256     \def\HyInd@@@wrindex#1#2#3\{\%
7257     \def\Hy@temp@A{#2}%
7258     \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7259     \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7260     \relax
7261     \protected@write\@indexfile{}\%
7262     \string\indexentry{%
7263     #1|hyperindexformat{/#2#3}%
7264     }\thepage}%
7265     }%
7266     \else
7267     \ifx\|#3\%
7268     \ifx\Hy@temp@A\HyInd@ParenRight
7269     \protected@write\@indexfile{}\%
7270     \string\indexentry{#1|#2}\thepage}%
7271     }%
7272     \else
7273     \protected@write\@indexfile{}\%
7274     \string\indexentry{#1|#2hyperpage}\thepage}%
7275     }%
7276     \fi
7277     \else
7278     \protected@write\@indexfile{}\%
7279     \string\indexentry{%
7280     #1|#2hyperindexformat{/#3}%
7281     }\thepage}%
7282     }%
7283     \fi
7284     \fi
7285     }%
7286     \fi
7287     }%
7288     \fi
7289     \Hy@DisableOption{hyperindex}
7290     \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.



```
7291 \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.

```
7292 \def\hyperpage#1{%
7293   \HyInd@hyperpage#1\nohyperpage{ }\@nil
7294 }
7295 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
7296   \HyInd@@hyperpage{#1}%
7297   #2%
7298   \def\Hy@temp{#3}%
7299   \ifx\Hy@temp\@empty
7300   \else
7301     \Hy@ReturnAfterFi{%
7302       \HyInd@hyperpage#3\@nil
7303     }%
7304   \fi
7305 }
7306 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
7307 \def\@hyperpage#1--#2--#3\{\%
7308   \ifx\#2\%
7309     \@commahyperpage{#1}%
7310   \else
7311     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
7312   \fi
7313 }
7314 \def\@commahyperpage#1{\@commahyperpage#1, \}
7315 \def\@commahyperpage#1, #2,#3\{\%
7316   \ifx\#2\%
7317     \HyInd@pagelink{#1}%
7318   \else
7319     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
7320   \fi
7321 }
```

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

```
7322 \def\HyInd@pagelink#1{%
7323   \begingroup
7324   \toks@={}%
7325   \HyInd@removespaces#1 \@nil
7326   \endgroup
7327 }
7328 \def\HyInd@removespaces#1 #2\@nil{%
7329   \toks@=\expandafter{\the\toks@#1}%
7330   \ifx\#2\%
7331     \edef\x{\the\toks@}%
7332     \ifx\x\@empty
7333     \else
7334       \hyperlink{page.\the\toks@}{\the\toks@}%
7335     \fi
7336   \else
7337     \Hy@ReturnAfterFi{%
7338       \HyInd@removespaces#2\@nil
7339     }%
7340   \fi
7341 }
```

## 44 Compatibility with foiltex

```
7342 \@ifclassloaded{foils}{%
7343   \providecommand*\ext@table{lot}%
7344   \providecommand*\ext@figure{lof}%
7345 }{}
```

## 45 Compatibility with seminar slide package

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

```
7346 \@ifclassloaded{seminar}{%
7347   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}%
7348 }{%
7349   \Hy@seminarslidesfalse
7350 }
7351 \@ifpackageloaded{slidesec}{%
7352   \newcommand\theHslidesection {\arabic{slidesection}}%
7353   \newcommand\theHslidesubsection{%
7354     \theHslidesection.\arabic{slidesubsection}}%
7355 }%
7356 \def\slide@heading[#1]#2{%
7357   \H@refstepcounter{slidesection}%
7358   \@addtoreset{slidesubsection}{slidesection}%
7359   \addtocontents{los}{%
7360     \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
7361     {\@SCTR}{slideheading.\theslidesection}}%
7362 }%
7363 \def\Hy@tempa{#2}%
7364 \ifx\Hy@tempa\@empty
7365   \else
7366     {%
7367       \edef\@currentlabel{%
7368         \csname p@slidesection\endcsname\theslidesection
7369       }%
7370       \makeslideheading{#2}%
7371     }%
7372   \fi
7373   \gdef\theslideheading{#1}%
7374   \gdef\theslidesubheading{}%
7375   \ifHy@bookmarksnumbered
7376     \def\Hy@slidetitle{\theslidesection\space #1}%
7377   \else
7378     \def\Hy@slidetitle{#1}%
7379   \fi
7380   \ifHy@hypertextnames
7381     \ifHy@naturalnames
7382       \hyper@@anchor{slideheading.\theslidesection}{\relax}%
7383       \Hy@writebookmark
7384         {\theslidesection}%
7385         {\Hy@slidetitle}%
7386         {slideheading.\theslidesection}%
7387         {1}%
7388         {toc}%
7389     \else
7390       \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
7391       \Hy@writebookmark
```

```

7392     {\theslidesection}%
7393     {\Hy@slidetitle}%
7394     {slideheading.\theHslidesection}%
7395     {1}%
7396     {toc}%
7397   \fi
7398 \else
7399   \Hy@GlobalStepCount\Hy@linkcounter
7400   \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
7401   \Hy@writebookmark
7402     {\theslidesection}%
7403     {\Hy@slidetitle}%
7404     {slideheading.\the\Hy@linkcounter}%
7405     {1}%
7406     {toc}%
7407   \fi
7408 }%
7409 \def\slide@subheading[#1]#2{%
7410   \H@refstepcounter{slidesubsection}%
7411   \addtocontents{los}{%
7412     \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
7413     {\@SCTR}{slideheading.\theslidesubsection}%
7414   }%
7415   \def\Hy@tempa{#2}%
7416   \ifx\Hy@tempa\@empty
7417   \else
7418     {%
7419       \edef\@currentlabel{%
7420         \csname p@slidesubsection\endcsname\theslidesubsection
7421       }%
7422       \makeslidesubheading{#2}%
7423     }%
7424   \fi
7425   \gdef\theslidesubheading{#1}%
7426   \ifHy@bookmarksnumbered
7427     \def\Hy@slidetitle{\theslidesubsection\space #1}%
7428   \else
7429     \def\Hy@slidetitle{#1}%
7430   \fi
7431   \ifHy@hypertexnames
7432   \ifHy@naturalnames
7433     \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
7434     \Hy@writebookmark
7435       {\theslidesubsection}%
7436       {\Hy@slidetitle}%
7437       {slideheading.\theslidesubsection}%
7438       {2}%
7439       {toc}%
7440   \else
7441     \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
7442     \Hy@writebookmark
7443       {\theslidesubsection}%
7444       {\Hy@slidetitle}%
7445       {slideheading.\theHslidesubsection}%
7446       {2}%
7447       {toc}%
7448   \fi

```

```

7449 \else
7450 \Hy@GlobalStepCount\Hy@linkcounter
7451 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
7452 \Hy@writebookmark
7453 {\theslidesubsection}%
7454 {\Hy@slidetitle}%
7455 {slideheading.\the\Hy@linkcounter}%
7456 {1}%
7457 {toc}%
7458 \fi
7459 }%
7460 \providecommand*\listslidename{List of Slides}%
7461 \def\listofslides{%
7462 \section*{%
7463 \listslidename
7464 \@mkboth{%
7465 \expandafter\MakeUppercase\listslidename
7466 }{%
7467 \expandafter\MakeUppercase\listslidename
7468 }%
7469 }%
7470 \def\l@slide##1##2##3##4{%
7471 \slide@undottedcline{%
7472 \slidnumberline{##3}{\hyperlink{##4}{##2}}%
7473 }{%
7474 }%
7475 \let\l@subslide\l@slide
7476 \@startlos
7477 }%
7478 \def\slide@contents{%
7479 \def\l@slide##1##2##3##4{%
7480 \slide@ccline{\slidnumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
7481 }%
7482 \let\l@subslide\@gobblefour
7483 \@startlos
7484 }%
7485 \def\Slide@contents{%
7486 \def\l@slide##1##2##3##4{%
7487 \ifcase\lslide@flag
7488 \message{##1 ** \the\c@slidesection}%
7489 \ifnum##1>\c@slidesection
7490 \def\lslide@flag{1}%
7491 {%
7492 \large
7493 \slide@ccline{%
7494 \slidnumberline{\$ \Rightarrow \bullet$}%
7495 {\hyperlink{##4}{##2}}%
7496 }{##3}%
7497 }%
7498 \else
7499 {%
7500 \large
7501 \slide@ccline{%
7502 \slidnumberline{\$ \surd\; \bullet$}%
7503 {\hyperlink{##4}{##2}}%
7504 }{##3}%
7505 }%

```

```

7506   \fi
7507   \or
7508   \def\lslide@flag{2}%
7509   {%
7510     \large
7511     \slide@cline{%
7512       \slidnumberline{$\bullet$}%
7513       {\hyperlink{###4}{##2}}%
7514     }{##3}%
7515   }%
7516   \or
7517   {%
7518     \large
7519     \slide@cline{%
7520       \slidnumberline{$\bullet$}%
7521       {\hyperlink{###4}{##2}}%
7522     }{##3}%
7523   }%
7524   \fi
7525 }%
7526 \def\l@subslide##1##2##3##4{%
7527   \ifnum\lslide@flag=1 %
7528     \@undottedtocline-2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}}%
7529   \fi
7530 }%
7531 \def\lslide@flag{0}%
7532 \@startlos
7533 }%
7534 }{}

```

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.)

```

7535 \ifHy@texht
7536   \expandafter\endinput
7537 \fi
7538 \let\real@setref\@setref
7539 \def\@setref#1##2##3{% csname, extract group, refname
7540   \ifx#1\relax
7541     \protect\G@refundefinedtrue
7542     \nfss@text{\reset@font\bfseries ??}%
7543     \@latex@warning{%
7544       Reference ‘#3’ on page \thepage \space undefined%
7545     }%
7546   \else
7547     \expandafter\Hy@setref@link#1\@empty\@empty\@nil{##2}%
7548   \fi
7549 }

```

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

```

7550 \def\Hy@setref@link#1##2##3##4##5##6\@nil#7{%
7551   \begingroup
7552   \toks0={\hyper@@link{##5}{##4}}%
7553   \toks1=\expandafter{##7{##1}{##2}{##3}{##4}{##5}}%
7554   \edef\x{\endgroup
7555     \the\toks0 {\the\toks1 }%
7556   }%

```

```

7557 \x
7558 }
7559 \def\@pagesetref#1#2#3{% csname, extract macro, ref
7560 \ifx#1\relax
7561 \protect\G@refundefinedtrue
7562 \nfss@text{\reset@font\bfseries ??}%
7563 \@latex@warning{%
7564 Reference '#3' on page \thepage \space undefined%
7565 }%
7566 \else
7567 \protect\hyper@link
7568 {\expandafter\@fifthoffive#1}%
7569 {page.\expandafter\@secondoffive#1}%
7570 {\expandafter\@secondoffive#1}%
7571 \fi
7572 }

7573 </package>
7574 <*check>
7575 \checklatex
7576 \checkcommand\def\@setref#1#2#3{%
7577 \ifx#1\relax
7578 \protect\G@refundefinedtrue
7579 \nfss@text{\reset@font\bfseries ??}%
7580 \@latex@warning{%
7581 Reference '#3' on page \thepage\space undefined%
7582 }%
7583 \else
7584 \expandafter#2#1\null
7585 \fi
7586 }
7587 </check>
7588 <*package>

```

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

```

7589 \def\HyRef@StarSetRef#1{%
7590 \begingroup
7591 \Hy@safe@activestru
7592 \edef\x{#1}%
7593 \@onelevel@sanitize\x
7594 \edef\x{\endgroup
7595 \noexpand\HyRef@@StarSetRef
7596 \expandafter\noexpand\csname r@\x\endcsname{\x}%
7597 }%
7598 \x
7599 }
7600 \def\HyRef@@StarSetRef#1#2#3{%
7601 \ifx#1\@undefined
7602 \let#1\relax
7603 \fi
7604 \real@setref#1#3{#2}%
7605 }
7606 \def\@refstar#1{%
7607 \HyRef@StarSetRef{#1}\@firstoffive
7608 }
7609 \def\@pagerefstar#1{%
7610 \HyRef@StarSetRef{#1}\@secondoffive

```

```

7611 }
7612 \def\@namerefstar#1{%
7613   \HyRef@StarSetRef{#1}\@thirdoffive
7614 }
7615 \Hy@AtBeginDocument{%
7616   \@ifpackageloaded{varioref}{%
7617     \def\@Refstar#1{%
7618       \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
7619     }%
7620     \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
7621       \MakeUppercase#1%
7622     }%
7623     \DeclareRobustCommand*\{Ref}{%
7624       \@ifstar\@Refstar\HyRef@Ref
7625     }%
7626     \def\HyRef@Ref#1{%
7627       \hyperref[#{1}]{\Ref*{#1}}%
7628     }%
7629     \def\Vr@f#1{%
7630       \leavevmode\unskip\vref@space
7631       \hyperref[#{1}]{%
7632         \Ref*{#1}%
7633         \let\vref@space\nobreakspace
7634         \@vpageref[\unskip]{#1}%
7635       }%
7636     }%
7637     \def\vr@f#1{%
7638       \leavevmode\unskip\vref@space
7639       \begingroup
7640       \let\T@pageref\@pagerefstar
7641       \hyperref[#{1}]{%
7642         \ref*{#1}%
7643         \vpageref[\unskip]{#1}%
7644       }%
7645     \endgroup
7646   }%
7647 }{}%
7648 }
7649 \DeclareRobustCommand*\{autopageref}{%
7650   \@ifstar{%
7651     \HyRef@autopagerefname\pageref*%
7652   }\HyRef@autopageref
7653 }
7654 \def\HyRef@autopageref#1{%
7655   \hyperref[#{1}]{\HyRef@autopagerefname\pageref*{#1}}%
7656 }
7657 \def\HyRef@autopagerefname{%
7658   \ltx@ifundefined{pageautorefname}{%
7659     \ltx@ifundefined{pagename}{%
7660       \Hy@Warning{No autoref name for 'page'}%
7661     }{%
7662       \pagename\nobreakspace
7663     }%
7664   }{}%
7665   \pageautorefname\nobreakspace
7666 }%
7667 }

```

```

7668 \DeclareRobustCommand*{\autoref}{%
7669 \@ifstar{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@@link}%
7670 }
7671 \def\HyRef@autoref#1#2{%
7672 \begingroup
7673 \Hy@safe@activetrue
7674 \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
7675 \endgroup
7676 }
7677 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
7678 \HyRef@ShowKeysRef{#2}%
7679 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
7680 \edef\HyRef@thisref{%
7681 \expandafter\@fourthoffive#1\@empty\@empty\@empty
7682 }%
7683 \expandafter\HyRef@testreftype\HyRef@thisref.\.%
7684 \Hy@safe@activesfalse
7685 #3{%
7686 \expandafter\@fifthoffive#1\@empty\@empty\@empty
7687 }{%
7688 \expandafter\@fourthoffive#1\@empty\@empty\@empty
7689 }{%
7690 \HyRef@currentHtag
7691 \expandafter\@firstoffive#1\@empty\@empty\@empty
7692 \null
7693 }%
7694 \else
7695 \protect\G@refundefinedtrue
7696 \nfss@text{\reset@font\bfseries ??}%
7697 \@latex@warning{%
7698 Reference '#2' on page \thepage\space undefined%
7699 }%
7700 \fi
7701 }
7702 \def\HyRef@testreftype#1.#2\{\%
7703 \ltx@ifundefined{#1autorefname}{%
7704 \ltx@ifundefined{#1name}{%
7705 \HyRef@StripStar#1\*\*\@nil{#1}%
7706 \ltx@ifundefined{\HyRef@name autorefname}{%
7707 \ltx@ifundefined{\HyRef@name name}{%
7708 \def\HyRef@currentHtag{}%
7709 \Hy@Warning{No autoref name for '#1'}%
7710 }{%
7711 \edef\HyRef@currentHtag{%
7712 \expandafter\noexpand\csname\HyRef@name name\endcsname
7713 \noexpand~%
7714 }%
7715 }%
7716 }{%
7717 \edef\HyRef@currentHtag{%
7718 \expandafter\noexpand
7719 \csname\HyRef@name autorefname\endcsname
7720 \noexpand~%
7721 }%
7722 }%
7723 }{%
7724 \edef\HyRef@currentHtag{%

```



```

7725     \expandafter\noexpand\csname#1name\endcsname
7726     \noexpand~%
7727   }%
7728 }%
7729 }{%
7730   \edef\HyRef@currentHtag{%
7731     \expandafter\noexpand\csname#1autorefname\endcsname
7732     \noexpand~%
7733   }%
7734 }%
7735 }
7736 \def\HyRef@StripStar#1*\#2\@nil#3{%
7737   \def\HyRef@name{#2}%
7738   \ifx\HyRef@name\HyRef@CaseStar
7739     \def\HyRef@name{#1}%
7740   \else
7741     \def\HyRef@name{#3}%
7742   \fi
7743 }
7744 \def\HyRef@CaseStar{*\\}
7745 \def\HyRef@currentHtag{}

```

Support for package showkeys.

`\HyRef@ShowKeysRef`

```

7746 \let\HyRef@ShowKeysRef\@gobble
7747 \def\HyRef@ShowKeysInit{%
7748   \begingroup\expandafter\expandafter\expandafter\endgroup
7749   \expandafter\ifx\csname SK@@label\endcsname\relax
7750   \else
7751     \ifx\SK@ref\@empty
7752     \else
7753       \def\HyRef@ShowKeysRef{%
7754         \SK@\SK@@ref
7755       }%
7756     \fi
7757   \fi
7758 }
7759 \@ifpackageloaded{showkeys}{%
7760   \HyRef@ShowKeysInit
7761 }{%
7762   \Hy@AtBeginDocument{%
7763     \@ifpackageloaded{showkeys}{%
7764       \HyRef@ShowKeysInit
7765     }{}%
7766   }%
7767 }

```

Defaults for the names that `\autoref` uses.

```

7768 \providecommand* \AMSautorefname{\equationautorefname}
7769 \providecommand* \Hfootnoteautorefname{\footnoteautorefname}
7770 \providecommand* \Itemautorefname{\itemautorefname}
7771 \providecommand* \itemautorefname{item}
7772 \providecommand* \equationautorefname{Equation}
7773 \providecommand* \footnoteautorefname{footnote}
7774 \providecommand* \itemautorefname{item}
7775 \providecommand* \figureautorefname{Figure}
7776 \providecommand* \tableautorefname{Table}

```

```

7777 \providecommand*\partautorefname{Part}
7778 \providecommand*\appendixautorefname{Appendix}
7779 \providecommand*\chapterautorefname{chapter}
7780 \providecommand*\sectionautorefname{section}
7781 \providecommand*\subsectionautorefname{subsection}
7782 \providecommand*\subsubsectionautorefname{subsubsection}
7783 \providecommand*\paragraphautorefname{paragraph}
7784 \providecommand*\subparagraphautorefname{subparagraph}
7785 \providecommand*\FancyVerbLineautorefname{line}
7786 \providecommand*\theoremautorefname{Theorem}
7787 \providecommand*\pageautorefname{page}
7788 \endpackage

```

## 46 Configuration files

### 46.1 PS/PDF strings

Some drivers write PS or PDF strings. These strings are delimited by parentheses, therefore a lonely unmatched parenthesis must be avoided to avoid PS or PDF syntax errors. Also the backslash character itself has to be protected.

`\Hy@pstringdef` Therefore such strings should be passed through `\Hy@pstringdef`. The first argument holds a macro for the result, the second argument is the string that needs protecting. Since version 1.30.0 pdf<sub>T</sub><sub>E</sub>X offers `\pdfescapestring`.

```

7789 <*pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>
7790 \RequirePackage{pdfTeXcmds}[2009/04/10]
7791 \begingroup\expandafter\expandafter\expandafter\endgroup
7792 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
7793 \begingroup
7794 \catcode\| =0 %
7795 \@makeother\| %
7796 |@firstofone{ \endgroup
7797 |def|Hy@pstringdef#1#2{%
7798 | \begingroup
7799 | \edef~{|string-}%
7800 | \xdef|Hy@gtemp{#2}%
7801 | \endgroup
7802 |let#1|Hy@gtemp
7803 |@onelevel@sanitize#1%
7804 | \edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
7805 | \edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
7806 | \edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
7807 }%
7808 |def|Hy@ExchangeBackslash#1\#2|@nil{%
7809 #1%
7810 |ifx|\#2|\% %
7811 |else
7812 \\\%
7813 |Hy@ReturnAfterFi{%
7814 |Hy@ExchangeBackslash#2|@nil
7815 }%
7816 |fi
7817 }%
7818 }%
7819 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
7820 #1%

```

```

7821 \ifx\#2\%
7822 \else
7823 \@backslashchar(%
7824 \Hy@ReturnAfterFi{%
7825 \Hy@ExchangeLeftParenthesis#2\@nil
7826 }%
7827 \fi
7828 }%
7829 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
7830 #1%
7831 \ifx\#2\%
7832 \else
7833 \@backslashchar)%
7834 \Hy@ReturnAfterFi{%
7835 \Hy@ExchangeRightParenthesis#2\@nil
7836 }%
7837 \fi
7838 }%
7839 \else
7840 \def\Hy@pstringdef#1#2{%
7841 \begingroup
7842 \edef~{\string~}%
7843 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
7844 \endgroup
7845 \let#1\Hy@gtemp
7846 }%
7847 \fi
7848 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)

```

## 46.2 pdfTeX

```

7849 <*pdfTeX)
7850 \providecommand*\XR@ext}{pdf}
7851 \Hy@setbreaklinks{true}

```

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`

```

7852 \let\Hy@pdfminorversion\relax
7853 \begingroup\expandafter\expandafter\expandafter\endgroup
7854 \expandafter\ifx\cname pdfminorversion\endcname\relax
7855 \begingroup\expandafter\expandafter\expandafter\endgroup
7856 \expandafter\ifx\cname pdfoptionpdfminorversion\endcname\relax
7857 \else
7858 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
7859 \fi
7860 \else
7861 \def\Hy@pdfminorversion{\pdfminorversion}%
7862 \fi
7863 \@ifundefined{Hy@pdfminorversion}{%
7864 \PackageInfo{hyperref}{%
7865 PDF version is not set, because pdfTeX is too old (<1.10a)%
7866 }%

```

```

7867 }{%
7868 \ifHy@ocgcolorlinks
7869 \ifnum\Hy@pdfminorversion<5 %
7870 \setkeys{Hyp}{pdfversion=1.5}%
7871 \fi
7872 \fi
7873 \ifHy@setpdfversion
7874 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
7875 \else
7876 \Hy@pdfminorversion=\Hy@pdfversion\relax
7877 \fi
7878 \PackageInfo{hyperref}{%
7879 \expandafter\string\Hy@pdfminorversion
7880 :=\number\Hy@pdfversion\space
7881 }%
7882 \fi
7883 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
7884 }
7885 \Hy@DisableOption{pdfversion}%

7886 \ifHy@ocgcolorlinks
7887 \immediate\pdfobj{%
7888 <<%
7889 /Type/OCG%
7890 /Name(View)%
7891 /Usage<<%
7892 /Print<<%
7893 /PrintState/OFF%
7894 >>%
7895 /View<<%
7896 /ViewState/ON%
7897 >>%
7898 >>%
7899 >>%
7900 }%
7901 \edef\OBJ@OCG@view{\the\pdfastobj\space 0 R}%
7902 \immediate\pdfobj{%
7903 <<%
7904 /Type/OCG%
7905 /Name(Print)%
7906 /Usage<<%
7907 /Print<<%
7908 /PrintState/ON%
7909 >>%
7910 /View<<%
7911 /ViewState/OFF%
7912 >>%
7913 >>%
7914 >>%
7915 }%
7916 \edef\OBJ@OCG@print{\the\pdfastobj\space 0 R}%
7917 \immediate\pdfobj{%
7918 [%
7919 \OBJ@OCG@view\space\OBJ@OCG@print
7920 ]%
7921 }%
7922 \edef\OBJ@OCGs{\the\pdfastobj\space 0 R}%
7923 \pdfcatalog{%

```

```

7924 /OCProperties<<%
7925 /OCGs \OBJ@OCGs
7926 /D<<%
7927 /OFF[\OBJ@OCG@print]%
7928 /AS[%
7929 <<%
7930 /Event/View%
7931 /OCGs \OBJ@OCGs
7932 /Category[/View]%
7933 >>%
7934 <<%
7935 /Event/Print%
7936 /OCGs \OBJ@OCGs
7937 /Category[/Print]%
7938 >>%
7939 <<%
7940 /Event/Export%
7941 /OCGs \OBJ@OCGs
7942 /Category[/Print]%
7943 >>%
7944 ]%
7945 >>%
7946 >>%
7947 }%
7948 \begingroup
7949 \edef\x{\endgroup
7950 \pdfpageresources{%
7951 /Properties<<%
7952 /OCView \OBJ@OCG@view
7953 /OCPrint \OBJ@OCG@print
7954 >>%
7955 }%
7956 }%
7957 \x
7958 \Hy@AtBeginDocument{%
7959 \def\Hy@colorlink#1{%
7960 \begingroup
7961 \ifHy@ocgcolorlinks
7962 \def\Hy@ocgcolor{#1}%
7963 \setbox0=\color@hbox
7964 \else
7965 \HyColor@UseColor#1%
7966 \fi
7967 }%
7968 \def\Hy@endcolorlink{%
7969 \ifHy@ocgcolorlinks
7970 \color@endbox
7971 \mbox{%
7972 \pdfliteral page{/OC/OCPrint BDC}%
7973 \rlap{\copy0}%
7974 \pdfliteral page{EMC/OC/OCView BDC}%
7975 \begingroup
7976 \expandafter\HyColor@UseColor\Hy@ocgcolor
7977 \box0 %
7978 \endgroup
7979 \pdfliteral page{EMC}%
7980 }%

```

```

7981   \fi
7982   \endgroup
7983 }%
7984 }%
7985 \else
7986 \Hy@DisableOption{ocgcolorlinks}%
7987 \fi

```

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

```

7988 \def\setpdfinkmargin#1{\pdfinkmargin#1}
7989 \ifx\pdfstartlink\@undefined% less than version 14
7990 \let\pdfstartlink\pdfannotlink
7991 \let\pdfinkmargin\@tempdima
7992 \let\pdfxform\pdfform
7993 \let\pdflastxform\pdflastform
7994 \let\pdfrefxform\pdfrefform
7995 \else
7996 \pdfinkmargin1pt %
7997 \fi

```

First set up the default linking

```
7998 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```

7999 \def\new@pdfink#1{%
8000 \Hy@SaveLastskip
8001 \Hy@VerboseAnchor{#1}%
8002 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8003 \Hy@DestName\Hy@pstringDest\@pdfview
8004 \Hy@RestoreLastskip
8005 }
8006 \let\pdf@endanchor\@empty

```

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

```

8007 \def\Hy@DestName#1#2{%
8008 \pdfdest name{#1}#2\relax
8009 }

```

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.

```

8010 \providecommand*\@pdfborder{0 0 1}
8011 \providecommand*\@pdfborderstyle{}
8012 \def\Hy@undefinedname{UNDEFINED}
8013 \def\find@pdfink#1#2{%
8014 \leavevmode
8015 \protected@edef\Hy@testname{#2}%
8016 \ifx\Hy@testname\@empty
8017 \Hy@Warning{%
8018   Empty destination name,\MessageBreak
8019   using '\Hy@undefinedname'%
8020 }%
8021 \let\Hy@testname\Hy@undefinedname
8022 \else
8023 \Hy@pstringdef\Hy@testname{%
8024 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%

```

```

8025 }%
8026 \fi
8027 \Hy@StartlinkName{%
8028 \ifHy@pdfa /F 4\fi
8029 \Hy@setpdfborder
8030 \ifx\@pdfhighlight\@empty
8031 \else
8032 /H\@pdfhighlight
8033 \fi
8034 \ifx\CurrentBorderColor\relax
8035 \else
8036 /C[\CurrentBorderColor]%
8037 \fi
8038 }\Hy@testname
8039 \expandafter\Hy@colorlink\csname @#1color\endcsname
8040 }
8041 \def\Hy@StartlinkName#1#2{%
8042 \pdfstartlink attr{#1}goto name{#2}\relax
8043 }
8044 \def\close@pdfink{%
8045 \Hy@endcolorlink
8046 \Hy@VerboseLinkStop
8047 \pdfendlink
8048 }
8049 \def\hyper@anchor#1{%
8050 \new@pdfink{#1}\anchor@spot\pdf@endanchor
8051 }
8052 \def\hyper@anchorstart#1{%
8053 \new@pdfink{#1}%
8054 \Hy@activeanchortrue
8055 }
8056 \def\hyper@anchorend{%
8057 \pdf@endanchor
8058 \Hy@activeanchorfalse
8059 }
8060 \def\hyper@linkstart#1#2{%
8061 \Hy@VerboseLinkStart{#1}{#2}%
8062 \ltx@ifundefined{@#1bordercolor}{%
8063 \let\CurrentBorderColor\relax
8064 }{%
8065 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8066 }%
8067 \find@pdfink{#1}{#2}%
8068 }
8069 \def\hyper@linkend{\close@pdfink}
8070 \def\hyper@link#1#2#3{%
8071 \Hy@VerboseLinkStart{#1}{#2}%
8072 \ltx@ifundefined{@#1bordercolor}{%
8073 \let\CurrentBorderColor\relax
8074 }{%
8075 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8076 }%
8077 \find@pdfink{#1}{#2}#3%
8078 \close@pdfink
8079 }
8080 \let\CurrentBorderColor\@linkbordercolor
8081 \def\hyper@linkurl#1#2{%

```

```

8082 \begingroup
8083 \Hy@pstringdef\Hy@pstringURI{#2}%
8084 \hyper@chars
8085 \leavevmode
8086 \pdfstartlink
8087 attr{%
8088 \Hy@setpdfborder
8089 \ifx\@pdfhighlight\@empty
8090 \else
8091 /H\@pdfhighlight
8092 \fi
8093 \ifx\@urlbordercolor\relax
8094 \else
8095 /C[\@urlbordercolor]%
8096 \fi
8097 }%
8098 user{%
8099 /Subtype/Link%
8100 \ifHy@pdfa /F 4\fi
8101 /A<<%
8102 /Type/Action%
8103 /S/URI%
8104 /URI(\Hy@pstringURI)%
8105 >>%
8106 }%
8107 \relax
8108 \Hy@colorlink\@urlcolor#1%
8109 \close@pdflink
8110 \endgroup
8111 }
8112 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
8113 \begingroup
8114 \Hy@pstringdef\Hy@pstringF{#2}%
8115 \Hy@pstringdef\Hy@pstringD{#3}%
8116 \leavevmode
8117 \pdfstartlink
8118 attr{%
8119 \Hy@setpdfborder
8120 \ifx\@pdfhighlight\@empty
8121 \else
8122 /H\@pdfhighlight
8123 \fi
8124 \ifx\@filebordercolor\relax
8125 \else
8126 /C[\@filebordercolor]%
8127 \fi
8128 }%
8129 user {%
8130 /Subtype/Link%
8131 \ifHy@pdfa /F 4\fi
8132 /A<<%
8133 /F(\Hy@pstringF)%
8134 /S/GoToR%
8135 \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}

8136   \ifx\#3\%
8137   /D[0 \@pdfstartview]%
8138   \else
8139   /D(\Hy@pstringD)%
8140   \fi
8141   >>%
8142   }%
8143   \relax
8144   \Hy@colorlink\@filecolor#1%
8145   \close@pdflink
8146   \endgroup
8147 }
8148 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
8149   \begingroup
8150   \Hy@pstringdef\Hy@pstringF{#1}%
8151   \Hy@pstringdef\Hy@pstringP{#3}%
8152   \leavevmode
8153   \pdfstartlink
8154   attr{%
8155     \Hy@setpdfborder
8156     \ifx\@pdfhighlight\@empty
8157     \else
8158     /H\@pdfhighlight
8159     \fi
8160     \ifx\@runbordercolor\relax
8161     \else
8162     /C[\@runbordercolor]%
8163     \fi
8164   }%
8165   user {%
8166     /Subtype/Link%
8167     \ifHy@pdfa /F 4\fi
8168     /A<<%
8169     /F(\Hy@pstringF)%
8170     /S/Launch%
8171     \Hy@SetNewWindow
8172     \ifx\#3\%
8173     \else
8174     /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8175     \fi
8176     >>%
8177   }%
8178   \relax
8179   \Hy@colorlink\@runcolor#2%
8180   \close@pdflink
8181   \endgroup
8182 }

\@pdfproducer
8183 \ifx\@pdfproducer\relax

```

```

8184 \begingroup\expandafter\expandafter\expandafter\endgroup
8185 \expandafter\ifx\csname luatexversion\endcsname\relax
8186 \def\@pdfproducer{pdfTeX}%
8187 \ifx\eTeXversion\@undefined
8188 \else
8189 \ifx\eTeXversion\relax
8190 \else
8191 \ifnum\eTeXversion>0 %
8192 \def\@pdfproducer{pdfTeX}%
8193 \fi
8194 \fi
8195 \fi
8196 \ifx\pdftexversion\@undefined
8197 \else
8198 \ifnum\pdftexversion<100 %
8199 \edef\@pdfproducer{%
8200 \@pdfproducer
8201 \the\pdftexversion.\pdftexrevision
8202 }%
8203 \else
8204 \ifnum\pdftexversion<130 %
8205 \edef\@pdfproducer{%
8206 \@pdfproducer-%
8207 \expandafter\@car\the\pdftexversion\@empty\@nil.%
8208 \expandafter\@cdr\the\pdftexversion\@empty\@nil.%
8209 \pdftexrevision
8210 }%
8211 \else
8212 \ifnum\pdftexversion<140 %
8213 \else
8214 \def\@pdfproducer{pdfTeX}%
8215 \fi
8216 \edef\@pdfproducer{%
8217 \@pdfproducer-%
8218 \expandafter\@car\the\pdftexversion\@empty\@nil.%
8219 \expandafter\@cdr\the\pdftexversion\@empty\@nil.%
8220 \pdftexrevision
8221 }%
8222 \fi
8223 \fi
8224 \fi
8225 \else
8226 \begingroup
8227 \count@=\luatexversion
8228 \divide\count@ by 100 %
8229 \edef\x{\the\count@}%
8230 \count@=-\x\relax
8231 \multiply\count@ by 100 %
8232 \advance\count@ by \luatexversion
8233 \edef\x{\endgroup
8234 \def\noexpand\@pdfproducer{%
8235 LuaTeX-\x.\the\count@.\luatexrevision
8236 }%
8237 }%
8238 \x
8239 \fi
8240 \fi

```

\PDF@SetupDox

```
8241 \def\PDF@SetupDoc{%
8242 \ifx\@pdfpagescrop\@empty
8243 \else
8244 \edef\process@me{%
8245 \pdfpagesattr={%
8246 /CropBox[\@pdfpagescrop]%
8247 \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
8248 \else
8249 ^^J\the\pdfpagesattr
8250 \fi
8251 }%
8252 }%
8253 \process@me
8254 \fi
8255 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8256 \pdfcatalog{%
8257 /PageMode/\@pdfpagemode
8258 \ifx\@baseurl\@empty
8259 \else
8260 /URI<</Base(\Hy@pstringB)>>%
8261 \fi
8262 }%
8263 \ifx\@pdfstartpage\@empty
8264 \else
8265 \ifx\@pdfstartview\@empty
8266 \else
8267 openaction goto page\@pdfstartpage{\@pdfstartview}%
8268 \fi
8269 \fi
8270 \edef\Hy@temp{%
8271 \ifHy@toolbar\else /HideToolbar true\fi
8272 \ifHy@menubar\else /HideMenubar true\fi
8273 \ifHy>windowui\else /HideWindowUI true\fi
8274 \ifHy@fitwindow /FitWindow true\fi
8275 \ifHy@centerwindow /CenterWindow true\fi
8276 \ifHy@displaydoctitle /DisplayDocTitle true\fi
8277 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8278 \Hy@UseNameKey{Direction}\@pdfdirection
8279 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8280 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8281 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8282 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8283 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8284 \Hy@UseNameKey{Duplex}\@pdfduplex
8285 \ifx\@pdfpicktraybypdfsize\@empty
8286 \else
8287 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8288 \fi
8289 \ifx\@pdfprintpagerange\@empty
8290 \else
8291 /PrintPageRange\@pdfprintpagerange}%
8292 \fi
8293 \ifx\@pdfnumcopies\@empty
8294 \else
8295 /NumCopies \@pdfnumcopies
8296 \fi
```

```

8297 }%
8298 \pdfcatalog{%
8299   \ifx\Hy@temp\@empty
8300     \else
8301       /ViewerPreferences<<\Hy@temp>>%
8302     \fi
8303   \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8304   \ifx\@pdflang\@empty
8305     \else
8306       /Lang(\@pdflang)%
8307     \fi
8308 }%
8309 }

```

\PDF@FinishDoc

```

8310 \def\PDF@FinishDoc{%
8311   \Hy@UseMaketitleInfos
8312   \HyInfo@GenerateAddons
8313   \pdfinfo{%
8314     /Author(\@pdfauthor)%
8315     /Title(\@pdftitle)%
8316     /Subject(\@pdfsubject)%
8317     /Creator(\@pdfcreator)%
8318     \ifx\@pdfcreationdate\@empty
8319     \else
8320       /CreationDate(\@pdfcreationdate)%
8321     \fi
8322     \ifx\@pdfmoddate\@empty
8323     \else
8324       /ModDate(\@pdfmoddate)%
8325     \fi
8326     \ifx\@pdfproducer\relax
8327     \else
8328       /Producer(\@pdfproducer)%
8329     \fi
8330     /Keywords(\@pdfkeywords)%
8331     \ifx\@pdftrapped\@empty
8332     \else
8333       /Trapped/\@pdftrapped
8334     \fi
8335     \HyInfo@Addons
8336   }%
8337   \Hy@DisableOption{pdfauthor}%
8338   \Hy@DisableOption{pdftitle}%
8339   \Hy@DisableOption{pdfsubject}%
8340   \Hy@DisableOption{pdfcreator}%
8341   \Hy@DisableOption{pdfcreationdate}%
8342   \Hy@DisableOption{pdfmoddate}%
8343   \Hy@DisableOption{pdfproducer}%
8344   \Hy@DisableOption{pdfkeywords}%
8345   \Hy@DisableOption{pdftrapped}%
8346   \Hy@DisableOption{pdfinfo}%
8347 }

```

\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.

```

8348 \def\hyper@pagetransition{%
8349 \ifx\@pdfpagetransition\relax
8350 \else
8351 \expandafter\Hy@RemoveTransPageAttr
8352 \the\pdfpageattr^^J/Trans{}}>>\END
8353 \ifx\@pdfpagetransition\@empty
8354 \else
8355 \edef\@processme{%
8356 \global\pdfpageattr{%
8357 \the\pdfpageattr
8358 ^^J/Trans << /S /\@pdfpagetransition\space >>%
8359 }%
8360 }%
8361 \@processme
8362 \fi
8363 \fi
8364 }

```

`\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.

```

8365 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
8366 \ifx\#2\%
8367 \global\pdfpageattr{#1}%
8368 \else
8369 \Hy@RemoveTransPageAttr#1#4\END
8370 \fi
8371 }

```

`\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`.

```

8372 \def\hyper@pageduration{%
8373 \ifx\@pdfpageduration\relax
8374 \else
8375 \expandafter
8376 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{}} \END
8377 \ifx\@pdfpageduration\@empty
8378 \else
8379 \edef\@processme{%
8380 \global\pdfpageattr{%
8381 \the\pdfpageattr
8382 ^^J/Dur \@pdfpageduration\space
8383 }%
8384 }%
8385 \@processme
8386 \fi
8387 \fi
8388 }

```

`\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.

```

8389 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%

```

```

8390 \ifx\#2\%
8391 \global\pdfpageattr{#1}%
8392 \else
8393 \Hy@RemoveDurPageAttr#1#4\END
8394 \fi
8395 }

```

`\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).

```

8396 \def\hyper@pagehidden{%
8397 \ifHy@useHidKey
8398 \expandafter
8399 \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
8400 \ifHy@pdfpagehidden
8401 \edef\@processme{%
8402 \global\pdfpageattr{%
8403 \the\pdfpageattr
8404 ^^J/Hid true % SPACE
8405 }%
8406 }%
8407 \@processme
8408 \fi
8409 \fi
8410 }

```

`\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.

```

8411 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
8412 \ifx\#2\%
8413 \global\pdfpageattr{#1}%
8414 \else
8415 \Hy@RemoveHidPageAttr#1#4\END
8416 \fi
8417 }

8418 \g@addto@macro\Hy@EveryPageHook{%
8419 \hyper@pagetransition
8420 \hyper@pageduration
8421 \hyper@pagehidden
8422 }

```

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

```

8423 </pdfTeX>
8424 <*pdfTeX | xetex>
8425 \Hy@AtBeginDocument{%
8426 \ifHy@setpagesize
8427 \expandafter\@firstofone
8428 \else
8429 \expandafter\@gobble
8430 \fi
8431 {%
8432 \@ifclassloaded{seminar}{%
8433 <*pdfTeX>

```

```

8434 \setlength{\pdfhorigin}{1truein}%
8435 \setlength{\pdfvorigin}{1truein}%
8436 </pdftex>
8437 \ifportrait
8438 \ifdim\paperwidth=\z@
8439 \else
8440 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
8441 \fi
8442 \ifdim\paperheight=\z@
8443 \else
8444 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
8445 \fi
8446 \else
8447 \ifdim\paperheight=\z@
8448 \else
8449 \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
8450 \fi
8451 \ifdim\paperwidth=\z@
8452 \else
8453 \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
8454 \fi
8455 \fi
8456 }{%
8457 \ltx@ifundefined{stockwidth}{%
8458 \ifdim\paperwidth>\z@
8459 \setlength{\pdfpagewidth}{\paperwidth}%
8460 \fi
8461 \ifdim\paperheight>\z@
8462 \setlength{\pdfpageheight}{\paperheight}%
8463 \fi
8464 }{%
8465 \ifdim\stockwidth>\z@
8466 \setlength{\pdfpagewidth}{\stockwidth}%
8467 \fi
8468 \ifdim\stockheight>\z@
8469 \setlength{\pdfpageheight}{\stockheight}%
8470 \fi
8471 }%
8472 }%
8473 }%
8474 \Hy@DisableOption{setpagesize}%
8475 }
8476 </pdftex | xetex>
8477 < *pdftex>
8478 \def\Acrobatmenu#1#2{%
8479 \Hy@Acrobatmenu{#1}{#2}{%
8480 \pdfstartlink
8481 attr{%
8482 \Hy@setpdfborder
8483 \ifx\@pdfhighlight\@empty
8484 \else
8485 /H\@pdfhighlight
8486 \fi
8487 \ifx\@menubordercolor\relax
8488 \else
8489 /C[\@menubordercolor]%
8490 \fi

```

```

8491 }%
8492 user{%
8493 /Subtype/Link%
8494 \ifHy@pdfa /F 4\fi
8495 /A<<%
8496 /S/Named/N/#1%
8497 >>%
8498 }%
8499 \relax
8500 \Hy@colorlink\@menucolor#2%
8501 \close@pdflink
8502 }%
8503 }

```

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

`\AtBeginShipoutFirst` adds an additional box layer around the first output page. This disturbs pdf $\TeX$ 's low level link commands `\pdfstartlink` and `\pdfendlink`, if a link is broken across the first and second output page.

The problem could be fixed by replacing `\AtBeginShipoutFirst`, because the box layer is not necessary for pdf $\TeX$ —no `\specials` need to be inserted. However it's easier to add an additional box level for the pages after the first one. Also `\AtBeginShipoutFirst` could be invoked independently from `hyperref`.

```

8504 \def\Hy@FixNotFirstPage{%
8505 \gdef\Hy@FixNotFirstPage{%
8506 \setbox\AtBeginShipoutBox=\hbox{%
8507 \copy\AtBeginShipoutBox
8508 }%
8509 }%
8510 }
8511 \AtBeginShipout{\Hy@FixNotFirstPage}
8512 </pdfTeX>

```

### 46.3 hypertext

The Hyper $\TeX$  specification (this is borrowed from an article by Arthur Smith) says that conformant viewers/translators must recognize the following set of `\special` commands:

**href:** `html:<a href = "href_string">`

**name:** `html:<a name = "name_string">`

**end:** `html:</a>`

**image:** `html:<img src = "href_string">`

**base\_name:** `html:<base href = "href_string">`

The *href*, *name* and *end* commands are used to do the basic hypertext operations of establishing links between sections of documents. The *image* command is intended (as with current html viewers) to place an image of arbitrary graphical format on the page in the current location. The *base\_name* command is be used to communicate to the *dvi* viewer the full (URL) location of the current document so that files specified by relative URL's may be retrieved correctly.

The *href* and *name* commands must be paired with an *end* command later in the  $\TeX$  file — the  $\TeX$  commands between the two ends of a pair form an *anchor* in the



document. In the case of an *href* command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by *href\_string*. The *anchor* associated with a name command represents a possible location to which other hypertext links may refer, either as local references (of the form `href="#name_string"` with the *name\_string* identical to the one in the name command) or as part of a URL (of the form `URL#name_string`). Here *href\_string* is a valid URL or local identifier, while *name\_string* could be any string at all: the only caveat is that “” characters should be escaped with a backslash (\), and if it looks like a URL name it may cause problems.

```

8513 {*hypertext}
8514 \providecommand*\XR@ext}{dvi}
8515 \def\PDF@FinishDoc{}
8516 \def\PDF@SetupDoc{%
8517   \ifx\@baseurl\@empty
8518   \else
8519     \special{html:<base href="\@baseurl">}%
8520   \fi
8521 }
8522 \def\hyper@anchor#1{%
8523   \Hy@SaveLastskip
8524   \Hy@VerboseAnchor{#1}%
8525   \begingroup
8526     \let\protect=\string
8527     \hyper@chars
8528     \special{html:<a name=%
8529       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8530   \endgroup
8531   \Hy@activeanchortrue
8532   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8533   \special{html:</a>}%
8534   \Hy@activeanchorfalse
8535   \Hy@RestoreLastskip
8536 }
8537 \def\hyper@anchorstart#1{%
8538   \Hy@SaveLastskip
8539   \Hy@VerboseAnchor{#1}%
8540   \begingroup
8541     \hyper@chars
8542     \special{html:<a name=%
8543       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8544   \endgroup
8545   \Hy@activeanchortrue
8546 }
8547 \def\hyper@anchorend{%
8548   \special{html:</a>}%
8549   \Hy@activeanchorfalse
8550   \Hy@RestoreLastskip
8551 }
8552 \def\@urltype{url}
8553 \def\hyper@linkstart#1#2{%
8554   \Hy@VerboseLinkStart{#1}{#2}%
8555   \expandafter\Hy@colorlink\csname @#1color\endcsname
8556   \def\Hy@tempa{#1}%
8557   \ifx\Hy@tempa\@urltype
8558     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
8559   \else

```

```

8560 \begingroup
8561 \hyper@chars
8562 \special{html:<a href=%
8563 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
8564 \endgroup
8565 \fi
8566 }
8567 \def\hyper@linkend{%
8568 \special{html:</a>}%
8569 \Hy@endcolorlink
8570 }
8571 \def\hyper@linkfile#1#2#3{%
8572 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\#3\fi}%
8573 }
8574 \def\hyper@linkurl#1#2{%

```

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

```

8575 \leavevmode
8576 \ifHy@raiselinks
8577 \setbox\@tempboxa=\color@hbox #1\color@endbox
8578 \@linkdim\dp\@tempboxa
8579 \lower\@linkdim\hbox{%
8580 \hyper@chars
8581 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
8582 }%
8583 \Hy@colorlink\@urlcolor#1%
8584 \@linkdim\ht\@tempboxa

```

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

```

8585 \advance\@linkdim by -6.5\p@
8586 \raise\@linkdim\hbox{\special{html:</a>}}%
8587 \Hy@endcolorlink
8588 \else
8589 \begingroup
8590 \hyper@chars
8591 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
8592 \Hy@colorlink\@urlcolor#1%
8593 \special{html:</a>}%
8594 \Hy@endcolorlink
8595 \endgroup
8596 \fi
8597 }

```

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

```

8598 \def\hyper@link#1#2#3{%
8599 \Hy@VerboseLinkStart{#1}{#2}%
8600 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
8601 }
8602 \def\hyper@image#1#2{%
8603 \begingroup
8604 \hyper@chars
8605 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
8606 \endgroup
8607 }
8608 \(/hypertex)

```

8609 (\*dviwindo)

## 46.4 dviwindo

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

This was more or less blindly copied from the `hypertex` cfg. For dviwindo,  $\LaTeX$  must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by `\baselineskip` high is used.

```
8610 \providecommand*\XR@ext}{dvi}
8611 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
8612 \def\hyper@anchor#1{%
8613   \Hy@SaveLastskip
8614   \Hy@VerboseAnchor{#1}%
8615   \begingroup
8616     \let\protect=\string
8617     \special{mark: #1}%
8618   \endgroup
8619   \Hy@activeanchortrue
8620   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8621   \Hy@activeanchorfalse
8622   \Hy@RestoreLastskip
8623 }
8624 \def\hyper@anchorstart#1{%
8625   \Hy@SaveLastskip
8626   \Hy@VerboseAnchor{#1}%
8627   \special{mark: #1}%
8628   \Hy@activeanchortrue
8629 }
8630 \def\hyper@anchorend{%
8631   \Hy@activeanchorfalse
8632   \Hy@RestoreLastskip
8633 }
8634 \def\hyper@linkstart#1#2{%
8635   \Hy@VerboseLinkStart{#1}{#2}%
8636   \expandafter\Hy@colorlink\csname @#1color\endcsname
8637   \special{button: %
8638     10000000 %
8639     \number\baselineskip\space
8640     #2%
8641   }%
8642 }
8643 \def\hyper@linkend{%
8644   \Hy@endcolorlink
8645 }
8646 \def\hyper@link#1#2#3{%
8647   \Hy@VerboseLinkStart{#1}{#2}%
8648   \setbox\@tempboxa=\color@hbox #3\color@endbox
8649   \leavevmode
8650   \ifHy@raiselinks
8651     \@linkdim\dp\@tempboxa
```

```

8652 \lower\@linkdim\hbox{%
8653 \special{button: %
8654 \number\wd\@tempboxa\space
8655 \number\ht\@tempboxa\space
8656 #2%
8657 }%
8658 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
8659 \Hy@endcolorlink
8660 }%
8661 \@linkdim\ht\@tempboxa
8662 \advance\@linkdim by -6.5\p@
8663 \raise\@linkdim\hbox{%}
8664 \else
8665 \special{button: %
8666 \number\wd\@tempboxa\space
8667 \number\ht\@tempboxa\space
8668 #2%
8669 }%
8670 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
8671 \Hy@endcolorlink
8672 \fi
8673 }
8674 \def\hyper@linkurl#1#2{%
8675 \begingroup
8676 \hyper@chars
8677 \leavevmode
8678 \setbox\@tempboxa=\color@hbox #1\color@endbox
8679 \ifHy@raiselinks
8680 \@linkdim\dp\@tempboxa
8681 \lower\@linkdim\hbox{%
8682 \special{button: %
8683 \number\wd\@tempboxa\space
8684 \number\ht\@tempboxa\space
8685 launch: \wwwbrowser\space
8686 #2%
8687 }%
8688 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
8689 }%
8690 \@linkdim\ht\@tempboxa
8691 \advance\@linkdim by -6.5\p@
8692 \raise\@linkdim\hbox{%}
8693 \else
8694 \special{button: %
8695 \number\wd\@tempboxa\space
8696 \number\ht\@tempboxa\space
8697 launch: \wwwbrowser\space
8698 #2%
8699 }%
8700 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
8701 \fi
8702 \endgroup
8703 }
8704 \def\hyper@linkfile#1#2#3{%
8705 \begingroup
8706 \hyper@chars
8707 \leavevmode
8708 \setbox\@tempboxa=\color@hbox #1\color@endbox

```

```

8709 \ifHy@raiselinks
8710 \@linkdim\dp\@tempboxa
8711 \lower\@linkdim\hbox{%
8712 \special{button: %
8713 \number\wd\@tempboxa\space
8714 \number\ht\@tempboxa\space
8715 #3,%
8716 file: #2%
8717 }%
8718 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
8719 }%
8720 \@linkdim\ht\@tempboxa
8721 \advance\@linkdim by -6.5\p@
8722 \raise\@linkdim\hbox{%
8723 \else
8724 \special{button: %
8725 \number\wd\@tempboxa\space
8726 \number\ht\@tempboxa\space
8727 #3,%
8728 file: #2%
8729 }%
8730 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
8731 \fi
8732 \endgroup
8733 }
8734 \ifx\@pdfproducer\relax
8735 \def\@pdfproducer{dviwindo + Distiller}%
8736 \fi
8737 \HyInfo@AddonUnsupportedtrue
8738 \def\PDF@FinishDoc{%
8739 \Hy@UseMaketitleInfos
8740 \HyInfo@TrappedUnsupported
8741 \special{PDF: Keywords \@pdfkeywords}%
8742 \special{PDF: Title \@pdftitle}%
8743 \special{PDF: Creator \@pdfcreator}%
8744 \ifx\@pdfcreationdate\@empty
8745 \else
8746 \special{PDF: CreationDate \@pdfcreationdate}%
8747 \fi
8748 \ifx\@pdfmoddate\@empty
8749 \else
8750 \special{PDF: ModDate \@pdfmoddate}%
8751 \fi
8752 \special{PDF: Author \@pdfauthor}%
8753 \ifx\@pdfproducer\relax
8754 \else
8755 \special{PDF: Producer \@pdfproducer}%
8756 \fi
8757 \special{PDF: Subject \@pdfsubject}%
8758 \Hy@DisableOption{pdfauthor}%
8759 \Hy@DisableOption{pdftitle}%
8760 \Hy@DisableOption{pdfsubject}%
8761 \Hy@DisableOption{pdfcreator}%
8762 \Hy@DisableOption{pdfcreationdate}%
8763 \Hy@DisableOption{pdfmoddate}%
8764 \Hy@DisableOption{pdfproducer}%
8765 \Hy@DisableOption{pdfkeywords}%

```

```

8766 \Hy@DisableOption{pdftrapped}%
8767 \Hy@DisableOption{pdfinfo}%
8768 }
8769 \def\PDF@SetupDoc{%
8770 \ifx\@baseurl\@empty
8771 \else
8772 \special{PDF: Base \@baseurl}%
8773 \fi
8774 \ifx\@pdfpagescrop\@empty\else
8775 \special{PDF: BBox \@pdfpagescrop}%
8776 \fi
8777 \def\Hy@temp{%
8778 \ifx\@pdfstartpage\@empty
8779 \else
8780 \ifx\@pdfstartview\@empty
8781 \else
8782 \edef\Hy@temp{%
8783 ,Page=\@pdfstartpage
8784 ,View=\@pdfstartview
8785 }%
8786 \fi
8787 \fi
8788 \edef\Hy@temp{%
8789 \noexpand\pdfmark{%
8790 pdfmark=/DOCVIEW,%
8791 PageMode=/\@pdfpagemode
8792 \Hy@temp
8793 }%
8794 }%
8795 \Hy@temp
8796 \ifx\@pdfpagescrop\@empty
8797 \else
8798 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
8799 \fi
8800 \edef\Hy@temp{%
8801 \ifHy@toolbar\else /HideToolbar true\fi
8802 \ifHy@menubar\else /HideMenubar true\fi
8803 \ifHy>windowui\else /HideWindowUI true\fi
8804 \ifHy@fitwindow /FitWindow true\fi
8805 \ifHy@centerwindow /CenterWindow true\fi
8806 \ifHy@displaydoctitle /DisplayDocTitle true\fi
8807 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8808 \Hy@UseNameKey{Direction}\@pdfdirection
8809 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8810 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8811 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8812 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8813 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8814 \Hy@UseNameKey{Duplex}\@pdfduplex
8815 \ifx\@pdfpicktraybypdfsize\@empty
8816 \else
8817 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8818 \fi
8819 \ifx\@pdfprintpagerange\@empty
8820 \else
8821 /PrintPageRange\@pdfprintpagerange}%
8822 \fi

```

```

8823 \ifx\@pdfnumcopies\@empty
8824 \else
8825 /NumCopies \@pdfnumcopies
8826 \fi
8827 }%
8828 \pdfmark{pdfmark=/PUT,%
8829 Raw={%
8830 \string{Catalog\string}<<%
8831 \ifx\Hy@temp\@empty
8832 \else
8833 /ViewerPreferences<<\Hy@temp>>%
8834 \fi
8835 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8836 \ifx\@pdflang\@empty
8837 \else
8838 /Lang(\@pdflang)%
8839 \fi
8840 >>%
8841 }%
8842 }%
8843 }
8844 </dviwindo>
8845 <*dvipdfm | xetex>

```

## 46.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

8846 \providecommand*\XR@ext}{pdf}
8847 \Hy@setbreaklinks{true}
8848 \newsavebox{\pdfm@box}
8849 \def\@pdfm@mark#1{\special{pdf:#1}}
8850 \def\@pdfm@dest#1{%
8851 \Hy@SaveLastskip
8852 \Hy@VerboseAnchor{#1}%
8853 \begingroup
8854 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8855 \def\x{XYZ}%
8856 \ifx\x\@pdfview
8857 \def\x{XYZ @xpos @ypos null}%
8858 \else
8859 \def\x{FitH}%
8860 \ifx\x\@pdfview
8861 \def\x{FitH @ypos}%
8862 \else
8863 \def\x{FitBH}%
8864 \ifx\x\@pdfview
8865 \def\x{FitBH @ypos}%
8866 \else
8867 \def\x{FitV}%
8868 \ifx\x\@pdfview
8869 \def\x{FitV @xpos}%
8870 \else
8871 \def\x{FitBV}%
8872 \ifx\x\@pdfview
8873 \def\x{FitBV @xpos}%
8874 \else
8875 \def\x{Fit}%

```

```

8876     \ifx\x\@pdfview
8877     \let\x\@pdfview
8878     \else
8879     \def\x{FitB}%
8880     \ifx\x\@pdfview
8881     \let\x\@pdfview
8882     \else
8883     \def\x{FitR}%
8884     \ifx\x\@pdfview
8885     \Hy@Warning{'pdfview=FitR' is not supported}%
8886     \def\x{XYZ @xpos @ypos null}%
8887     \else
8888     \@onelevel@sanitize\@pdfview
8889     \Hy@Warning{%
8890     Unknown value '\@pdfview' for pdfview%
8891     }%
8892     \def\x{XYZ @xpos @ypos null}%
8893     \fi
8894     \fi
8895     \fi
8896     \fi
8897     \fi
8898     \fi
8899     \fi
8900     \fi
8901     \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
8902 \endgroup
8903 \Hy@RestoreLastskip
8904 }
8905 \providecommand*\@pdfview{XYZ}
8906 \providecommand*\@pdfborder{0 0 1}
8907 \providecommand*\@pdfborderstyle{}
8908 \def\hyper@anchor#1{%
8909 \@pdfm@dest{#1}%
8910 }
8911 \def\hyper@anchorstart#1{%
8912 \Hy@activeanchortrue
8913 \@pdfm@dest{#1}%
8914 }
8915 \def\hyper@anchorend{%
8916 \Hy@activeanchorfalse
8917 }
8918 \newcounter{Hy@AnnotLevel}
8919 \ifHy@ocgcolorlinks
8920 \def\OBJ@OCG@view{@OCG@view}%
8921 \@pdfm@mark{%
8922 obj \OBJ@OCG@view <<%
8923 /Type/OCG%
8924 /Name(View)%
8925 /Usage<<%
8926 /Print<<%
8927 /PrintState/OFF%
8928 >>%
8929 /View<<%
8930 /ViewState/ON%
8931 >>%
8932 >>%

```



```

8933 >>%
8934 }%
8935 \@pdfm@mark{close \OBJ@OCG@view}%
8936 \def\OBJ@OCG@print{@OCG@print}%
8937 \@pdfm@mark{%
8938 obj \OBJ@OCG@print <<%
8939 /Type/OCG%
8940 /Name(Print)%
8941 /Usage<<%
8942 /Print<<%
8943 /PrintState/ON%
8944 >>%
8945 /View<<%
8946 /ViewState/OFF%
8947 >>%
8948 >>%
8949 >>%
8950 }%
8951 \@pdfm@mark{close \OBJ@OCG@print}%
8952 \def\OBJ@OCGs{@OCGs}%
8953 \@pdfm@mark{%
8954 obj \OBJ@OCGs [%
8955 \OBJ@OCG@view\space\OBJ@OCG@print
8956 ]%
8957 }%
8958 \@pdfm@mark{close \OBJ@OCGs}%
8959 \@pdfm@mark{%
8960 put @catalog <<%
8961 /OCProperties<<%
8962 /OCGs \OBJ@OCGs
8963 /D<<%
8964 /OFF[\OBJ@OCG@print]%
8965 /AS[%
8966 <<%
8967 /Event/View%
8968 /OCGs \OBJ@OCGs
8969 /Category[/View]%
8970 >>%
8971 <<%
8972 /Event/Print%
8973 /OCGs \OBJ@OCGs
8974 /Category[/Print]%
8975 >>%
8976 <<%
8977 /Event/Export%
8978 /OCGs \OBJ@OCGs
8979 /Category[/Print]%
8980 >>%
8981 ]%
8982 >>%
8983 >>%
8984 >>%
8985 }%
8986 \@AtBeginShipout{%
8987 \setbox\AtBeginShipoutBox=\hbox{%
8988 \copy\AtBeginShipoutBox
8989 \@pdfm@mark{%

```

```

8990     put @resources <<%
8991         /Properties<<%
8992         /OCView \OBJ@OCG@view
8993         /OCPrint \OBJ@OCG@print
8994     >>%
8995     >>%
8996     }%
8997 }%
8998 }%
8999 \Hy@AtBeginDocument{%
9000     \def\Hy@colorlink#1{%
9001         \begingroup
9002         \ifHy@ocgcolorlinks
9003             \def\Hy@ocgcolor{#1}%
9004             \setbox0=\color@hbox
9005         \else
9006             \HyColor@UseColor#1%
9007         \fi
9008     }%
9009     \def\Hy@endcolorlink{%
9010         \ifHy@ocgcolorlinks
9011             \color@endbox
9012             \mbox{%
9013                 \@pdfm@mark{content /OC/OCPrint BDC}%
9014                 \rlap{\copy0}%
9015                 \@pdfm@mark{content EMC/OC/OCView BDC}%
9016             \begingroup
9017                 \expandafter\HyColor@UseColor\Hy@ocgcolor
9018                 \box0 %
9019             \endgroup
9020             \@pdfm@mark{content EMC}%
9021         }%
9022     \fi
9023     \endgroup
9024 }%
9025 }%
9026 \else
9027 \Hy@DisableOption{ocgcolorlinks}%
9028 \fi
9029 \def\Hy@BeginAnnot#1{%
9030     \stepcounter{Hy@AnnotLevel}%
9031     \ifnum\value{Hy@AnnotLevel}=\@ne
9032     #1%
9033     \fi
9034 }
9035 \def\Hy@endAnnot{%
9036     \ifnum\value{Hy@AnnotLevel}=\@ne
9037         \Hy@endcolorlink
9038         \@pdfm@mark{eann}%
9039     \fi
9040     \addtocounter{Hy@AnnotLevel}\m@ne
9041 }
9042 \def\Hy@undefinedname{UNDEFINED}
9043 \def\hyper@linkstart#1#2{%
9044     \Hy@VerboseLinkStart{#1}{#2}%
9045     \Hy@BeginAnnot{%
9046         \protected@edef\Hy@testname{#2}%

```

```

9047 \ifx\Hy@testname\@empty
9048 \Hy@Warning{%
9049   Empty destination name,\MessageBreak
9050   using '\Hy@undefinedname'%
9051 }%
9052 \let\Hy@testname\Hy@undefinedname
9053 \else
9054 \Hy@pstringdef\Hy@testname{%
9055   \expandafter\HyperDestNameFilter\expandafter{%
9056     \Hy@testname
9057   }%
9058 }%
9059 \fi
9060 \@pdfm@mark{%
9061   bann<<%
9062   /Type/Annot%
9063   /Subtype/Link%
9064   \ifHy@pdfa /F 4\fi
9065   \Hy@setpdfborder
9066   \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9067   \else
9068     /C[\csname @#1bordercolor\endcsname]%
9069   \fi
9070   /A<<%
9071   /S/GoTo%
9072   /D(\Hy@testname)%
9073   >>%
9074   >>%
9075 }%
9076 \expandafter\Hy@colorlink\csname @#1color\endcsname
9077 }%
9078 }
9079 \def\hyper@linkend{\Hy@EndAnnot}%
9080 \def\hyper@link#1#2#3{%
9081   \hyper@linkstart{#1}{#2}#3\hyper@linkend
9082 }
9083 \def\hyper@linkfile#1#2#3{%
9084   \leavevmode
9085   \Hy@BeginAnnot{%
9086     \Hy@pstringdef\Hy@pstringF{#2}%
9087     \Hy@pstringdef\Hy@pstringD{#3}%
9088     \@pdfm@mark{%
9089       bann<<%
9090       /Type/Annot%
9091       /Subtype/Link%
9092       \ifHy@pdfa /F 4\fi
9093       \Hy@setpdfborder
9094       \ifx\@filebordercolor\relax
9095       \else
9096         /C[\@filebordercolor]%
9097       \fi
9098       /A<<%
9099       /S/GoToR%
9100       /F(\Hy@pstringF)%
9101       /D\ifx\@#3\@0 \@pdfstartview\else(\Hy@pstringD)\fi
9102       \Hy@SetNewWindow
9103       >>%

```

```

9104   >>%
9105   }%
9106   \Hy@colorlink\@filecolor
9107 }%
9108 #1%
9109 \Hy@EndAnnot
9110 }
9111 \def\hyper@linkurl#1#2{%
9112 \leavevmode
9113 \Hy@BeginAnnot{%
9114 \Hy@pstringdef\Hy@pstringURI{#2}%
9115 \@pdfm@mark{%
9116   bann<<%
9117   /Type/Annot%
9118   /Subtype/Link%
9119   \ifHy@pdfa /F 4\fi
9120   \Hy@setpdfborder
9121   \ifx\@urlbordercolor\relax
9122   \else
9123     /C[\@urlbordercolor]%
9124   \fi
9125   /A<<%
9126   /S/URI%
9127   /URI(\Hy@pstringURI)%
9128   >>%
9129   >>%
9130 }%
9131 \Hy@colorlink\@urlcolor
9132 }%
9133 #1%
9134 \Hy@EndAnnot
9135 }
9136 \def\Acrobatmenu#1#2{%
9137 \Hy@Acrobatmenu{#1}{#2}{%
9138 \Hy@BeginAnnot{%
9139 \@pdfm@mark{%
9140   bann<<%
9141   /Type/Annot%
9142   /Subtype/Link%
9143   \ifHy@pdfa /F 4\fi
9144   /A<<%
9145   /S/Named%
9146   /N/#1%
9147   >>%
9148   \Hy@setpdfborder
9149   \ifx\@menubordercolor\relax
9150   \relax
9151   /C[\@menubordercolor]%
9152   \fi
9153   >>%
9154 }%
9155 \Hy@colorlink\@menucolor
9156 }%
9157 #2%
9158 \Hy@EndAnnot
9159 }%
9160 }

```

```

9161 \ifx\@pdfproducer\relax
9162 \def\@pdfproducer{dvipdfm}%

```

Detect XeTeX. However, but xdvipdfmx will overwrite it in the final PDF file.

```

9163 \begingroup\expandafter\expandafter\expandafter\endgroup
9164 \expandafter\ifx\csname XeTeXversion\endcsname\relax
9165 \else
9166 \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
9167 \fi
9168 \fi
9169 \def\PDF@FinishDoc{%
9170 \Hy@UseMaketitleInfos
9171 \HyInfo@GenerateAddons
9172 \@pdfm@mark{%
9173 docinfo<<%
9174 /Title(\@pdftitle)%
9175 /Subject(\@pdfsubject)%
9176 /Creator(\@pdfcreator)%
9177 \ifx\@pdfcreationdate\@empty
9178 \else
9179 /CreationDate(\@pdfcreationdate)%
9180 \fi
9181 \ifx\@pdfmoddate\@empty
9182 \else
9183 /ModDate(\@pdfmoddate)%
9184 \fi
9185 /Author(\@pdfauthor)%
9186 \ifx\@pdfproducer\relax
9187 \else
9188 /Producer(\@pdfproducer)%
9189 \fi
9190 /Keywords(\@pdfkeywords)%
9191 \ifx\@pdftrapped\@empty
9192 \else
9193 /Trapped/\@pdftrapped
9194 \fi
9195 \HyInfo@Addons
9196 >>%
9197 }%
9198 \Hy@DisableOption{pdfauthor}%
9199 \Hy@DisableOption{pdftitle}%
9200 \Hy@DisableOption{pdfsubject}%
9201 \Hy@DisableOption{pdfcreator}%
9202 \Hy@DisableOption{pdfcreationdate}%
9203 \Hy@DisableOption{pdfmoddate}%
9204 \Hy@DisableOption{pdfproducer}%
9205 \Hy@DisableOption{pdfkeywords}%
9206 \Hy@DisableOption{pdftrapped}%
9207 \Hy@DisableOption{pdfinfo}%
9208 }

9209 \def\PDF@SetupDoc{%
9210 \edef\Hy@temp{%
9211 \ifHy@toolbar\else /HideToolbar true\fi
9212 \ifHy@menubar\else /HideMenubar true\fi
9213 \ifHy>windowui\else /HideWindowUI true\fi
9214 \ifHy@fitwindow /FitWindow true\fi
9215 \ifHy@centerwindow /CenterWindow true\fi

```

```

9216 \ifHy@displaydoctitle /DisplayDocTitle true\fi
9217 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9218 \Hy@UseNameKey{Direction}\@pdfdirection
9219 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9220 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9221 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9222 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9223 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9224 \Hy@UseNameKey{Duplex}\@pdfduplex
9225 \ifx\@pdfpicktraybypdfsize\@empty
9226 \else
9227 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9228 \fi
9229 \ifx\@pdfprintpagerange\@empty
9230 \else
9231 /PrintPageRange\@pdfprintpagerange\%
9232 \fi
9233 \ifx\@pdfnumcopies\@empty
9234 \else
9235 /NumCopies \@pdfnumcopies
9236 \fi
9237 }%
9238 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9239 \@pdfm@mark{%
9240 docview<<%
9241 \ifx\@pdfstartpage\@empty
9242 \else
9243 \ifx\@pdfstartview\@empty
9244 \else
9245 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
9246 \fi
9247 \fi
9248 \ifx\@baseurl\@empty
9249 \else
9250 /URI<</Base(\Hy@pstringB)>>%
9251 \fi
9252 /PageMode/\@pdfpagemode
9253 \ifx\Hy@temp\@empty
9254 \else
9255 /ViewerPreferences<<\Hy@temp>>%
9256 \fi
9257 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9258 \ifx\@pdflang\@empty
9259 \else
9260 /Lang(\@pdflang)%
9261 \fi
9262 >>%
9263 }%
9264 \ifx\@pdfpagescrop\@empty
9265 \else
9266 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
9267 \fi
9268 }
9269 </dvi-pdfm | xetex>

```

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

```
9270 <*dvi-pdfm>
```

```

9271 \AtBeginShipoutFirst{%
9272   \ifHy@setpagesize
9273     \begingroup
9274       \@ifundefined{stockwidth}{%
9275         \ifdim\paperwidth>\z@
9276           \ifdim\paperheight>\z@
9277             \special{papersize=\the\paperwidth,\the\paperheight}%
9278             \fi
9279           \fi
9280         }{%
9281           \ifdim\stockwidth>\z@
9282             \ifdim\stockheight>\z@
9283               \special{papersize=\the\stockwidth,\the\stockheight}%
9284               \fi
9285             \fi
9286           }%
9287     \endgroup
9288   \fi
9289   \Hy@DisableOption{setpagesize}%
9290 }
9291 </dvipdfm>

```

## 46.6 VTeX typesetting system

Provided by MicroPress, May 1998. They require VTeX version 6.02 or newer; see <http://www.micropress-inc.com/> for details.

```

9292 <*\vtxhtml>
9293 \providecommand*{\XR@ext}{htm}
9294 \RequirePackage{vtxhtml}
9295 \newif\if@Localurl
9296 \def\PDF@FinishDoc{}
9297 \def\PDF@SetupDoc{%
9298   \ifx\@baseurl\@empty
9299     \else
9300       \special{!direct <base href="\@baseurl">}%
9301     \fi
9302 }
9303 \def\@urltype{url}
9304 \def\hyper@link#1#2#3{%
9305   \Hy@VerboseLinkStart{#1}{#2}%
9306   \leavevmode
9307   \special{!direct <a href=%
9308     \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
9309   #3%
9310   \special{!direct </a>}%
9311 }
9312 \def\hyper@linkurl#1#2{%
9313   \begingroup
9314     \hyper@chars
9315     \leavevmode
9316     \MathBSuppress=1\relax
9317     \special{!direct <a href=%
9318       \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
9319     #1%
9320     \MathBSuppress=0\relax
9321     \special{!direct </a>}%
9322   \endgroup

```

```

9323 }
9324 \def\hyper@linkfile#1#2#3{%
9325 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
9326 }
9327 \def\hyper@linkstart#1#2{%
9328 \Hy@VerboseLinkStart{#1}{#2}%
9329 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urlltype
9330 \@Localurltrue
9331 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
9332 \else
9333 \@Localurlfalse
9334 \begingroup
9335 \hyper@chars
9336 \special{!aref \HyperDestNameFilter{#2}}%
9337 \endgroup
9338 \fi
9339 }
9340 \def\hyper@linkend{%
9341 \if@Localurl
9342 \special{!endaref}%
9343 \else
9344 \special{!direct </a>}%
9345 \fi
9346 }
9347 \def\hyper@anchorstart#1{%
9348 \Hy@SaveLastskip
9349 \Hy@VerboseAnchor{#1}%
9350 \begingroup
9351 \hyper@chars
9352 \special{!aname #1}%
9353 \special{!direct <a name=%
9354 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9355 \endgroup
9356 \Hy@activeanchortrue
9357 }
9358 \def\hyper@anchorend{%
9359 \special{!direct </a>}%
9360 \Hy@activeanchorfalse
9361 \Hy@RestoreLastskip
9362 }
9363 \def\hyper@anchor#1{%
9364 \Hy@SaveLastskip
9365 \Hy@VerboseAnchor{#1}%
9366 \begingroup
9367 \let\protect=\string
9368 \hyper@chars
9369 \leavevmode
9370 \special{!aname #1}%
9371 \special{!direct <a name=%
9372 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9373 \endgroup
9374 \Hy@activeanchortrue
9375 \bgroup\anchor@spot\egroup
9376 \special{!direct </a>}%
9377 \Hy@activeanchorfalse
9378 \Hy@RestoreLastskip
9379 }

```



```

9380 \def\@Form[#1]{%
9381 \typeout{Sorry, TeXpider does not yet support FORMs}%
9382 }
9383 \def\@endForm{}
9384 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9385 \typeout{Sorry, TeXpider does not yet support FORM gauges}%
9386 }
9387 \def\@TextField[#1]#2{% parameters, label
9388 \typeout{Sorry, TeXpider does not yet support FORM text fields}%
9389 }
9390 \def\@CheckBox[#1]#2{% parameters, label
9391 \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
9392 }
9393 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9394 \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
9395 }
9396 \def\@PushButton[#1]#2{% parameters, label
9397 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
9398 }
9399 \def\@Reset[#1]#2{%
9400 \typeout{Sorry, TeXpider does not yet support FORMs}%
9401 }
9402 \def\@Submit[#1]#2{%
9403 \typeout{Sorry, TeXpider does not yet support FORMs}%
9404 }
9405 \end{vtexhtml}
9406 \end{*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.

```

9407 \ifx\mediaheight\@undefined
9408 \else
9409 \ifx\mediaheight\relax
9410 \else
9411 \ifHy@setpagesize
9412 \providecommand*\VTeXInitMediaSize{%
9413 \ltx@ifundefined{stockwidth}{%
9414 \ifdim\paperheight>0pt %
9415 \setlength\mediaheight\paperheight
9416 \fi
9417 \ifdim\paperheight>0pt %
9418 \setlength\mediawidth\paperwidth
9419 \fi
9420 }{%
9421 \ifdim\stockheight>0pt %
9422 \setlength\mediaheight\stockheight
9423 \fi
9424 \ifdim\stockwidth>0pt %
9425 \setlength\mediawidth\stockwidth
9426 \fi
9427 }%
9428 }%
9429 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
9430 \fi
9431 \Hy@DisableOption{setpagesize}%
9432 \fi

```

9433 \fi

Older versions of VTeX require xyz in lower case.

```
9434 \providecommand*\@pdfview{xyz}
9435 \providecommand*\@pdfborder{0 0 1}
9436 \providecommand*\@pdfborderstyle{}
9437 \let\CurrentBorderColor\@linkbordercolor
9438 \def\hyper@anchor#1{%
9439   \Hy@SaveLastskip
9440   \Hy@VerboseAnchor{#1}%
9441   \begingroup
9442     \let\protect=\string
9443     \hyper@chars
9444     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
9445   \endgroup
9446   \Hy@activeanchortrue
9447   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9448   \Hy@activeanchorfalse
9449   \Hy@RestoreLastskip
9450 }
9451 \def\hyper@anchorstart#1{%
9452   \Hy@SaveLastskip
9453   \Hy@VerboseAnchor{#1}%
9454   \begingroup
9455     \hyper@chars
9456     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
9457   \endgroup
9458   \Hy@activeanchortrue
9459 }
9460 \def\hyper@anchorend{%
9461   \Hy@activeanchorfalse
9462   \Hy@RestoreLastskip
9463 }
9464 \def\@urltype{url}
9465 \def\Hy@undefinedname{UNDEFINED}
9466 \def\hyper@linkstart#1#2{%
9467   \Hy@VerboseLinkStart{#1}{#2}%
9468   \Hy@pstringdef\Hy@pstringURI{#2}%
9469   \expandafter\Hy@colorlink\csname @#1color\endcsname
9470   \ltx@ifundefined{@#1bordercolor}{%
9471     \let\CurrentBorderColor\relax
9472   }{%
9473     \edef\CurrentBorderColor{%
9474       \csname @#1bordercolor\endcsname
9475     }%
9476   }%
9477   \def\Hy@tempa{#1}%
9478   \ifx\Hy@tempa\@urltype
9479     \special{!%
9480       aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
9481       a=<%
9482         \ifHy@pdfa /F 4\fi
9483         \Hy@setpdfborder
9484         \ifx\CurrentBorderColor\relax
9485           \else
9486             /C [\CurrentBorderColor]%
9487         \fi
9488       >%
```

```

9489 }%
9490 \else
9491 \protected@edef\Hy@testname{#2}%
9492 \ifx\Hy@testname\@empty
9493 \Hy@Warning{%
9494   Empty destination name,\MessageBreak
9495   using '\Hy@undefinedname'%
9496 }%
9497 \let\Hy@testname\Hy@undefinedname
9498 \fi
9499 \special{!%
9500   aref \expandafter\HyperDestNameFilter
9501   \expandafter{\Hy@testname};%
9502   a=<%
9503     \ifHy@pdfa /F 4\fi
9504     \Hy@setpdfborder
9505     \ifx\CurrentBorderColor\relax
9506     \else
9507       /C [\CurrentBorderColor]%
9508     \fi
9509   >%
9510 }%
9511 \fi
9512 }
9513 \def\hyper@linkend{%
9514 \special{!endaref}%
9515 \Hy@endcolorlink
9516 }
9517 \def\hyper@linkfile#1#2#3{%
9518 \leavevmode
9519 \special{!%
9520   aref <%
9521   \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
9522   f=#2>#3;%
9523   a=<%
9524     \ifHy@pdfa /F 4\fi
9525     \Hy@setpdfborder
9526     \ifx\@filebordercolor\relax
9527     \else
9528       /C [\@filebordercolor]%
9529     \fi
9530   >%
9531 }%
9532 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
9533 \special{!endaref}%
9534 }
9535 \def\hyper@linkurl#1#2{%
9536 \begingroup
9537 \Hy@pstringdef\Hy@pstringURI{#2}%
9538 \hyper@chars
9539 \leavevmode
9540 \special{!%
9541   aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
9542   a=<%
9543     \ifHy@pdfa /F 4\fi
9544     \Hy@setpdfborder
9545     \ifx\@urlbordercolor\relax

```

```

9546     \else
9547     /C [\@urlbordercolor]%
9548     \fi
9549     >%
9550 }%
9551 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9552 \special{!endaref}%
9553 \endgroup
9554 }
9555 \def\hyper@link#1#2#3{%
9556 \Hy@VerboseLinkStart{#1}{#2}%
9557 \ltx@ifundefined{@#1bordercolor}{%
9558 \let\CurrentBorderColor\relax
9559 }{%
9560 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9561 }%
9562 \leavevmode
9563 \protected@edef\Hy@testname{#2}%
9564 \ifx\Hy@testname\@empty
9565 \Hy@Warning{%
9566 Empty destination name,\MessageBreak
9567 using '\Hy@undefinedname'%
9568 }%
9569 \let\Hy@testname\Hy@undefinedname
9570 \fi
9571 \special{!%
9572 aref \expandafter\HyperDestNameFilter
9573 \expandafter{\Hy@testname};%
9574 a=<%
9575 \ifHy@pdfa /F 4\fi
9576 \Hy@setpdfborder
9577 \ifx\CurrentBorderColor\relax
9578 \else
9579 /C [\CurrentBorderColor]%
9580 \fi
9581 >%
9582 }%
9583 \expandafter
9584 \Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
9585 \special{!endaref}%
9586 }
9587 \def\hyper@image#1#2{%
9588 \hyper@linkurl{#2}{#1}%
9589 }
9590 \def\@hyper@launch run:#1\#2#3{%
9591 \Hy@pstringdef\Hy@pstringF{#1}%
9592 \Hy@pstringdef\Hy@pstringP{#3}%
9593 \leavevmode
9594 \special{!aref %
9595 <u=%
9596 /Type/Action%
9597 /S/Launch%
9598 /F(\Hy@pstringF)%
9599 \Hy@SetNewWindow
9600 \ifx\#3\%
9601 \else
9602 /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%

```

```

9603   \fi%
9604   >;%
9605   a=<%
9606   \ifHy@pdfa /F 4\fi
9607   \Hy@setpdfborder
9608   \ifx\@runbordercolor\relax
9609   \else
9610     /C{\@runbordercolor}%
9611   \fi
9612   >%
9613   }%
9614   \Hy@colorlink\@runcolor#2\Hy@endcolorlink
9615   \special{!endaref}%
9616 }
9617 \def\Acrobatmenu#1#2{%
9618 \Hy@Acrobatmenu{#1}{#2}{%
9619 \special{!%
9620   aref <u=/S /Named /N /#1>;%
9621   a=<%
9622   \ifHy@pdfa /F 4\fi
9623   \Hy@setpdfborder
9624   \ifx\@menubordercolor\relax
9625   \else
9626     /C{\@menubordercolor}%
9627   \fi
9628   >%
9629   }%
9630   \Hy@colorlink\@menucolor#2\Hy@endcolorlink
9631   \special{!endaref}%
9632   }%
9633 }

```

The following code (transition effects) is made by Alex Kostin.

The code below makes sense for  $\text{V}\text{T}_{\text{E}}\text{X}$  7.02 or later.

Please never use `\@ifundefined{VTeXversion}{..}{..}` globally.

```

9634 \ifnum\Hy@VTeXversion<702 %
9635 \else
9636 \def\hyper@pagetransition{%
9637 \ifx\@pdfpagetransition\relax
9638 \else
9639 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

9640 \else
9641 \hvtex@parse@trans\@pdfpagetransition
9642 \fi
9643 \fi
9644 }%

```

I have to write an “honest” parser to convert raw PDF code into  $\text{V}\text{T}_{\text{E}}\text{X}$  `\special`.  
(AVK)

Syntax of  $\text{V}\text{T}_{\text{E}}\text{X}$  `\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:

```

9645 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
9646 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
9647 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
9648 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
9649 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
9650 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
9651 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

9652 \def\hvtex@par@dimension{/Dm}%
9653 \def\hvtex@par@direction{/Di}%
9654 \def\hvtex@par@duration{/D}%
9655 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

9656 \def\hvtex@gettoken{%
9657   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
9658 }%

```

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

```

9659 \def\hvtex@gettoken@#1 #2\@nil{%
9660   \edef\hvtex@token{#1}%
9661   \edef\hvtex@buffer{#2}%
9662 }%
9663 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

9664 \let\hvtex@trans@code\@empty
9665 \let\hvtex@param@dimension\@empty
9666 \let\hvtex@param@direction\@empty
9667 \let\hvtex@param@duration\@empty
9668 \let\hvtex@param@motion\@empty
9669 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

9670 \hvtex@gettoken
9671 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

9672   \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

9673   \else
9674     \hvtex@gettoken
9675   \fi
9676 \fi
9677 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```
9678 \hvtex@trans@params
9679 }%
```

Reentrant macro to parse optional parameters.

```
9680 \def\hvtex@trans@params{%
9681 \ifx\hvtex@buffer\@empty
9682 \else
9683 \hvtex@gettoken
9684 \let\hvtex@trans@par\hvtex@token
9685 \ifx\hvtex@buffer\@empty
9686 \else
9687 \hvtex@gettoken
9688 \ifx\hvtex@trans@par\hvtex@par@duration
```

/D is the effect duration in seconds.  $\text{\TeX}$  special takes it in milliseconds.

```
9689 \let\hvtex@param@duration\hvtex@token
9690 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
9691 \expandafter\edef\expandafter\hvtex@param@motion
9692 \expandafter{\expandafter\@gobble\hvtex@token}%
9693 \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
9694 \expandafter\edef\expandafter\hvtex@param@dimension
9695 \expandafter{\expandafter\@gobble\hvtex@token}%
9696 \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).

```
9697 \let\hvtex@param@direction\hvtex@token
9698 \fi\fi\fi
9699 \fi
9700 \fi
9701 \ifx\hvtex@buffer\@empty
9702 \let\next\hvtex@produce@trans
9703 \else
9704 \let\next\hvtex@trans@params
9705 \fi
9706 \next
9707 }%
```

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

```
9708 \def\hvtex@produce@trans{%
9709 \let\vtex@trans@special\@empty
9710 \if S\hvtex@trans@code
9711 \edef\vtex@trans@special{\hvtex@trans@code
9712 \hvtex@param@dimension\hvtex@param@motion}%
9713 \else\if B\hvtex@trans@code
9714 \edef\vtex@trans@special{%
9715 \hvtex@trans@code\hvtex@param@dimension
9716 }%
9717 \else\if X\hvtex@trans@code
9718 \edef\vtex@trans@special{%
9719 \hvtex@trans@code\hvtex@param@motion
9720 }%
9721 \else\if W\hvtex@trans@code
```

```

9722 \edef\vtex@trans@special{%
9723 \hvtex@trans@code\hvtex@param@direction
9724 }%
9725 \else\if D\hvtex@trans@code
9726 \let\vtex@trans@special\hvtex@trans@code
9727 \else\if R\hvtex@trans@code
9728 \let\vtex@trans@special\hvtex@trans@code
9729 \else\if G\hvtex@trans@code
9730 \edef\vtex@trans@special{%
9731 \hvtex@trans@code\hvtex@param@direction
9732 }%
9733 \fi\fi\fi\fi\fi\fi
9734 \ifx\vtex@trans@special\@empty
9735 \else
9736 \ifx\hvtex@param@duration\@empty
9737 \else
9738 \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

9739 \multiply\dimen@\@m
9740 \edef\vtex@trans@special{%
9741 \vtex@trans@special,\strip@pt\dimen@
9742 }%
9743 \fi

```

And all the mess is just for this.

```

9744 \special{!trans \vtex@trans@special}%
9745 \fi
9746 }%
9747 \def\hyper@pageduration{%
9748 \ifx\@pdfpageduration\relax
9749 \else
9750 \ifx\@pdfpageduration\@empty
9751 \special{!duration-}%
9752 \else
9753 \special{!duration \@pdfpageduration}%
9754 \fi
9755 \fi
9756 }%
9757 \def\hyper@pagehidden{%
9758 \ifHy@useHidKey
9759 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
9760 \fi
9761 }%
9762 \g@addto@macro\Hy@EveryPageBoxHook{%
9763 \hyper@pagetransition
9764 \hyper@pageduration
9765 \hyper@pagehidden
9766 }%
9767 \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

```

9768 \ifx\@pdfproducer\relax
9769 \def\@pdfproducer{VTeX}%
9770 \ifnum\Hy@VTeXversion>\z@
9771 \count@\VTeXversion
9772 \divide\count@ 100 %
9773 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
9774 \multiply\count@ -100 %
9775 \advance\count@\VTeXversion
9776 \edef\@pdfproducer{%
9777 \@pdfproducer
9778 .\ifnum\count@<10 0\fi\the\count@
9779 \ifx\VTeXOS\@undefined\else
9780 \ifnum\VTeXOS>0 %
9781 \ifnum\VTeXOS<6 %
9782 \space(%
9783 \ifcase\VTeXOS
9784 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
9785 \fi
9786 )%
9787 \fi
9788 \fi
9789 \fi
9790 ,\space
9791 \ifnum\OpMode=\@ne PDF\else PS\fi
9792 \space backend%
9793 \ifx\gexmode\@undefined\else
9794 \ifnum\gexmode>\z@\space with GeX\fi
9795 \fi
9796 }%
9797 \fi
9798 \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).

```

9799 \def\PDF@SetupDoc{%
9800 \ifx\@pdfpagescrop\@empty
9801 \else
9802 \special{!pdfinfo b=<\@pdfpagescrop>}%
9803 \fi

```

```

9804 \ifx\@pdfstartpage\@empty
9805 \else
9806 \ifx\@pdfstartview\@empty
9807 \else
9808 \special{!onopen Page\@pdfstartpage}%
9809 \fi
9810 \fi
9811 \special{!pdfinfo p=</\@pdfpagemode>}%
9812 \ifx\@baseurl\@empty
9813 \else
9814 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
9815 \fi
9816 \special{!pdfinfo v=<<<%
9817 \ifHy@toolbar\else /HideToolbar true\fi
9818 \ifHy@menubar\else /HideMenubar true\fi
9819 \ifHy>windowui\else /HideWindowUI true\fi
9820 \ifHy@fitwindow /FitWindow true\fi
9821 \ifHy@centerwindow /CenterWindow true\fi
9822 \ifHy@displaydoctitle /DisplayDocTitle true\fi
9823 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9824 \Hy@UseNameKey{Direction}\@pdfdirection
9825 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9826 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9827 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9828 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9829 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9830 \Hy@UseNameKey{Duplex}\@pdfduplex
9831 \ifx\@pdfpicktraybypdfsize\@empty
9832 \else
9833 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9834 \fi
9835 \ifx\@pdfprintpagerange\@empty
9836 \else
9837 /PrintPageRange\@pdfprintpagerange]%
9838 \fi
9839 \ifx\@pdfnumcopies\@empty
9840 \else
9841 /NumCopies \@pdfnumcopies
9842 \fi
9843 >>>}%
9844 \ifx\@pdfpagelayout\@empty
9845 \else
9846 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
9847 \fi
9848 }%
9849 \HyInfo@AddonUnsupportedtrue
9850 \def\PDF@FinishDoc{%
9851 \Hy@UseMaketitleInfos
9852 \HyInfo@TrappedUnsupported
9853 \special{!pdfinfo a=<\@pdfauthor>}%
9854 \special{!pdfinfo t=<\@pdftitle>}%
9855 \special{!pdfinfo s=<\@pdfsubject>}%
9856 \special{!pdfinfo c=<\@pdfcreator>}%
9857 \ifx\@pdfproducer\relax
9858 \else
9859 \special{!pdfinfo r=<\@pdfproducer>}%
9860 \fi

```

```

9861 \special{!pdfinfo k=<\@pdfkeywords>}%
9862 \Hy@DisableOption{pdfauthor}%
9863 \Hy@DisableOption{pdftitle}%
9864 \Hy@DisableOption{pdfsubject}%
9865 \Hy@DisableOption{pdfcreator}%
9866 \Hy@DisableOption{pdfcreationdate}%
9867 \Hy@DisableOption{pdfmoddate}%
9868 \Hy@DisableOption{pdfproducer}%
9869 \Hy@DisableOption{pdfkeywords}%
9870 \Hy@DisableOption{pdftrapped}%
9871 \Hy@DisableOption{pdfinfo}%
9872 }
9873 </vtex>

```

## 46.7 Fix for Adobe bug number 466320

If a destination occurs at the very begin of a page, the destination is moved to the previous page by Adobe Distiller 5. As workaround Adobe suggests:

```

/showpage {
  //showpage
  clippath stroke erasepage
} bind def

```

But unfortunately this fix generates an empty page at the end of the document. Therefore another fix is used by writing some clipped text.

```

9874 (dviwindo)\def\literalps@out#1{\special{ps:#1}}%
9875 <package>\providecommand*{\Hy@DistillerDestFix}{%
9876 <*pdfmark | dviwindo>
9877 \def\Hy@DistillerDestFix{%
9878 \begingroup
9879 \let\x\literalps@out

```

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

```

9880 \ifnum \@ifundefined{OpMode}{0}{%
9881 \ifundefined{gexmode}{0}{%
9882 \ifnum\gexmode>0 \OpMode\else 0\fi
9883 }>1 %
9884 \def\x##1{%
9885 \immediate\special{!##1}%
9886 }%
9887 \fi
9888 \x{%
9889 /product where{%
9890 pop %
9891 product(Distiller)search{%
9892 pop pop pop %
9893 version(.)search{%
9894 exch pop exch pop%
9895 (3011)eq{%
9896 gsave %
9897 newpath 0 0 moveto closepath clip%
9898 /Courier findfont 10 scalefont setfont %
9899 72 72 moveto(.)show %
9900 grestore%
9901 }if%
9902 }{pop}ifelse%

```

```

9903     }{pop}ifelse%
9904     }if%
9905   }%
9906 \endgroup
9907 }
9908 </pdfmark | dviwindo>

```

## 46.8 Direct pdfmark support

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

```

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

```

and the correct definitions of the following PostScript procedures:

```

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

```

```

9909 <*pdfmark>
9910 \Hy@breaklinks@unsupported
9911 \def\hyper@anchor#1{%
9912   \Hy@SaveLastskip
9913   \Hy@VerboseAnchor{#1}%
9914   \begingroup
9915   \pdfmark[\anchor@spot]{%
9916     pdfmark=/DEST,%
9917     linktype=anchor,%
9918     View=/\@pdfview \@pdfviewparams,%
9919     DestAnchor={#1}%
9920   }%
9921 \endgroup
9922 \Hy@RestoreLastskip
9923 }
9924 \ltx@ifundefined{hyper@anchorstart}{-}{\endinput}
9925 \def\hyper@anchorstart#1{%
9926   \Hy@SaveLastskip
9927   \Hy@VerboseAnchor{#1}%
9928   \literalps@out{H.S}%
9929   \Hy@AllowHyphens
9930   \xdef\hyper@currentanchor{#1}%
9931   \Hy@activeanchortrue
9932 }
9933 \def\hyper@anchorend{%
9934   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
9935   \pdfmark{%
9936     pdfmark=/DEST,%
9937     linktype=anchor,%
9938     View=/\@pdfview \@pdfviewparams,%
9939     DestAnchor=\hyper@currentanchor,%
9940   }%
9941   \Hy@activeanchorfalse
9942   \Hy@RestoreLastskip
9943 }

```

```

9944 \def\hyper@linkstart#1#2{%
9945 \Hy@VerboseLinkStart{#1}{#2}%
9946 \ifHy@breaklinks
9947 \else
9948 \leavevmode\hbox\bgroup
9949 \fi
9950 \expandafter\Hy@colorlink\csname @#1color\endcsname
9951 \literalps@out{H.S}%
9952 \Hy@AllowHyphens
9953 \xdef\hyper@currentanchor{#2}%
9954 \gdef\hyper@currentlinktype{#1}%
9955 }
9956 \def\hyper@linkend{%
9957 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
9958 \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
9959 \let\Hy@tempcolor\relax
9960 }{%
9961 \edef\Hy@tempcolor{%
9962 \csname @\hyper@currentlinktype bordercolor\endcsname
9963 }%
9964 }%
9965 \pdfmark{%
9966 pdfmark=/ANN,%
9967 linktype=link,%
9968 Subtype=/Link,%
9969 PDFAFlags=4,%
9970 Dest=\hyper@currentanchor,%
9971 AcroHighlight=\@pdfhighlight,%
9972 Border=\@pdfborder,%
9973 BorderStyle=\@pdfborderstyle,%
9974 Color=\Hy@tempcolor,%
9975 Raw=H.B%
9976 }%
9977 \Hy@endcolorlink
9978 \ifHy@breaklinks
9979 \else
9980 \egroup
9981 \fi
9982 }

```

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.

```

9983 \begingroup
9984 \catcode'P=12 %
9985 \catcode'T=12 %
9986 \lowercase{\endgroup
9987 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
9988 }
9989 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

9990 \def\hyper@pagetransition{%
9991 \ifx\@pdfpagetransition\relax
9992 \else
9993 \ifx\@pdfpagetransition\@empty
9994 % 1. Does an old entry have to be deleted?

```

```

9995     % 2. If 1=yes, how to delete?
9996     \else
9997     \pdfmark{%
9998     pdfmark=/PUT,%
9999     Raw={%
10000     \string{ThisPage\string}%
10001     <</Trans << /S /\@pdfpagetransition\space >> >>%
10002     }%
10003     }%
10004     \fi
10005     \fi
10006     }

```

\hyper@pageduration

```

10007 \def\hyper@pageduration{%
10008 \ifx\@pdfpageduration\relax
10009 \else
10010 \ifx\@pdfpageduration\@empty
10011     % 1. Does an old entry have to be deleted?
10012     % 2. If 1=yes, how to delete?
10013     \else
10014     \pdfmark{%
10015     pdfmark=/PUT,%
10016     Raw={%
10017     \string{ThisPage\string}%
10018     <</Dur \@pdfpageduration>>%
10019     }%
10020     }%
10021     \fi
10022     \fi
10023     }

```

\hyper@pagehidden

```

10024 \def\hyper@pagehidden{%
10025 \ifHy@useHidKey
10026 \pdfmark{%
10027 pdfmark=/PUT,%
10028 Raw={%
10029 \string{ThisPage\string}%
10030 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
10031 }%
10032 }%
10033 \fi
10034 }

10035 \g@addto@macro\Hy@EveryPageBoxHook{%
10036 \hyper@pagetransition
10037 \hyper@pageduration
10038 \hyper@pagehidden
10039 }

10040 \def\hyper@image#1#2{%
10041 \hyper@linkurl{#2}{#1}%
10042 }
10043 \def\Hy@undefinedname{UNDEFINED}
10044 \def\hyper@link#1#2#3{%
10045 \Hy@VerboseLinkStart{#1}{#2}%
10046 \ltx@ifundefined{@#1bordercolor}{%

```

```

10047 \let\Hy@tempcolor\relax
10048 }{%
10049 \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
10050 }%
10051 \begingroup
10052 \protected@edef\Hy@testname{#2}%
10053 \ifx\Hy@testname\@empty
10054 \Hy@Warning{%
10055     Empty destination name,\MessageBreak
10056     using '\Hy@undefinedname'%
10057 }%
10058 \let\Hy@testname\Hy@undefinedname
10059 \fi
10060 \pdfmark[#{#3}]{%
10061     Color=\Hy@tempcolor,%
10062     linktype={#1},%
10063     AcroHighlight=\@pdfhighlight,%
10064     Border=\@pdfborder,%
10065     BorderStyle=\@pdfborderstyle,%
10066     pdfmark=/ANN,%
10067     Subtype=/Link,%
10068     PDFAFlags=4,%
10069     Dest=\Hy@testname
10070 }%
10071 \endgroup
10072 }
10073 \newtoks\pdf@docset
10074 \def\PDF@FinishDoc{%
10075 \Hy@UseMaketitleInfos
10076 \Hy@Info@GenerateAddons
10077 \let\Hy@temp\@empty
10078 \ifx\@pdfcreationdate\@empty
10079 \else
10080 \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
10081 \fi
10082 \ifx\@pdfmoddate\@empty
10083 \else
10084 \expandafter\def\expandafter\Hy@temp\expandafter{%
10085 \Hy@temp
10086 ModDate=\@pdfmoddate,%
10087 }%
10088 \fi
10089 \ifx\@pdfproducer\relax
10090 \else
10091 \expandafter\def\expandafter\Hy@temp\expandafter{%
10092 \Hy@temp
10093 Producer=\@pdfproducer,%
10094 }%
10095 \fi
10096 \expandafter
10097 \pdfmark\expandafter{%
10098 \Hy@temp
10099 pdfmark=/DOCINFO,%
10100 Title=\@pdftitle,%
10101 Subject=\@pdfsubject,%
10102 Creator=\@pdfcreator,%
10103 Author=\@pdfauthor,%

```

```

10104 Keywords=\@pdfkeywords,%
10105 Trapped=\@pdftrapped
10106 }%
10107 \ifx\HyInfo@Addons\@empty
10108 \else
10109 \pdfmark{%
10110 pdfmark=/DOCINFO,%
10111 Raw={\HyInfo@Addons}%
10112 }%
10113 \fi
10114 \Hy@DisableOption{pdfauthor}%
10115 \Hy@DisableOption{pdftitle}%
10116 \Hy@DisableOption{pdfsubject}%
10117 \Hy@DisableOption{pdfcreator}%
10118 \Hy@DisableOption{pdfcreationdate}%
10119 \Hy@DisableOption{pdfmoddate}%
10120 \Hy@DisableOption{pdfproducer}%
10121 \Hy@DisableOption{pdfkeywords}%
10122 \Hy@DisableOption{pdftrapped}%
10123 \Hy@DisableOption{pdfinfo}%
10124 }
10125 \def\PDF@SetupDoc{%
10126 \def\Hy@temp{ }%
10127 \ifx\@pdfstartpage\@empty
10128 \else
10129 \ifx\@pdfstartview\@empty
10130 \else
10131 \edef\Hy@temp{%
10132 ,Page=\@pdfstartpage
10133 ,View=\@pdfstartview
10134 }%
10135 \fi
10136 \fi
10137 \edef\Hy@temp{%
10138 \noexpand\pdfmark{%
10139 pdfmark=/DOCVIEW,%
10140 PageMode=/\@pdfpagemode
10141 \Hy@temp
10142 }%
10143 }%
10144 \Hy@temp
10145 \ifx\@pdfpagescrop\@empty
10146 \else
10147 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
10148 \fi
10149 \edef\Hy@temp{%
10150 \ifHy@toolbar\else /HideToolbar true\fi
10151 \ifHy@menubar\else /HideMenubar true\fi
10152 \ifHy>windowui\else /HideWindowUI true\fi
10153 \ifHy@fitwindow /FitWindow true\fi
10154 \ifHy@centerwindow /CenterWindow true\fi
10155 \ifHy@displaydoctitle /DisplayDocTitle true\fi
10156 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10157 \Hy@UseNameKey{Direction}\@pdfdirection
10158 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10159 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10160 \Hy@UseNameKey{PrintArea}\@pdfprintarea

```



```

10161 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10162 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10163 \Hy@UseNameKey{Duplex}\@pdfduplex
10164 \ifx\@pdfpicktraybypdfsize\@empty
10165 \else
10166 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10167 \fi
10168 \ifx\@pdfprintpagerange\@empty
10169 \else
10170 /PrintPageRange\@pdfprintpagerange\%
10171 \fi
10172 \ifx\@pdfnumcopies\@empty
10173 \else
10174 /NumCopies \@pdfnumcopies
10175 \fi
10176 }%
10177 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10178 \pdfmark{%
10179 pdfmark=/PUT,%
10180 Raw={%
10181 \string{Catalog\string}<<%
10182 \ifx\Hy@temp\@empty
10183 \else
10184 /ViewerPreferences<<\Hy@temp>>%
10185 \fi
10186 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10187 \ifx\@pdflang\@empty
10188 \else
10189 /Lang(\@pdflang)%
10190 \fi
10191 \ifx\@baseurl\@empty
10192 \else
10193 /URI<</Base(\Hy@pstringB)>>%
10194 \fi
10195 >>%
10196 }%
10197 }%
10198 }
10199 </pdfmark>
10200 <*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.

```

10201 \newif\ifHy@pdfmarkerror
10202 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}
10203 \def\pdfmark@[#1]#2{%
10204 \Hy@pdfmarkerrorfalse
10205 \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
10206 \@processme
10207 \let\pdf@type\relax
10208 \setkeys{PDF}{#2}%
10209 \ifHy@pdfmarkerror
10210 \else
10211 \ifx\pdf@type\relax

```

```

10212 \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
10213 \ifx\#1\%
10214 \else
10215 \pdf@rect{#1}%
10216 \fi
10217 \else
10218 \ifx\#1\%
10219 \literalps@out{%
10220 [\the\pdf@toks\space\pdf@type\space pdfmark%
10221 ]}%
10222 \else
10223 \ltx@ifundefined{@\pdf@linktype color}{%
10224 \Hy@colorlink\@linkcolor
10225 }{%
10226 \expandafter\Hy@colorlink
10227 \csname @\pdf@linktype color\endcsname
10228 }%
10229 \pdf@rect{#1}%
10230 \literalps@out{%
10231 [\the\pdf@toks\space\pdf@type\space pdfmark%
10232 ]}%
10233 \Hy@endcolorlink
10234 \fi
10235 \fi
10236 \fi
10237 }

```

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}

```

```

10238 \newsavebox{\pdf@box}
10239 \providecommand*{\Hy@setouterhbox}{\sbox}
10240 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
10241 \def\Hy@DEST{/DEST}
10242 \def\pdf@rect#1{%
10243 \leavevmode
10244 \ifHy@breaklinks
10245 \Hy@setouterhbox\pdf@box{\Hy@AllowHyphens#1}%
10246 \else
10247 \sbox\pdf@box{#1}%
10248 \fi
10249 \dimen@ht\pdf@box
10250 \ifdim\dp\pdf@box=\z@
10251 \literalps@out{H.S}%
10252 \else
10253 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
10254 \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...).

```

10255 \ifHy@breaklinks
10256   \expandafter\Hy@breaklinkshbox
10257 \else
10258   \expandafter\box
10259 \fi
10260 \pdf@box

```

but if it can have multiple paragraphs you'd need one of these, but in that case the measured box size would be wrong anyway.

```

\ifHy@breaklinks#1\else\box\pdf@box\fi
\ifHy@breaklinks{#1}\else\box\pdf@box\fi

```

```

10261 \ifdim\dimen@=\z@
10262   \literalps@out{H.R.}%
10263 \else
10264   \raise\dimen@\hbox{\literalps@out{H.R.}}%
10265 \fi
10266 \ifx\pdf@type\Hy@DEST
10267 \else
10268   \pdf@addtoksx{H.B}%
10269 \fi
10270 }

```

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.

```

10271 \newtoks\pdf@toks
10272 \newtoks\pdf@defaulttoks
10273 \pdf@defaulttoks={}%
10274 \def\pdf@addtoks#1#2{%
10275   \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
10276   \@processme
10277 }
10278 \def\pdf@addtoksx#1{%
10279   \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
10280   \@processme
10281 }
10282 \def\PDFdefaults#1{%
10283   \pdf@defaulttoks={#1}%
10284 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

10285 % what is the type of pdfmark?
10286 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
10287 % what is the link type?
10288 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
10289 \def\pdf@linktype{link}
10290 % parameter is a stream of PDF
10291 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
10292 % parameter is a name
10293 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
10294 % parameter is a array
10295 \define@key{PDF}{Border}{%
10296   \edef\Hy@temp{#1}%
10297   \ifx\Hy@temp\@empty
10298     \else
10299     \pdf@addtoks{#1}\Hy@BorderArrayPatch}{Border}% hash-ok
10300 \fi
10301 }

```

```

10302 \let\Hy@BorderArrayPatch\@empty
10303 % parameter is a dictionary
10304 \define@key{PDF}{BorderStyle}{%
10305   \edef\Hy@temp{#1}%
10306   \ifx\Hy@temp\@empty
10307     \else
10308     \pdf@addtoks{<<#1>>}{BS}%
10309   \fi
10310 }
10311 % parameter is a array
10312 \define@key{PDF}{Color}{%
10313   \ifx\relax#1\relax
10314     \else
10315     \pdf@addtoks{[#1]}{Color}% hash-ok
10316   \fi
10317 }
10318 % parameter is a string
10319 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
10320 % parameter is a integer
10321 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
10322 % parameter is a array
10323 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
10324 % parameter is a string
10325 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
10326 % parameter is a string or file
10327 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
10328 % parameter is a destination
10329 \define@key{PDF}{Dest}{%
10330   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
10331   \ifx\Hy@pstringDest\@empty
10332     \Hy@pdfmarkerrortrue
10333     \Hy@Warning{Destination with empty name ignored}%
10334   \else
10335     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
10336   \fi
10337 }
10338 \define@key{PDF}{DestAnchor}{%
10339   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
10340   \ifx\Hy@pstringDest\@empty
10341     \Hy@pdfmarkerrortrue
10342     \Hy@Warning{Destination with empty name ignored}%
10343   \else
10344     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
10345   \fi
10346 }
10347 % parameter is a string
10348 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
10349 % parameter is a string
10350 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
10351 % parameter is a int
10352 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
10353 \define@key{PDF}{PDFAFlags}{%
10354   \ifHy@pdfa
10355     \pdf@addtoks{#1}{F}%
10356   \fi
10357 }
10358 % parameter is a name

```

```

10359 \define@key{PDF}{AcroHighlight}{%
10360   \begingroup
10361   \edef\x{#1}%
10362   \expandafter\endgroup\ifx\x\@empty
10363   \else
10364   \pdf@addtoks{#1}{H}%
10365   \fi
10366 }
10367 % parameter is a string
10368 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
10369 % parameter is a string
10370 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
10371 % parameter is a string
10372 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
10373 % parameter is a string
10374 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
10375 % parameter is a Boolean
10376 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
10377 % parameter is a integer or name
10378 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
10379 % parameter is a name
10380 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
10381 % parameter is a string
10382 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
10383 % parameter is a array
10384 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
10385 % parameter is a integer
10386 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
10387 % parameter is a name
10388 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
10389 % parameter is a string
10390 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
10391 % parameter is a string
10392 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
10393 % parameter is a string
10394 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
10395 % parameter is an array
10396 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
10397 % parameter is a string
10398 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

10399 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
10400 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
10401 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
10402 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
10403 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
10404 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
10405 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
10406 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
10407 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
10408 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
10409 \define@key{PDF}{Trapped}{%
10410   \edef\Hy@temp{#1}%
10411   \ifx\Hy@temp\@empty
10412   \else
10413   \pdf@addtoks{/#1}{Trapped}%
10414   \fi

```

```

10415 }
10416
10417 </pdfmarkbase>
10418 <*pdfmark>
10419 \def\Acrobatmenu#1#2{%
10420 \Hy@Acrobatmenu{#1}{#2}{%
10421 \pdfmark[{#2}]{%
10422 linktype=menu,%
10423 pdfmark=/ANN,%
10424 AcroHighlight=\@pdfhighlight,%
10425 Border=\@pdfborder,%
10426 BorderStyle=\@pdfborderstyle,%
10427 Action={<< /Subtype /Named /N /#1 >>},%
10428 Subtype=/Link,%
10429 PDFAFlags=4%
10430 }%
10431 }%
10432 }

```

And now for some useful examples:

```

10433 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
10434 \def\PDFNextPage@[#1]#2{%
10435 \pdfmark[{#2}]{%
10436 #1,%
10437 Border=\@pdfborder,%
10438 BorderStyle=\@pdfborderstyle,%
10439 Color=.2 .1 .5,%
10440 pdfmark=/ANN,%
10441 Subtype=/Link,%
10442 PDFAFlags=4,%
10443 Page=/Next%
10444 }%
10445 }
10446 \def\PDFPreviousPage{%
10447 \@ifnextchar{\PDFPreviousPage@}{\PDFPreviousPage@[]}}%
10448 }
10449 \def\PDFPreviousPage@[#1]#2{%
10450 \pdfmark[{#2}]{%
10451 #1,%
10452 Border=\@pdfborder,%
10453 BorderStyle=\@pdfborderstyle,%
10454 Color=.4 .4 .1,%
10455 pdfmark=/ANN,%
10456 Subtype=/Link,%
10457 PDFAFlags=4,%
10458 Page=/Prev%
10459 }%
10460 }
10461 \def\PDFOpen#1{%
10462 \pdfmark{#1,pdfmark=/DOCVIEW}%
10463 }

```

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

```

10464 \def\hyper@linkurl#1#2{%
10465 \begingroup
10466 \Hy@pstringdef\Hy@pstringURI{#2}%
10467 \hyper@chars
10468 \leavevmode

```

```

10469 \pdfmark[{#1}]{%
10470 pdfmark=/ANN,%
10471 linktype=url,%
10472 AcroHighlight=\@pdfhighlight,%
10473 Border=\@pdfborder,%
10474 BorderStyle=\@pdfborderstyle,%
10475 Color=\@urlbordercolor,%
10476 Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
10477 Subtype=/Link,%
10478 PDFAFlags=4%
10479 }%
10480 \endgroup
10481 }
10482 \def\hyper@linkfile#1#2#3{%
10483 \begingroup
10484 \Hy@pstringdef\Hy@pstringF{#2}%
10485 \Hy@pstringdef\Hy@pstringD{#3}%
10486 \leavevmode
10487 \pdfmark[{#1}]{%
10488 pdfmark=/ANN,%
10489 Subtype=/Link,%
10490 PDFAFlags=4,%
10491 AcroHighlight=\@pdfhighlight,%
10492 Border=\@pdfborder,%
10493 BorderStyle=\@pdfborderstyle,%
10494 linktype=file,%
10495 Color=\@filebordercolor,%
10496 Action={%
10497 <<%
10498 /S/GoToR%
10499 \Hy@SetNewWindow
10500 /F(\Hy@pstringF)%
10501 /D\ifx\#3\@0 \@pdfstartview\else(\Hy@pstringD)cvn\fi
10502 >>%
10503 }%
10504 }%
10505 \endgroup
10506 }
10507 \def\@hyper@launch run:#1\#2#3{%
10508 \begingroup
10509 \Hy@pstringdef\Hy@pstringF{#1}%
10510 \Hy@pstringdef\Hy@pstringP{#3}%
10511 \leavevmode
10512 \pdfmark[{#2}]{%
10513 pdfmark=/ANN,%
10514 Subtype=/Link,%
10515 PDFAFlags=4,%
10516 AcroHighlight=\@pdfhighlight,%
10517 Border=\@pdfborder,%
10518 BorderStyle=\@pdfborderstyle,%
10519 linktype=run,%
10520 Color=\@runbordercolor,%
10521 Action={%
10522 <<%
10523 /S/Launch%
10524 \Hy@SetNewWindow
10525 /F(\Hy@pstringF)%

```

```

10526     \ifx\|#3\|%
10527     \else
10528     /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
10529     \fi
10530     >>%
10531     }%
10532     }%
10533 \endgroup
10534 }
10535 </pdfmark>

```

Unfortunately, some parts of the pdfmark PostScript code depend on vagaries of the dvi driver. We isolate here all the problems.

## 46.9 Rokicki's dvips

dvips thinks in 10ths of a big point, its coordinate space is resolution dependent, and its *y* axis starts at the top of the page. Other drivers can and will be different!

The work is done in SDict, because we add in some header definitions in a moment.

```

10536 <*dvips>
10537 \providecommand*\XR@ext}{pdf}
10538 \def\Hy@raisedlink{}
10539 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
10540 \def\headerps@out#1{\special{! #1}}%
10541 \input{pdfmark.def}%
10542 \ifx\@pdfproducer\relax
10543   \def\@pdfproducer{dvips + Distiller}%
10544 \fi
10545 \providecommand*\@pdfborder{0 0 1}
10546 \providecommand*\@pdfborderstyle{}
10547 \providecommand*\@pdfview{XYZ}
10548 \providecommand*\@pdfviewparams{ H.V}
10549 \def\Hy@BorderArrayPatch{BorderArrayPatch}
10550 \g@addto@macro\Hy@FirstPageHook{%
10551   \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.

```

10552 /DvipsToPDF{72.27 mul Resolution div} def%
10553 /PDFToDvips{72.27 div Resolution mul} def%
10554 /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.

```

10555 /BorderArrayPatch{%

```



```

10556   [exch{%
10557     dup dup type/integertype eq exch type/realttype eq or%
10558     {BPToDvips}if%
10559   }forall]%
10560   }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.

```

10561   /HyperBorder {1 PDFToDvips} def%
10562   /H.V {pdf@hoff pdf@voff null} def%
10563   /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

```

10564   /H.S {%
10565     currentpoint %
10566     HyperBorder add /pdf@lly exch def %
10567     dup DvipsToPDF 72 add /pdf@hoff exch def %
10568     HyperBorder sub /pdf@llx exch def%
10569   } def%

```

The calculation of upper left  $y$  is done without raising the point in  $\text{\TeX}$ , by simply adding on the current  $\backslash$ 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

```

10570   /H.L {%
10571     2 sub dup%
10572     /HyperBasePt exch def %
10573     PDFToDvips /HyperBaseDvips exch def %
10574     currentpoint %
10575     HyperBaseDvips sub /pdf@ury exch def%
10576     /pdf@urx exch def%
10577   } def%
10578   /H.A {%
10579     H.L %
10580 % |pdf@voff| = the distance from the top of the page to a point
10581 % |\baselineskip| above the current point in PDF coordinates
10582     currentpoint exch pop %
10583     vsize 72 sub exch DvipsToPDF %
10584     HyperBasePt sub % baseline skip
10585     sub /pdf@voff exch def%
10586   } def%
10587   /H.R {%
10588     currentpoint %
10589     HyperBorder sub /pdf@ury exch def %
10590     HyperBorder add /pdf@urx exch def %
10591 % |pdf@voff| = the distance from the top of the page to the current point, in
10592 % PDF coordinates
10593     currentpoint exch pop vsize 72 sub %
10594     exch DvipsToPDF sub /pdf@voff exch def%
10595   } def%
10596   }%
10597 }
10598 \AtBeginShipoutFirst{%
10599   \ifHy@setpagesize

```

```

10600 \begingroup
10601 \ifundefined{stockwidth}{%
10602 \ifdim\paperwidth>\z@
10603 \ifdim\paperheight>\z@
10604 \special{papersize=\the\paperwidth,\the\paperheight}%
10605 \fi
10606 \fi
10607 }{%
10608 \ifdim\stockwidth>\z@
10609 \ifdim\stockheight>\z@
10610 \special{papersize=\the\stockwidth,\the\stockheight}%
10611 \fi
10612 \fi
10613 }%
10614 \endgroup
10615 \fi
10616 \Hy@DisableOption{setpagesize}%
10617 }
10618 </dvips>

```

## 46.10 VTeX's vtexpdfmark driver

This part is derived from the dvips (many names reflect this).

The origin seems to be the same as TeX's origin, 1 in from the left and 1 in downwards from the top. The direction of the  $y$  axis is downwards, the opposite of the dvips case. Units seems to be pt or bp.

```

10619 <*vtexpdfmark>
10620 \providecommand*\XR@ext}{pdf}
10621 \def\Hy@raisedlink{}
10622 \def\literalps@out#1{\special{pS:#1}}%
10623 \def\headerps@out#1{\immediate\special{pS:#1}}%
10624 \input{pdfmark.def}%
10625 \ifx\@pdfproducer\relax
10626 \ifnum\OpMode=\@ne
10627 \def\@pdfproducer{VTeX}%
10628 \else
10629 \def\@pdfproducer{VTeX + Distiller}%
10630 \fi
10631 \fi
10632 \providecommand*\@pdfborder{0 0 1}
10633 \providecommand*\@pdfborderstyle{}
10634 \providecommand*\@pdfview{XYZ}
10635 \providecommand*\@pdfviewparams{ H.V}

10636 \g@addto@macro\Hy@FirstPageHook{%
10637 \headerps@out{%
10638 /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.

```

10639 /HyperBorder {1} def%
10640 /H.V {pdf@hoff pdf@voff null} def%
10641 /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

10642 /H.S {%
10643   currentpoint %
10644   HyperBorder sub%
10645   /pdf@lly exch def %
10646   dup 72 add /pdf@hoff exch def %
10647   HyperBorder sub%
10648   /pdf@llx exch def%
10649 } def%

```

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

```

10650 /H.L {%
10651   2 sub%
10652   /HyperBasePt exch def %
10653   currentpoint %
10654   HyperBasePt add HyperBorder add%
10655   /pdf@ury exch def %
10656   HyperBorder add%
10657   /pdf@urx exch def%
10658 } def%
10659 /H.A {%
10660   H.L %
10661   currentpoint exch pop %
10662   vsize 72 sub exch %
10663   HyperBasePt add add%
10664   /pdf@voff exch def%
10665 } def%

```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

10666 /H.R {%
10667   currentpoint %
10668   HyperBorder add%
10669   /pdf@ury exch def %
10670   HyperBorder add%
10671   /pdf@urx exch def %
10672   currentpoint exch pop vsize 72 sub add%
10673   /pdf@voff exch def%
10674 } def%
10675 }%
10676 }
10677 </vtexpdfmark>

```

## 46.11 Textures

```

10678 <*textures>
10679 \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.

```

10680 \begingroup
10681 \obeylines %

```

```

10682 \gdef\Hy@ps@CR{\noexpand
10683 }%
10684 \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`.

```

10685 \def\literalps@out#1{%
10686 \special{postscript 0 0 transform}%
10687 \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
10688 }%
10689 %

```

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.

```

10690 \def\headerps@out#1{%
10691 \special{%
10692 prepostscript TeXdict begin\Hy@ps@CR
10693 #1\Hy@ps@CR
10694 end%
10695 }%
10696 }%
10697 %

```

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.

```

10698 \g@addto@macro\Hy@FirstPageHook{%
10699 \headerps@out{%
10700 /betterpdfmark {%
10701 systemdict begin %
10702 dup /BP eq%
10703 {cleartomark gsave nulldevice []}%
10704 {dup /EP eq%
10705 {cleartomark cleartomark grestore}%
10706 {cleartomark}%
10707 ifelse%
10708 }ifelse %
10709 end%
10710 }def\Hy@ps@CR
10711 ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
10712 }% end of \headerps@out
10713 }% end of \AtBeginShipoutFirst
10714 %
10715 \input{pdfmark.def}%
10716 %
10717 \ifx\@pdfproducer\relax
10718 \def\@pdfproducer{Textures + Distiller}%
10719 \fi
10720 \providecommand*\@pdfborder{0 0 1}

```

```

10721 \providecommand*\@pdfborderstyle{}
10722 \providecommand*\@pdfview{XYZ}
10723 \providecommand*\@pdfviewparams{ H.V}
10724 %

```

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  $\TeX$ .

```

10725 \Hy@AtBeginDocument{%
10726 \headerps@out{%

```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

10727 /vsize {\Hy@pageheight} def%
10728 /DvipsToPDF {} def%
10729 /PDFToDvips {} def%
10730 /BPToDvips {} def%
10731 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
10732 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
10733 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
10734 /H.S {%
10735 currentpoint %
10736 HyperBorder add /pdf@lly exch def %
10737 dup DvipsToPDF 72 add /pdf@hoff exch def %
10738 HyperBorder sub /pdf@llx exch def%
10739 } def\Hy@ps@CR
10740 /H.L {%
10741 2 sub %
10742 PDFToDvips /HyperBase exch def %
10743 currentpoint %
10744 HyperBase sub /pdf@ury exch def%
10745 /pdf@urx exch def%
10746 } def\Hy@ps@CR
10747 /H.A {%
10748 H.L %
10749 currentpoint exch pop %
10750 vsize 72 sub exch DvipsToPDF %
10751 HyperBase sub % baseline skip
10752 sub /pdf@voff exch def%
10753 } def\Hy@ps@CR
10754 /H.R {%
10755 currentpoint %
10756 HyperBorder sub /pdf@ury exch def %
10757 HyperBorder add /pdf@urx exch def %
10758 currentpoint exch pop vsize 72 sub %
10759 exch DvipsToPDF sub /pdf@voff exch def%
10760 } def\Hy@ps@CR
10761 }%
10762 }

10763 \Hy@AtBeginDocument{%
10764 \ifHy@colorlinks
10765 \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
10766 \fi
10767 }

```

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.

```

10768 \expandafter\let\expandafter\keepPDF@SetupDoc
10769 \csname PDF@SetupDoc\endcsname
10770 \def\PDF@SetupDoc{%
10771 \ifx \@baseurl \@empty
10772 \else
10773 \special{html:<base href="\@baseurl">}%
10774 \fi
10775 \keepPDF@SetupDoc
10776 }
10777 \def\hyper@anchor#1{%
10778 \Hy@SaveLastskip
10779 \Hy@VerboseAnchor{#1}%
10780 \begingroup
10781 \let\protect=\string
10782 \special{html:<a name=%
10783 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10784 \endgroup
10785 \Hy@activeanchortrue
10786 \Hy@colorlink \@anchorcolor\anchor@spot\Hy@endcolorlink
10787 \special{html:</a>}%
10788 \Hy@activeanchorfalse
10789 \Hy@RestoreLastskip
10790 }
10791 \def\hyper@anchorstart#1{%
10792 \Hy@SaveLastskip
10793 \Hy@VerboseAnchor{#1}%
10794 \begingroup
10795 \hyper@chars
10796 \special{html:<a name=%
10797 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10798 \endgroup
10799 \Hy@activeanchortrue
10800 }
10801 \def\hyper@anchorend{%
10802 \special{html:</a>}%
10803 \Hy@activeanchorfalse
10804 \Hy@RestoreLastskip
10805 }
10806 \def \@urlltype{url}
10807 \def\hyper@linkstart#1#2{%
10808 \Hy@VerboseLinkStart{#1}{#2}%
10809 \expandafter\Hy@colorlink\csname @#1color\endcsname
10810 \def\Hy@tempa{#1}%
10811 \ifx\Hy@tempa \@urlltype
10812 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
10813 \else
10814 \begingroup
10815 \hyper@chars
10816 \special{%
10817 html:<a href=%
10818 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>%
10819 }%
10820 \endgroup
10821 \fi
10822 }
10823 \def\hyper@linkend{%
10824 \special{html:</a>}%

```

```

10825 \Hy@endcolorlink
10826 }
10827 \def\hyper@linkfile#1#2#3{%
10828 \hyper@linkurl{#1}{%
10829 \Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi
10830 }%
10831 }
10832 \def\hyper@linkurl#1#2{%
10833 \leavevmode
10834 \ifHy@raiselinks
10835 \setbox\@tempboxa=\color@hbox #1\color@endbox
10836 \@linkdim\dp\@tempboxa
10837 \lower\@linkdim\hbox{%
10838 \hyper@chars
10839 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
10840 }%
10841 \Hy@colorlink\@urlcolor#1%
10842 \@linkdim\ht\@tempboxa
10843 \advance\@linkdim by -6.5\p@
10844 \raise\@linkdim\hbox{\special{html:</a>}}%
10845 \Hy@endcolorlink
10846 \else
10847 \begingroup
10848 \hyper@chars
10849 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
10850 \Hy@colorlink\@urlcolor#1%
10851 \special{html:</a>}%
10852 \Hy@endcolorlink
10853 \endgroup
10854 \fi
10855 }

```

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

```

10856 \def\hyper@link#1#2#3{%
10857 \Hy@VerboseLinkStart{#1}{#2}%
10858 \hyper@linkurl{#3}{\#HyperDestNameFilter{#2}}%
10859 }
10860 \def\hyper@image#1#2{%
10861 \begingroup
10862 \hyper@chars
10863 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
10864 \endgroup
10865 }
10866 </textures>

```

## 46.12 dvipsone

```

10867 % \subsection{dvipsone driver}
10868 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
10869 % |\special| commands.
10870 (*dvipsone)
10871 \providecommand*\XR@ext}{pdf}
10872 \def\Hy@raisedlink{}
10873 \providecommand*\@pdfborder{0 0 1}
10874 \providecommand*\@pdfborderstyle{}
10875 \def\literalps@out#1{\special{ps:#1}}%
10876 \def\headerps@out#1{\special{headertext=#1}}%
10877 \input{pdfmark.def}%

```

```

10878 \ifx\@pdfproducer\relax
10879 \def\@pdfproducer{dvipsone + Distiller}%
10880 \fi
10881 \HyInfo@AddonUnsupportedtrue
10882 \def\PDF@FinishDoc{%
10883 \Hy@UseMaketitleInfos
10884 \HyInfo@TrappedUnsupported
10885 \special{PDF: Keywords \@pdfkeywords}%
10886 \special{PDF: Title \@pdftitle}%
10887 \special{PDF: Creator \@pdfcreator}%
10888 \ifx\@pdfcreationdate\@empty
10889 \else
10890 \special{PDF: CreationDate \@pdfcreationdate}%
10891 \fi
10892 \ifx\@pdfmoddate\@empty
10893 \else
10894 \special{PDF: ModDate \@pdfmoddate}%
10895 \fi
10896 \special{PDF: Author \@pdfauthor}%
10897 \ifx\@pdfproducer\relax
10898 \else
10899 \special{PDF: Producer \@pdfproducer}%
10900 \fi
10901 \special{PDF: Subject \@pdfsubject}%
10902 \Hy@DisableOption{pdfauthor}%
10903 \Hy@DisableOption{pdftitle}%
10904 \Hy@DisableOption{pdfsubject}%
10905 \Hy@DisableOption{pdfcreator}%
10906 \Hy@DisableOption{pdfcreationdate}%
10907 \Hy@DisableOption{pdfmoddate}%
10908 \Hy@DisableOption{pdfproducer}%
10909 \Hy@DisableOption{pdfkeywords}%
10910 \Hy@DisableOption{pdftrapped}%
10911 \Hy@DisableOption{pdfinfo}%
10912 }
10913 \def\PDF@SetupDoc{%
10914 \def\Hy@temp{}%
10915 \ifx\@pdfstartpage\@empty
10916 \else
10917 \ifx\@pdfstartview\@empty
10918 \else
10919 \edef\Hy@temp{%
10920 ,Page=\@pdfstartpage
10921 ,View=\@pdfstartview
10922 }%
10923 \fi
10924 \fi
10925 \edef\Hy@temp{%
10926 \noexpand\pdfmark{%
10927 pdfmark=/DOCVIEW,%
10928 PageMode=/\@pdfpagemode
10929 \Hy@temp
10930 }%
10931 }%
10932 \Hy@temp
10933 \ifx\@pdfpagescrop\@empty
10934 \else

```



```

10935 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
10936 \fi
10937 \edef\Hy@temp{%
10938 \ifHy@toolbar\else /HideToolbar true\fi
10939 \ifHy@menubar\else /HideMenubar true\fi
10940 \ifHy@windowui\else /HideWindowUI true\fi
10941 \ifHy@fitwindow /FitWindow true\fi
10942 \ifHy@centerwindow /CenterWindow true\fi
10943 \ifHy@displaydoctitle /DisplayDocTitle true\fi
10944 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10945 \Hy@UseNameKey{Direction}\@pdfdirection
10946 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10947 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10948 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10949 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10950 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10951 \Hy@UseNameKey{Duplex}\@pdfduplex
10952 \ifx\@pdfpicktraybypdfsize\@empty
10953 \else
10954 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10955 \fi
10956 \ifx\@pdfprintpagerange\@empty
10957 \else
10958 /PrintPageRange\@pdfprintpagerange}%
10959 \fi
10960 \ifx\@pdfnumcopies\@empty
10961 \else
10962 /NumCopies \@pdfnumcopies
10963 \fi
10964 }%
10965 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10966 \pdfmark{%
10967 pdfmark=/PUT,%
10968 Raw={%
10969 \string{Catalog\string}<<%
10970 \ifx\Hy@temp\@empty
10971 \else
10972 /ViewerPreferences<<\Hy@temp>>%
10973 \fi
10974 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10975 \ifx\@pdflang\@empty
10976 \else
10977 /Lang(\@pdflang)%
10978 \fi
10979 \ifx\@baseurl\@empty
10980 \else
10981 /URI<</Base(\Hy@pstringB)>>%
10982 \fi
10983 >>%
10984 }%
10985 }%
10986 }
10987 \providecommand*\@pdfview{XYZ}
10988 \providecommand*\@pdfviewparams{ %
10989 gsave revscl currentpoint grestore %
10990 72 add exch pop null exch null%
10991 }

```

```
10992 \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  $\TeX$ .

```
10993 \g@addto@macro\Hy@FirstPageHook{%
```

```
10994 \headerps@out{%
```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```
10995 /DvipsToPDF { 65781 div } def%
```

```
10996 /PDFToDvips { 65781 mul } def%
```

```
10997 /BPToDvips{65781 mul}def%
```

```
10998 /HyperBorder { 1 PDFToDvips } def%
```

```
10999 /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.

```
11000 /BorderArrayPatch{%
```

```
11001 [exch{%
```

```
11002 dup dup type/integertype eq exch type/realttype eq or%
```

```
11003 {BPToDvips}if%
```

```
11004 }forall]%
```

```
11005 }def%
```

```
11006 /H.S {%
```

```
11007 currentpoint %
```

```
11008 HyperBorder add /pdf@lly exch def %
```

```
11009 dup DvipsToPDF 72 add /pdf@hoff exch def %
```

```
11010 HyperBorder sub /pdf@llx exch def%
```

```
11011 } def%
```

```
11012 /H.L {%
```

```
11013 2 sub %
```

```
11014 PDFToDvips /HyperBase exch def %
```

```
11015 currentpoint %
```

```
11016 HyperBase sub /pdf@ury exch def%
```

```
11017 /pdf@urx exch def%
```

```
11018 } def%
```

```
11019 /H.A {%
```

```
11020 H.L %
```

```
11021 currentpoint exch pop %
```

```
11022 HyperBase sub % baseline skip
```

```
11023 DvipsToPDF /pdf@voff exch def%
```

```
11024 } def%
```

```
11025 /H.R {%
```

```
11026 currentpoint %
```

```
11027 HyperBorder sub /pdf@ury exch def %
```

```
11028 HyperBorder add /pdf@urx exch def %
```

```
11029 currentpoint exch pop DvipsToPDF /pdf@voff exch def%
```

```
11030 } def%
```

```
11031 }%
```

```
11032 }
```

```
11033 </dvipsone>
```

## 46.13 TeX4ht

```
11034 <*tex4ht>
```

```
11035 \providecommand*{\XR@ext}{html}
```

```

11036 \def\Hy@raisedlink{}
11037 \@ifpackageloaded{tex4ht}{%
11038 \typeout{hyperref tex4ht: tex4ht already loaded}%
11039 }{%
11040 \RequirePackage[hhtex4ht]{tex4ht}%
11041 }
11042 \hyperlinkfileprefix{}
11043 \def\PDF@FinishDoc{}
11044 \def\PDF@SetupDoc{%
11045 \ifx\@baseurl\@empty
11046 \else
11047 \special{t4ht=<base href="\@baseurl">}%
11048 \fi
11049 }
11050 \def\hyper@anchor#1{%
11051 \Hy@SaveLastskip
11052 \Hy@VerboseAnchor{#1}%
11053 \begingroup
11054 \let\protect=\string
11055 \special{t4ht=<a name=%
11056 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11057 \endgroup
11058 \Hy@activeanchortrue
11059 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11060 \special{t4ht=</a>}%
11061 \Hy@activeanchorfalse
11062 \Hy@RestoreLastskip
11063 }
11064 \def\hyper@anchorstart#1{%
11065 \Hy@SaveLastskip
11066 \Hy@VerboseAnchor{#1}%
11067 \begingroup
11068 \hyper@chars\special{t4ht=<a name=%
11069 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11070 \endgroup
11071 \Hy@activeanchortrue
11072 }
11073 \def\hyper@anchorend{%
11074 \special{t4ht=</a>}%
11075 \Hy@activeanchorfalse
11076 \Hy@RestoreLastskip
11077 }
11078 \def\@urltype{url}
11079 \def\hyper@linkstart#1#2{%
11080 \Hy@VerboseLinkStart{#1}{#2}%
11081 \expandafter\Hy@colorlink\csname @#1color\endcsname
11082 \def\Hy@tempa{#1}%
11083 \ifx\Hy@tempa\@urltype
11084 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
11085 \else
11086 \begingroup
11087 \hyper@chars
11088 \special{t4ht=<a href=%
11089 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
11090 \endgroup
11091 \fi
11092 }

```

```

11093 \def\hyper@linkend{%
11094   \special{t4ht=</a>}%
11095   \Hy@endcolorlink
11096 }
11097 \def\hyper@linkfile#1#2#3{%
11098   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
11099 }
11100 \def\hyper@linkurl#1#2{%
11101   \leavevmode
11102   \ifHy@raiselinks
11103     \setbox\@tempboxa=\color@hbox #1\color@endbox
11104     \@linkdim\dp\@tempboxa
11105     \lower\@linkdim\hbox{%
11106       \begingroup
11107         \hyper@chars
11108         \special{%
11109           t4ht=<a href=\hyper@quote#2\hyper@quote>%
11110         }%
11111       \endgroup
11112     }%
11113     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
11114     \@linkdim\ht\@tempboxa
11115     \advance\@linkdim by -6.5\p@
11116     \raise\@linkdim\hbox{\special{t4ht=</a>}}%
11117   \else
11118     \begingroup
11119     \hyper@chars
11120     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
11121     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
11122     \special{t4ht=</a>}%
11123   \endgroup
11124   \fi
11125 }

```

Poor implementation of \hyper@link without considering #1.

```

11126 \def\hyper@link#1#2#3{%
11127   \Hy@VerboseLinkStart{#1}{#2}%
11128   \hyper@linkurl{#3}{\#HyperDestNameFilter{#2}}%
11129 }
11130 \def\hyper@image#1#2{%
11131   \begingroup
11132   \hyper@chars
11133   \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
11134   \endgroup
11135 }
11136 \let\autoref\ref
11137 \ifx \rEfLiNK \UnDef
11138   \def\rEfLiNK #1#2{#2}%
11139 \fi
11140 \def\backref#1{}
11141 </tex4ht>
11142 <*tex4htcfg>
11143 \IfFileExists{\jobname.cfg}{\endinput}{}
11144 \Preamble{html}
11145   \begin{document}%
11146 \EndPreamble
11147 \def\TeX{TeX}
11148 \def\OMEGA{Omega}

```

```

11149 \def\LaTeX{La\TeX}
11150 \def\LaTeXe{\LaTeX2e}
11151 \def\TeX{e-\TeX}
11152 \def\MF{Metafont}
11153 \def\MP{MetaPost}
11154 </tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

11155 <*pdfmark>
11156 \long\def\@Form[#1]{%
11157 \g@addto@macro\Hy@FirstPageHook{%
11158 \headerps@out{%
11159 [%
11160 /_objdef{pdfDocEncoding}%
11161 /type/dict%
11162 /OBJ pdfmark%
11163 [%
11164 {pdfDocEncoding}%
11165 <<%
11166 /Type/Encoding%
11167 /Differences[%
11168 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
11169 /tilde %
11170 39/quotesingle %
11171 96/grave %
11172 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
11173 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
11174 /quotedblbase/quotedblleft/quotedblright/quoteleft%
11175 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
11176 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
11177 164/currency %
11178 166/brokenbar %
11179 168/dieresis/copyright/ordfeminine %
11180 172/logicalnot/.notdef/registered/macron/degree/plusminus%
11181 /twosuperior/threesuperior/acute/mu %
11182 183/periodcentered/cedilla/onesuperior/ordmasculine %
11183 188/onequarter/onehalf/threequarters %
11184 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
11185 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
11186 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
11187 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
11188 /Uacute/UCircumflex/Udieresis/Yacute/Thorn/germandbls%
11189 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
11190 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
11191 /iacute/icircumflex/idieresis/eth/ntilde/ograve/oacute%
11192 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
11193 /ucircumflex/udieresis/yacute/thorn/ydieresis%
11194 ]%
11195 >>%
11196 /PUT pdfmark%
11197 [%
11198 /_objdef{ZaDb}%
11199 /type/dict%
11200 /OBJ pdfmark%
11201 [%

```

```

11202 {ZaDb}%
11203 <<%
11204 /Type/Font%
11205 /Subtype/Type1%
11206 /Name/ZaDb%
11207 /BaseFont/ZapfDingbats%
11208 >>%
11209 /PUT pdfmark%
11210 [%
11211 /_objdef{Helv}%
11212 /type/dict%
11213 /OBJ pdfmark%
11214 [%
11215 {Helv}%
11216 <<%
11217 /Type/Font%
11218 /Subtype/Type1%
11219 /Name/Helv%
11220 /BaseFont/Helvetica%
11221 /Encoding{pdfDocEncoding}%
11222 >>%
11223 /PUT pdfmark%
11224 [%
11225 /_objdef{aform}%
11226 /type/dict%
11227 /OBJ pdfmark%
11228 [%
11229 /_objdef{afields}%
11230 /type/array%
11231 /OBJ pdfmark%
11232 {%
11233 [%
11234 /BBox[0 0 100 100]%
11235 /_objdef{Check}%
11236 /BP pdfmark %
11237 1 0 0 setrgbcolor%
11238 /ZapfDingbats 80 selectfont %
11239 20 20 moveto%
11240 (4)show%
11241 [/EP pdfmark%
11242 [%
11243 /BBox[0 0 100 100]%
11244 /_objdef{Cross}%
11245 /BP pdfmark %
11246 1 0 0 setrgbcolor%
11247 /ZapfDingbats 80 selectfont %
11248 20 20 moveto%
11249 (8)show%
11250 [/EP pdfmark%
11251 [%
11252 /BBox[0 0 250 100]%
11253 /_objdef{Submit}%
11254 /BP pdfmark %
11255 0.6 setgray %
11256 0 0 250 100 rectfill %
11257 1 setgray %
11258 2 2 moveto %

```

```

11259 2 98 lineto %
11260 248 98 lineto %
11261 246 96 lineto %
11262 4 96 lineto %
11263 4 4 lineto %
11264 fill %
11265 0.34 setgray %
11266 248 98 moveto %
11267 248 2 lineto %
11268 2 2 lineto %
11269 4 4 lineto %
11270 246 4 lineto %
11271 246 96 lineto %
11272 fill%
11273 /Helvetica 76 selectfont %
11274 0 setgray %
11275 8 22.5 moveto%
11276 (Submit)show%
11277 [/EP pdfmark%
11278 [%
11279 /BBox[0 0 250 100]%
11280 /_objdef{SubmitP}%
11281 /BP pdfmark %
11282 0.6 setgray %
11283 0 0 250 100 rectfill %
11284 0.34 setgray %
11285 2 2 moveto %
11286 2 98 lineto %
11287 248 98 lineto %
11288 246 96 lineto %
11289 4 96 lineto %
11290 4 4 lineto %
11291 fill %
11292 1 setgray %
11293 248 98 moveto %
11294 248 2 lineto %
11295 2 2 lineto %
11296 4 4 lineto %
11297 246 4 lineto %
11298 246 96 lineto %
11299 fill%
11300 /Helvetica 76 selectfont %
11301 0 setgray %
11302 10 20.5 moveto%
11303 (Submit)show%
11304 [/EP pdfmark%
11305 } ?pdfmark%
11306 [%
11307 {aform}%
11308 <<%
11309 /Fields{afields}%
11310 /DR<<%
11311 /Font<<%
11312 /ZaDb{ZaDb}%
11313 /Helv{Helv}%
11314 >>%
11315 >>%

```

```

11316 /DA(/Helv 10 Tf 0 g)%
11317 /CO{corder}%
11318 \ifHy@pdfa
11319 \else
11320 /NeedAppearances true%
11321 \fi
11322 >>%
11323 /PUT pdfmark%
11324 [%
11325 {Catalog}%
11326 <<%
11327 /AcroForm{aform}%
11328 >>%
11329 /PUT pdfmark%
11330 [%
11331 /_objdef{corder}%
11332 /type/array%
11333 /OBJ pdfmark% dps
11334 }}%
11335 \setkeys{Form}{#1}%
11336 }
11337 \def\@endForm{}
11338 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
11339 \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
11340 }
11341 \def\@TextField[#1]#2{% parameters, label
11342 \def\Fld@name{#2}%
11343 \def\Fld@default{}%
11344 \let\Fld@value\@empty
11345 \def\Fld@width{\DefaultWidthofText}%
11346 \def\Fld@height{%
11347 \ifFld@multiline
11348 \DefaultHeightofTextMultiline
11349 \else
11350 \DefaultHeightofText
11351 \fi
11352 }%
11353 \begingroup
11354 \Field@toks={ }%
11355 \expandafter\HyField@SetKeys\expandafter{%
11356 \DefaultOptionsofText,#1%
11357 }%
11358 \HyField@FlagsText
11359 \ifFld@hidden\def\Fld@width{1sp}\fi
11360 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
11361 \LayoutTextField{#2}{%
11362 \Hy@escapeform\PDFForm@Text
11363 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
11364 pdfmark=/ANN,Raw={\PDFForm@Text}%
11365 }%
11366 }%
11367 \endgroup
11368 }
11369 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
11370 \def\Fld@name{#2}%
11371 \let\Fld@default\relax
11372 \let\Fld@value\relax

```



```

11373 \def\Fld@width{\DefaultWidthofChoiceMenu}%
11374 \def\Fld@height{\DefaultHeightofChoiceMenu}%
11375 \begingroup
11376 \Fld@menulength=0 %
11377 \@tempdima\z@
11378 \@for\@curropt:=#3\do{%
11379 \expandafter\Fld@checkequals\@curropt==\%
11380 \Hy@StepCount\Fld@menulength
11381 \settowidth{\@tempdimb}{\@currDisplay}%
11382 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
11383 }%
11384 \advance\@tempdima by 15\p@
11385 \Field@toks={ }%
11386 \begingroup
11387 \HyField@SetKeys{#1}%
11388 \edef\x{\endgroup
11389 \noexpand\expandafter
11390 \noexpand\HyField@SetKeys
11391 \noexpand\expandafter{%
11392 \expandafter\noexpand\csname DefaultOptionsof%
11393 \ifFld@radio
11394 Radio%
11395 \else
11396 \ifFld@combo
11397 \ifFld@popdown
11398 PopdownBox%
11399 \else
11400 ComboBox%
11401 \fi
11402 \else
11403 ListBox%
11404 \fi
11405 \fi
11406 \endcsname
11407 }%
11408 }\x
11409 \HyField@SetKeys{#1}%
11410 \ifFld@hidden\def\Fld@width{1sp}\fi
11411 \ifx\Fld@value\relax
11412 \let\Fld@value\Fld@default
11413 \fi
11414 \LayoutChoiceField{#2}{%
11415 \ifFld@radio
11416 \HyField@FlagsRadioButton
11417 \@@Radio{#3}%
11418 \else
11419 \begingroup
11420 \HyField@FlagsChoice
11421 \ifdim\Fld@width<\@tempdima
11422 \ifdim\@tempdima<1cm\@tempdima1cm\fi
11423 \edef\Fld@width{\the\@tempdima}%
11424 \fi
11425 \ifFld@combo
11426 \else
11427 \@tempdima=\the\Fld@menulength\Fld@charsize
11428 \advance\@tempdima by \Fld@borderwidth bp %
11429 \advance\@tempdima by \Fld@borderwidth bp %

```

```

11430         \edef\Fld@height{\the\@tempdima}%
11431         \fi
11432         \@@ListBox{#3}%
11433     \endgroup
11434     \fi
11435 }%
11436 \endgroup
11437 }
11438 \def\@@Radio#1{%
11439     \Fld@listcount=0 %
11440     \@for\@curropt:=#1\do{%
11441         \expandafter\Fld@checkequals\@curropt==\%
11442         \Hy@StepCount\Fld@listcount
11443         \@currDisplay\space
11444         \Hy@escapeform\PDFForm@Radio
11445         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
11446             pdfmark=/ANN,%
11447             Raw={%
11448                 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
11449             }%
11450         } % deliberate space between radio buttons
11451     }%
11452 }
11453 \newcount\Fld@listcount
11454 \def\@@ListBox#1{%
11455     \HyField@PDFChoices{#1}%
11456     \Hy@escapeform\PDFForm@List
11457     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
11458         pdfmark=/ANN,Raw={\PDFForm@List}%
11459     }%
11460 }
11461 \def\@PushButton[#1]#2{% parameters, label
11462     \def\Fld@name{#2}%
11463     \begingroup
11464     \Field@toks={ }%
11465     \expandafter\HyField@SetKeys\expandafter{%
11466         \DefaultOptionsofPushButton,#1%
11467     }%
11468     \ifHy@pdfa
11469         \PackageError{hyperref}{%
11470             PDF/A: Push button with JavaScript is prohibited%
11471         }\@ehc
11472         \LayoutPushButtonField{%
11473             \leavevmode
11474             \MakeButtonField{#2}%
11475         }%
11476     \else
11477         \HyField@FlagsPushButton
11478         \ifFld@hidden\def\Fld@width{1sp}\fi
11479         \LayoutPushButtonField{%
11480             \leavevmode
11481             \Hy@escapeform\PDFForm@Push
11482             \pdfmark[\MakeButtonField{#2}]{%
11483                 pdfmark=/ANN,Raw={\PDFForm@Push}%
11484             }%
11485         }%
11486     \fi

```

```

11487 \endgroup
11488 }
11489 \def\@Submit[#1]#2{%
11490 \Field@toks={ }%
11491 \def\Fld@width{\DefaultWidthofSubmit}%
11492 \def\Fld@height{\DefaultHeightofSubmit}%
11493 \begingroup
11494 \expandafter\HyField@SetKeys\expandafter{%
11495 \DefaultOptionsofSubmit,#1%
11496 }%
11497 \HyField@FlagsPushButton
11498 \HyField@FlagsSubmit
11499 \ifFld@hidden\def\Fld@width{1sp}\fi
11500 \Hy@escapeform\PDFForm@Submit
11501 \pdfmark{\MakeButtonField{#2}}{%
11502 pdfmark=/ANN,%
11503 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
11504 }%
11505 \endgroup
11506 }
11507 \def\@Reset[#1]#2{%
11508 \Field@toks={ }%
11509 \def\Fld@width{\DefaultWidthofReset}%
11510 \def\Fld@height{\DefaultHeightofReset}%
11511 \begingroup
11512 \expandafter\HyField@SetKeys\expandafter{%
11513 \DefaultOptionsofReset,#1%
11514 }%
11515 \leavevmode
11516 \ifHy@pdfa
11517 \PackageError{hyperref}{%
11518 PDF/A: Reset action is prohibited%
11519 }\@ehc
11520 \MakeButtonField{#2}%
11521 \else
11522 \HyField@FlagsPushButton
11523 \ifFld@hidden\def\Fld@width{1sp}\fi
11524 \Hy@escapeform\PDFForm@Reset
11525 \pdfmark{\MakeButtonField{#2}}{%
11526 pdfmark=/ANN,Raw={\PDFForm@Reset}%
11527 }%
11528 \fi
11529 \endgroup
11530 }%
11531 \def\@CheckBox[#1]#2{% parameters, label
11532 \def\Fld@name{#2}%
11533 \def\Fld@default{0}%
11534 \begingroup
11535 \def\Fld@width{\DefaultWidthofCheckBox}%
11536 \def\Fld@height{\DefaultHeightofCheckBox}%
11537 \Field@toks={ }%
11538 \expandafter\HyField@SetKeys\expandafter{%
11539 \DefaultOptionsofCheckBox,#1%
11540 }%
11541 \HyField@FlagsCheckBox
11542 \ifFld@hidden\def\Fld@width{1sp}\fi
11543 \LayoutCheckField{#2}{%

```

```

11544 \Hy@escapeform\PDFForm@Check
11545 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
11546 pdfmark=/ANN,Raw={\PDFForm@Check}%
11547 }%
11548 }%
11549 \endgroup
11550 }
11551 </pdfmark>

```

## 47.2 HyperTeX

```

11552 <*hypertex>
11553 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
11554 \def\@endForm{}
11555 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
11556 \typeout{Sorry, HyperTeX does not support FORM gauges}%
11557 }
11558 \def\@TextField[#1]#2{% parameters, label
11559 \typeout{Sorry, HyperTeX does not support FORM text fields}%
11560 }
11561 \def\@CheckBox[#1]#2{% parameters, label
11562 \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
11563 }
11564 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
11565 \typeout{Sorry, HyperTeX does not support FORM choice menus}%
11566 }
11567 \def\@PushButton[#1]#2{% parameters, label
11568 \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
11569 }
11570 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
11571 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
11572 </hypertex>

```

## 47.3 TeX4ht

```

11573 <*tex4ht>
11574 \def\@Form[#1]{%
11575 \setkeys{Form}{#1}%
11576 \HCode{<form action="\Form@action" method="\Form@method">}%
11577 }
11578 \def\@endForm{\HCode{</form>}}
11579 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
11580 \typeout{Sorry, TeX4ht does not support gauges}%
11581 }
11582 \def\@TextField[#1]#2{% parameters, label
11583 \let\Hy@reserved@a\@empty
11584 \def\Fld@name{#2}%
11585 \def\Fld@default{}%
11586 \bgroup
11587 \Field@toks={ }%
11588 \setkeys{Field}{#1}%
11589 \HCode{<label for="\Fld@name">#2</label>}%
11590 \ifFld@password
11591 \@@@PasswordField
11592 \else
11593 \@@@TextField
11594 \fi
11595 \egroup
11596 }

```

```

11597 \def\@@PasswordField{%
11598   \HCode{%
11599     <input type="password" %
11600       id="\Fld@name" %
11601       name="\Fld@name" %
11602       \ifFld@hidden type="hidden" \fi
11603       value="\Fld@default" %
11604       \the\Field@toks
11605     >%
11606   }%
11607 }
11608 \def\@@TextField{%
11609   \ifFld@multiline
11610     \HCode{<textarea %
11611       \ifFld@readonly readonly \fi
11612       id="\Fld@name" %
11613       name="\Fld@name" %
11614       \ifFld@hidden type="hidden" \fi
11615       \the\Field@toks>%
11616   }%
11617   \Fld@default
11618   \HCode{</textarea>}%
11619   \else
11620     \HCode{<input type="text" %
11621       \ifFld@readonly readonly \fi
11622       id="\Fld@name" %
11623       name="\Fld@name" %
11624       \ifFld@hidden type="hidden" \fi
11625       value="\Fld@default" %
11626       \the\Field@toks>%
11627   }%
11628   \fi
11629 }
11630 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
11631   \def\Fld@name{#2}%
11632   \def\Fld@default{#3}%
11633   \let\Hy@reserved@a\relax
11634   \begingroup
11635     \expandafter\Fld@findlength#3\\%
11636     \Field@toks={ }%
11637     \setkeys{Field}{#1}%
11638     #2%
11639     \ifFld@radio
11640       \expandafter\@@Radio#3\\%
11641     \else
11642       \expandafter\@@Menu#3\\%
11643     \fi
11644   \endgroup
11645 }
11646 \def\Fld@findlength#1\\{%
11647   \Fld@menulength=0 %
11648   \@for\@currupt:=#1\do{\Hy@StepCount\Fld@menulength}%
11649 }
11650 \def\@@Menu#1\\{%
11651   \HCode{<select size="\the\Fld@menulength" %
11652     name="\Fld@name" %
11653     \the\Field@toks>%

```

```

11654 }%
11655 \@for\@curropt:=#1\do{%
11656   \expandafter\Fld@ckeckequal\@curropt==\%
11657   \HCode{<option %
11658     \ifx\@curropt\Fld@default selected \fi
11659     value="\@currValue">\@currDisplay</option>%
11660   }%
11661 }%
11662 \HCode{</select>}%
11663 }
11664 \def\@@Radio#1\{%
11665   \@for\@curropt:=#1\do{%
11666     \expandafter\Fld@ckeckequal\@curropt==\%
11667     \HCode{<input type="radio" %
11668       \ifx\@curropt\Fld@default checked \fi
11669       name="\Fld@name" %
11670       value="\@currValue" %
11671       \the\Fld@toks>%
11672     }%
11673     \@currDisplay
11674   }%
11675 }
11676 \def\@PushButton[#1]#2{% parameters, label
11677   \def\Fld@name{#2}%
11678   \bgroup
11679   \Fld@toks={ }%
11680   \setkeys{Field}{#1}%
11681   \HCode{<input type="button" %
11682     name="\Fld@name" %
11683     value="#2" %
11684     \the\Fld@toks>%
11685   }%
11686   \HCode{</button>}%
11687   \egroup
11688 }
11689 \def\@Submit[#1]#2{%
11690   \HCode{<button type="submit">#2</button>}%
11691 }
11692 \def\@Reset[#1]#2{%
11693   \HCode{<button type="reset">#2</button>}%
11694 }
11695 \def\@CheckBox[#1]#2{% parameters, label
11696   \let\Hy@reserved@a\@empty
11697   \def\Fld@name{#2}%
11698   \def\Fld@default{0}%
11699   \bgroup
11700   \Fld@toks={ }%
11701   \setkeys{Field}{#1}%
11702   \HCode{<input type="checkbox" %
11703     \ifFld@checked checked \fi
11704     \ifFld@disabled disabled \fi
11705     \ifFld@readonly readonly \fi
11706     name="\Fld@name" %
11707     \ifFld@hidden type="hidden" \fi
11708     value="\Fld@default" %
11709     \the\Fld@toks>%
11710   #2%

```

```

11711 }%
11712 \egroup
11713 }
11714 </tex4ht>

```

## 47.4 pdfTeX

```

11715 <*pdftex>
11716 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
11717 \typeout{Sorry, pdftex does not support FORM gauges}%
11718 }
11719 \def\MakeFieldObject#1#2{\sbox0{#1}%
11720 \immediate\pdfxform0 %
11721 \expandafter\edef\csname #2Object\endcsname{%
11722 \the\pdflastxform\space 0 R%
11723 }%
11724 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
11725 }%
11726 \def\HyField@afields{}
11727 \begingroup\expandafter\expandafter\expandafter\endgroup
11728 \expandafter\ifx\csname pdflastlink\endcsname\relax
11729 \let\HyField@AddToFields\relax
11730 \PackageInfo{hyperref}{%
11731 You need pdfTeX 1.40.0 for setting the /Fields entry.%
11732 \MessageBreak
11733 Adobe Reader/Acrobat accepts an empty /Field array,%
11734 \MessageBreak
11735 but other PDF viewers might complain%
11736 }%
11737 \else
11738 \def\HyField@AuxAddToFields#1{}%
11739 \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%
11740 \Hy@AtBeginDocument{%
11741 \if@filesw
11742 \immediate\write\@mainaux{%
11743 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
11744 }%
11745 \fi
11746 \let\HyField@AfterAuxOpen\@firstofone
11747 \def\HyField@AuxAddToFields#1{%
11748 \xdef\HyField@afields{%
11749 \ifx\HyField@afields\@empty
11750 \else
11751 \HyField@afields
11752 \space
11753 \fi
11754 #1 0 R%
11755 }%
11756 }%
11757 }%
11758 \def\HyField@AddToFields{%
11759 \expandafter\HyField@@AddToFields\expandafter{%
11760 \the\pdflastlink
11761 }%
11762 }%
11763 \def\HyField@@AddToFields#1{%
11764 \HyField@AfterAuxOpen{%
11765 \if@filesw

```

```

11766     \write\@mainaux{%
11767         \string\HyField@AuxAddToFields{#1}%
11768     }%
11769     \fi
11770 }%
11771 }%
11772 \fi
11773 \def\@Form[#1]{%
11774     \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
11775     \setkeys{Form}{#1}%
11776     \Hy@FormObjects
11777     \ifnum\pdfTeXversion>13 %
11778         \pdfrefobj\OBJ@pdfdocencoding
11779         \pdfrefobj\OBJ@ZaDb
11780         \pdfrefobj\OBJ@Helv
11781     \fi
11782     \AtVeryEndDocument{%
11783         \immediate\pdfobj{%
11784             <<%
11785                 /Fields[\HyField@afields]%
11786                 /DR<<%
11787                 /Font<<%
11788                 /ZaDb \OBJ@ZaDb\space 0 R%
11789                 /Helv \OBJ@Helv\space 0 R%
11790                 >>%
11791             >>%
11792             /DA(/Helv 10 Tf 0 g)%
11793             \ifHy@pdfa
11794             \else
11795                 /NeedAppearances true%
11796             \fi
11797             >>%
11798         }%
11799         \edef\OBJ@acroform{\the\pdfastobj}%
11800         \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
11801     }%
11802     \MakeFieldObject{%
Same as \ding{123} of package pifont.
11803     \begingroup
11804     \fontfamily{pzd}%
11805     \fontencoding{U}%
11806     \fontseries{m}%
11807     \fontshape{n}%
11808     \selectfont
11809     \char123 %
11810     \endgroup
11811 }{Ding}%
11812 \MakeFieldObject{%
11813     \fbox{\textcolor{yellow}{\textsf{Submit}}}%
11814 }{Submit}%
11815 \MakeFieldObject{%
11816     \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
11817 }{SubmitP}%
11818 }
11819 \def\@endForm{}
11820 \def\@TextField[#1]#2{% parameters, label
11821     \def\Fld@name{#2}%

```



```

11822 \def\Fld@default{ }%
11823 \let\Fld@value\@empty
11824 \def\Fld@width{\DefaultWidthofText}%
11825 \def\Fld@height{%
11826   \ifFld@multiline
11827     \DefaultHeightofTextMultiline
11828   \else
11829     \DefaultHeightofText
11830   \fi
11831 }%
11832 \begingroup
11833 \Field@toks={ }%
11834 \expandafter\HyField@SetKeys\expandafter{%
11835   \DefaultOptionsofText,#1%
11836 }%
11837 \PDFForm@Name
11838 \HyField@FlagsText
11839 \ifFld@hidden\def\Fld@width{1sp}\fi
11840 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
11841 \LayoutTextField{#2}{%
11842   \Hy@escapeform\PDFForm@Text
11843   \pdfstartlink user {\PDFForm@Text}\relax
11844   \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
11845   \HyField@AddToFields
11846 }%
11847 \endgroup
11848 }
11849 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
11850 \def\Fld@name{#2}%
11851 \let\Fld@default\relax
11852 \let\Fld@value\relax
11853 \def\Fld@width{\DefaultWidthofChoiceMenu}%
11854 \def\Fld@height{\DefaultHeightofChoiceMenu}%
11855 \begingroup
11856 \Fld@menulength=0 %
11857 \@tempdima\z@
11858 \@for\@curropt:=#3\do{%
11859   \expandafter\Fld@checkequals\@curropt==\%
11860   \Hy@StepCount\Fld@menulength
11861   \settowidth{\@tempdimb}{\@currDisplay}%
11862   \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
11863 }%
11864 \advance\@tempdima by 15\p@
11865 \Field@toks={ }%
11866 \begingroup
11867 \HyField@SetKeys{#1}%
11868 \edef\x{\endgroup
11869 \noexpand\expandafter
11870 \noexpand\HyField@SetKeys
11871 \noexpand\expandafter{%
11872   \expandafter\noexpand\cename DefaultOptionsof%
11873   \ifFld@radio
11874     Radio%
11875   \else
11876     \ifFld@combo
11877     \ifFld@popdown
11878     PopdownBox%

```

```

11879         \else
11880             ComboBox%
11881         \fi
11882     \else
11883         ListBox%
11884     \fi
11885 \fi
11886 \endcsname
11887 }%
11888 } \x
11889 \HyField@SetKeys{#1}%
11890 \PDFForm@Name
11891 \ifFld@hidden\def\Fld@width{1sp}\fi
11892 \ifx\Fld@value\relax
11893     \let\Fld@value\Fld@default
11894 \fi
11895 \LayoutChoiceField{#2}{%
11896     \ifFld@radio
11897         \HyField@FlagsRadioButton
11898         \@@Radio{#3}%
11899     \else
11900         \begingroup
11901         \HyField@FlagsChoice
11902         \ifdim\Fld@width<\@tempdima
11903             \ifdim\@tempdima<1cm\@tempdima1cm\fi
11904             \edef\Fld@width{\the\@tempdima}%
11905         \fi
11906         \ifFld@combo
11907         \else
11908             \@tempdima=\the\Fld@menulength\Fld@charsize
11909             \advance\@tempdima by \Fld@borderwidth bp %
11910             \advance\@tempdima by \Fld@borderwidth bp %
11911             \edef\Fld@height{\the\@tempdima}%
11912         \fi
11913         \@@ListBox{#3}%
11914     \endgroup
11915 \fi
11916 }%
11917 \endgroup
11918 }
11919 \def\@@Radio#1{%
11920 \Fld@listcount=0 %
11921 \@for\@curropt=#1\do{%
11922     \expandafter\Fld@checkequals\@curropt==\%
11923     \Hy@StepCount\Fld@listcount
11924     \@currDisplay\space
11925     \leavevmode
11926     \Hy@escapeform\PDFForm@Radio
11927     \pdfstartlink user {%
11928         \PDFForm@Radio
11929         /AP<<%
11930         /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.

```

11931     /\@currValue\space \DingObject
11932     >>%

```

```

11933   >>%
11934   }%
11935   \relax
11936   \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
11937   \ifnum\Fld@listcount=1 %
11938     \HyField@AddToFields
11939   \fi
11940   \space % deliberate space between radio buttons
11941   }%
11942 }
11943 \newcount\Fld@listcount
11944 \def\@@ListBox#1{%
11945   \HyField@PDFChoices{#1}%
11946   \leavevmode
11947   \Hy@escapeform\PDFForm@List
11948   \pdfstartlink user {\PDFForm@List}\relax
11949   \MakeChoiceField{\Fld@width}{\Fld@height}%
11950   \pdfendlink
11951   \HyField@AddToFields
11952 }
11953 \def\@PushButton[#1]#2{% parameters, label
11954   \def\Fld@name{#2}%
11955   \begingroup
11956     \Field@toks={ }%
11957     \expandafter\HyField@SetKeys\expandafter{%
11958       \DefaultOptionsofPushButton,#1%
11959     }%
11960     \PDFForm@Name
11961     \ifHy@pdfa
11962       \PackageError{hyperref}{%
11963         PDF/A: Push button with JavaScript is prohibited%
11964       }\@ehc
11965       \LayoutPushButtonField{%
11966         \leavevmode
11967         \MakeButtonField{#2}%
11968       }%
11969     \else
11970       \HyField@FlagsPushButton
11971       \ifFld@hidden\def\Fld@width{1sp}\fi
11972       \LayoutPushButtonField{%
11973         \leavevmode
11974         \Hy@escapeform\PDFForm@Push
11975         \pdfstartlink user {\PDFForm@Push}\relax
11976         \MakeButtonField{#2}%
11977         \pdfendlink
11978         \HyField@AddToFields
11979       }%
11980     \fi
11981   \endgroup
11982 }
11983 \def\@Submit[#1]#2{%
11984   \Field@toks={ }%
11985   \def\Fld@width{\DefaultWidthofSubmit}%
11986   \def\Fld@height{\DefaultHeightofSubmit}%
11987   \begingroup
11988     \expandafter\HyField@SetKeys\expandafter{%
11989       \DefaultOptionsofSubmit,#1%

```

```

11990 }%
11991 \HyField@FlagsPushButton
11992 \HyField@FlagsSubmit
11993 \ifFld@hidden\def\Fld@width{1sp}\fi
11994 \leavevmode
11995 \Hy@escapeform\PDFForm@Submit
11996 \pdfstartlink user {%
11997 \PDFForm@Submit
11998 /AP<</N \SubmitObject/D \SubmitPObject>>%
11999 }%
12000 \relax
12001 \MakeButtonField{#2}%
12002 \pdfendlink
12003 \HyField@AddToFields
12004 \endgroup
12005 }
12006 \def\@Reset[#1]#2{%
12007 \Field@toks={ }%
12008 \def\Fld@width{\DefaultWidthofReset}%
12009 \def\Fld@height{\DefaultHeightofReset}%
12010 \begingroup
12011 \expandafter\HyField@SetKeys\expandafter{%
12012 \DefaultOptionsofReset,#1%
12013 }%
12014 \leavevmode
12015 \ifHy@pdfa
12016 \PackageError{hyperref}{%
12017 PDF/A: Reset action is prohibited%
12018 }\@ehc
12019 \MakeButtonField{#2}%
12020 \else
12021 \HyField@FlagsPushButton
12022 \ifFld@hidden\def\Fld@width{1sp}\fi
12023 \Hy@escapeform\PDFForm@Reset
12024 \pdfstartlink user {\PDFForm@Reset}\relax
12025 \MakeButtonField{#2}%
12026 \pdfendlink
12027 \HyField@AddToFields
12028 \fi
12029 \endgroup
12030 }
12031 \def\@CheckBox[#1]#2{% parameters, label
12032 \def\Fld@name{#2}%
12033 \def\Fld@default{0}%
12034 \begingroup
12035 \def\Fld@width{\DefaultWidthofCheckBox}%
12036 \def\Fld@height{\DefaultHeightofCheckBox}%
12037 \Field@toks={ }%
12038 \expandafter\HyField@SetKeys\expandafter{%
12039 \DefaultOptionsofCheckBox,#1%
12040 }%
12041 \PDFForm@Name
12042 \HyField@FlagsCheckBox
12043 \ifFld@hidden\def\Fld@width{1sp}\fi
12044 \LayoutCheckField{#2}{%
12045 \Hy@escapeform\PDFForm@Check
12046 \pdfstartlink user {\PDFForm@Check}\relax

```

```

12047   \MakeCheckField{\Fld@width}{\Fld@height}%
12048   \pdfendlink
12049   \HyField@AddToFields
12050   }%
12051 \endgroup
12052 }
12053 \def\Hy@FormObjects{%
12054 \pdfobj {%
12055   <<%
12056   /Type/Encoding%
12057   /Differences[
12058     24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
12059     /ring/tilde %
12060     39/quotesingle %
12061     96/grave %
12062     128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12063     /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12064     /quotedblbase/quotedblleft/quotedblright/quoteleft%
12065     /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
12066     /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12067     164/currency %
12068     166/brokenbar %
12069     168/dieresis/copyright/ordfeminine %
12070     172/logicalnot/.notdef/registered/macron/degree/plusminus%
12071     /twosuperior/threesuperior/acute/mu %
12072     183/periodcentered/cedilla/onesuperior/ordmasculine %
12073     188/onequarter/onehalf/threequarters %
12074     192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12075     /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12076     /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12077     /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12078     /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12079     /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
12080     /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12081     /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
12082     /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
12083     /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
12084   ]%
12085   >>%
12086 }%
12087 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
12088 \pdfobj{%
12089   <<%
12090   /Type/Font%
12091   /Subtype/Type1%
12092   /Name/ZaDb%
12093   /BaseFont/ZapfDingbats%
12094   >>%
12095 }%
12096 \xdef\OBJ@ZaDb{\the\pdflastobj}%
12097 \pdfobj{%
12098   <<%
12099   /Type/Font%
12100   /Subtype/Type1%
12101   /Name/Helv%
12102   /BaseFont/Helvetica%
12103   /Encoding \OBJ@pdfdocencoding\space 0 R%

```

```

12104 >>%
12105 }%
12106 \xdef\OBJ@Helv{\the\pdfastobj}%
12107 \global\let\Hy@FormObjects\relax
12108 }
12109 </pdfTeX>

```

## 47.5 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.

```

12110 < *dvipdfm | xetex >

```

\@Gauge

```

12111 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12112 \typeout{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
12113 }

```

\@Form

```

12114 \def\@Form[#1]{%
12115 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12116 \setkeys{Form}{#1}%
12117 \Hy@FormObjects
12118 \@pdfm@mark{obj @afields []}%
12119 \@pdfm@mark{obj @corder []}%
12120 \@pdfm@mark{%
12121 obj @aform <<%
12122 /Fields @afields%
12123 /DR<<%
12124 /Font<<%
12125 /ZaDb @OBJZaDb%
12126 /Helv @OBJHelv%
12127 >>%
12128 >>%
12129 /DA(/Helv 10 Tf 0 g)%
12130 /CO @corder%
12131 \ifHy@pdfa
12132 \else
12133 /NeedAppearances true%
12134 \fi
12135 >>%
12136 }%
12137 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
12138 }

```

\@endForm

```

12139 \def\@endForm{}

```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```

12140 \def\dvipdfm@setdim{%
12141 height \the\ht\pdfm@box\space
12142 width \the\wd\pdfm@box\space
12143 depth \the\dp\pdfm@box\space
12144 }

```

\HyField@AnnotCount

```

12145 \newcount\HyField@AnnotCount
12146 \HyField@AnnotCount=\z@

```

\HyField@AdvanceAnnotCount

```
12147 \def\HyField@AdvanceAnnotCount{%
12148   \global\advance\HyField@AnnotCount\@ne
12149 }
```

\HyField@TheAnnotCount

```
12150 \def\HyField@TheAnnotCount{%
12151   \the\HyField@AnnotCount
12152 }
```

\@TextField

```
12153 \def\@TextField[#1]#2{% parameters, label
12154   \def\Fld@name{#2}%
12155   \def\Fld@default{}%
12156   \let\Fld@value\@empty
12157   \def\Fld@width{\DefaultWidthofText}%
12158   \def\Fld@height{%
12159     \ifFld@multiline
12160       \DefaultHeightofTextMultiline
12161     \else
12162       \DefaultHeightofText
12163     \fi
12164   }%
12165   \begingroup
12166   \Field@toks={ }%
12167   \expandafter\HyField@SetKeys\expandafter{%
12168     \DefaultOptionsofText,#1%
12169   }%
12170   \PDFForm@Name
12171   \HyField@FlagsText
12172   \ifFld@hidden\def\Fld@width{1sp}\fi
12173   \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12174   \setbox\pdfm@box=\hbox{%
12175     \MakeTextField{\Fld@width}{\Fld@height}%
12176   }%
12177   \HyField@AdvanceAnnotCount
12178   \LayoutTextField{#2}{%
12179     \Hy@escapeform\PDFForm@Text
12180     \@pdfm@mark{%
12181       ann @text\HyField@TheAnnotCount\space
12182       \dvi pdfm@setdim << \PDFForm@Text >>%
12183     }%
12184   }%
12185   \unhbox\pdfm@box
12186   \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
12187   % record in @afields array
12188   \endgroup
12189 }
```

\@ChoiceMenu

```
12190 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12191   \def\Fld@name{#2}%
12192   \let\Fld@default\relax
12193   \let\Fld@value\relax
12194   \def\Fld@width{\DefaultWidthofChoiceMenu}%
12195   \def\Fld@height{\DefaultHeightofChoiceMenu}%

```

```

12196 \begingroup
12197 \Fld@menulength=0 %
12198 \@tempdima\z@
12199 \@for\@curropt:=#3\do{%
12200 \expandafter\Fld@checkequals\@curropt==\%
12201 \Hy@StepCount\Fld@menulength
12202 \settowidth{\@tempdimb}{\@currDisplay}%
12203 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12204 }%
12205 \advance\@tempdima by 15\p@
12206 \Field@toks={ }%
12207 \begingroup
12208 \HyField@SetKeys{#1}%
12209 \edef\x{\endgroup
12210 \noexpand\expandafter
12211 \noexpand\HyField@SetKeys
12212 \noexpand\expandafter{%
12213 \expandafter\noexpand\csname DefaultOptionsof%
12214 \ifFld@radio
12215 Radio%
12216 \else
12217 \ifFld@combo
12218 \ifFld@popdown
12219 PopdownBox%
12220 \else
12221 ComboBox%
12222 \fi
12223 \else
12224 ListBox%
12225 \fi
12226 \fi
12227 \endcsname
12228 }%
12229 }\x
12230 \HyField@SetKeys{#1}%
12231 \PDFForm@Name
12232 \ifFld@hidden\def\Fld@width{1sp}\fi
12233 \ifx\Fld@value\relax
12234 \let\Fld@value\Fld@default
12235 \fi
12236 \LayoutChoiceField{#2}{%
12237 \ifFld@radio
12238 \HyField@FlagsRadioButton
12239 \@@Radio{#3}%
12240 \else
12241 \begingroup
12242 \HyField@FlagsChoice
12243 \ifdim\Fld@width<\@tempdima
12244 \ifdim\@tempdima<1cm\@tempdima1cm\fi
12245 \edef\Fld@width{\the\@tempdima}%
12246 \fi
12247 \ifFld@combo
12248 \else
12249 \@tempdima=\the\Fld@menulength\Fld@charsize
12250 \advance\@tempdima by \Fld@borderwidth bp %
12251 \advance\@tempdima by \Fld@borderwidth bp %
12252 \edef\Fld@height{\the\@tempdima}%

```



```

12253     \fi
12254     \@@ListBox{#3}%
12255     \endgroup
12256     \fi
12257 }%
12258 \endgroup
12259 }

```

#### \@@Radio

```

12260 \def\@@Radio#1{%
12261   \Fld@listcount=0 %
12262   \setbox\pdfm@box=\hbox{%
12263     \MakeRadioField{\Fld@width}{\Fld@height}%
12264   }%
12265   \@for\@curropt:=#1\do{%
12266     \expandafter\Fld@checkequals\@curropt==\%
12267     \Hy@StepCount\Fld@listcount
12268     \@currDisplay\space
12269     \leavevmode
12270     \Hy@escapeform\PDFForm@Radio
12271     \ifnum\Fld@listcount=1 %
12272       \HyField@AdvanceAnnotCount
12273     \fi
12274     \@pdfm@mark{%
12275       ann %
12276       \ifnum\Fld@listcount=1 %
12277         @radio\HyField@TheAnnotCount%
12278       \space
12279     \fi
12280     \dviPDFm@setdim
12281     <<%
12282     \PDFForm@Radio
12283     /AP<</N<</\@currValue /null>>>>%
12284     >>%
12285   }%
12286   \unhcopy\pdfm@box\space% deliberate space between radio buttons
12287   \ifnum\Fld@listcount=1 %
12288     \@pdfm@mark{%
12289       put @afields @radio\HyField@TheAnnotCount
12290     }%
12291   \fi
12292 }%
12293 }

```

#### \Fld@listcount

```

12294 \newcount\Fld@listcount

```

#### \@@ListBox

```

12295 \def\@@ListBox#1{%
12296   \HyField@PDFChoices{#1}%
12297   \setbox\pdfm@box=\hbox{%
12298     \MakeChoiceField{\Fld@width}{\Fld@height}%
12299   }%
12300   \leavevmode
12301   \Hy@escapeform\PDFForm@List
12302   \HyField@AdvanceAnnotCount
12303   \@pdfm@mark{%

```

```

12304 ann @list\HyField@TheAnnotCount\space
12305 \dviPDFForm@setdim
12306 <<\PDFForm@List>>%
12307 }%
12308 \unhbox\pdfm@box
12309 \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
12310 }

```

#### \@PushButton

```

12311 \def\@PushButton[#1]#2{% parameters, label
12312 \def\Fld@name{#2}%
12313 \begingroup
12314 \Field@toks={ }%
12315 \expandafter\HyField@SetKeys\expandafter{%
12316 \DefaultOptionsofPushButton,#1%
12317 }%
12318 \PDFForm@Name
12319 \ifHy@pdfa
12320 \PackageError{hyperref}{%
12321 PDF/A: Push button with JavaScript is prohibited%
12322 }{\@ehc
12323 \LayoutPushButtonField{%
12324 \leavevmode
12325 \MakeButtonField{#2}%
12326 }%
12327 \else
12328 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
12329 \HyField@FlagsPushButton
12330 \ifFld@hidden\def\Fld@width{1sp}\fi
12331 \HyField@AdvanceAnnotCount
12332 \LayoutPushButtonField{%
12333 \leavevmode
12334 \Hy@escapeform\PDFForm@Push
12335 \@pdfm@mark{%
12336 ann @push\HyField@TheAnnotCount\space
12337 \dviPDFForm@setdim
12338 <<\PDFForm@Push>>%
12339 }%
12340 }%
12341 \unhbox\pdfm@box
12342 \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
12343 \fi
12344 \endgroup
12345 }

```

#### \@Submit

```

12346 \def\@Submit[#1]#2{%
12347 \Field@toks={ }%
12348 \def\Fld@width{\DefaultWidthofSubmit}%
12349 \def\Fld@height{\DefaultHeightofSubmit}%
12350 \begingroup
12351 \expandafter\HyField@SetKeys\expandafter{%
12352 \DefaultOptionsofSubmit,#1%
12353 }%
12354 \HyField@FlagsPushButton
12355 \HyField@FlagsSubmit
12356 \ifFld@hidden\def\Fld@width{1sp}\fi

```

```

12357 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
12358 \leavevmode
12359 \Hy@escapeform\PDFForm@Submit
12360 \HyField@AdvanceAnnotCount
12361 \@pdfm@mark{%
12362   ann @submit\HyField@TheAnnotCount\space
12363   \dvipdfm@setdim
12364   <<\PDFForm@Submit>>%
12365 }%
12366 \unhbox\pdfm@box%
12367 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
12368 \endgroup
12369 }

```

#### \@Reset

```

12370 \def\@Reset[#1]#2{%
12371   \Field@toks={ }%
12372   \def\Fld@width{\DefaultWidthofReset}%
12373   \def\Fld@height{\DefaultHeightofReset}%
12374   \begingroup
12375   \expandafter\HyField@SetKeys\expandafter{%
12376     \DefaultOptionsofReset,#1%
12377   }%
12378   \leavevmode
12379   \ifHy@pdfa
12380     \PackageError{hyperref}{%
12381       PDF/A: Reset action is prohibited%
12382     }\@ehc
12383     \MakeButtonField{#2}%
12384   \else
12385     \HyField@FlagsPushButton
12386     \ifFld@hidden\def\Fld@width{1sp}\fi
12387     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
12388     \Hy@escapeform\PDFForm@Reset
12389     \HyField@AdvanceAnnotCount
12390     \@pdfm@mark{%
12391       ann @reset\HyField@TheAnnotCount\space
12392       \dvipdfm@setdim
12393       <<\PDFForm@Reset>>%
12394     }%
12395     \unhbox\pdfm@box
12396     \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
12397   \fi
12398 \endgroup
12399 }

```

#### \@CheckBox

```

12400 \def\@CheckBox[#1]#2{% parameters, label
12401   \def\Fld@name{#2}%
12402   \def\Fld@default{0}%
12403   \begingroup
12404   \def\Fld@width{\DefaultWidthofCheckBox}%
12405   \def\Fld@height{\DefaultHeightofCheckBox}%
12406   \Field@toks={ }%
12407   \expandafter\HyField@SetKeys\expandafter{%
12408     \DefaultOptionsofCheckBox,#1%
12409   }%

```

```

12410 \PDFForm@Name
12411 \HyField@FlagsCheckBox
12412 \ifFld@hidden\def\Fld@width{1sp}\fi
12413 \setbox\pdfm@box=\hbox{%
12414   \MakeCheckField{\Fld@width}{\Fld@height}%
12415 }%
12416 \HyField@AdvanceAnnotCount
12417 \LayoutCheckField{#2}{%
12418   \Hy@escapeform\PDFForm@Check
12419   \@pdfm@mark{%
12420     ann @check\HyField@TheAnnotCount\space
12421     \dvipdfm@setdim
12422     <<\PDFForm@Check>>%
12423   }%
12424   \unhbox\pdfm@box
12425   \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
12426 }%
12427 \endgroup
12428 }

12429 \def\Hy@FormObjects{%
12430   \@pdfm@mark{obj @OBJpdfdocencoding%
12431     <<%
12432       /Type/Encoding%
12433       /Differences[%
12434         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
12435         39/quotesingle %
12436         96/grave %
12437         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12438         /fraction/guilsingleft/guilsingright/minus/perthousand%
12439         /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
12440         /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
12441         /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12442         164/currency %
12443         166/brokenbar %
12444         168/dieresis/copyright/ordfeminine %
12445         172/logicalnot/.notdef/registered/macron/degree/plusminus%
12446         /twosuperior/threesuperior/acute/mu %
12447         183/periodcentered/cedilla/onesuperior/ordmasculine %
12448         188/onequarter/onehalf/threequarters %
12449         192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12450         /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
12451         /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
12452         /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
12453         /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
12454         /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
12455         /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
12456         /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
12457         /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
12458         /thorn/ydieresis%
12459       ]%
12460     >>%
12461   }%
12462   \@pdfm@mark{obj @OBJZaDb%
12463     <<%
12464       /Type/Font%
12465       /Subtype/Type1%
12466       /Name/ZaDb%

```

```

12467 /BaseFont/ZapfDingbats%
12468 >>%
12469 }%
12470 \@pdfm@mark{obj @OBJHelv%
12471 <<%
12472 /Type/Font%
12473 /Subtype/Type1%
12474 /Name/Helv%
12475 /BaseFont/Helvetica%
12476 /Encoding @OBJpdfdocencoding%
12477 >>%
12478 }%
12479 \global\let\Hy@FormObjects\relax
12480 }
12481 </dvipdfm | xetex>

```

## 47.6 Common forms part

```
12482 <*pdfform>
```

\Hy@escapestring

```

12483 \begingroup\expandafter\expandafter\expandafter\endgroup
12484 \expandafter\ifx\csname pdfescapestring\endcsname\relax
12485 \let\Hy@escapestring\@firstofone
12486 \def\Hy@escapeform#1{%
12487   \ifHy@escapeform
12488     \def\Hy@escapestring##1{%
12489       \noexpand\Hy@escapestring{\noexpand##1}%
12490     }%
12491     \edef\Hy@temp{#1}%
12492     \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{\}\@nil
12493   \def\Hy@escapestring##1{%
12494     \@ifundefined{Hy@esc@\string##1}{%
12495       ##1%
12496       \ThisShouldNotHappen
12497     }{%
12498       \csname Hy@esc@\string##1\endcsname
12499     }%
12500   }%
12501 \else
12502   \let\Hy@escapestring\@firstofone
12503 \fi
12504 }%
12505 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
12506   \ifx\#3\%
12507   \else
12508     \expandafter
12509     \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
12510     \Hy@ReturnAfterFi{%
12511       \Hy@@@escapeform#3\@nil
12512     }%
12513   \fi
12514 }%
12515 \else
12516 \def\Hy@escapeform#1{%
12517   \ifHy@escapeform
12518     \let\Hy@escapestring\pdfescapestring

```

```

12519   \else
12520     \let\Hy@escapestring\@firstofone
12521   \fi
12522 }%
12523 \Hy@escapeform{}%
12524 \fi

```

#### \PDFForm@Name

```

12525 \def\PDFForm@Name{%
12526   \begingroup
12527   \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
12528     \ifHy@unicode
12529       \Hy@unicodedefalse
12530     \fi
12531   \fi
12532   \HyPsd@XeTeXBigCharstrue
12533   \pdfstringdef\Hy@gtemp\Fld@name
12534 \endgroup
12535 \let\Fld@name\Hy@gtemp
12536 }

```

#### \PDFForm@Check

```

12537 \def\PDFForm@Check{%
12538   /Subtype/Widget%
12539   \Fld@annotflags
12540   /T(\Fld@name)%
12541   /FT/Btn%
12542   \Fld@flags
12543   /Q \Fld@align
12544   /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
12545   /MK<<%
12546     \ifnum\Fld@rotation=\z@
12547     \else
12548       /R \Fld@rotation
12549     \fi
12550   \ifx\Fld@bordercolor\relax
12551   \else
12552     /BC[\Fld@bordercolor]%
12553   \fi
12554   \ifx\Fld@bcolor\relax
12555   \else
12556     /BG[\Fld@bcolor]%
12557   \fi
12558   /CA(\Hy@escapestring{\Fld@cbsymbol})%
12559   >>%
12560   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
12561     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
12562   /H/P%
12563   \ifFld@checked /V/Yes\else /V/Off\fi
12564 }

```

#### \PDFForm@Push

```

12565 \ifHy@pdfa
12566 \else
12567 \def\PDFForm@Push{%
12568   /Subtype/Widget%
12569   \Fld@annotflags

```

```

12570 /T(\Fld@name)%
12571 /FT/Btn%
12572 \Fld@flags
12573 /H/P%
12574 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
12575 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
12576     \ifx\Fld@bordercolor\relax\else 1\fi
12577     \space
12578 \else
12579 /MK<<%
12580     \ifnum\Fld@rotation=\z@
12581     \else
12582     /R \Fld@rotation
12583     \fi
12584     \ifx\Fld@bordercolor\relax
12585     \else
12586     /BC[\Fld@bordercolor]%
12587     \fi
12588     >>%
12589 \fi
12590 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
12591 }%
12592 \fi

```

#### \Fld@additionalactions

```

12593 \def\Fld@@additionalactions{%
K input (keystroke) format
12594 \ifx\Fld@keystroke@code\@empty
12595 \else
12596 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
12597 \fi
F display format
12598 \ifx\Fld@format@code\@empty
12599 \else
12600 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
12601 \fi
V validation
12602 \ifx\Fld@validate@code\@empty
12603 \else
12604 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
12605 \fi
C calculation
12606 \ifx\Fld@calculate@code\@empty
12607 \else
12608 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
12609 \fi
Fo receiving the input focus
12610 \ifx\Fld@onfocus@code\@empty
12611 \else
12612 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
12613 \fi
Bl loosing the input focus (blurred)
12614 \ifx\Fld@onblur@code\@empty
12615 \else

```

```

12616 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
12617 \fi
D pressing the mouse button (down)
12618 \ifx\Fld@onmousedown@code\@empty
12619 \else
12620 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
12621 \fi
U releasing the mouse button (up)
12622 \ifx\Fld@onmouseup@code\@empty
12623 \else
12624 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
12625 \fi
E cursor enters the annotation's active area.
12626 \ifx\Fld@onenter@code\@empty
12627 \else
12628 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
12629 \fi
X cursor exits the annotation's active area.
12630 \ifx\Fld@onexit@code\@empty
12631 \else
12632 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
12633 \fi
12634 }
12635 \def\Fld@additionalactions{%
12636 \if\Fld@@additionalactions-%
12637 \else
12638 \ifHy@pdfa
12639 \else
12640 /AA<<\Fld@@additionalactions>>%
12641 \fi
12642 \fi
12643 }

\PDFForm@List
12644 \def\PDFForm@List{%
12645 /Subtype/Widget%
12646 \Fld@annotflags
12647 /T(\Fld@name)%
12648 /FT/Ch%
12649 \Fld@flags
12650 /Q \Fld@align
12651 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
12652 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
12653 \ifx\Fld@bordercolor\relax\else 1\fi
12654 \ifx\Fld@bcolor\relax \else 1\fi
12655 \space
12656 \else
12657 /MK<<%
12658 \ifnum\Fld@rotation=\z@
12659 \else
12660 /R \Fld@rotation
12661 \fi
12662 \ifx\Fld@bordercolor\relax
12663 \else
12664 /BC[\Fld@bordercolor]%

```



```

12665 \fi
12666 \ifx\Fld@bcolor\relax
12667 \else
12668 /BG[\Fld@bcolor]%
12669 \fi
12670 >>%
12671 \fi
12672 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
12673 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
12674 \Fld@choices
12675 \Fld@additionalactions
12676 }

```

#### \PDFForm@Radio

```

12677 \def\PDFForm@Radio{%
12678 /Subtype/Widget%
12679 \Fld@annotflags
12680 /T(\Fld@name)%
12681 /FT/Btn%
12682 \Fld@flags
12683 /H/P%
12684 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
12685 /MK<<%
12686 \ifnum\Fld@rotation=\z@
12687 \else
12688 /R \Fld@rotation
12689 \fi
12690 \ifx\Fld@bordercolor\relax
12691 \else
12692 /BC[\Fld@bordercolor]%
12693 \fi
12694 \ifx\Fld@bcolor\relax
12695 \else
12696 /BG[\Fld@bcolor]%
12697 \fi
12698 /CA(\Fld@radiosymbol)%
12699 >>%
12700 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
12701 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
12702 \ifx\@currValue\Fld@default
12703 /V/\Fld@default
12704 \else
12705 /V/Of%
12706 \fi
12707 \Fld@additionalactions
12708 }

```

#### \PDFForm@Text

```

12709 \def\PDFForm@Text{%
12710 /Subtype/Widget%
12711 \Fld@annotflags
12712 /T(\Fld@name)%
12713 /FT/Tx%
12714 \Fld@flags
12715 /Q \Fld@align
12716 /BS<</W \Fld@borderwidth\space /S /Fld@borderstyle>>%
12717 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi

```

```

12718     \ifx\Fld@bordercolor\relax\else 1\fi
12719     \ifx\Fld@bcolor\relax    \else 1\fi
12720     \space
12721 \else
12722 /MK<<%
12723   \ifnum\Fld@rotation=\z@
12724   \else
12725     /R \Fld@rotation
12726   \fi
12727   \ifx\Fld@bordercolor\relax
12728   \else
12729     /BC[\Fld@bordercolor]%
12730   \fi
12731   \ifx\Fld@bcolor\relax
12732   \else
12733     /BG[\Fld@bcolor]%
12734   \fi
12735 >>%
12736 \fi
12737 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
12738   \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
12739 /DV(\Hy@escapestring{\Fld@default})%
12740 /V(\Hy@escapestring{\Fld@value})%
12741 \Fld@additionalactions
12742 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
12743 }

```

\PDFForm@Submit

```

12744 \def\PDFForm@Submit{%
12745 /Subtype/Widget%
12746 \Fld@annotflags
12747 /T(\Fld@name)%
12748 /FT/Btn%
12749 \Fld@flags
12750 /H/P%
12751 /BS<</W \Fld@borderwidth/S\Fld@borderstyle>>%
12752 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
12753   \ifx\Fld@bordercolor\relax\else 1\fi
12754   \space
12755 \else
12756 /MK<<%
12757   \ifnum\Fld@rotation=\z@
12758   \else
12759     /R \Fld@rotation
12760   \fi
12761   \ifx\Fld@bordercolor\relax
12762   \else
12763     /BC[\Fld@bordercolor]%
12764   \fi
12765 >>%
12766 \fi
12767 /A<<%
12768 /S/SubmitForm%
12769 /F<<%
12770 /FS/URL%
12771 /F(\Hy@escapestring{\Form@action})%
12772 >>%

```

```

12773   \Fld@submitflags
12774   >>%
12775 }

```

\PDFForm@Reset

```

12776 \ifHy@pdfa
12777 \else
12778   \def\PDFForm@Reset{%
12779     /Subtype/Widget%
12780     \Fld@annotflags
12781     /T(\Fld@name)%
12782     /FT/Btn%
12783     \Fld@flags
12784     /H/P%
12785     /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
12786     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
12787         \ifx\Fld@bordercolor\relax\else 1\fi
12788         \space
12789     \else
12790       /MK<<%
12791         \ifnum\Fld@rotation=\z@
12792         \else
12793           /R \Fld@rotation
12794         \fi
12795         \ifx\Fld@bordercolor\relax
12796         \else
12797           /BC[\Fld@bordercolor]%
12798         \fi
12799     % /CA (Clear)
12800     % /AC (Done)
12801     >>%
12802     \fi
12803     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
12804     /A<</S/ResetForm>>%
12805   }%
12806 \fi

12807 </pdfform>
12808 <*package>

```

## 48 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in  $\LaTeX$  macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```

12809 \def\phantomsection{%
12810   \Hy@MakeCurrentHrefAuto{section*}%
12811   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
12812 }
12813 </package>

```

## 48.1 Bookmarks

12814  $\langle$ \*outlines $\rangle$

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.

```
12815 \def\Hy@writebookmark#1#2#3#4#5{%
12816   % section number, text, label, level, file
12817   \ifx\WriteBookmarks\relax%
12818   \else
12819     \ifnum#4>\Hy@bookmarksdepth\relax
12820     \else
12821       \@@writetorep{#1}{#2}{#3}{#4}{#5}%
12822       \fi
12823     \fi
12824 }
12825 \def\Hy@currentbookmarklevel{0}
12826 \def\Hy@numberline#1{#1 }
12827 \def\@@writetorep#1#2#3#4#5{%
12828   \begingroup
12829   \edef\Hy@tempa{#5}%
12830   \ifx\Hy@tempa\Hy@bookmarkstype
12831     \edef\Hy@level{#4}%
12832     \ifx\Hy@levelcheck Y%
12833       \@tempcnta\Hy@level\relax
12834       \advance\@tempcnta by -1 %
12835       \ifnum\Hy@currentbookmarklevel<\@tempcnta
12836         \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
12837         \advance\@tempcnta by 1 %
12838         \Hy@Warning{%
12839           Difference (\the\@tempcnta) between bookmark levels is %
12840           greater \MessageBreak than one, level fixed%
12841         }%
12842         \@tempcnta\Hy@currentbookmarklevel
12843         \advance\@tempcnta by 1 %
12844         \edef\Hy@level{\the\@tempcnta}%
12845         \fi
12846       \else
12847         \global\let\Hy@levelcheck Y%
12848         \fi
12849       \global\let\Hy@currentbookmarklevel\Hy@level
12850       \@tempcnta\Hy@level\relax
12851       \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
12852       \advance\@tempcnta by -1 %
12853       \edef\Hy@tempa{#3}%
```

```

12854 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
12855 \ifx\Hy@tempa\Hy@tempb
12856 \Hy@Warning{%
12857   The anchor of a bookmark and its parent's must not%
12858   \MessageBreak be the same. Added a new anchor%
12859 }%
12860 \phantomsection
12861 \fi
12862 \ifHy@bookmarksnumbered
12863 \let\numberline\Hy@numberline
12864 \let\partnumberline\Hy@numberline
12865 \let\chapternumberline\Hy@numberline
12866 \else
12867 \let\numberline\@gobble
12868 \let\partnumberline\@gobble
12869 \let\chapternumberline\@gobble
12870 \fi
12871 \HyPsd@XeTeXBigCharstrue
12872 \pdfstringdef\Hy@tempa{#2}%
12873 \HyPsd@SanitizeForOutFile\Hy@tempa
12874 \if@filesw
12875 \stepcounter{bookmark@seq@number}%
12876 \@ifundefined{@outlinefile}{%
12877 }{%
12878   \protected@write\@outlinefile}{%
12879     \protect\BOOKMARK
12880     [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
12881     {\Hy@tempa}{\Hy@tempb}%
12882     \@percentchar\space\thebookmark@seq@number
12883   }%
12884 }%
12885 \fi
12886 \fi
12887 \endgroup
12888 }
12889 \newcounter{bookmark@seq@number}

12890 \begingroup
12891 \lccode'='{%
12892 \lccode'}='}%
12893 \lccode'1=\z@
12894 \lccode'2=\z@
12895 \lccode'3=\z@
12896 \lccode'5=\z@
12897 \lccode'7=\z@
12898 \lccode'\#=\z@
12899 \lccode'\='=\z@
12900 \lccode'\{=\z@
12901 \lccode'\}=\z@
12902 \lowercase{%
12903 \endgroup
12904 \def\HyPsd@SanitizeForOutFile#1{%
12905   \@onelevel@sanitize\Hy@tempa
12906   \escapechar'\%
12907   \edef\Hy@tempa{%
12908     \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
12909   }%
12910   \edef\Hy@tempa{%

```

```

12911 \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
12912 }%
12913 }%
12914 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
12915 #1%
12916 \ifx\#2\%
12917 \expandafter\ltx@gobble
12918 \else
12919 \expandafter\ltx@firstofone
12920 \fi
12921 {%
12922 \string\173%
12923 \HyPsd@SanitizeOut@BraceLeft#2\@nil
12924 }%
12925 }%
12926 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
12927 #1%
12928 \ifx\#2\%
12929 \expandafter\ltx@gobble
12930 \else
12931 \expandafter\ltx@firstofone
12932 \fi
12933 {%
12934 \string\175%
12935 \HyPsd@SanitizeOut@BraceRight#2\@nil
12936 }%
12937 }%
12938 }

```

In the call of `\BOOKMARK` the braces around `#4` are omitted, because it is not likely, that the level number contains `]`.

```

12939 \newcommand{\currentpdfbookmark}{%
12940 \pdfbookmark{\Hy@currentbookmarklevel}%
12941 }
12942 \newcommand{\subpdfbookmark}{%
12943 \@tempcnta\Hy@currentbookmarklevel
12944 \Hy@StepCount\@tempcnta
12945 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
12946 }
12947 \newcommand{\belowpdfbookmark}[2]{%
12948 \@tempcnta\Hy@currentbookmarklevel
12949 \Hy@StepCount\@tempcnta
12950 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
12951 \advance\@tempcnta by -1 %
12952 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
12953 }

```

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.

```

12954 \renewcommand\pdfbookmark[3][0]{%
12955 \Hy@writebookmark}{#2}{#3.#1}{#1}{toc}%
12956 \hyper@anchorstart{#3.#1}\hyper@anchorend
12957 }
12958 \def\BOOKMARK{%
12959 \@ifnextchar{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
12960 }
12961 \def\@BOOKMARK[#1]{%

```

```
12962 \@@BOOKMARK[{\@@BOOKMARK[{\#1}]}]{\@@BOOKMARK[{\#1}]}[-]%
12963 }
```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the texinfo pdf macros.

#### 48.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```
12964 \RequirePackage{rerunfilecheck}[2009/12/10]
12965 \def\Hy@OutlineRerunCheck{%
12966   \RerunFileCheck{\jobname.out}{%
12967     \immediate\closeout\@outlinefile
12968   }{%
12969     Rerun to get outlines right\MessageBreak
12970     or use package 'bookmark'%
12971   }%
12972 }
```

#### 48.1.2 Driver stuff

The VTEX section was written originally by VTEX, but then amended by Denis Girou (denis.girou@idris.fr), then by 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.

```
12973 \<*vtex>
12974 \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.

```
12975 \begingroup
12976 \catcode'\'=12 %
12977 \ifnum\Hy@VTeXversion<650 %
12978 \catcode'\ "=12 %
12979 \gdef\hv@pdf@char#1#2#3{%
12980   \char
12981   \ifcase'#1#2#3 %
12982     "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
12983     \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
12984     \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
12985     \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
12986     \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
12987     \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
12988     \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
12989     \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
12990     \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
12991     \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
12992     \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
12993     \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
12994     \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
12995     \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
12996     \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
12997     \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
12998     \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
12999     \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
13000     \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
```

```

13001 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
13002 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
13003 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
13004 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
13005 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
13006 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
13007 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
13008 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
13009 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
13010 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
13011 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
13012 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
13013 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
13014 \fi
13015 }%
13016 \else
13017 \gdef\hv@pdf@char{\char'}%
13018 \fi
13019 \endgroup

```

## \@@BOOKMARK

```

13020 \def\@@BOOKMARK[#1][#2]#3#4#5{%
13021 \expandafter\edef\csname @count@#3\endcsname{%
13022 \the\@serial@counter
13023 }%
13024 \edef\@mycount{\the\@serial@counter}%
13025 \Hy@StepCount\@serial@counter
13026 \edef\@parcount{%
13027 \expandafter\ifx\csname @count@#5\endcsname\relax
13028 0%
13029 \else
13030 \csname @count@#5\endcsname
13031 \fi
13032 }%
13033 \immediate\special{%
13034 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
13035 s=\ifx#2-c\else o\fi,t=#4%
13036 }%
13037 }%

```

## \ReadBookmarks

```

13038 \def\ReadBookmarks{%
13039 \begingroup
13040 \def\0{\hv@pdf@char 0}%
13041 \def\1{\hv@pdf@char 1}%
13042 \def\2{\hv@pdf@char 2}%
13043 \def\3{\hv@pdf@char 3}%
13044 \def\({}%
13045 \def\)}%
13046 \def\do##1{%
13047 \ifnum\catcode'##1=\active
13048 \@makeother##1%
13049 \else
13050 \ifnum\catcode'##1=6 %
13051 \@makeother##1%
13052 \fi
13053 \fi

```



```

13054 }%
13055 \dospecials
13056 \Hy@safe@activetrue
13057 \InputIfFileExists{\jobname.out}{-}{-}%
13058 \endgroup
13059 \ifx\WriteBookmarks\relax
13060 \else
13061 \if@filesw
13062 \newwrite\@outlinefile
13063 \Hy@OutlineRerunCheck
13064 \immediate\openout\@outlinefile=\jobname.out\relax
13065 \ifHy@typexml
13066 \immediate\write\@outlinefile{<relaxxml>\relax}%
13067 \fi
13068 \fi
13069 \fi
13070 }

13071 </vtex>
13072 <!*vtex>
13073 \def\ReadBookmarks{%
13074 \begingroup
13075 \def\do##1{%
13076 \ifnum\catcode'##1=\active
13077 \@makeother##1%
13078 \else
13079 \ifnum\catcode'##1=6 %
13080 \@makeother##1%
13081 \fi
13082 \fi
13083 }%
13084 \dospecials
13085 \Hy@safe@activetrue
13086 \escapechar='\%
13087 \let\escapechar\@gobble %
13088 \def\@@BOOKMARK[##1][##2]##3##4##5{%
13089 \calc@bm@number{##5}%
13090 }%
13091 \InputIfFileExists{\jobname.out}{-}{-}%
13092 \ifx\WriteBookmarks\relax
13093 \global\let\WriteBookmarks\relax
13094 \fi
13095 \def\@@BOOKMARK[##1][##2]##3##4##5{%
13096 \def\Hy@temp{##4}%
13097 <*pdfTex>
13098 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
13099 \Hy@OutlineName{\Hy@pstringName%
13100 ##2\check@bm@number{##3}}%
13101 }{%
13102 \expandafter\strip@prefix\meaning\Hy@temp
13103 }%
13104 </pdfTex>
13105 <*pdfmark>
13106 \pdfmark{%
13107 pdfmark=/OUT,%
13108 Count={##2\check@bm@number{##3}},%
13109 Dest={##3},%
13110 Title=\expandafter\strip@prefix\meaning\Hy@temp

```

```

13111 }%
13112 </pdfmark>
13113 < *dvipdfm | xetex>
13114 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
13115 \@pdfm@mark{%
13116   outline \ifHy@DvipdfmxOutlineOpen
13117     [%
13118       \ifnum##21>\z@
13119       \else
13120       -%
13121       \fi
13122     ] %
13123     \fi
13124     ##1<<%
13125     /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
13126     /A<<%
13127     /S/GoTo%
13128     /D(\Hy@pstringName)%
13129     >>%
13130     >>%
13131   }%
13132 </dvipdfm | xetex>
13133 }%
13134 {%
13135   \def\WriteBookmarks{0}%
13136   \InputIfFileExists{jobname.out}{-}{-}%
13137 }%
13138 %{\escapechar\m@ne\InputIfFileExists{jobname.out}{-}{-}}%
13139 \ifx\WriteBookmarks\relax
13140 \else
13141   \if@filesw
13142     \newwrite\@outlinefile
13143     \Hy@OutlineRerunCheck
13144     \immediate\openout\@outlinefile=jobname.out\relax
13145     \ifHy@typexml
13146       \immediate\write\@outlinefile{<relaxxml>\relax}%
13147     \fi
13148   \fi
13149 \fi
13150 \endgroup
13151 }
13152 < *pdftex>
13153 \def\Hy@OutlineName#1#2#3#4{%
13154   \pdfoutline goto name{#2}count#3{#4}%
13155 }
13156 </pdftex>
13157 \def\check@bm@number#1{%
13158   \expandafter\ifx\csname B_#1\endcsname\relax
13159     0%
13160   \else
13161     \csname B_#1\endcsname
13162   \fi
13163 }
13164 \def\calc@bm@number#1{%
13165   \@tempcnta=\check@bm@number{#1}\relax
13166   \advance\@tempcnta by 1 %
13167   \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%

```

```

13168 }
13169 </!vtex>

13170 \ifHy@implicit
13171 \else
13172 \expandafter\endinput
13173 \fi

13174 </outlines>
13175 <*outlines | hypertex>

13176 \newlength\Hy@SectionHShift
13177 \def\Hy@SectionAnchorHref#1{%
13178 \ifx\protect\@typeset@protect
13179 \Hy@@SectionAnchor{#1}%
13180 \fi
13181 }
13182 \DeclareRobustCommand*\Hy@@SectionAnchor[1]{%
13183 \leavevmode
13184 \hbox to 0pt{%
13185 \kern-\Hy@SectionHShift
13186 \Hy@raisedlink{%
13187 \hyper@anchorstart{#1}\hyper@anchorend
13188 }%
13189 \hss
13190 }%
13191 }
13192 \let\H@old@ssect\@ssect
13193 \def\@ssect#1#2#3#4#5{%
13194 \Hy@MakeCurrentHrefAuto{section*}%
13195 \setlength{\Hy@SectionHShift}{#1}%
13196 \begingroup
13197 \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
13198 \toks\tw@\expandafter{%
13199 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
13200 #5%
13201 }%
13202 \edef\x{\endgroup
13203 \the\toks@\the\toks\tw@}%
13204 }\x
13205 }
13206 \let\H@old@schapter\@schapter
13207 \def\@schapter#1{%
13208 \begingroup
13209 \let\@mkboth\@gobbletwo
13210 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
13211 \Hy@raisedlink{%
13212 \hyper@anchorstart{\@currentHref}\hyper@anchorend
13213 }%
13214 \endgroup
13215 \H@old@schapter{#1}%
13216 }

```

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:

```

13217 \ltx@ifundefined{@chapter}{}{%
13218 \let\Hy@org@chapter\@chapter
13219 \def\@chapter{%

```

```

13220 \def\Hy@next{%
13221   \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
13222   \Hy@raisedlink{%
13223     \hyper@anchorstart{\@currentHref}\hyper@anchorend
13224   }%
13225 }%
13226 \ifnum\c@secnumdepth>\m@ne
13227   \tx@ifundefined{if@mainmatter}%
13228   \iftrue{\csname if@mainmatter\endcsname}%
13229   \let\Hy@next\relax
13230 \fi
13231 \fi
13232 \Hy@next
13233 \Hy@org@chapter
13234 }%
13235 }

13236 \let\H@old@part\@part
13237 \begingroup\expandafter\expandafter\expandafter\endgroup
13238 \expandafter\ifx\csname chapter\endcsname\relax
13239   \let\Hy@secnum@part\z@
13240 \else
13241   \let\Hy@secnum@part\m@ne
13242 \fi
13243 \def\@part{%
13244   \ifnum\Hy@secnum@part>\c@secnumdepth
13245     \phantomsection
13246   \fi
13247   \H@old@part
13248 }

13249 \let\H@old@spart\@spart
13250 \def\@spart#1{%
13251   \Hy@MakeCurrentHrefAuto{part*}%
13252   \Hy@raisedlink{%
13253     \hyper@anchorstart{\@currentHref}\hyper@anchorend
13254   }%
13255   \H@old@spart{#1}%
13256 }

13257 \let\H@old@sect\@sect
13258 \def\@sect#1#2#3#4#5#6[#7]#8{%
13259   \ifnum #2>\c@secnumdepth
13260     \expandafter\@firstoftwo
13261   \else
13262     \expandafter\@secondoftwo
13263   \fi
13264   {%
13265     \Hy@MakeCurrentHrefAuto{section*}%
13266     \setlength{\Hy@SectionHShift}{#3}%
13267     \begingroup
13268     \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
13269     \toks\tw@\expandafter{%
13270       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
13271       #8%
13272     }%
13273     \edef\x{\endgroup
13274       \the\toks@\the\toks\tw@}%
13275     }\x
13276   }{%

```

```

13277 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{{#7}}{#8}%
13278 }%
13279 }
13280 </outlines | hypertex>
13281 <*outlines>
13282 \expandafter\def\csname Parent-4\endcsname{}
13283 \expandafter\def\csname Parent-3\endcsname{}
13284 \expandafter\def\csname Parent-2\endcsname{}
13285 \expandafter\def\csname Parent-1\endcsname{}
13286 \expandafter\def\csname Parent0\endcsname{}
13287 \expandafter\def\csname Parent1\endcsname{}
13288 \expandafter\def\csname Parent2\endcsname{}
13289 \expandafter\def\csname Parent3\endcsname{}
13290 \expandafter\def\csname Parent4\endcsname{}
13291 </outlines>

```

## 49 Compatibility with koma-script classes

```
13292 <*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.

```

13293 \def\Hy@tempa{%
13294 \def\@addchap{##1}##2{%
13295 \typeout{##2}%
13296 \if@twoside
13297 \@mkboth{##1}{}%
13298 \else
13299 \@mkboth{}{##1}%
13300 \fi
13301 \addtocontents{lof}{\protect\addvspace{10\p@}}%
13302 \addtocontents{lot}{\protect\addvspace{10\p@}}%
13303 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
13304 \Hy@raisedlink{%
13305 \hyper@anchorstart{\@currentHref}\hyper@anchorend
13306 }%
13307 \if@twocolumn
13308 \@topnewpage[\@makeschapterhead{##2}]%
13309 \else
13310 \@makeschapterhead{##2}%
13311 \@afterheading
13312 \fi
13313 \addcontentsline{toc}{chapter}{##1}%
13314 }%
13315 }
13316 \@ifclassloaded{scrbook}{%
13317 \@ifclasslater{scrbook}{2001/01/01}{%
13318 \let\Hy@tempa\@empty
13319 }{}%
13320 }{}%
13321 \@ifclassloaded{scrreprt}{%
13322 \@ifclasslater{scrreprt}{2001/01/01}{%
13323 \let\Hy@tempa\@empty

```

```

13324 }{}%
13325 }{}%
13326 \let\Hy@tempa\@empty
13327 }{}%
13328 }{}%
13329 \Hy@tempa
13330 </outlines | hypertex>

```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 50.1 PD1 encoding

```

13331 <*pd1enc>
13332 \DeclareFontEncoding{PD1}{}{}

Accents
13333 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
13334 \DeclareTextAccent{\'}{PD1}{\textacute}
13335 \DeclareTextAccent{\~}{PD1}{\textasciicircum}
13336 \DeclareTextAccent{\~}{PD1}{\texttilde}
13337 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
13338 \DeclareTextAccent{\r}{PD1}{\textring}
13339 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
13340 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
13341 \DeclareTextAccent{\c}{PD1}{\textcedilla}
13342 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
13343 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
13344 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
13345 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
13346 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
13347 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\textasciicircum}
13348 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
13349 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
13350 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
13351 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
13352 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
13353 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
13354 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
13355 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
13356 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
13357 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}
13358 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
13359 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\textasciicircum}
13360 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
13361 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
13362 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
13363 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
13364 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
13365 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
13366 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
13367 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
13368 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
13369 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
13370 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
13371 \DeclareTextCommand{\newtie}{PD1}[1]{%

```

13372 \TextSymbolUnavailable{\newtie{#1}}#1%  
13373 }

Special white space escape characters not for use in bookmarks but for other PDF strings.

13374 % U+0009 (CHARACTER TABULATION)  
13375 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009  
13376 % U+000A (LINE FEED)  
13377 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A  
13378 % U+000D (CARRIAGE RETURN)  
13379 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

Accent glyph names

13380 % U+02D8 BREVE; breve  
13381 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8  
13382 % U+02C7 CARON; caron  
13383 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7  
13384 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex  
13385 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6  
13386 % U+02D9 DOT ABOVE; dotaccent  
13387 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9  
13388 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
13389 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD  
13390 % U+02DB OGONEK; ogonek  
13391 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB  
13392 % U+02DA RING ABOVE; ring  
13393 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA  
13394 % U+02DC SMALL TILDE; ilde, \*tilde  
13395 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC

\040: U+0020 SPACE; \*space, spacehackarabic

\041: U+0021 EXCLAMATION MARK; exclam

13396 % U+0022 QUOTATION MARK; quotedbl  
13397 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022  
13398 % U+0023 NUMBER SIGN; numbersign  
13399 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
13400 % U+0024 DOLLAR SIGN; dollar  
13401 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
13402 % U+0025 PERCENT SIGN; percent  
13403 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
13404 % U+0026 AMPERSAND; ampersand  
13405 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026

\047: U+0027 APOSTROPHE; quotesingle

13406 % U+0028 LEFT PARENTHESIS; parenleft

13407 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028

13408 % U+0029 RIGHT PARENTHESIS; parenright

13409 \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

13410 % U+002E FULL STOP; period

13411 \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  
13412 % U+003C LESS-THAN SIGN; less  
13413 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
\075: U+003D EQUALS SIGN; equal  
13414 % U+003E GREATER-THAN SIGN; greater  
13415 \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  
13416 % U+005C REVERSE SOLIDUS; backslash  
13417 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
\135: U+005D RIGHT SQUARE BRACKET; bracketright  
13418 % U+005E CIRCUMFLEX ACCENT; asciicircum  
13419 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
13420 % U+005F LOW LINE; underscore  
13421 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
13422 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
13423 % U+0060 GRAVE ACCENT; grave  
13424 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
\141: U+0061 LATIN SMALL LETTER A; a  
...  
\150: U+0068 LATIN SMALL LETTER H; h  
13425 % U+0069 LATIN SMALL LETTER I; i  
13426 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
\152: U+006A LATIN SMALL LETTER J; j  
...  
\172: U+007A LATIN SMALL LETTER Z; z  
13427 % U+007B LEFT CURLY BRACKET; braceleft  
13428 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
13429 % U+007C VERTICAL LINE; \*bar, verticalbar  
13430 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
13431 % U+007D RIGHT CURLY BRACKET; braceright  
13432 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
13433 % U+007E TILDE; asciitilde  
13434 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
Slot \177 (0x7F) is undefined in PDFDocEncoding.  
13435 % U+2022 BULLET; bullet  
13436 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
13437 % U+2020 DAGGER; dagger  
13438 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
13439 % U+2021 DOUBLE DAGGER; daggerdbl  
13440 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
13441 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
13442 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
13443 % U+2014 EM DASH; emdash  
13444 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
13445 % U+2013 EN DASH; endash  
13446 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
13447 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
13448 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192



13449 % U+2044 FRACTION SLASH; fraction  
13450 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
13451 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
ingleft  
13452 \DeclareTextCommand{\guilsinglleft}{PD1}{\210}% U+2039  
13453 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
ingright  
13454 \DeclareTextCommand{\guilsinglright}{PD1}{\211}% U+203A  
13455 % U+2212 MINUS SIGN; minus  
13456 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
13457 % U+2030 PER MILLE SIGN; perthousand  
13458 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
13459 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
13460 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
13461 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
13462 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
13463 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
13464 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
13465 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
13466 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
13467 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
13468 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
13469 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
13470 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
13471 % U+2122 TRADE MARK SIGN; trademark  
13472 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
13473 % U+FB01 LATIN SMALL LIGATURE FI; fi  
13474 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
13475 % U+FB02 LATIN SMALL LIGATURE FL; fl  
13476 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
13477 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
13478 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
13479 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
13480 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
13481 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
13482 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
13483 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
13484 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178  
13485 \DeclareTextCommand{\IJ}{PD1}{\230}  
13486 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
13487 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
13488 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
13489 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
13490 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
13491 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
13492 % U+0153 LATIN SMALL LIGATURE OE; oe  
13493 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
13494 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
13495 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
13496 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
13497 \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.  
13498 % U+20AC EURO SIGN; \*Euro, euro  
13499 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
13500 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
13501 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1

13502 % U+00A2 CENT SIGN; cent  
13503 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
13504 % U+00A3 POUND SIGN; sterling  
13505 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
13506 % U+00A4 CURRENCY SIGN; currency  
13507 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
13508 % U+00A5 YEN SIGN; yen  
13509 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
13510 % U+00A6 BROKEN BAR; brokenbar  
13511 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
13512 % U+00A7 SECTION SIGN; section  
13513 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
13514 % U+00A8 DIAERESIS; dieresis  
13515 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
13516 % U+00A9 COPYRIGHT SIGN; copyright  
13517 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
13518 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
13519 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
13520 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
13521 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
13522 % U+00AC NOT SIGN; logicalnot  
13523 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
13524 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
No glyph \255 in PDFDocEncoding.  
13525 % U+00AE REGISTERED SIGN; registered  
13526 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
13527 % U+00AF MACRON; \*macron, overscore  
13528 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
13529 % U+00B0 DEGREE SIGN; degree  
13530 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
13531 % U+00B1 PLUS-MINUS SIGN; plusminus  
13532 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
13533 % U+00B2 SUPERSCRIPT TWO; twosuperior  
13534 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
13535 % U+00B3 SUPERSCRIPT THREE; threesuperior  
13536 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
13537 % U+00B4 ACUTE ACCENT; acute  
13538 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
13539 % U+00B5 MICRO SIGN; mu, mu1  
13540 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
13541 % U+00B6 PILCROW SIGN; paragraph  
13542 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
13543 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
13544 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
13545 % U+00B8 CEDILLA; cedilla  
13546 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
13547 % U+00B9 SUPERSCRIPT ONE; onesuperior  
13548 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
13549 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
13550 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
13551 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
13552 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
13553 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
13554 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
13555 % U+00BD VULGAR FRACTION ONE HALF; onehalf

13556 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
13557 % U+00BE VULGAR FRACTION THREE QUARTERS; thre-quarters  
13558 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
13559 % U+00BF INVERTED QUESTION MARK; questiondown  
13560 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
13561 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
13562 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
13563 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Acute  
13564 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
13565 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
13566 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
13567 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
13568 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
13569 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
13570 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
13571 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
13572 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
13573 % U+00C6 LATIN CAPITAL LETTER AE; AE  
13574 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
13575 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
13576 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
13577 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
13578 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
13579 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
13580 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
13581 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
13582 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
13583 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
13584 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
13585 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
13586 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
13587 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
13588 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
13589 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
13590 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
13591 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
13592 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
13593 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
13594 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
13595 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
13596 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
13597 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
13598 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
13599 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
13600 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
13601 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
13602 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
13603 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
13604 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
13605 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
13606 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
13607 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
13608 % U+00D7 MULTIPLICATION SIGN; multiply  
13609 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
13610 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
13611 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
13612 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave

13613 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331}% U+00D9  
13614 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
13615 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
13616 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
13617 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
13618 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
13619 \DeclareTextCompositeCommand{"}{PD1}{U}{\334}% U+00DC  
13620 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
13621 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
13622 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
13623 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
13624 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
13625 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
13626 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
13627 \DeclareTextCompositeCommand{\'}{PD1}{a}{\340}% U+00E0  
13628 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
13629 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
13630 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
13631 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
13632 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
13633 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
13634 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
13635 \DeclareTextCompositeCommand{\'}{PD1}{a}{\344}% U+00E4  
13636 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
13637 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
13638 % U+00E6 LATIN SMALL LETTER AE; ae  
13639 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
13640 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
13641 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
13642 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
13643 \DeclareTextCompositeCommand{\'}{PD1}{e}{\350}% U+00E8  
13644 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
13645 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
13646 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
13647 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
13648 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
13649 \DeclareTextCompositeCommand{"}{PD1}{e}{\353}% U+00EB  
13650 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
13651 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
13652 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
13653 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
13654 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
13655 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
13656 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
13657 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
13658 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
13659 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
13660 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
13661 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
13662 % U+00F0 LATIN SMALL LETTER ETH; eth  
13663 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
13664 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
13665 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
13666 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
13667 \DeclareTextCompositeCommand{\'}{PD1}{o}{\362}% U+00F2  
13668 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
13669 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3

13670 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
13671 \DeclareTextCompositeCommand{\~}{PD1}{o}{\364}% U+00F4  
13672 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
13673 \DeclareTextCompositeCommand{\-}{PD1}{o}{\365}% U+00F5  
13674 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
13675 \DeclareTextCompositeCommand{\' }{PD1}{o}{\366}% U+00F6  
13676 % U+00F7 DIVISION SIGN; divide  
13677 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
13678 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
13679 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
13680 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
13681 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9  
13682 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
13683 \DeclareTextCompositeCommand{\' }{PD1}{u}{\372}% U+00FA  
13684 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
13685 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB  
13686 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
13687 \DeclareTextCompositeCommand{\" }{PD1}{u}{\374}% U+00FC  
13688 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
13689 \DeclareTextCompositeCommand{\' }{PD1}{y}{\375}% U+00FD  
13690 % U+00FE LATIN SMALL LETTER THORN; thorn  
13691 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
13692 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
13693 \DeclareTextCompositeCommand{\" }{PD1}{y}{\377}% U+00FF  
13694 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

Glyphs that consist of several characters.

13695 \DeclareTextCommand{\SS}{PD1}{SS}  
13696 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

Aliases (german.sty)

13697 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}  
13698 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}  
13699 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}  
13700 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}  
13701 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}  
13702 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}  
13703 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}  
13704 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

Aliases (math names)

13705 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}  
13706 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}  
13707 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}  
13708 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}  
13709 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}  
13710 \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).

13711 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek  
13712 \DeclareTextCompositeCommand{\' }{PD1}{c}{c}% cacute  
13713 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek  
13714 \DeclareTextCompositeCommand{\' }{PD1}{n}{n}% nacute  
13715 \DeclareTextCompositeCommand{\' }{PD1}{s}{s}% sacute  
13716 \DeclareTextCompositeCommand{\' }{PD1}{z}{z}% zacute  
13717 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot  
13718 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek  
13719 \DeclareTextCompositeCommand{\' }{PD1}{C}{C}% Cacute

```

13720 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
13721 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
13722 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
13723 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
13724 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
13725 </pdlenc>

```

## 50.2 PU encoding

```

13726 <*puenc>
13727 \DeclareFontEncoding{PU}{-}{-}

```

### 50.2.1 NFSS2 accents

```

13728 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
13729 \DeclareTextCommand{\'}{PU}[1]{#1\83\000}% U+0300
13730 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
13731 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
13732 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
13733 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
13734 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
13735 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
13736 % U+0304 COMBINING MACRON; macroncmb
13737 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
13738 % U+0306 COMBINING BREVE; brevecmb
13739 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
13740 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
13741 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
13742 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
13743 % U+0308 COMBINING DIAERESIS; dieresiscmb
13744 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
13745 % U+030A COMBINING RING ABOVE; ringcmb
13746 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
13747 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
13748 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
13749 % U+030C COMBINING CARON; caroncmb
13750 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
13751 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
13752 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
13753 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
13754 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
13755 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
13756 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
13757 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
13758 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
13759 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
13760 % U+0327 COMBINING CEDILLA; cedillacmb
13761 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
13762 % U+0328 COMBINING OGONEK; ogonekcmb
13763 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
13764 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb
13765 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
13766 % U+20DD COMBINING ENCLOSING CIRCLE
13767 \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.

```

13768 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textasciigrave}
13769 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}

```

```

13770 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textasciicircum}
13771 \DeclareTextCompositeCommand{\-}{PU}{\@empty}{\texttilde}
13772 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}
13773 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
13774 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}
13775 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
13776 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
13777 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}
13778 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}
13779 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}
13780 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}
13781 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}
13782 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}
13783 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}
13784 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}
13785 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}
13786 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}

13787 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}
13788 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}
13789 \DeclareTextCompositeCommand{\^}{PU}{\ }{\textasciicircum}
13790 \DeclareTextCompositeCommand{\-}{PU}{\ }{\texttilde}
13791 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}
13792 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}
13793 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
13794 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
13795 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
13796 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
13797 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
13798 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
13799 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
13800 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}
13801 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
13802 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
13803 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
13804 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
13805 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

```

Accents for capitals (see encoding TS1)

```

13806 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}
13807 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}
13808 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}
13809 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}
13810 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}
13811 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}
13812 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\\"{#1}}
13813 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}
13814 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}
13815 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}
13816 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}
13817 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}
13818 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}
13819 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}
13820 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

```

## 50.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

```
13821 % U+0009 (CHARACTER TABULATION)
```

```

13822 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
13823 % U+000A (LINE FEED)
13824 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
13825 % U+000D (CARRIAGE RETURN)
13826 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D
\80\040: U+0020 SPACE; space, spacehackarabic
\80\041: U+0021 EXCLAMATION MARK; exclam
13827 % U+0022 QUOTATION MARK; quotedbl
13828 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022
13829 % U+0023 NUMBER SIGN; numbersign
13830 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
13831 % U+0024 DOLLAR SIGN; dollar
13832 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
13833 % U+0025 PERCENT SIGN; percent
13834 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
13835 % U+0026 AMPERSAND; ampersand
13836 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
13837 % U+0027 APOSTROPHE; quotesingle
13838 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
13839 % U+0028 LEFT PARENTHESIS; parenleft
13840 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028
13841 % U+0029 RIGHT PARENTHESIS; parenright
13842 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029
13843 % U+002A ASTERISK; asterisk
13844 \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
13845 % U+003C LESS-THAN SIGN; less
13846 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C
\80\075: U+003D EQUALS SIGN; equal
13847 % U+003E GREATER-THAN SIGN; greater
13848 \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
13849 % U+005C REVERSE SOLIDUS; backslash
13850 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C
\80\135: U+005D RIGHT SQUARE BRACKET; bracketright
13851 % U+005E CIRCUMFLEX ACCENT; asciicircum
13852 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E
13853 % U+005F LOW LINE; underscore
13854 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F

```



13855 % U+0060 GRAVE ACCENT; grave  
13856 \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  
13857 % U+0069 LATIN SMALL LETTER I; i  
13858 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % \80\151 U+0069  
13859 \DeclareTextCompositeCommand{\.}{PU}{i}{i}% \80\151 U+0069  
\80\152: U+006A LATIN SMALL LETTER J; j  
...  
\80\172: U+007A LATIN SMALL LETTER Z; z  
13860 % U+007B LEFT CURLY BRACKET; braceleft  
13861 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
13862 % U+007C VERTICAL LINE; \*bar, verticalbar  
13863 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
13864 % U+007D RIGHT CURLY BRACKET; braceright  
13865 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
13866 % U+007E TILDE; asciitilde  
13867 \DeclareTextCommand{\textasciitilde}{PU}{\80\176}% U+007E

### 50.2.3 Latin-1 Supplement: U+0080 to U+00FF

\80\240: U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace  
13868 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
13869 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
13870 % U+00A2 CENT SIGN; cent  
13871 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
13872 % U+00A3 POUND SIGN; sterling  
13873 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
13874 % U+00A4 CURRENCY SIGN; currency  
13875 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
13876 % U+00A5 YEN SIGN; yen  
13877 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
13878 % U+00A6 BROKEN BAR; brokenbar  
13879 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
13880 % U+00A7 SECTION SIGN; section  
13881 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
13882 % U+00A8 DIAERESIS; dieresis  
13883 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
13884 % U+00A9 COPYRIGHT SIGN; copyright  
13885 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9  
13886 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
13887 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
13888 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
13889 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
13890 % U+00AC NOT SIGN; logicalnot  
13891 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
13892 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
\80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
13893 % U+00AE REGISTERED SIGN; registered  
13894 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
13895 % U+00AF MACRON; \*macron, overscore  
13896 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
13897 % U+00B0 DEGREE SIGN; degree

13898 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
13899 % U+00B1 PLUS-MINUS SIGN; plusminus  
13900 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
13901 % U+00B2 SUPERSCRIPT TWO; twosuperior  
13902 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2  
13903 % U+00B3 SUPERSCRIPT THREE; threesuperior  
13904 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3  
13905 % U+00B4 ACUTE ACCENT; acute  
13906 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
13907 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
13908 % U+00B5 MICRO SIGN; mu, mu1  
13909 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
13910 % U+00B6 PILCROW SIGN; paragraph  
13911 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
13912 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
13913 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
13914 % U+00B8 CEDILLA; cedilla  
13915 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
13916 % U+00B9 SUPERSCRIPT ONE; onesuperior  
13917 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
13918 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
13919 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
13920 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
13921 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
13922 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
13923 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
13924 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
13925 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
13926 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
13927 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
13928 % U+00BF INVERTED QUESTION MARK; questiondown  
13929 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
13930 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
13931 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
13932 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
13933 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
13934 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
13935 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\302}% U+00C2  
13936 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
13937 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
13938 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
13939 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
13940 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
13941 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
13942 % U+00C6 LATIN CAPITAL LETTER AE; AE  
13943 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
13944 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
13945 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
13946 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
13947 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
13948 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
13949 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
13950 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
13951 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\312}% U+00CA  
13952 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
13953 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB

13954 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
13955 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
13956 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
13957 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\315}% U+00CD  
13958 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
13959 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\316}% U+00CE  
13960 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
13961 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
13962 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
13963 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
13964 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
13965 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
13966 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
13967 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
13968 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
13969 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\323}% U+00D3  
13970 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
13971 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\324}% U+00D4  
13972 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
13973 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
13974 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
13975 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
13976 % U+00D7 MULTIPLICATION SIGN; multiply  
13977 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
13978 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
13979 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
13980 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
13981 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
13982 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
13983 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\332}% U+00DA  
13984 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
13985 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\333}% U+00DB  
13986 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
13987 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
13988 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
13989 \DeclareTextCompositeCommand{\`}{PU}{Y}{\80\335}% U+00DD  
13990 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
13991 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
13992 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
13993 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
13994 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
13995 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
13996 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
13997 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\341}% U+00E1  
13998 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
13999 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\342}% U+00E2  
14000 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14001 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
14002 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14003 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
14004 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14005 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
14006 % U+00E6 LATIN SMALL LETTER AE; ae  
14007 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
14008 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14009 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
14010 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave

14011 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}% U+00E8  
14012 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14013 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
14014 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14015 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
14016 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14017 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
14018 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14019 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
14020 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\354}% U+00EC  
14021 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14022 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
14023 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\355}% U+00ED  
14024 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14025 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
14026 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
14027 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14028 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
14029 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
14030 % U+00F0 LATIN SMALL LETTER ETH; eth  
14031 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
14032 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14033 \DeclareTextCompositeCommand{\-}{PU}{n}{\80\361}% U+00F1  
14034 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14035 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}% U+00F2  
14036 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
14037 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
14038 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
14039 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
14040 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
14041 \DeclareTextCompositeCommand{\-}{PU}{o}{\80\365}% U+00F5  
14042 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
14043 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
14044 % U+00F7 DIVISION SIGN; divide  
14045 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
14046 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
14047 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
14048 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
14049 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}% U+00F9  
14050 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
14051 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
14052 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
14053 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
14054 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
14055 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
14056 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
14057 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
14058 % U+00FE LATIN SMALL LETTER THORN; thorn  
14059 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
14060 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
14061 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

## 50.2.4 Latin Extended-A: U+0080 to U+017F

14062 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
14063 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
14064 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron

14065 \DeclareTextCompositeCommand{\=} {PU}{a}{\81\001}% U+0101  
14066 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
14067 \DeclareTextCompositeCommand{\u} {PU}{A}{\81\002}% U+0102  
14068 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
14069 \DeclareTextCompositeCommand{\u} {PU}{a}{\81\003}% U+0103  
14070 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
14071 \DeclareTextCompositeCommand{\k} {PU}{A}{\81\004}% U+0104  
14072 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
14073 \DeclareTextCompositeCommand{\k} {PU}{a}{\81\005}% U+0105  
14074 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
14075 \DeclareTextCompositeCommand{\'} {PU}{C}{\81\006}% U+0106  
14076 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
14077 \DeclareTextCompositeCommand{\'} {PU}{c}{\81\007}% U+0107  
14078 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
14079 \DeclareTextCompositeCommand{\^} {PU}{C}{\81\010}% U+0108  
14080 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
14081 \DeclareTextCompositeCommand{\^} {PU}{c}{\81\011}% U+0109  
14082 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
14083 \DeclareTextCompositeCommand{\.} {PU}{C}{\81\012}% U+010A  
14084 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
14085 \DeclareTextCompositeCommand{\.} {PU}{c}{\81\013}% U+010B  
14086 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
14087 \DeclareTextCompositeCommand{\v} {PU}{C}{\81\014}% U+010C  
14088 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
14089 \DeclareTextCompositeCommand{\v} {PU}{c}{\81\015}% U+010D  
14090 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
14091 \DeclareTextCompositeCommand{\v} {PU}{D}{\81\016}% U+010E  
14092 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
14093 \DeclareTextCompositeCommand{\v} {PU}{d}{\81\017}% U+010F  
14094 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
14095 \DeclareTextCommand{\DJ} {PU}{\81\020}% U+0110  
14096 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
14097 \DeclareTextCommand{\dj} {PU}{\81\021}% U+0111  
14098 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
14099 \DeclareTextCompositeCommand{\=} {PU}{E}{\81\022}% U+0112  
14100 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
14101 \DeclareTextCompositeCommand{\=} {PU}{e}{\81\023}% U+0113  
14102 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
14103 \DeclareTextCompositeCommand{\u} {PU}{E}{\81\024}% U+0114  
14104 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
14105 \DeclareTextCompositeCommand{\u} {PU}{e}{\81\025}% U+0115  
14106 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
14107 \DeclareTextCompositeCommand{\.} {PU}{E}{\81\026}% U+0116  
14108 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
14109 \DeclareTextCompositeCommand{\.} {PU}{e}{\81\027}% U+0117  
14110 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
14111 \DeclareTextCompositeCommand{\k} {PU}{E}{\81\030}% U+0118  
14112 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
14113 \DeclareTextCompositeCommand{\k} {PU}{e}{\81\031}% U+0119  
14114 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
14115 \DeclareTextCompositeCommand{\v} {PU}{E}{\81\032}% U+011A  
14116 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
14117 \DeclareTextCompositeCommand{\v} {PU}{e}{\81\033}% U+011B  
14118 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
14119 \DeclareTextCompositeCommand{\^} {PU}{G}{\81\034}% U+011C  
14120 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
14121 \DeclareTextCompositeCommand{\^} {PU}{g}{\81\035}% U+011D

14122 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
14123 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
14124 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
14125 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
14126 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
14127 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
14128 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
14129 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
14130 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaac-  
cent  
14131 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
14132 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
14133 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
14134 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
14135 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
14136 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
14137 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
14138 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
14139 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
14140 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
14141 \DeclareTextCommand{\texthslash}{PU}{\81\047}% U+0127  
14142 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
14143 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
14144 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
14145 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
14146 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
14147 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
14148 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
14149 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
14150 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
14151 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
14152 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
14153 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
14154 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
14155 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
14156 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
14157 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
14158 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
14159 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
14160 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
14161 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
14162 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
14163 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
14164 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
14165 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
14166 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
14167 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
14168 % U+0133 LATIN SMALL LIGATURE IJ; ij  
14169 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
14170 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
14171 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
14172 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
14173 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
14174 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
14175 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-  
cent  
14176 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136

14177 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
14178 \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 chosen `\textkra`.

14179 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
14180 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
14181 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
14182 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
14183 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
14184 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
14185 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaaccent  
14186 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
14187 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
14188 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
14189 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
14190 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
14191 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
14192 \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`.

14193 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
14194 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
14195 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
14196 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
14197 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14198 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
14199 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14200 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
14201 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
14202 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143  
14203 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
14204 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144  
14205 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent  
14206 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
14207 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
14208 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
14209 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
14210 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
14211 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
14212 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
14213 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
14214 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
14215 % U+014A LATIN CAPITAL LETTER ENG; Eng  
14216 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
14217 % U+014B LATIN SMALL LETTER ENG; eng  
14218 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
14219 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
14220 \DeclareTextCompositeCommand{\=} {PU}{O}{\81\114}% U+014C  
14221 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
14222 \DeclareTextCompositeCommand{\=} {PU}{o}{\81\115}% U+014D  
14223 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
14224 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E

14225 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
14226 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
14227 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblac  
acute, Ohungarumlaut  
14228 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
14229 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblac  
ute, ohungarumlaut  
14230 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
14231 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
14232 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
14233 % U+0153 LATIN SMALL LIGATURE OE; oe  
14234 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
14235 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
14236 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
14237 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
14238 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
14239 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcomma  
accent  
14240 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
14241 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcomma  
accent  
14242 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
14243 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
14244 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
14245 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
14246 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
14247 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
14248 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
14249 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
14250 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
14251 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
14252 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
14253 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
14254 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
14255 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
14256 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
14257 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
14258 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
14259 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
14260 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
14261 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
14262 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
14263 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcomma  
accent  
14264 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
14265 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcomma  
accent  
14266 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
14267 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
14268 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
14269 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
14270 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
14271 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
14272 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
14273 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
14274 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
14275 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
14276 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
14277 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde



14278 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
14279 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
14280 \DeclareTextCompositeCommand{\=} {PU}{U}{\81\152}% U+016A  
14281 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
14282 \DeclareTextCompositeCommand{\=} {PU}{u}{\81\153}% U+016B  
14283 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
14284 \DeclareTextCompositeCommand{\u} {PU}{U}{\81\154}% U+016C  
14285 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
14286 \DeclareTextCompositeCommand{\u} {PU}{u}{\81\155}% U+016D  
14287 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
14288 \DeclareTextCompositeCommand{\r} {PU}{U}{\81\156}% U+016E  
14289 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
14290 \DeclareTextCompositeCommand{\r} {PU}{u}{\81\157}% U+016F  
14291 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblac-  
acute, Uhungarumlaut  
14292 \DeclareTextCompositeCommand{\H} {PU}{U}{\81\160}% U+0170  
14293 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacut  
e, uhungarumlaut  
14294 \DeclareTextCompositeCommand{\H} {PU}{u}{\81\161}% U+0171  
14295 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
14296 \DeclareTextCompositeCommand{\k} {PU}{U}{\81\162}% U+0172  
14297 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
14298 \DeclareTextCompositeCommand{\k} {PU}{u}{\81\163}% U+0173  
14299 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
14300 \DeclareTextCompositeCommand{\^} {PU}{W}{\81\164}% U+0174  
14301 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
14302 \DeclareTextCompositeCommand{\^} {PU}{w}{\81\165}% U+0175  
14303 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
14304 \DeclareTextCompositeCommand{\^} {PU}{Y}{\81\166}% U+0176  
14305 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
14306 \DeclareTextCompositeCommand{\^} {PU}{y}{\81\167}% U+0177  
14307 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
14308 \DeclareTextCompositeCommand{\"} {PU}{Y}{\81\170}% U+0178  
14309 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
14310 \DeclareTextCompositeCommand{\'} {PU}{Z}{\81\171}% U+0179  
14311 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
14312 \DeclareTextCompositeCommand{\'} {PU}{z}{\81\172}% U+017A  
14313 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
14314 \DeclareTextCompositeCommand{\.} {PU}{Z}{\81\173}% U+017B  
14315 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
14316 \DeclareTextCompositeCommand{\.} {PU}{z}{\81\174}% U+017C  
14317 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
14318 \DeclareTextCompositeCommand{\v} {PU}{Z}{\81\175}% U+017D  
14319 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
14320 \DeclareTextCompositeCommand{\v} {PU}{z}{\81\176}% U+017E  
14321 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
14322 \DeclareTextCommand{\textlongS} {PU}{\81\177}% U+017F

### 50.2.5 Latin Extended-B: U+0180 to U+024F

14323 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
14324 \DeclareTextCommand{\textflorin} {PU}{\81\222}% U+0192  
14325 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
14326 \DeclareTextCompositeCommand{\v} {PU}{A}{\81\315}% U+01CD  
14327 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
14328 \DeclareTextCompositeCommand{\v} {PU}{a}{\81\316}% U+01CE  
14329 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
14330 \DeclareTextCompositeCommand{\v} {PU}{I}{\81\317}% U+01CF

14331 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
14332 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
14333 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
14334 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
14335 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
14336 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
14337 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
14338 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
14339 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
14340 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
14341 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
14342 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
14343 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
14344 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
14345 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
14346 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
14347 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
14348 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
14349 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
14350 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
14351 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
14352 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
14353 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
14354 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
14355 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
14356 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
14357 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
14358 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
14359 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
14360 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
14361 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
14362 \DeclareTextCompositeCommand{\`}{PU}{G}{\81\364}% U+01F4  
14363 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
14364 \DeclareTextCompositeCommand{\`}{PU}{g}{\81\365}% U+01F5  
14365 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
14366 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
14367 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
14368 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
14369 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
14370 \DeclareTextCompositeCommand{\`}{PU}{\AE}{\81\374}% U+01FC  
14371 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
14372 \DeclareTextCompositeCommand{\`}{PU}{\ae}{\81\375}% U+01FD  
14373 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslasha-  
acute, Ostrokeacut  
14374 \DeclareTextCompositeCommand{\`}{PU}{\O}{\81\376}% U+01FE  
14375 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslasha-  
acute, ostrokeacute  
14376 \DeclareTextCompositeCommand{\`}{PU}{\o}{\81\377}% U+01FF  
14377 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
14378 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
14379 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
14380 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
14381 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
14382 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
14383 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
14384 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
14385 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave

14386 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
14387 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
14388 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
14389 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
14390 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
14391 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
14392 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
14393 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
14394 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
14395 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
14396 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
14397 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
14398 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
14399 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
14400 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
14401 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
14402 % U+021E LATIN CAPITAL LETTER H WITH CARON  
14403 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
14404 % U+021F LATIN SMALL LETTER H WITH CARON  
14405 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
14406 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
14407 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
14408 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
14409 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
14410 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
14411 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
14412 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
14413 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
14414 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
14415 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
14416 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
14417 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
14418 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
14419 \DeclareTextCompositeCommand{\=} {PU}{Y}{\82\062}% U+0232  
14420 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
14421 \DeclareTextCompositeCommand{\=} {PU}{y}{\82\063}% U+0233  
14422 % U+0237 LATIN SMALL LETTER DOTLESS J  
14423 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

### 50.2.6 Spacing Modifier Letters: U+02B0 to U+02FF

14424 % U+02C7 CARON; caron  
14425 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
14426 % U+02D8 BREVE; breve  
14427 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
14428 % U+02D9 DOT ABOVE; dotaccent  
14429 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
14430 % U+02DA RING ABOVE; ring  
14431 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
14432 % U+02DB OGONEK; ogonek  
14433 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
14434 % U+02DC SMALL TILDE; ilde, \*tilde  
14435 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
14436 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
14437 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
14438 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
14439 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
14440 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5

14441 % U+02F7 MODIFIER LETTER LOW TILDE  
14442 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

### 50.2.7 Combining Diacritical Marks: U+0300 to U+036F

14443 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
14444 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
14445 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
14446 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
14447 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
14448 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
14449 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
14450 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
14451 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
14452 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

### 50.2.8 Greek and Coptic: U+0370 to U+03FF

14453 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
14454 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
14455 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
14456 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
14457 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphanos  
14458 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386  
14459 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
14460 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388  
14461 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
14462 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389  
14463 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
14464 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A  
14465 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omicrontonos  
14466 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C  
14467 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilononos  
14468 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E  
14469 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
14470 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F  
14471 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; Iotadieresis  
14472 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}% U+0390  
14473 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
14474 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
14475 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
14476 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
14477 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
14478 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
14479 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
14480 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
14481 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
14482 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
14483 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
14484 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
14485 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
14486 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
14487 % U+0398 GREEK CAPITAL LETTER THETA; Theta  
14488 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
14489 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
14490 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
14491 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa

14492 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
14493 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
14494 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
14495 % U+039C GREEK CAPITAL LETTER MU; Mu  
14496 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
14497 % U+039D GREEK CAPITAL LETTER NU; Nu  
14498 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
14499 % U+039E GREEK CAPITAL LETTER XI; Xi  
14500 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E  
14501 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
14502 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
14503 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
14504 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
14505 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
14506 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
14507 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
14508 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
14509 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
14510 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
14511 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
14512 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5  
14513 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
14514 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
14515 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
14516 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
14517 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
14518 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
14519 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
14520 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
14521 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
14522 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
14523 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
14524 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Upsilon  
dieresis  
14525 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
14526 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
14527 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}% U+03AC  
14528 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilon  
nos  
14529 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
14530 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanos  
14531 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
14532 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanos  
14533 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
14534 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; up-  
silon  
dieresis  
14535 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}% U+03B0  
14536 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
14537 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1  
14538 % U+03B2 GREEK SMALL LETTER BETA; beta  
14539 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
14540 % U+03B3 GREEK SMALL LETTER GAMMA; gamma  
14541 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
14542 % U+03B4 GREEK SMALL LETTER DELTA; delta  
14543 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
14544 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
14545 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
14546 % U+03B6 GREEK SMALL LETTER ZETA; zeta

14547 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
14548 % U+03B7 GREEK SMALL LETTER ETA; eta  
14549 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
14550 % U+03B8 GREEK SMALL LETTER THETA; theta  
14551 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
14552 % U+03B9 GREEK SMALL LETTER IOTA; iota  
14553 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
14554 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
14555 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA  
14556 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
14557 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB  
14558 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
14559 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
14560 % U+03BD GREEK SMALL LETTER NU; nu  
14561 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
14562 % U+03BE GREEK SMALL LETTER XI; xi  
14563 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
14564 % U+03BF GREEK SMALL LETTEROMICRON; omicron  
14565 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
14566 % U+03C0 GREEK SMALL LETTER PI; pi  
14567 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0  
14568 % U+03C1 GREEK SMALL LETTER RHO; rho  
14569 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
14570 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
14571 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
14572 % U+03C3 GREEK SMALL LETTER SIGMA; sigma  
14573 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3  
14574 % U+03C4 GREEK SMALL LETTER TAU; tau  
14575 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4  
14576 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon  
14577 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5  
14578 % U+03C6 GREEK SMALL LETTER PHI; phi  
14579 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6  
14580 % U+03C7 GREEK SMALL LETTER CHI; chi  
14581 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7  
14582 % U+03C8 GREEK SMALL LETTER PSI; psi  
14583 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8  
14584 % U+03C9 GREEK SMALL LETTER OMEGA; omega  
14585 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9  
14586 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iodadieresis  
14587 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA  
14588 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-  
silonadieresis  
14589 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB  
14590 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos  
14591 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC  
14592 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos  
14593 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD  
14594 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD  
14595 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos  
14596 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE  
14597 % U+03DA GREEK LETTER STIGMA; Stigmagreek  
14598 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA  
14599 % U+03DB GREEK SMALL LETTER STIGMA  
14600 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB  
14601 % U+03DC GREEK LETTER DIGAMMA; Digammagreek  
14602 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC

14603 % U+03DD GREEK SMALL LETTER DIGAMMA  
14604 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD  
14605 % U+03DE GREEK LETTER KOPPA; Koppagreek  
14606 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE  
14607 % U+03DF GREEK SMALL LETTER KOPPA  
14608 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF  
14609 % U+03E0 GREEK LETTER SAMPI; Sampigreek  
14610 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0  
14611 % U+03E1 GREEK SMALL LETTER SAMPI  
14612 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}% U+03E1

## 50.2.9 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich (vov@vov.vsu.ru) for the help with the Cyrillic glyph names.

14613 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE  
14614 \DeclareTextCompositeCommand{\'}{PU}{\CYRE}{\84\000}% U+0400  
14615 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, \*afii10023  
14616 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401  
14617 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}% ???  
14618 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, \*afii10051  
14619 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402  
14620 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, \*afii10052  
14621 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403  
14622 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, \*afii10053  
14623 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404  
14624 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, \*afii10054  
14625 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
14626 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyrillic, \*afii10055  
14627 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
14628 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
14629 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
14630 \DeclareTextCompositeCommand{"}{PU}{\CYRII}{\84\007}% U+0407  
14631 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
14632 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
14633 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
14634 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
14635 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
14636 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
14637 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
14638 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
14639 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
14640 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
14641 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
14642 \DeclareTextCompositeCommand{\'}{PU}{\CYRI}{\84\015}% U+040D  
14643 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
14644 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
14645 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
14646 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
14647 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
14648 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
14649 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
14650 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
14651 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
14652 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
14653 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
14654 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020

14655 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
14656 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
14657 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
14658 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
14659 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
14660 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
14661 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
14662 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
14663 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
14664 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
14665 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
14666 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
14667 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
14668 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
14669 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
14670 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
14671 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
14672 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
14673 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
14674 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
14675 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
14676 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
14677 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
14678 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
14679 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
14680 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
14681 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
14682 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
14683 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
14684 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
14685 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
14686 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
14687 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
14688 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
14689 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
14690 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
14691 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
14692 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
14693 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
14694 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
14695 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
14696 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
14697 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
14698 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
14699 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
14700 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
14701 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
14702 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
14703 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
14704 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
14705 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
14706 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
14707 % U+042D CYRILLIC CAPITAL LETTER E; Eversedcyrillic, \*afii10047  
14708 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
14709 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
14710 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
14711 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049



14712 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
14713 % U+0430 CYRILLIC SMALL LETTER A; acyrillic; \*afii10065  
14714 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
14715 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
14716 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
14717 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
14718 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
14719 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
14720 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
14721 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
14722 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
14723 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
14724 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
14725 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
14726 \DeclareTextCommand{\cyrz}{PU}{\84\066}% U+0436  
14727 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
14728 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
14729 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
14730 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
14731 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
14732 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
14733 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
14734 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
14735 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
14736 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
14737 \DeclareTextCommand{\cyr}{PU}{\84\073}% U+043B  
14738 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
14739 \DeclareTextCommand{\cyr}{PU}{\84\074}% U+043C  
14740 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
14741 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
14742 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
14743 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
14744 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
14745 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
14746 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
14747 \DeclareTextCommand{\cyr}{PU}{\84\100}% U+0440  
14748 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
14749 \DeclareTextCommand{\cyr}{PU}{\84\101}% U+0441  
14750 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
14751 \DeclareTextCommand{\cyr}{PU}{\84\102}% U+0442  
14752 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
14753 \DeclareTextCommand{\cyr}{PU}{\84\103}% U+0443  
14754 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
14755 \DeclareTextCommand{\cyr}{PU}{\84\104}% U+0444  
14756 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
14757 \DeclareTextCommand{\cyr}{PU}{\84\105}% U+0445  
14758 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
14759 \DeclareTextCommand{\cyr}{PU}{\84\106}% U+0446  
14760 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
14761 \DeclareTextCommand{\cyr}{PU}{\84\107}% U+0447  
14762 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
14763 \DeclareTextCommand{\cyr}{PU}{\84\110}% U+0448  
14764 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
14765 \DeclareTextCommand{\cyr}{PU}{\84\111}% U+0449  
14766 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
14767 \DeclareTextCommand{\cyr}{PU}{\84\112}% U+044A  
14768 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic

14769 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
14770 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
14771 \DeclareTextCommand{\cyrstfn}{PU}{\84\114}% U+044C  
14772 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
14773 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
14774 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
14775 \DeclareTextCommand{\cyrju}{PU}{\84\116}% U+044E  
14776 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
14777 \DeclareTextCommand{\cyrja}{PU}{\84\117}% U+044F  
14778 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
14779 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
14780 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
14781 \DeclareTextCommand{\cyrjo}{PU}{\84\121}% U+0451  
14782 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
14783 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
14784 \DeclareTextCommand{\cyrjde}{PU}{\84\122}% U+0452  
14785 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
14786 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
14787 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
14788 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
14789 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
14790 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
14791 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyrillic  
14792 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
14793 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
14794 \DeclareTextCommand{\cyrji}{PU}{\84\127}% U+0457  
14795 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457  
14796 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
14797 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
14798 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
14799 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
14800 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
14801 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
14802 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
14803 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
14804 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
14805 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
14806 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
14807 \DeclareTextCompositeCommand{\'}{PU}{\cyri}{\84\135}% U+045D  
14808 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
14809 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
14810 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
14811 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
14812 \DeclareTextCommand{\cyrdze}{PU}{\84\137}% U+045F  
14813 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
14814 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
14815 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
14816 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
14817 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
14818 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
14819 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
14820 \DeclareTextCommand{\cyrjat}{PU}{\84\143}% U+0463  
14821 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
14822 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
14823 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
14824 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465

14825 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
14826 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
14827 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
14828 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
14829 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittlei-  
otifiedcyrillic  
14830 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
14831 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittlei-  
otifiedcyrillic  
14832 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
14833 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
14834 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
14835 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
14836 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
14837 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
cyrillic  
14838 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
14839 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotifiedcyril-  
lic  
14840 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
14841 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
14842 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
14843 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
14844 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
14845 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
14846 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
14847 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
14848 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
14849 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
14850 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
14851 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
14852 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
14853 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
14854 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
14855 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
14856 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
14857 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
CENT; Izhitsadblgravecyrillic  
14858 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
14859 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
CENT; izhitsadblgravecyrillic  
14860 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
14861 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
14862 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
14863 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
14864 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
14865 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyril-  
lic  
14866 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
14867 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
14868 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
14869 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlo-  
cyrillic  
14870 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
14871 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlo-  
cyrillic  
14872 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D

14873 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
14874 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
14875 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
14876 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
14877 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
14878 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
14879 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
14880 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
14881 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
14882 \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  
14883 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
14884 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
14885 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
14886 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
14887 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
14888 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
14889 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
14890 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
14891 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
14892 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
14893 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
14894 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
14895 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturncyrillic, \*afii10050  
14896 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
14897 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
14898 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
14899 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestrokecyrillic  
14900 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
14901 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
14902 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
14903 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemiddlehookcyrillic  
14904 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
14905 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemiddlehookcyrillic  
14906 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
14907 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescendercyrillic  
14908 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
14909 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescendercyrillic  
14910 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497

14911 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescendercyrillic  
14912 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
14913 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
14914 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescendercyrillic  
14915 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
14916 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
14917 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic  
14918 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
14919 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescendercyrillic  
14920 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
14921 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kaver-ticalstrokecyrillic  
14922 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
14923 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kaver-ticalstrokecyrillic  
14924 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
14925 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
14926 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
14927 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
14928 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
14929 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
14930 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
14931 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
14932 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
14933 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
14934 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
14935 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
14936 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
14937 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
14938 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
14939 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
14940 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
14941 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
14942 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
14943 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
14944 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
14945 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
14946 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
14947 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
14948 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
14949 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
14950 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
14951 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
14952 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
14953 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
14954 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB

14955 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
14956 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
14957 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
14958 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
14959 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
14960 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
14961 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; usstraightcyrillic  
14962 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
14963 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
14964 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
14965 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; usstraightstrokecyrillic  
14966 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
14967 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadesendercyrillic  
14968 \DeclareTextCommand{\CYRHDC}{PU}{\84\262}% U+04B2  
14969 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
14970 \DeclareTextCommand{\cyrhdc}{PU}{\84\263}% U+04B3  
14971 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
14972 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
14973 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
14974 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
14975 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescendercyrillic  
14976 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
14977 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
14978 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
14979 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Chevverticalstrokecyrillic  
14980 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
14981 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; chevverticalstrokecyrillic  
14982 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
14983 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
14984 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
14985 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
14986 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
14987 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasiancyrillic  
14988 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
14989 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic  
14990 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
14991 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic  
14992 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
14993 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
14994 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCENDER; chedescenderabkhasiancyrillic  
14995 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
14996 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
14997 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic

14998 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
14999 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
15000 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
15001 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
15002 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
15003 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
15004 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
15005 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
15006 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
15007 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
15008 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
15009 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
15010 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
15011 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
15012 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
15013 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
15014 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
15015 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassian-  
cyrillic  
15016 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
15017 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
cyrillic  
15018 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
15019 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
15020 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
15021 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
15022 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
15023 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
15024 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
15025 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
15026 \DeclareTextCompositeCommand{\U}{PU}{\cyr a}{\84\321}% U+04D1  
15027 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrlilic  
15028 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2  
15029 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrlilic  
15030 \DeclareTextCompositeCommand{\U}{PU}{\cyr a}{\84\323}% U+04D3  
15031 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
15032 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
15033 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
15034 \DeclareTextCommand{\cyr a e}{PU}{\84\325}% U+04D5  
15035 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevecyrillic  
15036 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
15037 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevecyrillic  
15038 \DeclareTextCompositeCommand{\U}{PU}{\cyr e}{\84\327}% U+04D7  
15039 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
15040 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
15041 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
15042 \DeclareTextCommand{\cyr schwa}{PU}{\84\331}% U+04D9  
15043 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiere-  
siscyrlilic  
15044 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
15045 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiere-  
siscyrlilic  
15046 \DeclareTextCompositeCommand{\U}{PU}{\cyr schwa}{\84\333}% U+04DB  
15047 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
siscyrlilic

15048 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% U+04DC  
15049 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresis-cyrillic  
15050 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% U+04DD  
15051 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresis-cyrillic  
15052 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% U+04DE  
15053 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresis-cyrillic  
15054 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% U+04DF  
15055 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-cyrillic  
15056 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
15057 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasian-cyrillic  
15058 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
15059 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacron-cyrillic  
15060 \DeclareTextCompositeCommand{\=} {PU}{\CYRI}{\84\342}% U+04E2  
15061 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacron-cyrillic  
15062 \DeclareTextCompositeCommand{\=} {PU}{\cyri}{\84\343}% U+04E3  
15063 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresis-cyrillic  
15064 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% U+04E4  
15065 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresis-cyrillic  
15066 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% U+04E5  
15067 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresis-cyrillic  
15068 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
15069 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresis-cyrillic  
15070 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
15071 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarred-cyrillic  
15072 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
15073 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarred-cyrillic  
15074 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
15075 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS; Obarreddieresis-cyrillic  
15076 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
15077 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarreddieresis-cyrillic  
15078 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
15079 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
15080 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
15081 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
15082 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
15083 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacron-cyrillic  
15084 \DeclareTextCompositeCommand{\=} {PU}{\CYRU}{\84\356}% U+04EE  
15085 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacron-cyrillic  
15086 \DeclareTextCompositeCommand{\=} {PU}{\cyru}{\84\357}% U+04EF  
15087 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresis-cyrillic  
15088 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
15089 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresis-cyrillic  
15090 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
15091 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlaut-cyrillic  
15092 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2  
15093 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlaut-cyrillic  
15094 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3  
15095 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresis-cyrillic



15096 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
15097 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresis-cyrillic  
15098 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
15099 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
15100 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
15101 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
15102 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
15103 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
15104 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
15105 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
15106 \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  
15107 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
15108 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
15109 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
15110 \DeclareTextCommand{\cyrhkh}{PU}{\84\375}% U+04FD  
\84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE  
\84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE

### 50.2.10 Thai: U+0E00 to U+0E7F

15111 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
15112 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

### 50.2.11 Latin Extended Additional: U+1E00 to U+1EFF

15113 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
15114 \DeclareTextCompositeCommand{.}{PU}{B}{\9036\002}% U+1E02  
15115 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
15116 \DeclareTextCompositeCommand{.}{PU}{b}{\9036\003}% U+1E03  
15117 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
15118 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
15119 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
15120 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
15121 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
15122 \DeclareTextCompositeCommand{.}{PU}{D}{\9036\012}% U+1E0A  
15123 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
15124 \DeclareTextCompositeCommand{.}{PU}{d}{\9036\013}% U+1E0B  
15125 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
15126 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
15127 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
15128 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
15129 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
15130 \DeclareTextCompositeCommand{c}{PU}{D}{\9036\020}% U+1E10  
15131 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
15132 \DeclareTextCompositeCommand{c}{PU}{d}{\9036\021}% U+1E11  
15133 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
15134 \DeclareTextCompositeCommand{.}{PU}{F}{\9036\036}% U+1E1E  
15135 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
15136 \DeclareTextCompositeCommand{.}{PU}{f}{\9036\037}% U+1E1F  
15137 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
15138 \DeclareTextCompositeCommand{=} {PU}{G}{\9036\040}% U+1E20  
15139 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron

15140 \DeclareTextCompositeCommand{\=} {PU}{g}{\9036\041}% U+1E21  
15141 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
15142 \DeclareTextCompositeCommand{\.} {PU}{H}{\9036\042}% U+1E22  
15143 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
15144 \DeclareTextCompositeCommand{\.} {PU}{h}{\9036\043}% U+1E23  
15145 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
15146 \DeclareTextCompositeCommand{\"} {PU}{H}{\9036\046}% U+1E26  
15147 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
15148 \DeclareTextCompositeCommand{\"} {PU}{h}{\9036\047}% U+1E27  
15149 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
15150 \DeclareTextCompositeCommand{\c} {PU}{H}{\9036\050}% U+1E28  
15151 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
15152 \DeclareTextCompositeCommand{\c} {PU}{h}{\9036\051}% U+1E29  
15153 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
15154 \DeclareTextCompositeCommand{\'} {PU}{K}{\9036\060}% U+1E30  
15155 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
15156 \DeclareTextCompositeCommand{\'} {PU}{k}{\9036\061}% U+1E31  
15157 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
15158 \DeclareTextCompositeCommand{\b} {PU}{K}{\9036\064}% U+1E34  
15159 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
15160 \DeclareTextCompositeCommand{\b} {PU}{k}{\9036\065}% U+1E35  
15161 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
15162 \DeclareTextCompositeCommand{\b} {PU}{L}{\9036\072}% U+1E3A  
15163 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
15164 \DeclareTextCompositeCommand{\b} {PU}{l}{\9036\073}% U+1E3B  
15165 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
15166 \DeclareTextCompositeCommand{\'} {PU}{M}{\9036\076}% U+1E3E  
15167 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
15168 \DeclareTextCompositeCommand{\'} {PU}{m}{\9036\077}% U+1E3F  
15169 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
15170 \DeclareTextCompositeCommand{\.} {PU}{M}{\9036\100}% U+1E40  
15171 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
15172 \DeclareTextCompositeCommand{\.} {PU}{m}{\9036\101}% U+1E41  
15173 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
15174 \DeclareTextCompositeCommand{\.} {PU}{N}{\9036\104}% U+1E44  
15175 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
15176 \DeclareTextCompositeCommand{\.} {PU}{n}{\9036\105}% U+1E45  
15177 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
15178 \DeclareTextCompositeCommand{\b} {PU}{N}{\9036\110}% U+1E48  
15179 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
15180 \DeclareTextCompositeCommand{\b} {PU}{n}{\9036\111}% U+1E49  
15181 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
15182 \DeclareTextCompositeCommand{\'} {PU}{P}{\9036\124}% U+1E54  
15183 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
15184 \DeclareTextCompositeCommand{\'} {PU}{p}{\9036\125}% U+1E55  
15185 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
15186 \DeclareTextCompositeCommand{\.} {PU}{P}{\9036\126}% U+1E56  
15187 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
15188 \DeclareTextCompositeCommand{\.} {PU}{p}{\9036\127}% U+1E57  
15189 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
15190 \DeclareTextCompositeCommand{\.} {PU}{R}{\9036\130}% U+1E58  
15191 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
15192 \DeclareTextCompositeCommand{\.} {PU}{r}{\9036\131}% U+1E59  
15193 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
15194 \DeclareTextCompositeCommand{\b} {PU}{R}{\9036\136}% U+1E5E  
15195 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
15196 \DeclareTextCompositeCommand{\b} {PU}{r}{\9036\137}% U+1E5F

15197 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
15198 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
15199 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
15200 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
15201 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
15202 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
15203 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
15204 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
15205 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
15206 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
15207 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
15208 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
15209 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
15210 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
15211 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
15212 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
15213 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
15214 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
15215 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
15216 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
15217 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
15218 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
15219 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
15220 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
15221 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
15222 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
15223 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
15224 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
15225 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
15226 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
15227 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
15228 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
15229 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
15230 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
15231 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
15232 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
15233 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
15234 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
15235 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
15236 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
15237 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
15238 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
15239 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
15240 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
15241 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
15242 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
15243 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
15244 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
15245 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
15246 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
15247 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
15248 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
15249 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
15250 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
15251 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
15252 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99

15253 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotaccent  
 15254 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
 15255 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
 15256 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
 15257 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
 15258 \DeclareTextCompositeCommand{\-}{PU}{e}{\9036\275}% U+1EBD  
 15259 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 15260 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
 15261 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 15262 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
 15263 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 15264 \DeclareTextCompositeCommand{\-}{PU}{Y}{\9036\370}% U+1EF8  
 15265 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 15266 \DeclareTextCompositeCommand{\-}{PU}{y}{\9036\371}% U+1EF9

### 50.2.12 General Punctuation: U+2000 to U+206F

15267 % U+200C ZERO WIDTH NON-JOINER; \*afi61664, zerowidthnonjoiner  
 15268 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 15269 % U+2013 EN DASH; endash  
 15270 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 15271 % U+2014 EM DASH; emdash  
 15272 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 15273 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 15274 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 15275 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 15276 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 15277 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 15278 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 15279 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 15280 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 15281 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 15282 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 15283 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 15284 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 15285 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 15286 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 15287 % U+2020 DAGGER; dagger  
 15288 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
 15289 % U+2021 DOUBLE DAGGER; daggerdbl  
 15290 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 15291 % U+2022 BULLET; bullet  
 15292 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022  
 15293 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 15294 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 15295 % U+2030 PER MILLE SIGN; perthousand  
 15296 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 15297 % U+2031 PER TEN THOUSAND SIGN  
 15298 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 15299 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 singleft  
 15300 \DeclareTextCommand{\guilsingleft}{PU}{\9040\071}% U+2039  
 15301 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 singright  
 15302 \DeclareTextCommand{\guilsingright}{PU}{\9040\072}% U+203A  
 15303 % U+203B REFERENCE MARK; referencemark  
 15304 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B

15305 % U+203D INTERROBANG  
15306 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
15307 % U+2044 FRACTION SLASH; fraction  
15308 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
15309 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
15310 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
15311 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
15312 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
15313 % U+2052 COMMERCIAL MINUS SIGN  
15314 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

### 50.2.13 Superscripts and Subscripts: U+2070 to U+209F

15315 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
15316 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
15317 % U+2074 SUPERSCRIPT FOUR; foursuperior  
15318 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
15319 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
15320 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
15321 % U+2076 SUPERSCRIPT SIX; sixsuperior  
15322 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
15323 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
15324 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077  
15325 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
15326 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
15327 % U+2079 SUPERSCRIPT NINE; ninesuperior  
15328 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
15329 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
15330 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
15331 % U+207B SUPERSCRIPT MINUS  
15332 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
15333 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
15334 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}  
15335 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
15336 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
15337 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
15338 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
15339 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
15340 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}  
15341 % U+2080 SUBSCRIPT ZERO; zeroinferior  
15342 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
15343 % U+2081 SUBSCRIPT ONE; oneinferior  
15344 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
15345 % U+2082 SUBSCRIPT TWO; twoinferior  
15346 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
15347 % U+2083 SUBSCRIPT THREE; threeminferior  
15348 \DeclareTextCommand{\textthreeminferior}{PU}{\9040\203}% U+2083  
15349 % U+2084 SUBSCRIPT FOUR; fourinferior  
15350 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
15351 % U+2085 SUBSCRIPT FIVE; fiveinferior  
15352 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
15353 % U+2086 SUBSCRIPT SIX; sixinferior  
15354 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086  
15355 % U+2087 SUBSCRIPT SEVEN; seveninferior  
15356 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
15357 % U+2088 SUBSCRIPT EIGHT; eightinferior  
15358 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
15359 % U+2089 SUBSCRIPT NINE; nineinferior

15360 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
 15361 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
 15362 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
 15363 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
 15364 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

#### 50.2.14 Currency Symbols: U+20A0 to U+20CF

15365 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 15366 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 15367 % U+20A4 LIRA SIGN; afii08941, \*lira  
 15368 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 15369 % U+20A6 NAIRA SIGN  
 15370 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 15371 % U+20A7 PESETA SIGN; peseta  
 15372 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 15373 % U+20A9 WON SIGN; won  
 15374 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 15375 % U+20AB DONG SIGN; dong  
 15376 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 15377 % U+20AC EURO SIGN; \*Euro, euro  
 15378 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 15379 % U+20B1 PESO SIGN  
 15380 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 15381 % U+20B2 GUARANI SIGN  
 15382 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

#### 50.2.15 Letterlike Symbols: U+2100 to U+214F

15383 % U+2103 DEGREE CELSIUS; centigrade  
 15384 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 15385 % U+2116 NUMERO SIGN; \*afii61352, numero  
 15386 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 15387 % U+2117 SOUND RECORDING COPYRIGHT  
 15388 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 15389 % U+211E PRESCRIPTION TAKE; prescription  
 15390 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 15391 % U+2120 SERVICE MARK  
 15392 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 15393 % U+2122 TRADE MARK SIGN; trademark  
 15394 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 15395 % U+2126 OHM SIGN; Ohm, Omega  
 15396 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 15397 % U+2127 INVERTED OHM SIGN  
 15398 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
 15399 % U+212B ANGSTROM SIGN; angstrom  
 15400 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 15401 % U+212E ESTIMATED SYMBOL; estimated  
 15402 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 15403 % U+2135 ALEF SYMBOL; aleph  
 15404 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

#### 50.2.16 Arrows: U+2190 to U+21FF

15405 % U+2190 LEFTWARDS ARROW; arrowleft  
 15406 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
 15407 % U+2191 UPWARDS ARROW; arrowup  
 15408 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
 15409 % U+2192 RIGHTWARDS ARROW; arrowright  
 15410 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192

15411 % U+2193 DOWNWARDS ARROW; arrowdown  
15412 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

### 50.2.17 Mathematical Operators: U+2200 to U+22FF

15413 % U+2212 MINUS SIGN; minus  
15414 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
15415 % U+221A SQUARE ROOT; radical  
15416 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

### 50.2.18 Miscellaneous Technical: U+2300 to U+23FF

15417 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
15418 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
15419 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
15420 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

### 50.2.19 Control Pictures: U+2400 to U+243F

15421 % U+2422 BLANK SYMBOL  
15422 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
15423 % U+2423 OPEN BOX; blank  
15424 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

### 50.2.20 Enclosed Alphanumerics: U+2460 to U+24FF

15425 % U+2460 CIRCLED DIGIT ONE; onecircle  
15426 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
15427 % U+2461 CIRCLED DIGIT TWO; twocircle  
15428 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
15429 % U+2462 CIRCLED DIGIT THREE; threecircle  
15430 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
15431 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
15432 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
15433 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
15434 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
15435 % U+2465 CIRCLED DIGIT SIX; sixcircle  
15436 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
15437 % U+2466 CIRCLED DIGIT SEVEN; sevendigit  
15438 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
15439 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
15440 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
15441 % U+2468 CIRCLED DIGIT NINE; ninecircle  
15442 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
15443 % U+2469 CIRCLED NUMBER TEN; tencircle  
15444 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
15445 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
15446 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
15447 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
15448 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
15449 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
15450 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
15451 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
15452 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
15453 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
15454 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
15455 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
15456 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
15457 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
15458 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
15459 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle

15460 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
15461 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
15462 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
15463 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
15464 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
15465 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
15466 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
15467 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
15468 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
15469 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
15470 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
15471 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
15472 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
15473 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
15474 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
15475 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
15476 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
15477 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
15478 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
15479 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
15480 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
15481 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
15482 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
15483 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
15484 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
15485 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
15486 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
15487 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
15488 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
15489 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
15490 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
15491 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
15492 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
15493 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
15494 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
15495 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
15496 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
15497 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
15498 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
15499 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
15500 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
15501 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
15502 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
15503 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
15504 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
15505 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
15506 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
15507 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
15508 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
15509 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
15510 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
15511 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
15512 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
15513 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
15514 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
15515 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
15516 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF



15517 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
15518 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
15519 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
15520 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
15521 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
15522 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
15523 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
15524 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
15525 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
15526 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
15527 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
15528 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
15529 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
15530 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
15531 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
15532 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
15533 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
15534 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
15535 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
15536 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
15537 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
15538 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
15539 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
15540 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
15541 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
15542 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
15543 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
15544 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
15545 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
15546 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
15547 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
15548 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
15549 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
15550 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
15551 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
15552 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
15553 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
15554 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
15555 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
15556 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
15557 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
15558 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
15559 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
15560 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
15561 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
15562 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
15563 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
15564 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
15565 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
15566 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
15567 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
15568 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
15569 % U+24EA CIRCLED DIGIT ZERO  
15570 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

### 50.2.21 Box Drawing: U+2500 to U+257F

15571 % U+25E6 WHITE BULLET; \*openbullet, whitebullet

15572 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6  
 15573 % U+25EF LARGE CIRCLE; largecircle  
 15574 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

### 50.2.22 Miscellaneous Symbols: U+2600 to U+26FF

15575 % U+266A EIGHTH NOTE; musicalnote  
 15576 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
 15577 % U+26AD MARRIAGE SYMBOL  
 15578 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
 15579 % U+26AE DIVORCE SYMBOL  
 15580 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

### 50.2.23 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

15581 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 15582 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6  
 15583 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
 15584 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

### 50.2.24 Alphabetic Presentation Forms: U+FB00 to U+FB4F

15585 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 15586 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 15587 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 15588 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

### 50.2.25 Miscellaneous

15589 \DeclareTextCommand{\SS}{PU}{SS}

### 50.2.26 Aliases

Aliases (german.sty)

15590 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}  
 15591 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}  
 15592 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}  
 15593 \DeclareTextCommand{\textgrq}{PU}{\textquotelleft}  
 15594 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}  
 15595 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}  
 15596 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}  
 15597 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

Aliases (math names)

15598 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}  
 15599 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}  
 15600 \DeclareTextCommand{\textdiv}{PU}{\textdivide}  
 15601 \DeclareTextCommand{\textpm}{PU}{\textplusminus}  
 15602 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

15603 </puenc>

## 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

15604 <\*puvnenc>

15605 \DeclareTextCommand{\abreve}{PU}{\81\003}  
 15606 \DeclareTextCommand{\acircumflex}{PU}{\80\342}  
 15607 \DeclareTextCommand{\dj}{PU}{\81\021}  
 15608 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}  
 15609 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}

15610 \DeclareTextCommand{\ohorn}{PU}{\81\241}  
15611 \DeclareTextCommand{\uhorn}{PU}{\81\260}  
15612 \DeclareTextCommand{\ABREVE}{PU}{\81\002}  
15613 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}  
15614 \DeclareTextCommand{\DJ}{PU}{\81\020}  
15615 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}  
15616 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}  
15617 \DeclareTextCommand{\OHORN}{PU}{\81\240}  
15618 \DeclareTextCommand{\UHORN}{PU}{\81\257}  
  
15619 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}  
15620 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}  
15621 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}  
15622 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}  
15623 \DeclareTextCompositeCommand{\-}{PU}{a}{\80\343}  
15624 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}  
15625 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}  
15626 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}  
15627 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}  
15628 \DeclareTextCompositeCommand{\-}{PU}{\abreve}{\9036\265}  
15629 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}  
15630 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}  
15631 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}  
15632 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
15633 \DeclareTextCompositeCommand{\-}{PU}{\acircumflex}{\9036\253}  
15634 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
15635 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
15636 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
15637 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
15638 \DeclareTextCompositeCommand{\-}{PU}{e}{\9036\275}  
15639 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
15640 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
15641 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
15642 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
15643 \DeclareTextCompositeCommand{\-}{PU}{\ecircumflex}{\9036\305}  
15644 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
15645 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
15646 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
15647 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
15648 \DeclareTextCompositeCommand{\-}{PU}{i}{\81\051}  
15649 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
15650 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
15651 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
15652 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
15653 \DeclareTextCompositeCommand{\-}{PU}{o}{\80\365}  
15654 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
15655 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
15656 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
15657 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
15658 \DeclareTextCompositeCommand{\-}{PU}{\ocircumflex}{\9036\327}  
15659 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
15660 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
15661 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
15662 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
15663 \DeclareTextCompositeCommand{\-}{PU}{\ohorn}{\9036\341}  
15664 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
15665 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
15666 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}

15667 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
15668 \DeclareTextCompositeCommand{\-}{PU}{u}{\81\151}  
15669 \DeclareTextCompositeCommand{\'}{PU}{uhorn}{\9036\351}  
15670 \DeclareTextCompositeCommand{\d}{PU}{uhorn}{\9036\361}  
15671 \DeclareTextCompositeCommand{\`}{PU}{uhorn}{\9036\353}  
15672 \DeclareTextCompositeCommand{\h}{PU}{uhorn}{\9036\355}  
15673 \DeclareTextCompositeCommand{\-}{PU}{uhorn}{\9036\357}  
15674 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
15675 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
15676 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}  
15677 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
15678 \DeclareTextCompositeCommand{\-}{PU}{y}{\9036\371}  
15679 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
15680 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
15681 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
15682 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
15683 \DeclareTextCompositeCommand{\-}{PU}{A}{\80\303}  
15684 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
15685 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
15686 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
15687 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
15688 \DeclareTextCompositeCommand{\-}{PU}{\ABREVE}{\9036\264}  
15689 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}  
15690 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}  
15691 \DeclareTextCompositeCommand{\`}{PU}{\ACIRCUMFLEX}{\9036\246}  
15692 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}  
15693 \DeclareTextCompositeCommand{\-}{PU}{\ACIRCUMFLEX}{\9036\252}  
15694 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}  
15695 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}  
15696 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}  
15697 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}  
15698 \DeclareTextCompositeCommand{\-}{PU}{E}{\9036\274}  
15699 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}  
15700 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}  
15701 \DeclareTextCompositeCommand{\`}{PU}{\ECIRCUMFLEX}{\9036\300}  
15702 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}  
15703 \DeclareTextCompositeCommand{\-}{PU}{\ECIRCUMFLEX}{\9036\304}  
15704 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}  
15705 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}  
15706 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}  
15707 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}  
15708 \DeclareTextCompositeCommand{\-}{PU}{I}{\81\050}  
15709 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}  
15710 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}  
15711 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}  
15712 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}  
15713 \DeclareTextCompositeCommand{\-}{PU}{O}{\80\325}  
15714 \DeclareTextCompositeCommand{\`}{PU}{\OCIRCUMFLEX}{\9036\320}  
15715 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}  
15716 \DeclareTextCompositeCommand{\`}{PU}{\OCIRCUMFLEX}{\9036\322}  
15717 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}  
15718 \DeclareTextCompositeCommand{\-}{PU}{\OCIRCUMFLEX}{\9036\326}  
15719 \DeclareTextCompositeCommand{\`}{PU}{\OHORN}{\9036\332}  
15720 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}  
15721 \DeclareTextCompositeCommand{\`}{PU}{\OHORN}{\9036\334}  
15722 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}  
15723 \DeclareTextCompositeCommand{\-}{PU}{\OHORN}{\9036\340}

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15724 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
15725 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
15726 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}
15727 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
15728 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
15729 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}
15730 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
15731 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
15732 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
15733 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
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15735 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
15736 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
15737 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
15738 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
15739 </puvnenc>

```

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

15740 <*puarenc>
15741 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LET-
TER HAMZA
15742 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LET-
TER ALEF WITH MADDA ABOVE
15743 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LET-
TER ALEF WITH HAMZA ABOVE
15744 \DeclareTextCommand{\wawhamza}{PU}{\86\044} % 0624;afii57412;ARABIC LET-
TER WAW WITH HAMZA ABOVE
15745 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LET-
TER ALEF WITH HAMZA BELOW
15746 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LET-
TER YEH WITH HAMZA ABOVE
15747 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF
15748 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH
15749 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA
15750 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH
15751 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LET-
TER THEH
15752 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LET-
TER JEEM
15753 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH
15754 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH
15755 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL
15756 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL
15757 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH
15758 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN
15759 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN
15760 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LET-
TER SHEEN
15761 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD
15762 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD
15763 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH
15764 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH
15765 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN

```

```

15766 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afi57434;ARABIC LET-
      TER GHAIN
15767 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afi57440;ARABIC TATWEEL
15768 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afi57441;ARABIC LETTER FEH
15769 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afi57442;ARABIC LETTER QAF
15770 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afi57443;ARABIC LETTER KAF
15771 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afi57444;ARABIC LETTER LAM
15772 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afi57445;ARABIC LET-
      TER MEEM
15773 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afi57446;ARABIC LETTER NOON
15774 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afi57470;ARABIC LETTER HEH
15775 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afi57448;ARABIC LETTER WAW
15776 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afi57449;ARABIC LET-
      TER ALEF MAKSURA
15777 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afi57450;ARABIC LETTER YEH
15778 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afi57451;ARABIC FATHATAN
15779 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afi57452;ARABIC DAMMATAN
15780 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afi57453;ARABIC KASRATAN
15781 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afi57454;ARABIC FATHA
15782 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afi57455;ARABIC DAMMA
15783 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afi57456;ARABIC KASRA
15784 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afi57457;ARABIC SHADDA
15785 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afi57458;ARABIC SUKUN

Farsi
15786 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afi57506;ARABIC LETTER PEH
15787 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afi57507;ARABIC LET-
      TER TCHEH
15788 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afi57508;ARABIC LETTER JEH
15789 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afi?????;FARSI LET-
      TER KAF
15790 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afi57509;ARABIC LETTER GAF
15791 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afi?????;FARSI LET-
      TER YEH

15792 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
15793 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ
15794 \langle/parenc\rangle

```

## 51 End of file hycheck.tex

```

15795 \langle*check\rangle
15796 \langletypeout\rangle
15797 \langlebegin{document}\rangle
15798 \langleend{document}\rangle
15799 \langle/check\rangle

```

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