

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

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## 1 Documentation overview for `hyperref`

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

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

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

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

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

**Bookmark talk, slides** Slides for the talk “PDF information and navigation elements with `hyperref`, `pdfTeX` and `thumbpdf`” at Euro $\text{\TeX}$  1999.

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

Source code documentation:

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

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

**`nameref.dtx`** “Section name references in  $\text{\LaTeX}$ ”

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### 3 File hycheck.tex

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

```
1 \langle *check\rangle
2 \documentclass{article}
3 \makeatletter
```

`\checklatex` Optional argument: release date of L<sup>A</sup>T<sub>E</sub>X.

```
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   }\%
```

`\checkcommand` The macro `\checkcommand` parses the next tokens as a  $\text{\LaTeX}$  definition and compares this definition with the current meaning of that command.

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

\Hy@RestoreCatcodes

```

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

```

```

216 \x\)%
217 \x\[%
218 \x\]%
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{keyval}[1997/11/10]
233 \RequirePackage{ifpdf}[2006/02/20]
234 \RequirePackage{ifvtex}
235 \RequirePackage{ifxetex}[2006/08/21]
236 \RequirePackage{hycolor}
237 \def\Hy@Warning#1{\PackageWarning{hyperref}{#1}}
238 \def\Hy@WarningNoLine#1{\PackageWarningNoLine{hyperref}{#1}}
239 \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`.

```

240 \@ifundefined{AfterBeginDocument}{%
241 \def\AfterBeginDocument{\AtBeginDocument}%
242 }{}%

```

## 4.3 Switches

```

243 \newif\ifHy@typexml
244 \newif\ifHy@activeanchor
245 \newif\ifHy@backref
246 \newif\ifHy@bookmarks
247 \newif\ifHy@bookmarksnumbered
248 \newif\ifHy@bookmarksopen
249 \newif\ifHy@breaklinks
250 \newif\ifHy@centerwindow
251 \newif\ifHy@CJKbookmarks
252 \newif\ifHy@colorlinks
253 \newif\ifHy@draft
254 \let\Hy@finaltrue\Hy@draftfalse
255 \let\Hy@finalfalse\Hy@drafttrue

```

```

256 \newif\ifHy@escapeform
257 \newif\ifHy@figures
258 \newif\ifHy@fitwindow
259 \newif\ifHy@frenchlinks
260 \newif\ifHy@hyperfootnotes
261 \newif\ifHy@hyperindex
262 \newif\ifHy@hypertextnames
263 \newif\ifHy@implicit
264 \newif\ifHy@linktocpage
265 \newif\ifHy@menubar
266 \newif\ifHy@naturalnames
267 \newif\ifHy@nesting
268 \newif\ifHy@newwindowset
269 \newif\ifHy@newwindow
270 \newif\ifHy@ocgcolorlinks
271 \newif\ifHy@pageanchor
272 \newif\ifHy@pagelabels
273 \newif\ifHy@pdfpagehidden
274 \newif\ifHy@pdfstring
275 \newif\ifHy@plainpages
276 \newif\ifHy@psize
277 \newif\ifHy@raiselinks
278 \newif\ifHy@seminarslides
279 \newif\ifHy@setpagesize
280 \newif\ifHy@texht
281 \newif\ifHy@toolbar
282 \newif\ifHy@unicode
283 \newif\ifHy@usetitle
284 \newif\ifHy@verbose
285 \newif\ifHy@windowui
286 \newif\ifHy@displaydoctitle
287 \newif\ifHy@pdfa

```

Defaults for the switches are now set.

```

288 \Hy@backreffalse
289 \Hy@bookmarksnumberedfalse
290 \Hy@bookmarksopenfalse
291 \Hy@bookmarkstrue
292 \Hy@breaklinksfalse
293 \Hy@centerwindowfalse
294 \Hy@CJKbookmarksfalse
295 \Hy@escapeformfalse
296 \Hy@figuresfalse
297 \Hy@fitwindowfalse
298 \Hy@hyperfootnotetrue
299 \Hy@hyperindextrue
300 \Hy@hypertextnametrue
301 \Hy@implicittrue
302 \Hy@linktocpagefalse
303 \Hy@menubartrue
304 \Hy@naturalnamesfalse
305 \Hy@nestingfalse
306 \Hy@newwindowsetfalse
307 \Hy@newwindowfalse
308 \Hy@pageanchortrue
309 \Hy@pagelabelstrue
310 \Hy@pdfpagehiddenfalse
311 \Hy@pdfstringfalse

```

```

312 \Hy@plainpagesfalse
313 \Hy@raiselinksfalse
314 \Hy@setpagesizetrue
315 \Hy@texhtfalse
316 \Hy@toolbartrue
317 \Hy@typexmlfalse
318 \Hy@unicodetrue
319 \Hy@usetitlefalse
320 \Hy@verbosefalse
321 \Hy@windowuitrue
322 \Hy@displaydoctitlefalse
323 \Hy@pdfafalse

```

## 5 Common help macros

\Hy@StepCount

```

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

```

\Hy@GlobalStepCount

```

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

326 \newdimen\@linkdim
327 \let\Hy@driver\@empty
328 \let\MaybeStopEarly\relax
329 \newcount\Hy@linkcounter
330 \newcount\Hy@pagecounter
331 \Hy@linkcounter0
332 \Hy@pagecounter0

```

### 5.1 Macros for recursions

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

```

333 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
334 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

335 \let\Hy@ReturnEnd\@empty
336 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
337 \long\def\Hy@ReturnAfterElseFiFiEnd#1\else#2\Hy@ReturnEnd{\fi\fi#1}

```

### 5.2 Babel's protection of shorthand characters

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

```

338 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
339 \def\Hy@safe@activesfalse{\csname @safe@activesfalse\endcsname}

```

### 5.3 Coordinate transformations

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

\hypercalcbp    The user macro \hypercalcbp can be used, for example, inside option values:  
 pdfstartview={FitBH \hypercalcbp{\paperheight-\topmargin-1in}}

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

Example (T<sub>E</sub>X):

```

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

\hypercalcbp

340 \begingroup\expandafter\expandafter\expandafter\endgroup
341 \expandafter\ifx\csname dimexpr\endcsname\relax
342   \def\hypercalcbpdef#1#2{%
343     \begingroup
344       \toks@{}%
345       \HyCal@scan#2\hypercalcbp\@nil
346       \expandafter\endgroup
347       \expandafter\def\expandafter#1\expandafter{\the\toks@}%
348   }%
349   \def\HyCal@scan#1\hypercalcbp#2\@nil{%
350     \toks@\expandafter{\the\toks@ #1}%
351     \ifx\#2\%
352       \else
353         \Hy@ReturnAfterFi{%
354           \HyCal@do#2\@nil
355         }%
356       \fi
357     }%
358     \def\HyCal@do#1#2\@nil{%
359       \@ifpackageloaded{calc}{-}{%
360         \Hy@Warning{%
361           For calculations \string\hypercalcbp\space needs\MessageBreak
362           package calc or e-TeX%
363         }%
364       }%
365       \setlength{\dimen@}{#1}%
366       \setlength{\dimen@}{0.99626401\dimen@}%
367       \edef\x{%
368         \toks@{%
369           \the\toks@
370           \strip@pt\dimen@
371         }%
372       }\x
373       \HyCal@scan#2\@nil

```

```

374 }%
375 \else
376   \def\hypercalcbp#1{%
377     \strip@pt\dimexpr 0.99626401\dimexpr #1\relax\relax
378   }%
379   \def\hypercalcbpdef{\def}%
380 \fi

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

Email: oberdiek@uni-freiburg.de.

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

### 6.1 Description of PDF strings

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

- They are surrounded by parentheses. The hexadecimal form is not supported.
- Like PostScript language strings they use the same escaping mechanism:
 

<code>\\</code>	the backslash itself
<code>\), \((</code>	unbalanced parentheses
<code>\n, \r, \t, \b, \f</code>	special white space escape sequences
<code>\ddd</code>	octal character code <i>ddd</i>
- Strings are stored either in `PDFDocEncoding`, which is a superset of `ISOLatin1` and is compatible with Unicode with character codes below 256, or in Unicode.

### 6.2 Definition of `\pdfstringdef`

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

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

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

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

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

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

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

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

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

```
382 \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.

```
383 \escapechar'\%
```

From the view of  $\TeX$  a octal sequence consists of the command tokens `\0` until `\3` and two digits. For saving tokens `\0`, `\1`, `\2`, and `\3` are directly used without a preceding `\string` in the glyph definitions. This is done here locally by defining the `\0` until `\3` commands. So the user can use octal escape sequences directly, the disadvantage is that a previous definition of this short commands does not apply.

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

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

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

```
387 \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.

```
388 \ifHy@unicode
```

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

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

```
391 \fontencoding{PU}%
```

```
392 \HyPsd@UTFviii
```

```
393 \else
```

```
394 \fontencoding{PD1}%
```

```
395 \fi
```

```
396 \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).

```
397 \@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).

```
398 \let\@inmathwarn\HyPsd@inmathwarn
```

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

```
399 \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.

```
400 \let\{\textbraceleft
401 \let\}\textbraceright
402 \let\\\textbackslash
403 \let\#\textnumbersign
404 \let\$\textdollar
405 \let\%\textpercent
406 \let\&\textampersand
407 % \let\~\textasciitilde
408 \let\_ \textunderscore
409 \let\P\textparagraph
410 \let\ldots\textellipsis
411 \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.

```
412 \def\{\pdfstringdefWarn\\}%
413 \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.

```
414 \def\TeX{\TeX}%
415 \def\LaTeX{La\TeX}%
416 \def\LaTeXe{LaTeX2e}%
417 \def\eTeX{e-\TeX}%
418 \def\SliTeX{Sli\TeX}%
419 \def\MF{Metafont}%
420 \def\MP{Metapost}%
```

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

```

421 \let\emph\@firstofone
422 \let\textnormal\@firstofone
423 \let\textrm\@firstofone
424 \let\textsf\@firstofone
425 \let\texttt\@firstofone
426 \let\textbf\@firstofone
427 \let\textmd\@firstofone
428 \let\textit\@firstofone
429 \let\textsc\@firstofone
430 \let\textsl\@firstofone
431 \let\textup\@firstofone
432 \let\normalfont\@empty
433 \let\rmfamily\@empty
434 \let\sffamily\@empty
435 \let\ttfamily\@empty
436 \let\bfseries\@empty
437 \let\mdseries\@empty
438 \let\itshape\@empty
439 \let\scshape\@empty
440 \let\slshape\@empty
441 \let\upshape\@empty
442 \let\em\@empty
443 \let\rm\@empty
444 \let\Huge\@empty
445 \let\LARGE\@empty
446 \let\Large\@empty
447 \let\footnotesize\@empty
448 \let\huge\@empty
449 \let\large\@empty
450 \let\normalsize\@empty
451 \let\scriptsize\@empty
452 \let\small\@empty
453 \let\tiny\@empty
454 \let\mathversion\@gobble

```

**Package color.**

```

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

```

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

```

456 \let\textlatin\@firstofone
457 \@ifundefined{language@group}{-}{%
458 \csname HyPsd@babel@language@group\endcsname
459 }%
460 \HyPsd@GreekPatch
461 \let\@safe@activetrue\relax
462 \let\@safe@activesfalse\relax

```

Disable \cyr, used in russianb.ldf.

```

463 \let\cyr\relax

```

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

```

464 \let\es@roman\@Roman

```

**Package german.**

```

465 \let\glqq\textglqq
466 \let\grqq\textgrqq
467 \let\glq\textglq
468 \let\grq\textgrq
469 \let\flqq\textflqq
470 \let\frqq\textfrqq
471 \let\flq\textflq
472 \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}

473 \let\if@mid@expandable\@firstoftwo

```

**AMS classes.**

```

474 \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.

```

475 \let\hspace\HyPsd@hspace

```

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

```

476 \let\label\@gobble
477 \let\index\@gobble
478 \let\glossary\@gobble
479 \let\href\@secondoftwo
480 \let\mkboth\@gobbletwo

```

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

```

481 \let\ref\HyPsd@ref
482 \let\pageref\HyPsd@pageref
483 \let\nameref\HyPsd@nameref
484 \let\autoref\HyPsd@autoref

```

**Miscellaneous commands.**

```

485 \let\leavevmode\@empty
486 \let\mbox\@empty

```

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

```

487 \def\halign{\pdfstringdefWarn\halign\@gobble}%

```

**Patch for cjk bookmarks.**

```

488 \ifHy@CJKbookmarks
489 \HyPsd@CJKhook
490 \fi

```

**User hook.** The switch `\Hy@pdfstring` is turned on. So user commands can detect that they are processed not to be typeset 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`).

```
491 \Hy@pdfstringtrue
492 \pdfstringdefPreHook
```

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

```
493 \HyPsd@LetUnexpandableSpace\space
494 \HyPsd@LetUnexpandableSpace\ %
495 \HyPsd@LetUnexpandableSpace~%
496 \HyPsd@LetUnexpandableSpace\nobreakspace
```

**Package xspace.**

```
497 \@ifundefined{@xspace}{%
498 \let\xspace\HyPsd@ITALCORR
499 }{%
500 \let\xspace\HyPsd@XSPACE
501 }%
502 \let\/\HyPsd@ITALCORR
503 \let\bgroup\/%
504 \let\egroup\/%
```

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

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

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

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

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

```
506 \let\@ifnextchar\HyPsd@ifnextchar
507 \let\@ifnextchar\HyPsd@new@ifnextchar
508 \let\@protected@testopt\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).

```
509    \begingroup
510    \let\GenericError\@gobblefour
511    \let\GenericWarning\@gobbletwo
512    \let\GenericInfo\@gobbletwo
```

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

```
513    \ifx\nofrenchguillemets\@undefined
514    \else
515    \nofrenchguillemets
516    \fi
```

**Definition commands and expansion.** Redefining the defining commands (see sec. 6.5.10). The original meaning of `\xdef` is saved in `\Hy@temp`.

```
517    \let\Hy@temp\xdef
518    \let\def\HyPsd@DefCommand
519    \let\gdef\HyPsd@DefCommand
520    \let\edef\HyPsd@DefCommand
521    \let\xdef\HyPsd@DefCommand
522    \let\futurelet\HyPsd@LetCommand
523    \let\let\HyPsd@LetCommand
524    \Hy@temp#1{#2}%
525    \endgroup
```

### 6.2.3 Postprocessing

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

```
526 \ifx#1\@empty
527 \else
```

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

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

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

```
528 \HyPsd@ProtectSpaces#1%
529 \let\HyPsd@String\@empty
530 \expandafter\HyPsd@RemoveBraces\expandafter{#1}%
531 \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.

```
532 \let\HyPsd@SPACEOPTI\relax
533 {%
534 \let\HyPsd@String\@empty
535 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
536 \global\let#1\HyPsd@String
537 }%
538 \expandafter\HyPsd@RemoveMask\expandafter
539 |\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.

```
540 \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
541 \let\HyPsd@String\@empty
542 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
543 \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.

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

```
545 \ifHy@unicode
546 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
547 \HyPsd@SPACEOPTI#1%
548 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
549 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
550 {\HyPsd@SPACEOPTI\80\273}#1%
551 \else
552 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
553 \expandafter\HyPsd@Subst\expandafter{%
554 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
555 \string\273}\HyPsd@SPACEOPTI\273}#1%
556 \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.

```
557 \ifHy@unicode
558 \HyPsd@StringSubst{\)}{\80\051}#1%
559 \HyPsd@Subst){\80\051}#1%
560 \let\HyPsd@empty\relax
561 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
562 {\HyPsd@empty\80\051}#1%
563 \else
564 \HyPsd@StringSubst{\)}{\051}#1%
565 \HyPsd@Subst){\051}#1%
566 \let\HyPsd@empty\relax
```

```

567      \HyPsd@StringSubst{\051}{\HyPsd@empty\string\)}#1%
568      \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`.

```

569      \expandafter\HyPsd@Subst\expandafter{\}/\HyPsd@empty#1%
570      \@ifundefined{xspace}{%
571      }{%
572      \let\HyPsd@xspace\relax
573      \expandafter\HyPsd@Subst\expandafter
574      {\HyPsd@XSPACE}\HyPsd@xspace#1%
575      \let\HyPsd@xspace\HyPsd@doxspace
576      }%
577      \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.

```

578 %      \HyPsd@Subst{---}\textemdash#1%
579 %      \HyPsd@Subst{--}\textendash#1%
580 %      \HyPsd@Subst{fi}\textfi#1%
581 %      \HyPsd@Subst{fl}\textfl#1%
582 %      \HyPsd@Subst{!'}\texttexclamdown#1%
583 %      \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

584      \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.

```

585      \ifHy@unicode
586      \HyPsd@StringSubst{\textparenleft#1%
587      \HyPsd@Subst{\textparenleft#1%
588      \else
589      \HyPsd@StringSubst{\(\050}#1%
590      \HyPsd@Subst{\050}#1%
591      \HyPsd@StringSubst{\050}{\string\)}#1%

```



```
592 \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.

```
593 \ifHy@unicode
594 \edef\HyPsd@SPACEOPTI{\80\040}%
595 \else
596 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
597 \fi
598 \xdef#1{#1\@empty}%
599 \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.

```
600 \endgroup
601 \begingroup
602 \ifHy@unicode
603 \HyPsd@ConvertToUnicode#1%
```

**Try conversion back to PDFDocEncoding.**

```
604 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
605 \ifundefined{StringEncodingConvertTest}{%
606 }{%
607 \EdefUnescapeString\HyPsd@temp#1%
608 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
609 {utf16be}{pdfdoc}{%
610 \EdefEscapeString\HyPsd@temp\HyPsd@temp
611 \global\let#1\HyPsd@temp
612 \Hy@unicodedefalse
613 }{}%
614 }%
615 \fi
616 \fi
```

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

```
617 \pdfstringdefPostHook#1%
618 \endgroup
619 }
```

```
\Hy@pdfstringdef
```

```
620 \def\Hy@pdfstringdef#1#2{%
621 \pdfstringdef\Hy@gtemp{#2}%
622 \let#1\Hy@gtemp
623 }
```

## 6.3 Encodings

### 6.3.1 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.

```
624 \@ifundefined{T@PD1}{\input{pd1enc.def}}{}
625 \DeclareFontFamily{PD1}{pdf}{}
626 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
627 \DeclareFontSubstitution{PD1}{pdf}{m}{n}
```

### 6.3.2 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.

```
628 \def\HyPsd@InitUnicode{%
629   \ifundefined{T@PU}{\input{puenc.def}}{}%
630   \DeclareFontFamily{PU}{pdf}{}%
631   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
632   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
633   \let\HyPsd@InitUnicode\relax
634 }
```

## 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.

```
635 \newcommand*{\texorpdfstring}{%
636   \ifHy@pdfstring
637     \expandafter\@secondoftwo
638   \else
639     \expandafter\@firstoftwo
640   \fi
641 }
```

### 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`.

```
642 \@ifundefined{pdfstringdefPreHook}{%
643   \let\pdfstringdefPreHook\empty
644 }{}
645 \@ifundefined{pdfstringdefPostHook}{%
646   \let\pdfstringdefPostHook\@gobble
647 }{}
```

`\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`.

```
648 \def\pdfstringdefDisableCommands{%
649   \begingroup
650     \makeatletter
651     \HyPsd@DisableCommands
652 }
```

`\HyPsd@DisableCommands`

```
653 \long\def\HyPsd@DisableCommands#1{%
654   \toks0=\expandafter{\pdfstringdefPreHook}%
655   \toks1={#1}%
656   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
657   \endgroup
658 }
```

`\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`.

```
659 \def\pdfstringdefWarn#1{%
660   \expandafter\noexpand\csname<>-\string#1\endcsname
661 }
```

## 6.5 Help macros for expansion

### 6.5.1 Babel languages

```
662 \newif\ifHy@next
```

Nothing to do for english.

```
663 \@ifundefined{danish@sh@"@sel}{-}{-}%
664 \def\HyPsd@babel@danish{%
665   \declare@shorthand{danish}{|}{-}%
666   \declare@shorthand{danish}{~}{-}%
667 }%
668 }
669 \@ifundefined{dutch@sh@"@sel}{-}{-}%
670 \def\HyPsd@babel@dutch{%
```

```

671 \declare@shorthand{dutch}{"}{}%
672 \declare@shorthand{dutch}{"}{}%
673 }%
674 }
675 \@ifundefined{finnish@sh@}{@sel}{}%
676 \def\HyPsd@babel@finnish{%
677 \declare@shorthand{finnish}{"}{}%
678 }%
679 }
680 \@ifundefined{french@sh@}{@sel}{}%
681 \def\HyPsd@babel@frenchb{%
682 \def\guill@spacing{}%
683 }%
684 }
685 \@ifundefined{german@sh@}{@sel}{}%
686 \def\HyPsd@babel@german{%
687 \declare@shorthand{german}{f}{f}%
688 \declare@shorthand{german}{"}{}%
689 \declare@shorthand{german}{"}{}%
690 }%
691 }
692 \@ifundefined{macedonian@sh@}{@sel}{}%
693 \def\HyPsd@babel@macedonian{%
694 \declare@shorthand{macedonian}{"}{}%
695 \declare@shorthand{macedonian}{"}{}%
696 }%
697 }{}
698 \@ifundefined{ngerman@sh@}{@sel}{}%
699 \def\HyPsd@babel@ngerman{%
700 \declare@shorthand{ngerman}{"}{}%
701 \declare@shorthand{ngerman}{"}{}%
702 }%
703 }
704 \@ifundefined{portuges@sh@}{@sel}{}%
705 \def\HyPsd@babel@portuges{%
706 \declare@shorthand{portuges}{"}{}%
707 }%
708 }
709 \@ifundefined{russian@sh@}{@sel}{}%
710 \def\HyPsd@babel@russian{%
711 \declare@shorthand{russian}{"}{}%
712 \declare@shorthand{russian}{"}{}%
713 }%
714 }
715 \@ifundefined{slovene@sh@}{@sel}{}%
716 \def\HyPsd@babel@slovene{%
717 \declare@shorthand{slovene}{"}{}%
718 }%
719 }

```

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

```

720 \@ifundefined{spanish@sh@}{@sel}{}%
721 \def\HyPsd@babel@spanish{%
722 \declare@shorthand{spanish}{<<}{\guillemotleft}%
723 \declare@shorthand{spanish}{>>}{\guillemotright}%
724 \declare@shorthand{spanish}{=}{-}%
725 \declare@shorthand{spanish}{"}{}%
726 \declare@shorthand{spanish}{!}{\textexclamdown}%

```

```

727 \declare@shorthand{spanish}{"}{\textquestiondown}%
728 }%
729 }
730 \@ifundefined{swedish@sh@"@sel}{}{%
731 \def\HyPsd@babel@swedish{%
732 \declare@shorthand{swedish}{"}{}%
733 \declare@shorthand{swedish}{"}{-}%
734 }%
735 }
736 \@ifundefined{ukrainian@sh@"@sel}{}{%
737 \def\HyPsd@babel@ukrainian{%
738 \declare@shorthand{ukrainian}{"}{}%
739 \declare@shorthand{ukrainian}{"}{-}%
740 }%
741 }
742 \@ifundefined{usorbian@sh@"@sel}{}{%
743 \def\HyPsd@babel@usorbian{%
744 \declare@shorthand{usorbian}{f}{f}%
745 \declare@shorthand{usorbian}{"}{}%
746 }%
747 }
748 \@ifundefined{greek@sh@\string~@sel}{%
749 \let\HyPsd@GreekPatch\@empty
750 }{%
751 \def\HyPsd@GreekPatch{%
752 \let\greeknumeral\HyPsd@greeknumeral
753 \let\Greeknnumeral\HyPsd@Greeknnumeral
754 }%
755 }
756 \def\HyPsd@greeknumeral#1{%
757 \HyPsd@GreekNum\@firstoftwo{#1}%
758 }
759 \def\HyPsd@Greeknnumeral#1{%
760 \HyPsd@GreekNum\@secondoftwo{#1}%
761 }
762 \def\HyPsd@GreekNum#1#2{%
763 \ifHy@unicode
764 \ifnum#2<\@one
765 \@arabic{#2}%
766 \else
767 \ifnum#2<1000000 %
768 \HyPsd@@GreekNum#1{#2}%
769 \else
770 \@arabic{#2}%
771 \fi
772 \fi
773 \else
774 \@arabic{#2}%
775 \fi
776 }
777 \def\HyPsd@@GreekNum#1#2{%
778 \ifnum#2<\@m
779 \ifnum#2<10 %
780 \expandafter\HyPsd@GreekNumI
781 \expandafter\@gobble\expandafter#1\number#2%
782 \else
783 \ifnum#2<100 %

```

```

784         \expandafter\HyPsd@GreekNumII
785         \expandafter\@gobble\expandafter#1\number#2%
786     \else
787         \expandafter\HyPsd@GreekNumIII
788         \expandafter\@gobble\expandafter#1\number#2%
789     \fi
790 \fi
791 \ifnum#2>\z@
792     \textnumeralsigngreek
793 \fi
794 \else
795     \ifnum#2<\@M
796         \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
797     \else
798         \ifnum#2<100000 %
799             \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
800         \else
801             \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
802         \fi
803     \fi
804 \fi
805 }
806 \def\HyPsd@GreekNumI#1#2#3{%
807     #1{%
808         \ifnum#3>\z@
809             \textnumeralsignlowergreek
810         \fi
811     }%
812     \expandafter#2%
813     \ifcase#3 %
814         {}{}%
815         \or\textalpha\textAlpha
816         \or\textbeta\textBeta
817         \or\textgamma\textGamma
818         \or\textdelta\textDelta
819         \or\textepsilon\textEpsilon
820         \or\textstigmagreek\textStigmagreek
821         \or\textzeta\textZeta
822         \or\texteta\textEta
823         \or\texttheta\textTheta
824     \else
825         {}{}%
826     \fi
827 }
828 \def\HyPsd@GreekNumII#1#2#3#4{%
829     #1{%
830         \ifnum#3>\z@
831             \textnumeralsignlowergreek
832         \fi
833     }%
834     \expandafter#2%
835     \ifcase#3 %
836         {}{}%
837         \or\textiota\textIota
838         \or\textkappa\textKappa
839         \or\textlambda\textLambda
840         \or\textmu\textMu

```

```

841 \or\textnu\textNu
842 \or\textxi\textXi
843 \or\textomicron\textOmicron
844 \or\textpi\textPi
845 \or\textkoppagreek\textKoppagreek
846 \else
847   {}{}%
848 \fi
849 \HyPsd@GreekNumI#1#2#4%
850 }
851 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
852   #1{%
853     \ifnum#3>\z@
854       \textnumeralsignlowergreek
855       \fi
856   }%
857   \expandafter#2%
858   \ifcase#3 %
859     {}{}%
860   \or\textrho\textRho
861   \or\textsigma\textSigma
862   \or\texttau\textTau
863   \or\textupsilon\textUpsilon
864   \or\textphi\textPhi
865   \or\textchi\textChi
866   \or\textpsi\textPsi
867   \or\textomega\textOmega
868   \or\textsampigreek\textSampigreek
869   \else
870     {}{}%
871   \fi
872   \HyPsd@GreekNumII#1#2#4#5%
873 }
874 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
875   \HyPsd@GreekNumI\@firstofone#1#2%
876   \HyPsd@@GreekNum#1{#3#4#5}%
877 }
878 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
879   \HyPsd@GreekNumII\@firstofone#1#2#3%
880   \HyPsd@@GreekNum#1{#4#5#6}%
881 }
882 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
883   \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
884   \HyPsd@@GreekNum#1{#5#6#7}%
885 }

```

### 6.5.2 CJK bookmarks

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

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

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

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

```

886 \begingroup
887   \catcode"7F=\active
888   \toks@{%
889     \let\CJK@ignorespaces\empty
890     \def\CJK@char#1{\@gobbletwo}%
891     \let\CJK@charx\@gobblefour
892     \let\CJK@punctchar\@gobblefour
893     \def\CJK@punctcharx#1{\@gobblefour}%
894     \catcode"7F=\active
895     \def^^7f#1^^7f#2^^7f{%
896       \string #1\HyPsd@DecimalToOctal{#2}%
897     }%
898     % ... ?
899     \ifHy@unicode
900       \def\Hy@cjkpu{\80}%
901     \else
902       \let\Hy@cjkpu\@empty
903     \fi
904     \HyPsd@CJKActiveChars
905   }%
906   \count@=127 %
907   \@whilenum\count@<255 \do{%
908     \advance\count@ by 1 %
909     \lccode'\~= \count@
910     \lowercase{%
911       \toks@\expandafter{\the\toks@ ~}%
912     }%
913   }%
914   \toks@\expandafter{\the\toks@ !}%
915   \xdef\HyPsd@CJKhook{\the\toks@}%
916 \endgroup

```

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

```

917 \def\HyPsd@CJKActiveChars#1{%
918   \ifx#1!%
919     \let\HyPsd@CJKActiveChars\relax
920   \else
921     \edef#1{\noexpand\Hy@cjkpu\string#1}%
922   \fi
923   \HyPsd@CJKActiveChars
924 }

```

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

```

925 \def\HyPsd@DecimalToOctal#1{%
926   \ifcase #1 %
927     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
928     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
929     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
930     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
931     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
932     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
933     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
934     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
935     \or @\or A\or B\or C\or D\or E\or F\or G%
936     \or H\or I\or J\or K\or L\or M\or N\or O%
937     \or P\or Q\or R\or S\or T\or U\or V\or W%

```



```

938 \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
939 \or \140\or a\or b\or c\or d\or e\or f\or g%
940 \or h\or i\or j\or k\or l\or m\or n\or o%
941 \or p\or q\or r\or s\or t\or u\or v\or w%
942 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
943 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
944 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
945 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
946 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
947 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
948 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
949 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
950 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
951 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
952 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
953 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
954 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
955 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
956 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
957 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
958 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
959 \fi
960 }

```

### 6.5.3 \@inmathwarn-Patch

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

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

```

\def\@current@cmd#1{%
  \ifx\protect\@typeset@protect
    \@inmathwarn#1%
  \else
    \noexpand#1\expandafter\@gobble
  \fi}
\def\@changed@cmd#1#2{%
  \ifx\protect\@typeset@protect
    \@inmathwarn#1%
    \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
      \expandafter\ifx\csname ?\string#1\endcsname\relax
        \expandafter\def\csname ?\string#1\endcsname{%
          \TextSymbolUnavailable#1%
        }%
      \fi
      \global\expandafter\let
        \csname\cf@encoding\string#1\expandafter\endcsname
        \csname ?\string#1\endcsname
    \fi
    \csname\cf@encoding\string#1%
      \expandafter\endcsname
  \else
    \noexpand#1%
  \fi}

```

```

\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}

961 \def\HyPsd@inmathwarn#1#2{%
962   \ifx#2\expandafter
963     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
964       \HyPsd@GLYPHERR
965       \expandafter\@gobble\string#1%
966       >%
967       \expandafter\expandafter\expandafter\HyPsd@EndWithElse
968     \else
969       \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
970     \fi
971   \else
972     \expandafter#2%
973   \fi
974 }
975 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
976 \def\HyPsd@EndWithElse#1\else\else}

```

#### 6.5.4 \add@accent-Patch

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

```

\HyPsd@add@accent
977 \def\HyPsd@add@accent#1#2{%
978   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
979   #2%
980 }%

```

#### 6.5.5 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, dimen, and skip assignments.

These properties are used in \HyPsd@CheckCatcodes.

```

981 \def\HyPsd@LetUnexpandableSpace#1{%
982   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
983 }

```

\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.

```

984 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

### 6.5.6 Marker for commands

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

```
985 \edef\HyPsd@XSPACE{\string#\string X}
986 \edef\HyPsd@ITALCORR{\string#\string I}
987 \edef\HyPsd@GLYPHERR{\string#\string G}
```

### 6.5.7 `\hspace` fix

`\HyPsd@hspace`

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

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

```
989 \def\HyPsd@@hspace#1*#2\END{%
990   \ifx\#2\%
991     \HyPsd@hspacetest{#1}%
992   \else
993     \expandafter\HyPsd@hspacetest
994   \fi
995 }
```

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

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

### 6.5.8 Fix for AMS classes

```
997 \@ifundefined{tocsection}{%
998   \let\HyPsd@AMSclassfix\relax
999 }{%
1000   \def\HyPsd@AMSclassfix{%
1001     \let\tocpart\HyPsd@tocsection
1002     \let\tocchapter\HyPsd@tocsection
1003     \let\tocappendix\HyPsd@tocsection
1004     \let\tocsection\HyPsd@tocsection
1005     \let\tocsubsection\HyPsd@tocsection
1006     \let\tocsubsubsection\HyPsd@tocsection
1007     \let\tocparagraph\HyPsd@tocsection
1008   }%
1009   \def\HyPsd@tocsection#1#2#3{%
1010     \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1011     #3%
1012   }%
1013 }
```

### 6.5.9 Reference commands

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

```
1014 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%
```

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

```
1015 \def\HyPsd@@ref#1*#2\END{%
```

```

1016 \ifx\#2\%
1017 \HyPsd@@@ref{#1}%
1018 \else
1019 \expandafter\HyPsd@@@ref
1020 \fi
1021 }%

\HyPsd@@@ref \HyPsd@@@ref does the work and extracts the first argument.
1022 \def\HyPsd@@@ref#1{%
1023 \expandafter\ifx\csname r@#1\endcsname\relax
1024 ??%
1025 \else
1026 \expandafter\expandafter\expandafter
1027 \@car\csname r@#1\endcsname\@nil
1028 \fi
1029 }

\HyPsd@pageref Macro \HyPsd@pageref calls the macro \HyPsd@@pageref for star checking. The same
methods like in \HyPsd@hspace is used.
1030 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*END}

\HyPsd@@pageref Macro \HyPsd@@pageref checks if a star is present.
1031 \def\HyPsd@@pageref#1*#2END{%
1032 \ifx\#2\%
1033 \HyPsd@@@pageref{#1}%
1034 \else
1035 \expandafter\HyPsd@@@pageref
1036 \fi
1037 }

\HyPsd@@@pageref \HyPsd@@@pageref does the work and extracts the second argument.
1038 \def\HyPsd@@@pageref#1{%
1039 \expandafter\ifx\csname r@#1\endcsname\relax
1040 ??%
1041 \else
1042 \expandafter\expandafter\expandafter\expandafter
1043 \expandafter\expandafter\expandafter\@car
1044 \expandafter\expandafter\expandafter\@gobble
1045 \csname r@#1\endcsname{}\@nil
1046 \fi
1047 }

\HyPsd@nameref Macro \HyPsd@nameref calls the macro \HyPsd@@nameref for star checking. The same
methods like in \HyPsd@hspace is used.
1048 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*END}

\HyPsd@@nameref Macro \HyPsd@@nameref checks if a star is present.
1049 \def\HyPsd@@nameref#1*#2END{%
1050 \ifx\#2\%
1051 \HyPsd@@@nameref{#1}%
1052 \else
1053 \expandafter\HyPsd@@@nameref
1054 \fi
1055 }

```

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

```

1056 \def\HyPsd@@@nameref#1{%
1057   \expandafter\ifx\csname r@#1\endcsname\relax
1058     ??%
1059   \else
1060     \expandafter\expandafter\expandafter\expandafter
1061     \expandafter\expandafter\expandafter\@car
1062     \expandafter\expandafter\expandafter\@gobbletwo
1063     \csname r@#1\endcsname\}\}\@nil
1064   \fi
1065 }

```

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

```

1066 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}

```

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

```

1067 \def\HyPsd@@autoref#1*#2\END{%
1068   \ifx\#2\%
1069     \HyPsd@@@autoref{#1}%
1070   \else
1071     \expandafter\HyPsd@@@autoref
1072   \fi
1073 }

```

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

```

1074 \def\HyPsd@@@autoref#1{%
1075   \expandafter\ifx\csname r@#1\endcsname\relax
1076     ??%
1077   \else
1078     \expandafter\expandafter\expandafter\HyPsd@autorefname
1079     \csname r@#1\endcsname\}\}\}\@nil
1080     \expandafter\expandafter\expandafter
1081     \@car\csname r@#1\endcsname\@nil
1082   \fi
1083 }

```

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

```

1084 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1085   \ifx\#4\%
1086   \else
1087     \HyPsd@@autorefname#4.\@nil
1088   \fi
1089 }

```

`\HyPsd@@autorefname`

```

1090 \def\HyPsd@@autorefname#1.#2\@nil{%
1091   \@ifundefined{#1autorefname}\%
1092   \@ifundefined{#1name}\%
1093   }\%
1094   \csname#1name\endcsname\space
1095   }\%
1096   }\%
1097   \csname#1autorefname\endcsname\space
1098   }\%
1099 }

```

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

```
\HyPsd@DefCommand
\HyPsd@LetCommand
1100 \begingroup
1101   \def\x#1#2{%
1102     \endgroup
1103     \let#1\def
1104     \def\HyPsd@DefCommand##1##2##{%
1105       #1%
1106       \expandafter\noexpand
1107         \csname\expandafter@gobble\string##1\@empty\endcsname
1108       \@gobble
1109     }%
1110     \let#2\let
1111     \def\HyPsd@@LetCommand##1{%
1112       \expandafter\ifx\csname##1\expandafter\endcsname
1113         \csname iftrue\endcsname
1114       \pdfstringdefWarn\let
1115       \expandafter\@gobble
1116     \else
1117       \expandafter\ifx\csname##1\expandafter\endcsname
1118         \csname iffalse\endcsname
1119       \pdfstringdefWarn\let
1120       \expandafter\expandafter\expandafter\@gobble
1121     \else
1122       #2%
1123       \expandafter\noexpand
1124       \csname##1\expandafter\expandafter\expandafter\endcsname
```

```

1125         \fi
1126     \fi
1127 }%
1128 }%
1129 \expandafter\x\csname <def>-command\expandafter\endcsname
1130         \csname <let>-command\endcsname
1131 \def\HyPsd@LetCommand#1{%
1132     \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1133     \expandafter\expandafter\expandafter{%
1134     \expandafter\@gobble\string#1\@empty
1135 }%
1136 }

```

### 6.5.11 \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.

```

1137 \def\HyPsd@ifnextchar{%
1138     \pdfstringdefWarn\@ifnextchar
1139     \expandafter\@gobbletwo\@gobble
1140 }

```

`\HyPsd@new@ifnextchar` Package `amsgen.sty` redefines `\@ifstar` using `\new@ifnextchar` instead of `\@ifnextchar`. See bug report latex/3662.

```

1141 \def\HyPsd@new@ifnextchar{%
1142     \pdfstringdefWarn\new@ifnextchar
1143     \expandafter\@gobbletwo\@gobble
1144 }

```

### 6.5.12 \@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`.

```

1145 \def\HyPsd@protected@testopt#1{%
1146     \pdfstringdefWarn#1%
1147     \@gobbletwo
1148 }

```

## 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:

```

1149 \def\HyPsd@Warning#1{%
1150     \begingroup
1151         \def\space{ }%
1152         \Hy@Warning{#1}%
1153     \endgroup
1154 }

```

## 6.6.2 Protecting spaces

```

1155 \RequirePackage{etexcmds}[2007/09/09]
1156 \ifetex@unexpanded
1157   \expandafter\@secondoftwo
1158 \else
1159   \expandafter\@firstoftwo
1160 \fi
1161 {%

```

`\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`.

```

1162   \def\HyPsd@ProtectSpaces#1{%
1163     \iftrue
1164       \expandafter\HyPsd@@ProtectSpacesFi
1165       \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1166     \fi
1167   }%

```

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

```

1168   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1169     \fi
1170     \ifx\scrollmode#2\scrollmode
1171       \HyPsd@RemoveMask#1\HyPsd@End#3%
1172     \else
1173       \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1174       \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1175     \fi
1176   }%

```

### 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.

```

1177   \def\HyPsd@RemoveMask#1|\HyPsd@End#2{%
1178     \toks@\expandafter{#1}%
1179     \xdef#2{\the\toks@}%
1180   }%

1181 }{%
1182   \let\HyPsd@fi\fi
1183   \def\HyPsd@ProtectSpaces#1{%
1184     \xdef#1{%
1185       \iftrue
1186         \expandafter\HyPsd@@ProtectSpacesFi
1187         \expandafter|\expandafter\@empty#1| %
1188       \HyPsd@fi
1189     }%
1190     \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1191   }%
1192   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1193     \fi
1194     \etex@unexpanded{#1}%
1195     \ifx\scrollmode#2\scrollmode
1196     \else
1197       \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%

```



```

1198 \HyPsd@fi
1199 }%
1200 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1201 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1202 }%
1203 }

```

### 6.6.3 Remove grouping braces

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

```

1204 \def\HyPsd@RemoveBraces#1{%
1205 \ifx\scrollmode#1\scrollmode
1206 \else
1207 \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1208 \fi
1209 }

```

`\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`.

```

1210 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1211 \fi
1212 \def\Hy@temp@A{#1#2}%
1213 \def\Hy@temp@B{#3}%
1214 \ifx\Hy@temp@A\Hy@temp@B
1215 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1216 \HyPsd@String#1%
1217 }%
1218 \ifx\scrollmode#2\scrollmode
1219 \else
1220 \Hy@ReturnAfterFiFiEnd{%
1221 \HyPsd@RemoveBraces{#2}%
1222 }%
1223 \fi
1224 \else
1225 \def\Hy@temp@A{#1}%
1226 \HyPsd@AppendItalcorr\HyPsd@String
1227 \ifx\Hy@temp@A\empty
1228 \Hy@ReturnAfterElseFiFiEnd{%
1229 \HyPsd@RemoveBraces{#2}%
1230 }%
1231 \else
1232 \HyPsd@ProtectSpaces\Hy@temp@A
1233 \HyPsd@AppendItalcorr\Hy@temp@A
1234 \Hy@ReturnAfterFiFiEnd{%
1235 \expandafter\HyPsd@RemoveBraces\expandafter
1236 {\Hy@temp@A#2}%
1237 }%
1238 \fi
1239 \fi

```

```

1240 \Hy@ReturnEnd
1241 }

```

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

```

1242 \def\HyPsd@AppendItalcorr#1{%
1243   \expandafter\HyPsd@@AppendItalcorr\expandafter{/}#1%
1244 }
1245 \def\HyPsd@@AppendItalcorr#1#2{%
1246   \expandafter\def\expandafter#2\expandafter{#2#1}%
1247 }

```

#### 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).

```

1248 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1249   \global\let\HyPsd@Rest\relax
1250   \ifcat\relax\noexpand#1\relax
1251     \ifx#1\protect
1252     \else
1253       \ifx#1\penalty
1254         \setbox\z@=\hbox{%
1255           \afterassignment\HyPsd@AfterCountRemove
1256           \count@=#2\HyPsd@End
1257         }%
1258       \else
1259         \ifx#1\kern
1260           \setbox\z@=\hbox{%
1261             \afterassignment\HyPsd@AfterDimenRemove
1262             \dimen@=#2\HyPsd@End
1263           }%
1264         \else
1265           \ifx#1\hskip
1266             \setbox\z@=\hbox{%
1267               \afterassignment\HyPsd@AfterSkipRemove
1268               \skip@=#2\HyPsd@End
1269             }%
1270           \else
1271             \HyPsd@CatcodeWarning{#1}%
1272           \fi
1273         \fi
1274       \fi
1275     \fi
1276   \else
1277     \ifcat#1A% letter
1278       \expandafter\def\expandafter\HyPsd@String\expandafter{%

```

```

1279     \HyPsd@String#1%
1280   }%
1281   \else
1282     \ifcat#1 % SPACE
1283       \expandafter\def\expandafter\HyPsd@String\expandafter{%
1284         \HyPsd@String\HyPsd@SPACEOPTI
1285       }%
1286   \else
1287     \ifcat$#1%
1288       \HyPsd@CatcodeWarning{math shift}%
1289   \else
1290     \ifcat&#1%
1291       \HyPsd@CatcodeWarning{alignment tab}%
1292   \else
1293     \ifcat^#1%
1294       \HyPsd@CatcodeWarning{superscript}%
1295   \else
1296     \ifcat_#1%
1297       \HyPsd@CatcodeWarning{subscript}%
1298   \else
1299     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1300       \HyPsd@String#1%
1301     }%
1302   \fi
1303 \fi
1304 \fi
1305 \fi
1306 \fi
1307 \fi
1308 \fi
1309 \ifx\HyPsd@Rest\relax
1310   \ifx\scrollmode#2\scrollmode
1311   \else
1312     \Hy@ReturnAfterFiFiEnd{%
1313       \HyPsd@CheckCatcodes#2\HyPsd@End
1314     }%
1315   \fi
1316 \else
1317   \ifx\HyPsd@Rest\@empty
1318   \else
1319     \Hy@ReturnAfterFiFiEnd{%
1320       \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1321     }%
1322   \fi
1323 \fi
1324 \Hy@ReturnEnd
1325 }

```

### Remove counts, dimens, skips.

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

```

1326 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1327   \gdef\HyPsd@Rest{#1}%
1328 }

```

\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.

```

1329 \def\HyPsd@AfterDimenRemove#1\HyPsd@end{%
1330   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1331     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1332     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1333   \else
1334     \ifdim\dimen@=\z@
1335     \else
1336       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1337     \fi
1338     \gdef\HyPsd@Rest{#1}%
1339   \fi
1340 }

```

`\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).

```

1341 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1342   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1343     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1344     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1345   \else
1346     \ifdim\skip@=\z@
1347     \else
1348       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1349     \fi
1350     \gdef\HyPsd@Rest{#1}%
1351   \fi
1352 }

```

### Catcode warnings.

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

```

1353 \def\HyPsd@CatcodeWarning#1{%
1354   \HyPsd@Warning{%
1355     Token not allowed in a PDF string (%
1356     \ifHy@unicode
1357       Unicode%
1358     \else
1359       PDFDocEncoding%
1360     \fi
1361     ),%
1362     \MessageBreak removing ‘\HyPsd@RemoveCmdPrefix#1’%
1363   }%
1364 }
1365 \begingroup
1366   \catcode‘\|=0 %
1367   \catcode‘\|=12 %
1368   \gdef\HyPsd@RemoveCmdPrefix#1{%
1369     \expandafter\HyPsd@RemoveCmdPrefix
1370     \string#1\@empty\<>-|@empty|@empty
1371   }%
1372   \gdef\HyPsd@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1373 \endgroup

```

`\HyPsd@RemoveSpaceWarning`

```

1374 \def\HyPsd@RemoveSpaceWarning#1{%
1375   \HyPsd@Warning{%
1376     Token not allowed in a PDFDocEncoded string:%
1377     \MessageBreak #1\MessageBreak
1378     removed%
1379   }%
1380 }

```

\HyPsd@ReplaceSpaceWarning

```

1381 \def\HyPsd@ReplaceSpaceWarning#1{%
1382   \HyPsd@Warning{%
1383     Token not allowed in a PDFDocEncoded string:%
1384     \MessageBreak #1\MessageBreak
1385     replaced by space%
1386   }%
1387 }

```

### 6.6.5 Check for wrong glyphs

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

```

1388 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1389   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1390     \HyPsd@String#1%
1391   }%
1392   \ifx\#2\%
1393   \else
1394     \Hy@ReturnAfterFi{%
1395       \HyPsd@GlyphProcessWarning#2\@empty
1396     }%
1397   \fi
1398 }
1399 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1400   \HyPsd@Warning{%
1401     Glyph not defined in %
1402     P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1403     removing '@backslashchar#1'%
1404   }%
1405   \HyPsd@GlyphProcess#2\@empty
1406 }

```

### 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 a protected space \040.

```

1407 \def\HyPsd@spaceopti#1{ % first space
1408   \ifx\HyPsd@spaceopti#1%
1409     \040%
1410   \else
1411     #1%
1412   \fi
1413 }%

```

## 6.6.6 Replacing tokens

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

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

```

1414 \def\HyPsd@Subst#1#2#3{%
1415   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1416     \fi
1417     ##1%
1418     \ifx\scrollmode##2\scrollmode
1419     \else
1420       #2%
1421     \HyPsd@@ReplaceFi##2\END
1422     \fi
1423   }%
1424   \xdef#3{%
1425     \iftrue
1426       \expandafter\HyPsd@@ReplaceFi#3#1\END
1427     \fi
1428   }%
1429 }
```

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

```

1430 \def\HyPsd@StringSubst#1{%
1431   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1432 }
```

## 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.

```

1433 \def\HyPsd@doxspace#1{%
1434   \ifx#1\relax\else
1435     \ifx#1.\else
1436       \ifx#1:\else
1437         \ifx#1,\else
1438         \ifx#1;\else
1439         \ifx#1!\else
1440         \ifx#1?\else
1441         \ifx#1/\else
1442         \ifx#1-\else
1443         \ifx#1'\else
1444           \HyPsd@SPACEOPTI
1445         \fi
1446       \fi
1447     \fi
1448   \fi
1449   \fi
1450   \fi
1451   \fi
1452   \fi
1453   \fi
```

```

1454 \fi
1455 #1%
1456 }%

```

### 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.

```

1457 \beginngroup
1458 \catcode'\|=0 %
1459 \catcode'\|=12 %

```

\HyPsd@ConvertToUnicode

```

1460 |gdef|HyPsd@ConvertToUnicode#1{%
1461   |xdef#1{%
1462     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1463   }%
1464   |ifx#1|@empty
1465   |else
1466     |xdef#1{%
1467       \376\377%
1468       #1%
1469     }%
1470   |fi
1471 }%

```

\HyPsd@DoConvert

```

1472 |gdef|HyPsd@DoConvert#1{%
1473   |ifx#1|@empty
1474   |else
1475     |Hy@ReturnAfterFi{%
1476       |ifx#1\%%
1477       \%%
1478       |expandafter|HyPsd@DoEscape
1479     |else
1480       \000#1%
1481       |expandafter|HyPsd@DoConvert
1482     |fi
1483   }%
1484   |fi
1485 }%

```

\HyPsd@DoEscape

```

1486 |gdef|HyPsd@DoEscape#1{%
1487   |ifx#19%
1488   |expandafter|HyPsd@GetTwoBytes
1489   |else
1490     |Hy@ReturnAfterFi{%
1491       |ifx#18%
1492       00%
1493       |expandafter|HyPsd@GetTwoBytes
1494     |else
1495       #1%
1496       |expandafter|HyPsd@GetOneByte
1497     |fi

```

```

1498     }%
1499     |fi
1500 }%

```

`\HyPsd@GetTwoBytes`

```

1501 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1502     #1\#2#3#4%
1503     |HyPsd@DoConvert
1504 }%

```

`\HyPsd@GetOneByte`

```

1505 |gdef|HyPsd@GetOneByte#1#2{%
1506     #1#2%
1507     |HyPsd@DoConvert
1508 }%
1509 |endgroup

```

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

```

1510 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1511     \xdef#4{#4#1#2}%
1512     \HyPsd@@ConvertToUnicode#3\END#4%
1513 }

```

## 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 `e $\TeX$ 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

1514 \begingroup\expandafter\expandafter\expandafter\endgroup
1515 \expandafter\ifx\csname numexpr\endcsname\relax
1516     \let\HyPsd@UTFviii\relax
1517 \else
1518     \begingroup
1519     \lccode'\~='^f4\relax
1520     \lowercase{\endgroup
1521     \def\HyPsd@UTFviii{%
1522         \let\UTFviii@two@octets\HyPsd@UTFviii@two
1523         \let\UTFviii@three@octets\HyPsd@UTFviii@three
1524         \let\UTFviii@four@octets\HyPsd@UTFviii@four
1525         \ifx~\HyPsd@UTFviii@ccxliv@undef
1526             \let~\HyPsd@UTFviii@ccxliv@def
1527         \fi
1528         \let\unichar\HyPsd@unichar
1529     }%
1530 }%
1531 \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
1532 \edef\HyPsd@UTFviii@ccxliv@def{%
1533     \noexpand\UTFviii@four@octets\string ~^f4%
1534 }%

```



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

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

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

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

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

$$(5)$$

```

1535 \def\HyPsd@UTFviii@two#1#2{%
1536   \expandafter\HyPsd@UTFviii@two
1537   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
1538   \number'#1\expandafter|
1539   \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|
1540   \number'#2 \@nil
1541 }%
1542 \def\HyPsd@UTFviii@two#1#2#3#4\@nil{%
1543   \expandafter\8%
1544   \number\dimexpr #1-48\expandafter\relax
1545   \csname\number\dimexpr #2-4*#1\relax\expandafter\endcsname
1546   \number\dimexpr #3-8*%
1547   \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1548   \number\dimexpr #4-8*#3\relax
1549 }%
```

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

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

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

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

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

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

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

$$(12)$$

```

1550 \def\HyPsd@UTFviii@three#1#2#3{%
1551   \expandafter\HyPsd@UTFviii@three
1552   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
1553   \number'#1\expandafter|
1554   \number\ifnum\dimexpr'#2-128\relax <32 0\else 1\fi\expandafter|
1555   \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|
1556   \number'#2\expandafter|
1557   \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|
1558   \number'#3 \@nil
1559 }%
1560 \def\HyPsd@UTFviii@three#1#2#3#4#5#6#7\@nil{%
1561   \expandafter\9%
1562   \number\dimexpr #1-56\expandafter\relax
1563   \number\dimexpr 2*(#2-4*#1)+#3\expandafter\relax
1564   \number\dimexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1565   \csname\number\dimexpr #5-4*#4\relax\expandafter\endcsname
1566   \number\dimexpr #6-16\expandafter\relax
1567   \number\dimexpr #7-8*#6\relax
1568 }%
```

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
```

```
1569 \def\HyPsd@UTFviii@four#1#2{%
1570   \expandafter\HyPsd@UTFviii@four\number
1571   \numexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
1572   \expandafter|\number
1573   \numexpr'#2-16*\dimexpr.0625\dimexpr'#2sp|%
1574 }%
1575 \def\HyPsd@UTFviii@four#1|#2|#3{%
1576   \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1577   \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1578   \ifodd#2 %
1579     \number\dimexpr(#2-1)/2\relax
1580   \else
1581     \number\dimexpr#2/2\relax
1582   \fi
1583   \number\dimexpr\ifodd#2 4+\fi
1584   \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
1585   \933%
1586   \expandafter\HyPsd@UTFviii@four\number
1587   \numexpr'#3-16*\dimexpr.0625\dimexpr'#3sp|%
1588 }%
1589 \def\HyPsd@UTFviii@four#1|#2{%
1590   \number\dimexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1591   \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1592   \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
1593   \number\dimexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
1594 }%
```

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

```
1595 \def\HyPsd@unichar#1{%
1596   \ifHy@unicode
1597     \ifnum#1>"10FFFF %
1598       \HyPsd@UnicodeReplacementCharacter % illegal
1599     \else
1600       \ifnum#1>"FFFF %
```

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

```
1601   \expandafter\HyPsd@unichar\expandafter{%
1602     \number\dimexpr 55296+%
1603     \dimexpr.0009765625\dimexpr\number#1sp-\p@
1604     \relax\relax\relax
1605   }%
```

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

```
1606   \expandafter\HyPsd@unichar\expandafter{%
1607     \number\dimexpr#1-9216%
1608     -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1609     \relax\relax\relax
1610   }%
1611   \else
1612     \ifnum#1>"7FF %
```

```

1613         \9%
1614         \expandafter\HyPsd@unichar@first@byte\expandafter{%
1615             \number
1616             \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1617         }%
1618     \else
1619         \8%
1620         \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
1621     \fi
1622     \expandafter\HyPsd@unichar@second@byte\expandafter{%
1623         \number
1624         \numexpr#1-256*\number
1625         \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
1626     }%
1627 \fi
1628 \fi
1629 \else
1630     .% unsupported (Unicode -> PDF Doc Encoding)
1631 \fi
1632 }%
1633 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
1634 \def\HyPsd@unichar@first@byte#1{%
1635     \number\dimexpr.015625\dimexpr#1sp\relax\relax
1636     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1637         \number
1638         \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1639         \relax\relax\relax
1640     }%
1641 }%
1642 \def\HyPsd@unichar@second@byte#1{%
1643     \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
1644     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1645         \number
1646         \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1647         \relax\relax\relax
1648     }%
1649 }%
1650 \def\HyPsd@unichar@octtwo#1{%
1651     \number\dimexpr.125\dimexpr#1sp\relax\relax
1652     \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
1653     \relax\relax\relax
1654 }%
1655 \fi

```

## 7 Support of other packages

### 7.1 Class memoir

```

1656 \@ifclassloaded{memoir}{%
1657     \AtEndOfPackage{\RequirePackage{memhfixc}}}%
1658 }{}

```

### 7.2 Package subfigure

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

```

1659 \@ifpackageloaded{subfigure}{%
1660     \@ifundefined{sub@label}{%

```

```

1661 \Hy@hypertextnamesfalse
1662 }{%
1663 \renewcommand*{\sub@label}[1]{%
1664 \@bsphack
1665 \subfig@oldlabel{#1}%
1666 \if@filesw
1667 \begingroup
1668 \edef\@currentlabstr{%
1669 \expandafter\strip@prefix\meaning\@currentlabelname
1670 }%
1671 \protected@write\@auxout{}{%
1672 \string\newlabel{sub@#1}{%
1673 {\@nameuse{@@thesub\@capter}}%
1674 {\thepage}%
1675 }%
1676 \expandafter\strip@period\@currentlabstr
1677 \relax.\relax\@@%
1678 }%
1679 {\@currentHref}%
1680 {}%
1681 }%
1682 }%
1683 \endgroup
1684 \fi
1685 \@esphack
1686 }%
1687 \@ifpackagelater{subfigure}{2002/03/26}{-}{%
1688 \providecommand*{\toclevel@subfigure}{1}%
1689 \providecommand*{\toclevel@subtable}{1}%
1690 }%
1691 }%
1692 }{}

```

### 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:

```

1693 \@ifundefined{XR@addURL}{%
1694 }{%

```

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.

```

1695 \def\XR@addURL#1{\XR@dURL#1{-}{-}{-}{-}}%
1696 \def\XR@dURL#1#2#3#4#5\{%
1697   {#1}{#2}%
1698   \if!#4!%
1699   \else
1700     {#3}{#4}{\XR@URL}%
1701   \fi
1702 }%
1703 }

```

```

1704 \def\Hy@true{true}
1705 \def\Hy@false{false}

```

Providing dummy definitions.

```
1706 \let\literalps@out\@gobble
1707 \newcommand\pdfbookmark[3][]{}
```

```

1708 \def\Acrobatmenu#1#2{\leavevmode#2}
1709 \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

```

1710 \let\HyperRaiseLinkHook\@empty
1711 \def\HyperRaiseLinkDefault{\baselineskip}

```

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

```

1712 \def\Hy@raisedlink#1{%
1713   \ifvmode
1714     #1%
1715   \else
1716     \penalty\@M
1717     \smash{%
1718       \begingroup
1719         \let\HyperRaiseLinkLength\@tempdima
1720         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1721         \HyperRaiseLinkHook
1722       \expandafter\endgroup
1723       \expandafter\raise\the\HyperRaiseLinkLength\hbox{#1}%
1724     }%
1725   \fi
1726 }

```

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

```

\Hy@RestoreLastskip
1727 \def\Hy@SaveLastskip{%
1728   \let\Hy@RestoreLastskip\relax
1729   \ifvmode
1730     \ifdim\lastskip=\z@
1731       \let\Hy@RestoreLastskip\nobreak
1732     \else
1733       \begingroup
1734         \skip@=-\lastskip
1735         \edef\x{%
1736           \endgroup
1737           \def\noexpand\Hy@RestoreLastskip{%
1738             \noexpand\ifvmode
1739               \noexpand\nobreak
1740               \vskip\the\skip@
1741               \vskip\the\lastskip\relax
1742             \noexpand\fi
1743           }%
1744         }%

```

```

1745     \x
1746     \fi
1747 \else
1748     \ifhmode
1749         \ifdim\lastskip=\z@
1750             \let\Hy@RestoreLastskip\nobreak
1751         \else
1752             \begingroup
1753                 \skip@=-\lastskip
1754                 \edef\x{%
1755                     \endgroup
1756                     \def\noexpand\Hy@RestoreLastskip{%
1757                         \noexpand\ifhmode
1758                             \noexpand\nobreak
1759                             \hskip\the\skip@
1760                             \hskip\the\lastskip\relax
1761                         \noexpand\fi
1762                     }%
1763                 }%
1764             \x
1765         \fi
1766     \fi
1767 \fi
1768 }%

```

## 9 Options

### 9.1 Help macros

\Hy@boolkey

```

1769 \def\Hy@boolkey{\@dblarg\Hy@boolkey}
1770 \def\Hy@@boolkey[#1]#2#3{%
1771     \lowercase{\def\Hy@tempa{#3}}%
1772     \ifx\Hy@tempa\@empty
1773         \let\Hy@tempa\Hy@true
1774     \fi
1775     \ifx\Hy@tempa\Hy@true
1776     \else
1777         \ifx\Hy@tempa\Hy@false
1778         \else
1779             \let\Hy@tempa\relax
1780         \fi
1781     \fi
1782     \ifx\Hy@tempa\relax
1783         \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1784     \else
1785         \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1786         \csname Hy@#2\Hy@tempa\endcsname
1787     \fi
1788 }

```

\Hy@WarnOptionValue

```

1789 \def\Hy@WarnOptionValue#1#2#3{%
1790     \Hy@Warning{%
1791         Unexpected value ‘#1’\MessageBreak
1792         of option ‘#2’ instead of\MessageBreak

```

```

1793     #3%
1794 }%
1795 }

```

`\Hy@DisableOption`

```

1796 \def\Hy@DisableOption#1{%
1797   \@ifundefined{KV@Hyp@#1@default}{%
1798     \define@key{Hyp}{#1}%
1799   }{%
1800     \define@key{Hyp}{#1}[]%
1801   }%
1802   {\Hy@WarnOptionDisabled{#1}}%
1803 }

```

`\Hy@WarnOptionDisabled`

```

1804 \def\Hy@WarnOptionDisabled#1{%
1805   \Hy@Warning{%
1806     Option ‘#1’ has already been used,\MessageBreak
1807     setting the option has no effect%
1808   }%
1809 }

```

`\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.

```

1810 \def\Hy@CheckOptionValue#1#2#3{%
1811   \begingroup
1812     \edef\x{#1}%
1813     \@onelevel@sanitize\x
1814     \let\y=y%
1815     \def\do##1##2{%
1816       \def\z{##1}%
1817       \@onelevel@sanitize\z
1818       \ifx\x\z
1819         \let\y=n%
1820         \let\do\@gobbletwo
1821       \fi
1822     }%
1823     #3%
1824     \ifx\y y%
1825       \def\do##1##2{%
1826         * ‘##1’%
1827         \ifx\\##2\\else\space(##2)\fi
1828         \MessageBreak
1829       }%
1830       \Hy@Warning{%
1831         Values of option ‘#2’:\MessageBreak
1832         #3%
1833         * An empty value disables the option.\MessageBreak
1834         Unknown value ‘\x’%
1835       }%
1836     \fi
1837   \endgroup
1838 }

```

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

```

1839 \def\Hy@DefNameKey#1{%
1840   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
1841 }

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

1842 \def\Hy@@DefNameKey#1#2#3{%
1843   \define@key{Hyp}{#2}{%
1844     \edef#1{##1}%
1845     \ifx#1\@empty
1846     \else
1847       \Hy@CheckOptionValue{##1}{#2}{#3}%
1848     \fi
1849   }%
1850   \let#1\@empty
1851 }

\Hy@UseNameKey

1852 \def\Hy@UseNameKey#1#2{%
1853   \ifx#2\@empty
1854   \else
1855     /#1/#2%
1856   \fi
1857 }

```

## 9.2 Defining the options

```

1858 \define@key{Hyp}{implicit}[true]{%
1859   \Hy@boolkey{implicit}{#1}%
1860 }
1861 \define@key{Hyp}{draft}[true]{%
1862   \Hy@boolkey{draft}{#1}%
1863 }
1864 \define@key{Hyp}{final}[true]{%
1865   \Hy@boolkey{final}{#1}%
1866 }
1867 \let\KV@Hyp@nolinks\KV@Hyp@draft
1868 \define@key{Hyp}{a4paper}[true]{%
1869   \def\special@paper{210mm,297mm}%
1870   \def\Hy@pageheight{842}%
1871 }
1872 \define@key{Hyp}{a5paper}[true]{%
1873   \def\special@paper{148mm,210mm}%
1874   \def\Hy@pageheight{595}%
1875 }
1876 \define@key{Hyp}{b5paper}[true]{%
1877   \def\special@paper{176mm,250mm}%
1878   \def\Hy@pageheight{709}%
1879 }
1880 \define@key{Hyp}{letterpaper}[true]{%
1881   \def\special@paper{8.5in,11in}%
1882   \def\Hy@pageheight{792}%
1883 }
1884 \define@key{Hyp}{legalpaper}[true]{%
1885   \def\special@paper{8.5in,14in}%
1886   \def\Hy@pageheight{1008}%

```



```

1887 }
1888 \define@key{Hyp}{executivepaper}[true]{%
1889   \def\special@paper{7.25in,10.5in}%
1890   \def\Hy@pageheight{720}%
1891 }
1892 \define@key{Hyp}{setpagesize}[true]{%
1893   \Hy@boolkey{setpagesize}{#1}%
1894 }
1895 \define@key{Hyp}{debug}[true]{%
1896   \Hy@boolkey[debug]{verbose}{#1}%
1897 }
1898 \define@key{Hyp}{linktocpage}[true]{%
1899   \Hy@boolkey{linktocpage}{#1}%
1900   \ifHy@linktocpage
1901     \let\Hy@linktoc\Hy@linktoc@page
1902   \else
1903     \let\Hy@linktoc\Hy@linktoc@section
1904   \fi
1905 }
1906 \chardef\Hy@linktoc@none=0 %
1907 \chardef\Hy@linktoc@section=1 %
1908 \chardef\Hy@linktoc@page=2 %
1909 \chardef\Hy@linktoc@all=3 %
1910 \ifHy@linktocpage
1911   \let\Hy@linktoc\Hy@linktoc@page
1912 \else
1913   \let\Hy@linktoc\Hy@linktoc@section
1914 \fi
1915 \define@key{Hyp}{linktoc}{%
1916   \@ifundefined{Hy@linktoc@#1}{%
1917     \Hy@Warning{%
1918       Unexpected value ‘#1’ of\MessageBreak
1919       option ‘linktoc’ instead of ‘none’,\MessageBreak
1920       ‘section’, ‘page’ or ‘all’%
1921     }%
1922   }{%
1923     \expandafter\let\expandafter\Hy@linktoc
1924       \csname Hy@linktoc@#1\endcsname
1925   }%
1926 }
1927 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1928 \let\XR@ext\relax
1929 \define@key{Hyp}{verbose}[true]{%
1930   \Hy@boolkey{verbose}{#1}%
1931 }
1932 \define@key{Hyp}{typexml}[true]{%
1933   \Hy@boolkey{typexml}{#1}%
1934 }

```

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.

```

1935 \define@key{Hyp}{raiselinks}[true]{%
1936   \Hy@boolkey{raiselinks}{#1}%
1937 }

```

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

```

1938 \def\Hy@setbreaklinks#1{%
1939   \csname breaklinks#1\endcsname
1940 }

1941 \def\Hy@breaklinks@unsupported{%
1942   \ifx\Hy@setbreaklinks\@gobble
1943     \ifHy@breaklinks
1944       \Hy@WarningNoLine{%
1945         You have enabled option 'breaklinks'.\MessageBreak
1946         But driver '\Hy@driver.def' does not support this.\MessageBreak
1947         Expect trouble with the link areas of broken links%
1948       }%
1949     \fi
1950   \fi
1951 }

1952 \define@key{Hyp}{breaklinks}[true]{%
1953   \Hy@boolkey{breaklinks}{#1}%
1954   \let\Hy@setbreaklinks\@gobble
1955 }

```

Determines whether an automatic anchor is put on each page

```

1956 \define@key{Hyp}{pageanchor}[true]{%
1957   \Hy@boolkey{pageanchor}{#1}%
1958 }

```

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.

```

1959 \define@key{Hyp}{plainpages}[true]{%
1960   \Hy@boolkey{plainpages}{#1}%
1961 }

```

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

```

1962 \define@key{Hyp}{naturalnames}[true]{%
1963   \Hy@boolkey{naturalnames}{#1}%
1964 }

```

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

```

1965 \define@key{Hyp}{hypertexnames}[true]{%
1966   \Hy@boolkey{hypertexnames}{#1}%
1967 }

```

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

```

1968 \define@key{Hyp}{nesting}[true]{%
1969   \Hy@boolkey{nesting}{#1}%
1970 }

```

```

1971 \define@key{Hyp}{unicode}[true]{%
1972   \Hy@boolkey{unicode}{#1}%
1973   \ifHy@unicode
1974     \def\HyPsd@pdfencoding{unicode}%
1975   \else
1976     \def\HyPsd@pdfencoding{pdfdoc}%
1977   \fi
1978   \HyPsd@LoadUnicode
1979 }

1980 \def\HyPsd@LoadUnicode{%
1981   \@ifundefined{T@PU}{\input{puenc.def}}{}%
1982   \DeclareFontFamily{PU}{pdf}{}%
1983   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%

```

```

1984 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
1985 \global\let\HyPsd@LoadUnicode\relax
1986 }
1987 \AtBeginDocument{%
1988 \ifx\HyPsd@LoadUnicode\relax
1989 \else
1990 \def\HyPsd@LoadUnicode{%
1991 \PackageError{hyperref}{%
1992 Unicode support for bookmarks is not available.\MessageBreak
1993 Activate unicode support by using one of the options\MessageBreak
1994 'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
1995 in the preamble%
1996 } \@ehc
1997 \global\let\HyPsd@LoadUnicode\relax
1998 \global\Hy@unicodedefalse
1999 \global\let\Hy@unicodetrue\Hy@unicodedefalse
2000 }%
2001 \fi
2002 }

2003 \define@key{Hyp}{pdfencoding}{%
2004 \edef\HyPsd@temp{#1}%
2005 \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2006 \let\HyPsd@pdfencoding\HyPsd@temp
2007 \Hy@unicodedefalse
2008 \else
2009 \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2010 \z@
2011 \else
2012 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2013 \z@
2014 \else
2015 \@ne
2016 \fi
2017 \fi
2018 \let\HyPsd@pdfencoding\HyPsd@temp
2019 \hypersetup{unicode}%
2020 \ifHy@unicode
2021 \def\HyPsd@pdfencoding{#1}%
2022 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2023 \HyPsd@LoadStringEncoding
2024 \fi
2025 \else
2026 \Hy@Warning{Cannot switch to unicode bookmarks}%
2027 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2028 \fi
2029 \else
2030 \@onelevel@sanitize\HyPsd@temp
2031 \Hy@Warning{%
2032 Values of option 'pdfencoding':\MessageBreak
2033 'pdfdoc', 'unicode', 'auto'.\MessageBreak
2034 Ignoring unknown value '\HyPsd@temp'%
2035 }%
2036 \fi
2037 \fi
2038 }
2039 \def\HyPsd@pdfencoding@auto{auto}
2040 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}

```

```

2041 \def\HyPsd@pdfencoding@unicode{unicode}
2042 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
2043 \def\HyPsd@LoadStringEnc{%
2044   \RequirePackage{stringenc}[2007/06/14]%
2045   \let\HyPsd@LoadStringEnc\relax
2046 }
2047 \AtBeginDocument{%
2048   \ifpackageloaded{stringenc}{%
2049     \let\HyPsd@LoadStringEnc\relax
2050   }{%
2051     \def\HyPsd@LoadStringEnc{%
2052       \Hy@WarningNoLine{%
2053         Missing package ‘stringenc’. Use ‘pdfencoding=auto’\MessageBreak
2054         in the preamble or load the package there%
2055       }%
2056     }%
2057   }%
2058 }

2059 \newif\ifHy@setpdfversion
2060 \define@key{Hyp}{pdfversion}{%
2061   \ifundefined{Hy@pdfversion@#1}{%
2062     \PackageWarning{hyperref}{%
2063       Unsupported PDF version ‘#1’.\MessageBreak
2064       Valid values: 1.2 until 1.7%
2065     }%
2066   }{%
2067     \Hy@setpdfversiontrue
2068     \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
2069   }%
2070 }
2071 \@namedef{Hy@pdfversion@1.2}{2}%
2072 \@namedef{Hy@pdfversion@1.3}{3}%
2073 \@namedef{Hy@pdfversion@1.4}{4}%
2074 \@namedef{Hy@pdfversion@1.5}{5}%
2075 \@namedef{Hy@pdfversion@1.6}{6}%
2076 \@namedef{Hy@pdfversion@1.7}{7}%
2077 \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

2078 \define@key{Hyp}{hyperref}[true]{%
2079 \define@key{Hyp}{tex4ht}[true]{%
2080   \Hy@texhttrue
2081   \setkeys{Hyp}{colorlinks=true}%
2082   \def\BeforeTeXIVht{\usepackage{color}}%
2083   \def\Hy@driver{htex4ht}%
2084   \def\MaybeStopEarly{%
2085     \typeout{Hyperref stopped early}%
2086     \AfterBeginDocument{%
2087       \PDF@FinishDoc
2088       \gdef\PDF@FinishDoc{}%
2089     }%
2090     \endinput
2091   }%
2092 }
2093 \define@key{Hyp}{pdftex}[true]{%
2094   \def\Hy@driver{hpdftex}%

```

```

2095 }
2096 \define@key{Hyp}{nativepdf}[true]{%
2097   \def\Hy@driver{hdvips}%
2098 }
2099 \define@key{Hyp}{dvipdfm}[true]{%
2100   \def\Hy@driver{hdvipdfm}%
2101 }
2102 \define@key{Hyp}{dvipdfmx}[true]{%
2103   \def\Hy@driver{hdvipdfm}%
2104 }
2105 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2106   \expandafter\ifx\csname if#1\expandafter\endcsname
2107     \csname iftrue\endcsname
2108     \chardef\SpecialDvipdfmxOutlineOpen@ne
2109   \else
2110     \chardef\SpecialDvipdfmxOutlineOpen@z@
2111   \fi
2112 }
2113 \define@key{Hyp}{xetex}[true]{%
2114   \def\Hy@driver{hdvipdfm}%
2115 }
2116 \define@key{Hyp}{pdfmark}[true]{%
2117   \def\Hy@driver{hdvips}%
2118 }
2119 \define@key{Hyp}{dvips}[true]{%
2120   \def\Hy@driver{hdvips}%
2121 }
2122 \define@key{Hyp}{hypertex}[true]{%
2123   \def\Hy@driver{hypertex}%
2124 }
2125 \let\Hy@MaybeStopNow\relax
2126 \define@key{Hyp}{vtex}[true]{%
2127   \begingroup\expandafter\expandafter\expandafter\endgroup
2128   \expandafter\ifx\csname OpMode\endcsname\relax
2129     \@latex@error{Non-VTeX processor}{}%
2130     \global\let\Hy@MaybeStopNow\endinput
2131   \endinput
2132 \else
2133   \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2134     \def\Hy@driver{hvtex}%
2135   \else
2136     \ifnum\OpMode=10\relax
2137       \def\Hy@driver{hvtexhtm}%
2138       \def\MaybeStopEarly{%
2139         \typeout{Hyperref stopped early}%
2140         \AfterBeginDocument{%
2141           \PDF@FinishDoc
2142           \gdef\PDF@FinishDoc{}}%
2143       }%
2144       \endinput
2145     }%
2146   \else
2147     \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2148     \global\let\Hy@MaybeStopNow\endinput
2149   \endinput
2150 \fi
2151 \fi

```

```

2152 \fi
2153 }
2154 \define@key{Hyp}{vtexpdfmark}[true]{%
2155 \beginngroup\expandafter\expandafter\expandafter\endgroup
2156 \expandafter\ifx\csname OpMode\endcsname\relax
2157 \latexerror{Non-VTeX processor}{}%
2158 \let\Hy@MaybeStopNow\endinput
2159 \endinput
2160 \else
2161 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2162 \def\Hy@driver{hvtexmrk}%
2163 \else
2164 \latexerror{Mode (\the\OpMode) has no hyperref driver}{}%
2165 \let\Hy@MaybeStopNow\endinput
2166 \endinput
2167 \fi
2168 \fi
2169 }
2170 \define@key{Hyp}{dviwindo}[true]{%
2171 \def\Hy@driver{hdviwind}%
2172 \setkeys{Hyp}{colorlinks}%
2173 \PassOptionsToPackage{dviwindo}{color}%
2174 }
2175 \define@key{Hyp}{dvipsone}[true]{%
2176 \def\Hy@driver{hdvipson}%
2177 }
2178 \define@key{Hyp}{textures}[true]{%
2179 \def\Hy@driver{htexture}%
2180 }
2181 \define@key{Hyp}{latex2html}[true]{%
2182 \AtBeginDocument{\@@latextohtmlX}%
2183 }

```

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

```

2184 \define@key{Hyp}{ps2pdf}[true]{%
2185 \def\Hy@driver{hdvips}%
2186 \providecommand*\pdfborder{0 0 1}%
2187 }

```

## 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.

```

2188 \define@key{Hyp}{hyperfigures}[true]{%
2189 \Hy@boolkey[hyperfigures]{figures}{#1}%
2190 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

2191 \define@key{Hyp}{hyperfootnotes}[true]{%
2192 \Hy@boolkey{hyperfootnotes}{#1}%
2193 }

```

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

```

2194 \def\back@none{none}
2195 \def\back@section{section}
2196 \def\back@page{page}
2197 \def\back@slide{slide}
2198 \define@key{Hyp}{backref}[section]{%

```

```

2199 \lowercase{\def\Hy@tempa{#1}}%
2200 \ifx\Hy@tempa\@empty
2201   \let\Hy@tempa\back@section
2202 \fi
2203 \ifx\Hy@tempa\Hy@false
2204   \let\Hy@tempa\back@none
2205 \fi
2206 \ifx\Hy@tempa\back@slide
2207   \let\Hy@tempa\back@section
2208 \fi
2209 \ifx\Hy@tempa\back@page
2210   \PassOptionsToPackage{hyperpageref}{backref}%
2211   \Hy@backreftrue
2212 \else
2213   \ifx\Hy@tempa\back@section
2214     \PassOptionsToPackage{hyperref}{backref}%
2215     \Hy@backreftrue
2216   \else
2217     \ifx\Hy@tempa\back@none
2218       \Hy@backreffalse
2219     \else
2220       \Hy@WarnOptionValue{#1}{backref}{%
2221         'section', 'slide', 'page', 'none', \MessageBreak
2222         or 'false'}%
2223     \fi
2224   \fi
2225 \fi
2226 }
2227 \define@key{Hyp}{pagebackref}[true]{%
2228   \lowercase{\def\Hy@tempa{#1}}%
2229   \ifx\Hy@tempa\@empty
2230     \let\Hy@tempa\Hy@true
2231   \fi
2232   \ifx\Hy@tempa\Hy@true
2233     \PassOptionsToPackage{hyperpageref}{backref}%
2234     \Hy@backreftrue
2235   \else
2236     \ifx\Hy@tempa\Hy@false
2237       \Hy@backreffalse
2238     \else
2239       \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
2240     \fi
2241   \fi
2242 }

```

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

```

2243 \define@key{Hyp}{hyperindex}[true]{%
2244   \Hy@boolkey{hyperindex}{#1}%
2245 }

```

Configuration of encap char.

```

2246 \define@key{Hyp}{encap}[|]{%
2247   \def\HyInd@EncapChar{#1}%
2248 }

```

## 12 Language options

The `\autoref` feature depends on the language.

```
2249 \def\HyLang@afrikaans{%
2250   \def\equationautorefname{Vergelyking}%
2251   \def\footnoteautorefname{Voetnota}%
2252   \def\itemautorefname{Item}%
2253   \def\figureautorefname{Figuur}%
2254   \def\tableautorefname{Tabel}%
2255   \def\partautorefname{Deel}%
2256   \def\appendixautorefname{Bylae}%
2257   \def\chapterautorefname{Hoofstuk}%
2258   \def\sectionautorefname{Afdeling}%
2259   \def\subsectionautorefname{Subafdeling}%
2260   \def\subsubsectionautorefname{Subsubafdeling}%
2261   \def\paragraphautorefname{Paragraaf}%
2262   \def\subparagraphautorefname{Subparagraaf}%
2263   \def\FancyVerbLineautorefname{Lyn}%
2264   \def\theoremautorefname{Teorema}%
2265   \def\pageautorefname{Bladsy}%
2266 }
2267 \def\HyLang@english{%
2268   \def\equationautorefname{Equation}%
2269   \def\footnoteautorefname{footnote}%
2270   \def\itemautorefname{item}%
2271   \def\figureautorefname{Figure}%
2272   \def\tableautorefname{Table}%
2273   \def\partautorefname{Part}%
2274   \def\appendixautorefname{Appendix}%
2275   \def\chapterautorefname{chapter}%
2276   \def\sectionautorefname{section}%
2277   \def\subsectionautorefname{subsection}%
2278   \def\subsubsectionautorefname{subsubsection}%
2279   \def\paragraphautorefname{paragraph}%
2280   \def\subparagraphautorefname{subparagraph}%
2281   \def\FancyVerbLineautorefname{line}%
2282   \def\theoremautorefname{Theorem}%
2283   \def\pageautorefname{page}%
2284 }
2285 \def\HyLang@french{%
2286   \def\equationautorefname{\`Equation}%
2287   \def\footnoteautorefname{note}%
2288   \def\itemautorefname{item}%
2289   \def\figureautorefname{Figure}%
2290   \def\tableautorefname{Tableau}%
2291   \def\partautorefname{Partie}%
2292   \def\appendixautorefname{Appendice}%
2293   \def\chapterautorefname{chapitre}%
2294   \def\sectionautorefname{section}%
2295   \def\subsectionautorefname{sous-section}%
2296   \def\subsubsectionautorefname{sous-sous-section}%
2297   \def\paragraphautorefname{paragraphe}%
2298   \def\subparagraphautorefname{sous-paragraphe}%
2299   \def\FancyVerbLineautorefname{ligne}%
2300   \def\theoremautorefname{Th\'eor\`eme}%
2301   \def\pageautorefname{page}%
2302 }
```



```

2303 \def\HyLang@german{%
2304   \def\equationautorefname{Gleichung}%
2305   \def\footnoteautorefname{Fu\ss note}%
2306   \def\itemautorefname{Punkt}%
2307   \def\figureautorefname{Abbildung}%
2308   \def\tableautorefname{Tabelle}%
2309   \def\partautorefname{Teil}%
2310   \def\appendixautorefname{Anhang}%
2311   \def\chapterautorefname{Kapitel}%
2312   \def\sectionautorefname{Abschnitt}%
2313   \def\subsectionautorefname{Unterabschnitt}%
2314   \def\subsubsectionautorefname{Unterunterabschnitt}%
2315   \def\paragraphautorefname{Absatz}%
2316   \def\subparagraphautorefname{Unterabsatz}%
2317   \def\FancyVerbLineautorefname{Zeile}%
2318   \def\theoremautorefname{Theorem}%
2319   \def\pageautorefname{Seite}%
2320 }
2321 \def\HyLang@italian{%
2322   \def\equationautorefname{Equazione}%
2323   \def\footnoteautorefname{nota}%
2324   \def\itemautorefname{punto}%
2325   \def\figureautorefname{Figura}%
2326   \def\tableautorefname{Tabella}%
2327   \def\partautorefname{Parte}%
2328   \def\appendixautorefname{Appendice}%
2329   \def\chapterautorefname{Capitolo}%
2330   \def\sectionautorefname{sezione}%
2331   \def\subsectionautorefname{sottosezione}%
2332   \def\subsubsectionautorefname{sottosottosezione}%
2333   \def\paragraphautorefname{paragrafo}%
2334   \def\subparagraphautorefname{sottoparagrafo}%
2335   \def\FancyVerbLineautorefname{linea}%
2336   \def\theoremautorefname{Teorema}%
2337   \def\pageautorefname{Pag.\@}%
2338 }
2339 \def\HyLang@magyar{%
2340   \def\equationautorefname{Egyenlet}%
2341   \def\footnoteautorefname{l\'abjegyzet}%
2342   \def\itemautorefname{Elem}%
2343   \def\figureautorefname{\`Abra}%
2344   \def\tableautorefname{T\'abl\'azat}%
2345   \def\partautorefname{R\'esz}%
2346   \def\appendixautorefname{F\'uggel\'ek}%
2347   \def\chapterautorefname{fejezet}%
2348   \def\sectionautorefname{szakasz}%
2349   \def\subsectionautorefname{alszakasz}%
2350   \def\subsubsectionautorefname{alalszakasz}%
2351   \def\paragraphautorefname{bekezd\'es}%
2352   \def\subparagraphautorefname{albekezd\'es}%
2353   \def\FancyVerbLineautorefname{sor}%
2354   \def\theoremautorefname{T\'etel}%
2355   \def\pageautorefname{oldal}%
2356 }
2357 \def\HyLang@portuges{%
2358   \def\equationautorefname{Equa\c c\~ao}%
2359   \def\footnoteautorefname{Nota de rodap\'e}%

```

```

2360 \def\itemautorefname{Item}%
2361 \def\figureautorefname{Figura}%
2362 \def\tableautorefname{Tabela}%
2363 \def\partautorefname{Parte}%
2364 \def\appendixautorefname{Ap\~endice}%
2365 \def\chapterautorefname{Cap\~itulo}%
2366 \def\sectionautorefname{Se\c c\~ao}%
2367 \def\subsectionautorefname{Subse\c c\~ao}%
2368 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
2369 \def\paragraphautorefname{par\~agrafo}%
2370 \def\subparagraphautorefname{subpar\~agrafo}%
2371 \def\FancyVerbLineautorefname{linha}%
2372 \def\theoremautorefname{Teorema}%
2373 \def\pageautorefname{P\~agina}%
2374 }

```

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`.

```

2375 \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`?

```

2376 \def\equationautorefname{\cyr\cyrv\cyrery\cyr.}%

```

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

```

2377 % \def\equationautorefname{%
2378 %     \cyr\cyrv\cyrery\cyr\cyrz\cyre\cyrn\cyri\cyre
2379 % }%

```

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

```

2380 \def\footnoteautorefname{%
2381     \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyr.\ \cyrp\cyr\cyri\cyrm.%
2382 }%

```

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}`”

```

2383 % \def\footnoteautorefname{%
2384 %     \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyr\cyrh\cyrn\cyro\cyre\ %
2385 %     \cyrp\cyr\cyri\cyrm\cyre\cyrh\cyra\cyrn\cyri\cyre
2386 % }%

```

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

```

2387 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
2388 % \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.

```

2389 \def\itemautorefname{\cyr\cyrp.}%
2390 % \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.

```

2391 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
2392 \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.

```

2393 \def\partautorefname{\cyr\cyrch.}%
2394 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
2395 \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.

```

2396 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
2397 % \def\appendixautorefname{%
2398 % \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrrh\cyre\cyrn\cyri\cyre
2399 % }%

```

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.

```

2400 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
2401 \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.

```

2402 \def\paragraphautorefname{\cyr\cyrp.}%
2403 \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.

```

2404 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
2405 % \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.

```

2406 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%

```

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

```

2407 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
2408 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%

```

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

```

2409 % \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 ...

```

2410 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%

```

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

```
2411 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
2412 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
2413 \def\pageautorefname{\cyr\cyrs.}%
2414 }

2415 \def\HyLang@spanish{%
2416 \def\equationautorefname{Ecuaci\'on}%
2417 \def\footnoteautorefname{Nota a pie de p\'agina}%
2418 \def\itemautorefname{Elemento}%
2419 \def\figureautorefname{Figura}%
2420 \def\tableautorefname{Tabla}%
2421 \def\partautorefname{Parte}%
2422 \def\appendixautorefname{Ap\'endice}%
2423 \def\chapterautorefname{Cap\'itulo}%
2424 \def\sectionautorefname{Secci\'on}%
2425 \def\subsectionautorefname{Subsecci\'on}%
2426 \def\subsubsectionautorefname{Subsubsecci\'on}%
2427 \def\paragraphautorefname{P\'arrafo}%
2428 \def\subparagraphautorefname{Subp\'arrafo}%
2429 \def\FancyVerbLineautorefname{L\'inea}%
2430 \def\theoremautorefname{Teorema}%
2431 \def\pageautorefname{P\'agina}%
2432 }

2433 \def\HyLang@vietnamese{%
2434 \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr\'inh}%
2435 \def\footnoteautorefname{Ch\'u th\'ich}%
2436 \def\itemautorefname{m\du{c}}%
2437 \def\figureautorefname{H\'inh}%
2438 \def\tableautorefname{B\h{a}ng}%
2439 \def\partautorefname{Ph\'acircumflex{}n}%
2440 \def\appendixautorefname{Ph\du{} l\du{c}}%
2441 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
2442 \def\sectionautorefname{m\du{c}}%
2443 \def\subsectionautorefname{m\du{c}}%
2444 \def\subsubsectionautorefname{m\du{c}}%
2445 \def\paragraphautorefname{dj{}o\da{n}}%
2446 \def\subparagraphautorefname{dj{}o\da{n}}%
2447 \def\FancyVerbLineautorefname{d\'ong}%
2448 \def\theoremautorefname{DJ{}\di{nh} l\'y}%
2449 \def\pageautorefname{Trang}%
2450 }
```

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

```
2451 \def\HyLang@addto#1#2{%
2452 #2%
2453 \@temptokena{#2}%
2454 \ifx#1\relax
2455 \let#1\@empty
2456 \fi
2457 \ifx#1\undefined
2458 \edef#1{\the\@temptokena}%
2459 \else
2460 \toks@\expandafter{#1}%
```

```

2461 \edef#1{\the\toks@\the\@temptokena}%
2462 \fi
2463 \@temptokena{\toks@\@temptokena
2464 }

2465 \def\HyLang@DeclareLang#1#2#3{%
2466 \begingroup
2467 \edef\x##1##2{%
2468 \noexpand\ifx##2\relax
2469 \errmessage{No definitions for language #2' found!}%
2470 \noexpand\fi
2471 \endgroup
2472 \noexpand\define@key{Hyp}{#1}[]{%
2473 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
2474 #3%
2475 }%
2476 }%
2477 \expandafter\x\csname extras#1\expandafter\endcsname
2478 \csname HyLang@#2\endcsname
2479 }

2480 \HyLang@DeclareLang{english}{english}{}
2481 \HyLang@DeclareLang{UKenglish}{english}{}
2482 \HyLang@DeclareLang{british}{english}{}
2483 \HyLang@DeclareLang{USenglish}{english}{}
2484 \HyLang@DeclareLang{american}{english}{}
2485 \HyLang@DeclareLang{german}{german}{}
2486 \HyLang@DeclareLang{austrian}{german}{}
2487 \HyLang@DeclareLang{ngerman}{german}{}
2488 \HyLang@DeclareLang{naustrian}{german}{}
2489 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
2490 \HyLang@DeclareLang{brazil}{portuges}{}
2491 \HyLang@DeclareLang{brazilian}{portuges}{}
2492 \HyLang@DeclareLang{portuguese}{portuges}{}
2493 \HyLang@DeclareLang{spanish}{spanish}{}
2494 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
2495 \HyLang@DeclareLang{french}{french}{}
2496 \HyLang@DeclareLang{frenchb}{french}{}
2497 \HyLang@DeclareLang{francais}{french}{}
2498 \HyLang@DeclareLang{acadian}{french}{}
2499 \HyLang@DeclareLang{canadien}{french}{}
2500 \HyLang@DeclareLang{italian}{italian}{}
2501 \HyLang@DeclareLang{magyar}{magyar}{}
2502 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

2503 \define@key{Hyp}{vietnamese}[]{}%
2504 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
2505 \AtEndOfPackage{%
2506 \ifundefined{T@PU}{}{}%
2507 \input{puvnenc.def}%
2508 }%
2509 }%
2510 }

2511 \define@key{Hyp}{vietnam}[]{}%
2512 \HyLang@addto\extravietnam\HyLang@vietnamese
2513 \AtEndOfPackage{%
2514 \ifundefined{T@PU}{}{}%
2515 \input{puvnenc.def}%

```

```

2516 }%
2517 }%
2518 }

```

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

```

2519 \define@key{Hyp}{arabic}[]{%
2520   \AtEndOfPackage{%
2521     \ifundefined{T@PU}{-}{%
2522       \input{puarenc.def}%
2523     }%
2524   }%
2525 }

```

## 13 Options to change appearance of links

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

```

2526 \define@key{Hyp}{colorlinks}[true]{%
2527   \Hy@boolkey{colorlinks}{#1}%
2528 }
2529 \define@key{Hyp}{ocgcolorlinks}[true]{%
2530   \Hy@boolkey{ocgcolorlinks}{#1}%
2531 }
2532 \AtBeginDocument{%
2533   \begingroup
2534     \ifundefined{OBJ@OCG@view}{%
2535       \ifHy@ocgcolorlinks
2536         \Hy@Warning{%
2537           Driver does not support ‘ocgcolorlinks’,\MessageBreak
2538             using ‘colorlinks’ instead%
2539         }%
2540       \fi
2541     }{}%
2542   \endgroup
2543 }
2544 \define@key{Hyp}{frenchlinks}[true]{%
2545   \Hy@boolkey{frenchlinks}{#1}%
2546 }

```

## 14 Bookmarking

```

2547 \define@key{Hyp}{bookmarks}[true]{%
2548   \Hy@boolkey{bookmarks}{#1}%
2549 }
2550 \define@key{Hyp}{bookmarksopen}[true]{%
2551   \Hy@boolkey{bookmarksopen}{#1}%
2552 }

```

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.

```

2553 \let\Hy@bookmarksdepth\c@tocdepth
2554 \define@key{Hyp}{bookmarksdepth}[]{%
2555   \begingroup
2556     \edef\x{#1}%
2557     \ifx\x\empty
2558       \global\let\Hy@bookmarksdepth\c@tocdepth
2559     \else
2560       \@ifundefined{toclevel@x}{%
2561         \@onelevel@sanitize\x
2562         \edef\y{\expandafter\@car\x\@nil}%
2563         \ifcase 0\expandafter\ifx\y-1\fi
2564           \expandafter\ifnum\expandafter'\y>47 %
2565             \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
2566           \Hy@Warning{Unknown document division name (\x)}%
2567         \else
2568           \setbox\z@=\hbox{%
2569             \count@=\x
2570             \xdef\Hy@bookmarksdepth{\the\count@}%
2571           }%
2572         \fi
2573       }{%
2574         \setbox\z@=\hbox{%
2575           \count@=\csname toclevel@x\endcsname
2576           \xdef\Hy@bookmarksdepth{\the\count@}%
2577         }%
2578       }%
2579     \fi
2580   \endgroup
2581 }

```

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

```

2582 \define@key{Hyp}{bookmarksopenlevel}{%
2583   \def\@bookmarksopenlevel{#1}%
2584 }
2585 \def\@bookmarksopenlevel{\maxdimen}
2586 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
2587 \define@key{Hyp}{bookmarkstype}{%
2588   \def\Hy@bookmarkstype{#1}%
2589 }
2590 \def\Hy@bookmarkstype{toc}

```

Richard Curnow [richard@curnow.demon.co.uk](mailto:richard@curnow.demon.co.uk) suggested this functionality. It adds section numbers etc to bookmarks.

```

2591 \define@key{Hyp}{bookmarksnumbered}[true]{%
2592   \Hy@boolkey{bookmarksnumbered}{#1}%
2593 }

```

Option `CJKbookmarks` enables the patch for CJK bookmarks.

```

2594 \define@key{Hyp}{CJKbookmarks}[true]{%
2595   \Hy@boolkey{CJKbookmarks}{#1}%
2596 }
2597 \def\Hy@temp#1{%
2598   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
2599 }

```

```

2600 \def\Hy@temp#1#2#3{%
2601   \define@key{Hyp}{#2color}{%
2602     \HyColor@HyperrefColor{##1}#1%
2603   }%
2604   \def#1{#3}%
2605 }
2606 \Hy@temp{link}{red}
2607 \Hy@temp{anchor}{black}
2608 \Hy@temp{cite}{green}
2609 \Hy@temp{file}{cyan}
2610 \Hy@temp{url}{magenta}
2611 \Hy@temp{menu}{red}
2612 \Hy@temp{run}{\@filecolor}
2613 \define@key{Hyp}{pagecolor}{%
2614   \Hy@WarningPageColor
2615 }
2616 \def\Hy@WarningPageColor{%
2617   \Hy@WarningNoLine{Option 'pagecolor' is not available anymore}%
2618   \global\let\Hy@WarningPageColor\relax
2619 }

2620 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2621 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2622 \let\@baseurl\empty
2623 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2624 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2625 \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.

```

2626 \let\pdfpagetransition\relax
2627 \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.

```

2628 \let\pdfpageduration\relax
2629 \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.

```

2630 \newif\ifHy@useHidKey
2631 \Hy@useHidKeyfalse
2632 \define@key{Hyp}{pdfpagehidden}[true]{%
2633   \Hy@boolkey{pdfpagehidden}{#1}%
2634   \ifHy@pdfpagehidden
2635     \global\Hy@useHidKeytrue
2636   \fi
2637 }

```

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).

```

2638 \def\Hy@ColorList{cite,file,link,menu,run,url}
2639 \@for\Hy@temp:=\Hy@ColorList\do{%
2640   \edef\Hy@temp{%
2641     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2642       \noexpand\HyColor@HyperrefBorderColor
2643       {##1}%
2644       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
2645       {hyperref}%
2646       {\Hy@temp bordercolor}%
2647     }%
2648   }%
2649   \Hy@temp
2650 }
2651 \define@key{Hyp}{pagebordercolor}{%
2652   \Hy@WarningPageBorderColor
2653 }
2654 \def\Hy@WarningPageBorderColor{%
2655   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
2656   \global\let\Hy@WarningPageBorderColor\relax
2657 }
2658 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2659 \Hy@DefNameKey{pdfhighlight}{%
2660   \do{/I}{Invert}%
2661   \do{/N}{None}%
2662   \do{/O}{Outline}%
2663   \do{/P}{Push}%
2664 }
2665 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2666 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2667 \def\Hy@setpdfborder{%
2668   \ifx\@pdfborder\@empty
2669     \else
2670       /Border[\@pdfborder]%
2671     \fi
2672     \ifx\@pdfborderstyle\@empty
2673       \else
2674         /BS<<\@pdfborderstyle>>%
2675       \fi
2676 }
2677 \Hy@DefNameKey{pdfpagemode}{%
2678   \do{UseNone}{}%
2679   \do{UseOutlines}{}%
2680   \do{UseThumbs}{}%
2681   \do{FullScreen}{}%
2682   \do{UseOC}{PDF 1.5}%
2683   \do{UseAttachments}{PDF 1.6}%
2684 }
2685 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2686   \do{UseNone}{}%
2687   \do{UseOutlines}{}%
2688   \do{UseThumbs}{}%
2689   \do{FullScreen}{}%

```

```

2690 \do{UseOC}{PDF 1.5}%
2691 \do{UseAttachments}{PDF 1.6}%
2692 }
2693 \Hy@DefNameKey{pdfdirection}{%
2694 \do{L2R}{Left to right}%
2695 \do{R2L}{Right to left}%
2696 }
2697 \Hy@DefNameKey{pdfviewarea}{%
2698 \do{MediaBox}{}%
2699 \do{CropBox}{}%
2700 \do{BleedBox}{}%
2701 \do{TrimBox}{}%
2702 \do{ArtBox}{}%
2703 }
2704 \Hy@DefNameKey{pdfviewclip}{%
2705 \do{MediaBox}{}%
2706 \do{CropBox}{}%
2707 \do{BleedBox}{}%
2708 \do{TrimBox}{}%
2709 \do{ArtBox}{}%
2710 }
2711 \Hy@DefNameKey{pdfprintarea}{%
2712 \do{MediaBox}{}%
2713 \do{CropBox}{}%
2714 \do{BleedBox}{}%
2715 \do{TrimBox}{}%
2716 \do{ArtBox}{}%
2717 }
2718 \Hy@DefNameKey{pdfprintclip}{%
2719 \do{MediaBox}{}%
2720 \do{CropBox}{}%
2721 \do{BleedBox}{}%
2722 \do{TrimBox}{}%
2723 \do{ArtBox}{}%
2724 }
2725 \Hy@DefNameKey{pdfprintscaling}{%
2726 \do{AppDefault}{}%
2727 \do{None}{}%
2728 }
2729 \Hy@DefNameKey{pdfduplex}{%
2730 \do{Simplex}{}%
2731 \do{DuplexFlipShortEdge}{}%
2732 \do{DuplexFlipLongEdge}{}%
2733 }
2734 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
2735 \do{true}{}%
2736 \do{false}{}%
2737 }
2738 \define@key{Hyp}{pdfprintpagerange}{%
2739 \def\@pdfprintpagerange{#1}%
2740 }
2741 \Hy@DefNameKey{pdfnumcopies}{%
2742 \do{2}{two copies}%
2743 \do{3}{three copies}%
2744 \do{4}{four copies}%
2745 \do{5}{five copies}%
2746 }

```

```

2747 \define@key{Hyp}{pdfusetitle}[true]{%
2748   \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2749 }
2750 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2751 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2752 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2753 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2754 \define@key{Hyp}{pdfcreationdate}{%
2755   \beginngroup
2756     \Hy@unicodedefalse
2757     \pdfstringdef\@pdfcreationdate{#1}%
2758   \endgroup
2759 }
2760 \define@key{Hyp}{pdfmoddate}{%
2761   \beginngroup
2762     \Hy@unicodedefalse
2763     \pdfstringdef\@pdfmoddate{#1}%
2764   \endgroup
2765 }
2766 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2767 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2768 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
2769 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2770 \let\setpdflinkmargin@gobble
2771 \def\calculate@pdfview#1 #2\{%
2772   \def\@pdfview{#1}%
2773   \ifx\#2\%
2774     \def\@pdfviewparams{-32768}%
2775   \else
2776     \def\@pdfviewparams{#2}%
2777   \fi
2778 }
2779 \beginngroup\expandafter\expandafter\expandafter\endgroup
2780 \expandafter\ifx\csname numexpr\endcsname\relax
2781   \def\Hy@number#1{%
2782     \expandafter\@firstofone\expandafter{\number#1}%
2783   }%
2784 \else
2785   \def\Hy@number#1{%
2786     \the\numexpr#1\relax
2787   }%
2788 \fi
2789 \define@key{Hyp}{pdfstartpage}{%
2790   \ifx\#1\%
2791     \def\@pdfstartpage{}%
2792   \else
2793     \edef\@pdfstartpage{\Hy@number{#1}}%
2794   \fi
2795 }%
2796 \define@key{Hyp}{pdfstartview}{%
2797   \ifx\#1\%
2798     \def\@pdfstartview{}%
2799   \else
2800     \hypercalcbpdef\@pdfstartview{ /#1 }%
2801   \fi
2802 }
2803 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}

```

```

2804 \define@key{Hyp}{pdftoolbar}[true]{%
2805   \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2806 }
2807 \define@key{Hyp}{pdfmenubar}[true]{%
2808   \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2809 }
2810 \define@key{Hyp}{pdfwindowui}[true]{%
2811   \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2812 }
2813 \define@key{Hyp}{pdffitwindow}[true]{%
2814   \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2815 }
2816 \define@key{Hyp}{pdfcenterwindow}[true]{%
2817   \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2818 }
2819 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2820   \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2821 }
2822 \define@key{Hyp}{pdfa}[true]{%
2823   \Hy@boolkey[pdfa]{#1}%
2824 }
2825 \define@key{Hyp}{pdfnewwindow}[true]{%
2826   \def\Hy@temp{#1}%
2827   \ifx\Hy@temp\empty
2828     \Hy@newwindowsetfalse
2829   \else
2830     \Hy@newwindowsettrue
2831     \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2832   \fi
2833 }
2834 \def\Hy@SetNewWindow{%
2835   \ifHy@newwindowset
2836     /NewWindow %
2837   \ifHy@newwindow true\else false\fi
2838   \fi
2839 }
2840 \Hy@DefNameKey{pdfpagelayout}{%
2841   \do{SinglePage}{}%
2842   \do{OneColumn}{}%
2843   \do{TwoColumnLeft}{}%
2844   \do{TwoColumnRight}{}%
2845   \do{TwoPageLeft}{PDF 1.5}%
2846   \do{TwoPageRight}{PDF 1.5}%
2847 }
2848 \define@key{Hyp}{pdflang}{%
2849   \def\@pdflang{#1}%
2850 }
2851 \define@key{Hyp}{pdfpagelabels}[true]{%
2852   \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2853 }
2854 \define@key{Hyp}{pdfescapeform}[true]{%
2855   \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2856 }

```

Default values:

```

2857 \def\@linkbordercolor{1 0 0}
2858 \def\@urlbordercolor{0 1 1}
2859 \def\@menubordercolor{1 0 0}

```

```

2860 \def\@filebordercolor{0 .5 .5}
2861 \def\@runbordercolor{0 .7 .7}
2862 \def\@citebordercolor{0 1 0}
2863 \def\@pdfhighlight{/I}
2864 \def\@pdftitle{}
2865 \def\@pdfauthor{}
2866 \let\@pdfproducer\relax
2867 \def\@pdfcreator{LaTeX with hyperref package}
2868 \def\@pdfcreationdate{}
2869 \def\@pdfmoddate{}
2870 \def\@pdfsubject{}
2871 \def\@pdfkeywords{}
2872 \def\@pdfpagescrop{}
2873 \def\@pdfstartview{ /Fit }
2874 \def\@pdfstartpage{1}
2875 \def\@pdfprintpagerange{}
2876 \def\@pdflang{}
2877 \let\PDF@SetupDoc\@empty
2878 \let\PDF@FinishDoc\@empty
2879 \let\phantomsection\@empty
2880 \let\special@paper\@empty
2881 \def\HyperDestNameFilter#1{#1}
2882 \ifundefined{stockwidth}{%
2883   \ifdim\paperwidth>\z@
2884     \ifdim\paperheight>\z@
2885       \edef\special@paper{\the\paperwidth,\the\paperheight}%
2886     \fi
2887   \fi
2888 }{%
2889   \ifdim\stockwidth>\z@
2890     \ifdim\stockheight>\z@
2891       \edef\special@paper{\the\stockwidth,\the\stockheight}%
2892     \fi
2893   \fi
2894 }
2895 \begingroup
2896   \edef\x{\ifundefined{stockheight}\paperheight\stockheight}%
2897   \dimen@=\x\relax
2898   \ifdim\dimen@>\z@
2899   \else
2900     \dimen@=11in\relax
2901     \Hy@WarningNoLine{%
2902       Height of page (\expandafter\string\x) %
2903       is invalid (\the\x),\MessageBreak
2904       using 11in%
2905     }%
2906   \fi
2907   \dimen@=0.99626401\dimen@
2908   \xdef\Hy@pageheight{\strip@pt\dimen@}%
2909 \endgroup
2910 \def\HyInd@EncapChar{\|}
2911 \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.

```

2912 \let\hyper@normalise\ExecuteOptions

```

```

2913 \let\ExecuteOptions\hypersetup
2914 \Hy@RestoreCatcodes
2915 \InputIfFileExists{hyperref.cfg}{-}{-}
2916 \Hy@SetCatcodes
2917 \let\ExecuteOptions\hyper@normalise
2918 \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`.

```

2919 \RequirePackage{kvoptions}[2006/08/17]

```

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

```

2920 \@ifpackageloaded{tex4ht}{%
2921   \@ifpackagewith{hyperref}{tex4ht}{-}{-}%
2922   \PassOptionsToPackage{tex4ht}{hyperref}%
2923 }%
2924 }{}

```

```

2925 \let\ReadBookmarks\relax
2926 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2927 \AtBeginDocument{%
2928   \ifHy@draft
2929     \let\hyper@@anchor\@gobble
2930     \gdef\hyper@link#1#2#3{#3}%
2931     \let\hyper@anchorstart\@gobble
2932     \let\hyper@anchorend\@empty
2933     \let\hyper@linkstart\@gobbletwo
2934     \let\hyper@linkend\@empty
2935     \def\hyper@linkurl#1#2{#1}%
2936     \def\hyper@linkfile#1#2#3{#1}%
2937     \def\hyper@link@[#1]#2#3{#1}%
2938     \def\Acrobatmenu#1#2{\leavevmode#2}%
2939     \let\PDF@SetupDoc\@empty
2940     \let\PDF@FinishDoc\@empty
2941     \let\@fifthoffive\@secondoftwo
2942     \let\@secondoffive\@secondoftwo
2943     \let\ReadBookmarks\relax
2944     \let\WriteBookmarks\relax
2945     \Hy@WarningNoLine{ draft mode on}%
2946   \fi
2947   \Hy@DisableOption{draft}%
2948   \Hy@DisableOption{nolinks}%
2949   \Hy@DisableOption{final}%
2950 }

```

## 15.1 PDF/A

```

2951 \Hy@DisableOption{pdfa}

2952 \ifHy@pdfa
2953   \setkeys{Hyp}{pdfversion=1.4}%
2954   \def\Hy@Acrobatmenu#1#2{%
2955     \leavevmode
2956     \begingroup
2957     \edef\x{#1}%

```

```

2958 \@onelevel@sanitize\x
2959 \ifx\x\Hy@NextPage
2960 \let\y=Y%
2961 \else
2962 \ifx\x\Hy@PrevPage
2963 \let\y=Y%
2964 \else
2965 \ifx\x\Hy@FirstPage
2966 \let\y=Y%
2967 \else
2968 \ifx\x\Hy@LastPage
2969 \let\y=Y%
2970 \else
2971 \let\y=N%
2972 \fi
2973 \fi
2974 \fi
2975 \fi
2976 \expandafter\endgroup
2977 \ifx\y Y%
2978 \else
2979 \PackageError{hyperref}{%
2980 PDF/A: Named action '#1' is not permitted%
2981 }\@ehc
2982 {#2}%
2983 \expandafter\@gobble
2984 \fi
2985 }%
2986 \def\Hy@temp#1{%
2987 \expandafter\def\csname Hy@#1\endcsname{#1}%
2988 \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
2989 }%
2990 \Hy@temp{NextPage}%
2991 \Hy@temp{PrevPage}%
2992 \Hy@temp{FirstPage}%
2993 \Hy@temp{LastPage}%
2994 \else
2995 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
2996 \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.

```

2997 \Hy@nextfalse
2998 \@ifundefined{spanish@sh@"@sel}{\Hy@nexttrue}
2999 \@ifundefined{galician@sh@"@sel}{\Hy@nexttrue}
3000 \@ifundefined{estonian@sh@"@sel}{\Hy@nexttrue}
3001 \ifHy@next
3002 \let\texttilde\~%
3003 \fi

```

## 15.3 Patch for babel 3.8j

Babel 2008/03/16 v3.8j adds a patch to disable shorthands for bookmarks. That reduces warnings, but the bookmarks are ugly. Therefore the following patch tries to undo this.

```

3004 \@ifpackageloaded{babel}{%

```

```

3005 \@ifpackagelater{babel}{2008/03/16}{%
3006   \def\Hy@PatchLanguageShorthands#1{%
3007     \begingroup
3008       \edef\x{#1}%
3009       \@onelevel@sanitize\x
3010       \def\y{system}%
3011       \@onelevel@sanitize\y
3012     \expandafter\endgroup
3013     \ifx\x\y
3014     \else
3015       \HyOrg@languageshorthands{#1}%
3016     \fi
3017   }%
3018   \AtBeginDocument{%
3019     \begingroup
3020       \toks0=\expandafter{\pdfstringdefPreHook}%
3021       \xdef\pdfstringdefPreHook{%
3022         \let\noexpand\HyOrg@languageshorthands
3023         \noexpand\languageshorthands
3024         \let\noexpand\languageshorthands
3025         \noexpand\Hy@PatchLanguageShorthands
3026         \the\toks0 %
3027         \let\noexpand\languageshorthands
3028         \noexpand\HyOrg@languageshorthands
3029       }%
3030     \endgroup
3031   }%
3032 }{}%
3033 }{}

3034 \ifHy@figures
3035   \Hy@Info{Hyper figures ON}%
3036 \else
3037   \Hy@Info{Hyper figures OFF}%
3038 \fi
3039 \ifHy@nesting
3040   \Hy@Info{Link nesting ON}%
3041 \else
3042   \Hy@Info{Link nesting OFF}%
3043 \fi
3044 \ifHy@hyperindex
3045   \Hy@Info{Hyper index ON}%
3046 \else
3047   \Hy@Info{Hyper index OFF}%
3048 \fi
3049 \ifHy@plainpages
3050   \Hy@Info{Plain pages ON}%
3051 \else
3052   \Hy@Info{Plain pages OFF}%
3053 \fi
3054 \ifHy@backref
3055   \Hy@Info{Backreferencing ON}%
3056 \else
3057   \Hy@Info{Backreferencing OFF}%
3058 \fi
3059 \ifHy@typexml
3060   \AtEndOfPackage{%
3061     \RequirePackage{color}%

```



```

3062 \RequirePackage{nameref}%
3063 }%
3064 \fi
3065 \Hy@DisableOption{typexml}
3066 \ifHy@implicit
3067 \typeout{Implicit mode ON; LaTeX internals redefined}%
3068 \else
3069 \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
3070 \def\MaybeStopEarly{%
3071 \typeout{Hyperref stopped early}%
3072 \AfterBeginDocument{%
3073 \PDF@FinishDoc
3074 \gdef\PDF@FinishDoc{}}%
3075 }%
3076 \endinput
3077 }%
3078 \AtBeginDocument{%
3079 \let\autoref\ref
3080 \let\autopageref\pageref
3081 \ifx\@pdfpagemode\@empty
3082 \gdef\@pdfpagemode{UseNone}%
3083 \fi
3084 \global\Hy@backreffalse
3085 }%
3086 \AtEndOfPackage{%
3087 \global\let\ReadBookmarks\relax
3088 \global\let\WriteBookmarks\relax
3089 }%
3090 \fi
3091 \Hy@DisableOption{implicit}

```

### 15.3.1 Driver loading

```

3092 \AtEndOfPackage{%
3093 \@ifpackageloaded{tex4ht}{%
3094 \def\Hy@driver{htex4ht}%
3095 \Hy@texhttrue
3096 }{}%

```

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.

```

3097 \ifx\Hy@driver\@empty
3098 \else
3099 \def\Hy@temp{hpdftex}%
3100 \ifpdf
3101 \ifx\Hy@driver\Hy@temp
3102 \else
3103 \Hy@WarningNoLine{%
3104 Wrong driver ‘\Hy@driver.def’;\MessageBreak
3105 pdfTeX is running in PDF mode.\MessageBreak
3106 Forcing driver ‘\Hy@temp.def’%
3107 }%
3108 \let\Hy@driver\Hy@temp
3109 \fi
3110 \else
3111 \ifx\Hy@driver\Hy@temp
3112 \Hy@WarningNoLine{%
3113 Wrong driver ‘\Hy@driver.def’;\MessageBreak

```

```

3114         pdfTeX is not running in PDF mode.\MessageBreak
3115         Using default driver%
3116     }%
3117     \let\Hy@driver\@empty
3118 \fi
3119 \fi
3120 \fi
3121 \ifx\Hy@driver\@empty
3122 \else
3123     \def\Hy@temp{hdvipdfm}%
3124     \ifxetex
3125         \ifx\Hy@driver\Hy@temp
3126         \else
3127             \Hy@WarningNoLine{%
3128                 Wrong driver '\Hy@driver.def';\MessageBreak
3129                 XeTeX is running.\MessageBreak
3130                 Forcing driver '\Hy@temp.def' for XeTeX%
3131             }%
3132             \let\Hy@driver\Hy@temp
3133         \fi
3134     \fi
3135 \fi
3136 \ifx\Hy@driver\@empty
3137 \else
3138     \def\Hy@temp{hvtexhtm}%
3139     \ifvtexhtml
3140         \ifx\Hy@driver\Hy@temp
3141         \else
3142             \Hy@WarningNoLine{%
3143                 Wrong driver '\Hy@driver.def';\MessageBreak
3144                 VTeX is running in HTML mode.\MessageBreak
3145                 Forcing driver '\Hy@temp.def'%
3146             }%
3147             \let\Hy@driver\Hy@temp
3148         \fi
3149     \else
3150         \ifx\Hy@driver\Hy@temp
3151             \Hy@WarningNoLine{%
3152                 Wrong driver '\Hy@driver.def';\MessageBreak
3153                 VTeX is not running in HTML mode.\MessageBreak
3154                 Using default driver%
3155             }%
3156             \let\Hy@driver\@empty
3157         \fi
3158     \fi
3159 \fi

```

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

```

3160 \ifx\Hy@driver\@empty
3161     \providecommand*{\Hy@defaultdriver}{hypertex}%
3162     \ifpdf
3163         \def\Hy@driver{hpdfTeX}%
3164     \else
3165         \ifxetex
3166             \def\Hy@driver{hdvipdfm}%
3167         \else
3168             \ifvtexhtml
3169                 \def\Hy@driver{hvtexhtm}%

```

```

3170         \def\MaybeStopEarly{%
3171             \typeout{Hyperref stopped early}%
3172             \AfterBeginDocument{%
3173                 \PDF@FinishDoc
3174                 \gdef\PDF@FinishDoc{%
3175                     }%
3176             \endinput
3177         }%
3178     \else
3179         \ifvtexpdf
3180             \def\Hy@driver{hvtex}%
3181         \else
3182             \ifvtexps
3183                 \def\Hy@driver{hvtex}%
3184             \else
3185                 \let\Hy@driver\Hy@defaultdriver
3186             \fi
3187         \fi
3188     \fi
3189 \fi
3190 \fi
3191 \ifx\Hy@driver\Hy@defaultdriver
3192     \def\Hy@temp{hdvwind}%
3193     \ifx\Hy@temp\Hy@driver
3194         \setkeys{Hyp}{colorlinks}%
3195         \PassOptionsToPackage{dviwindo}{color}%
3196     \fi
3197 \fi
3198 \typeout{*hyperref using default driver \Hy@driver*}%
3199 \else
3200     \typeout{*hyperref using driver \Hy@driver*}%
3201 \fi
3202 \input{\Hy@driver.def}%
3203 \let\@unprocessedoptions\relax
3204 \Hy@RestoreCatcodes
3205 }
3206 \newif\ifHy@DvipdfmxOutlineOpen
3207 \begingroup\expandafter\expandafter\expandafter\endgroup
3208 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
3209 \else
3210     \ifnum\SpecialDvipdfmxOutlineOpen>\z@
3211         \Hy@DvipdfmxOutlineOpentru
3212     \fi
3213 \fi
3214 \Hy@DisableOption{tex4ht}
3215 \Hy@DisableOption{pdftex}
3216 \Hy@DisableOption{nativepdf}
3217 \Hy@DisableOption{dvipdfm}
3218 \Hy@DisableOption{dvipdfmx}
3219 \Hy@DisableOption{dvipdfmx-outline-open}
3220 \Hy@DisableOption{pdfmark}
3221 \Hy@DisableOption{dvips}
3222 \Hy@DisableOption{hypertex}
3223 \Hy@DisableOption{vtex}
3224 \Hy@DisableOption{vtexpdfmark}
3225 \Hy@DisableOption{dviwindo}
3226 \Hy@DisableOption{dvipsone}

```

```

3227 \Hy@DisableOption{textures}
3228 \Hy@DisableOption{latex2html}
3229 \Hy@DisableOption{ps2pdf}
3230 \Hy@DisableOption{xetex}
3231 \AtEndOfPackage{%
3232   \Hy@DisableOption{pdfversion}%
3233 }

```

### 15.3.2 Bookmarks

```

3234 \def\WriteBookmarks{0}
3235 \def\@bookmarkopenstatus#1{%
3236   \ifHy@bookmarksopen

```

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

```

3237   \ifnum#1<\expandafter\@firstofone\expandafter
3238     {\number\@bookmarkopenlevel} % explicit space
3239   \else
3240     -%
3241   \fi
3242 \else
3243   -%
3244 \fi
3245 }
3246 \ifHy@bookmarks
3247   \Hy@Info{Bookmarks ON}%
3248   \ifx\@pdfpagemode\@empty
3249     \def\@pdfpagemode{UseOutlines}%
3250   \fi
3251 \else
3252   \def\@bookmarkopenstatus#1{%
3253     \Hy@Info{Bookmarks OFF}%
3254     \AtEndOfPackage{%
3255       \global\let\ReadBookmarks\relax
3256       \global\let\WriteBookmarks\relax
3257     }%
3258     \ifx\@pdfpagemode\@empty
3259       \def\@pdfpagemode{UseNone}%
3260     \fi
3261 \fi
3262 \Hy@DisableOption{bookmarks}

```

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

```

3263 \AtBeginDocument{%
3264   \ifHy@ocgcolorlinks
3265     \setkeys{Hyp}{colorlinks}%
3266     \ifHy@pdfa
3267       \Hy@Warning{%
3268         PDF/A: Optional Content Groups are prohibited,\MessageBreak
3269         using ‘colorlinks’ instead of ‘ocgcolorlinks’%
3270       }%
3271       \Hy@ocgcolorlinksfalse
3272     \fi
3273   \fi
3274   \ifHy@ocgcolorlinks
3275   \else
3276     \Hy@DisableOption{ocgcolorlinks}%
3277   \fi

```

```

3278 \ifHy@colorlinks
3279   \def\@pdfborder{0 0 0}%
3280   \let\@pdfborderstyle\@empty
3281   \ifHy@typexml
3282   \else
3283     \RequirePackage{color}%
3284   \fi
3285   \def\Hy@colorlink#1{%
3286     \begingroup
3287     \HyColor@UseColor#1%
3288   }%
3289   \def\Hy@endcolorlink{\endgroup}%
3290   \Hy@Info{Link coloring ON}%
3291 \else
3292   \ifHy@frenchlinks
3293     \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
3294     \def\Hy@endcolorlink{\endgroup}%
3295     \Hy@Info{French linking ON}%
3296   \else
for grouping consistency:
3297     \def\Hy@colorlink#1{\begingroup}%
3298     \def\Hy@endcolorlink{\endgroup}%
3299     \Hy@Info{Link coloring OFF}%
3300   \fi
3301 \fi
3302 \Hy@DisableOption{colorlinks}%
3303 \Hy@DisableOption{frenchlinks}%
3304 \ifHy@texht
3305   \long\def\@firstoffive#1#2#3#4#5{#1}%
3306   \long\def\@secondoffive#1#2#3#4#5{#2}%
3307   \long\def\@thirdoffive#1#2#3#4#5{#3}%
3308   \long\def\@fourthoffive#1#2#3#4#5{#4}%
3309   \long\def\@fifthoffive#1#2#3#4#5{#5}%
3310   \providecommand*\@safe@activestruer{}%
3311   \providecommand*\@safe@activesfalse{}%
3312   \def\T@ref#1{%
3313     \Hy@safe@activestruer
3314     \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
3315     \Hy@safe@activesfalse
3316   }%
3317   \def\T@pageref#1{%
3318     \Hy@safe@activestruer
3319     \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
3320     \Hy@safe@activesfalse
3321   }%
3322 \else
3323   \ifHy@typexml\else\RequirePackage{nameref}\fi
3324 \fi
3325 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
3326 \DeclareRobustCommand\pageref{%
3327   \@ifstar\@pagerefstar\T@pageref
3328 }%
3329 }
3330 \AfterBeginDocument{%
3331   \ifHy@texht
3332   \else
3333     \ReadBookmarks

```

```

3334 \fi
3335 }
3336 \ifHy@backref
3337 \RequirePackage{backref}%
3338 \else
3339 \let\Hy@backout\@gobble
3340 \fi
3341 \Hy@DisableOption{backref}
3342 \Hy@DisableOption{pagebackref}
3343 \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.

```

3344 \begingroup
3345 \endlinechar=-1 %
3346 \catcode'\^A=14 %
3347 \catcode'\^M\active
3348 \catcode'\%\active
3349 \catcode'\#\active
3350 \catcode'\_\active
3351 \catcode'\$\active
3352 \gdef\hyper@normalise{^A
3353 \begingroup
3354 \catcode'\^M\active
3355 \def^M{ }^A
3356 \catcode'\%\active
3357 \let%\@percentchar
3358 \let%\@percentchar
3359 \catcode'\#\active
3360 \def#{\hyper@hash}^A
3361 \def\#{\hyper@hash}^A
3362 \@makeother\&^A
3363 \edef\textunderscore{\string_}^A
3364 \let_\textunderscore
3365 \catcode'\_\active
3366 \let_\textunderscore
3367 \let~\hyper@tilde
3368 \let~\hyper@tilde
3369 \let\textasciitilde\hyper@tilde
3370 \let\\\@backslashchar
3371 \edef$\string$^A
3372 \Hy@safe@activetrue
3373 \hyper@n@rmalise
3374 }^A
3375 \catcode'\#=6 ^A
3376 \gdef\Hy@ActiveCarriageReturn{^M}^A
3377 \gdef\hyper@n@rmalise#1#2{^A
3378 \def\Hy@tempa{#2}^A
3379 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
3380 \Hy@ReturnAfterElseFi{^A

```

```

3381      \hyper@@normalise{#1}^^A
3382    }^^A
3383  \else
3384    \Hy@ReturnAfterFi{^^A
3385    \hyper@@normalise{#1}{#2}^^A
3386  }^^A
3387  \fi
3388 }^^A
3389 \gdef\hyper@@normalise#1#2{^^A
3390   \edef\Hy@tempa{^^A
3391     \endgroup
3392     \noexpand#1{\Hy@RemovePercentCr#2%\@nil}^^A
3393   }^^A
3394   \Hy@tempa
3395 }^^A
3396 \gdef\Hy@RemovePercentCr#1%\@M#2\@nil{^^A
3397   #1^^A
3398   \ifx\limits#2\limits
3399   \else
3400     \Hy@ReturnAfterFi{^^A
3401       \Hy@RemovePercentCr #2\@nil
3402     }^^A
3403   \fi
3404 }^^A
3405 \endgroup
3406 \providecommand*\hyper@chars{%
3407   \let#\hyper@hash
3408   \let%\@percentchar
3409   \Hy@safe@activetrue
3410 }

3411 \def\hyperlink#1#2{%
3412   \hyper@@link{#1}{#2}%
3413 }

3414 \DeclareRobustCommand*\href{%
3415   \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
3416 }
3417 \def\Hy@href#1{%
3418   \hyper@normalise\href@
3419 }
3420 \begingroup
3421   \catcode'\$=6 %
3422   \catcode'\#=12 %
3423   \gdef\href$1{\expandafter\href@split$1##\}%
3424   \gdef\href@split$1#$2#$3\{\%
3425     \hyper@@link{$1}{$2}%
3426   }%
3427 \endgroup

```

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

```

3428 \RequirePackage{url}
3429 \let\HyOrg@url\url
3430 \def\Hurl{\begingroup \Url}
3431 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
3432 \def\nolinkurl@#1{\Hurl{#1}}
3433 \DeclareRobustCommand*\url{\hyper@normalise\url@}
3434 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

```

```

3435 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
3436 \providecommand\hyper@image[2]{#2}

3437 \def\hypertarget#1#2{%
3438   \ifHy@nesting
3439     \hyper@@anchor{#1}{#2}%
3440   \else
3441     \hyper@@anchor{#1}{\relax}#2%
3442   \fi
3443 }

```

`\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.

```

3444 \DeclareRobustCommand*\hyperref{%
3445   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref}
3446 }

3447 \def\Hy@babelnormalise#1[#2]{%
3448   \begingroup
3449     \Hy@safe@activestrue
3450     \edef\Hy@tempa{%
3451       \endgroup
3452       \noexpand#1[#{#2}]%
3453     }%
3454   \Hy@tempa
3455 }

3456 \def\@hyperref{\hyper@normalise\@hyperref}
3457 \def\@hyperref#1#2#3{%
3458   \edef\ref@one{\ifx\\#2\\\else#2.\fi#3}%
3459   \expandafter\tryhyper@link\ref@one\{#1}%
3460 }

3461 \def\tryhyper@link#1\\#2{%
3462   \hyper@@link{#2}{#1}%
3463 }

3464 \def\hyperdef{\@ifnextchar[{\label@hyperdef}\@hyperdef}}
3465 \def\@hyperdef#1#2#3{%, category, name, text
3466   \ifHy@nesting
3467     \hyper@@anchor{#1.#2}{#3}%
3468   \else
3469     \hyper@@anchor{#1.#2}{\relax}#3%
3470   \fi
3471 }

```

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.

```

3472 \def\label@hyperref[#1]{%
3473   \expandafter\label@\@hyperref\csname r@#1\endcsname{#1}%
3474 }%

3475 \def\label@\@hyperref#1#2#3{%
3476   \ifx#1\relax
3477     \protect\G@refundefinedtrue
3478     \@latex@warning{%
3479       Hyper reference ‘#2’ on page \thepage \space undefined%
3480     }%
3481     \hyper@@link{}{??}{#3}%

```



```

3482 \else
3483   \hyper@@link{\expandafter\@fifthoffive#1}%
3484   {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
3485 \fi
3486 }
3487 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
3488                               % anchor text
3489   \@bspack
3490   \if@filesw
3491     \protected@write\@auxout{%
3492       {\string\newlabel{#1}{\{ }\}\#2.#3}}%
3493   \fi
3494   \@espack
3495   \ifHy@nesting
3496     \hyper@@anchor{#2.#3}{#4}%
3497   \else
3498     \hyper@@anchor{#2.#3}{\relax}#4%
3499   \fi
3500 }

```

## 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, it's an internal link, otherwise we need to open another file or a URL. A link start has a type, and a URL.

```

3501 \def\hyper@@link{\let\Hy@reserved@a\relax
3502   \ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
3503 }
3504 \def\hyper@link@[#1]#2#3#4{%
3505   \begingroup
3506     \protected@edef\Hy@tempa{#2}%
3507     \Hy@safe@activestrue
3508     \edef\x{#3}%
3509     \ifx\Hy@tempa\@empty
3510       \toks0{\hyper@link{#1}}%
3511     \else
3512       \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
3513     \fi
3514     \toks2{%
3515       \Hy@safe@activesfalse
3516       #4%
3517     }%
3518     \edef\Hy@tempa{\the\toks2}%
3519     \edef\x{\endgroup
3520       \ifx\Hy@tempa\@empty
3521         \noexpand\Hy@Warning{Suppressing empty link}%
3522       \else
3523         \the\toks0 {\x}{\the\toks2}}%
3524     \fi
3525   }%
3526   \x
3527 }

```

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.

```
3528 \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.

```
3529 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
3530 }
```

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

```
3531 \def\@pdftempwordfile{file}%
3532 \def\@pdftempwordrun{run}%
3533 \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:

```
3534 \ifx\#6\%
3535 \expandafter\@hyper@linkfile file:#7\{#3}{#2}%
3536 \else
3537 \ifx\#4\%
3538 \expandafter\@hyper@linkfile file:#7\{#3}{#2}%
3539 \else
```

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

```
3540 \def\@pdftempa{#4}%
3541 \ifx\@pdftempa\@pdftempwordfile
3542 \expandafter\@hyper@linkfile#7\{#3}{#2}%
3543 \else
```

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

```
3544 \ifx\@pdftempa\@pdftempwordrun
3545 \ifHy@pdfa
3546 \PackageError{hyperref}{%
3547 PDF/A: Launch action is prohibited%
3548 }\@ehc
3549 \begingroup
3550 \leavevmode
3551 #2%
3552 \endgroup
3553 \else
3554 \expandafter\@hyper@launch#7\{#3}{#2}%
3555 \fi
3556 \else
```

otherwise its a URL

```

3557         \hyper@linkurl{#3}{#7\ifx\#2\\\else\hyper@hash#2\fi}%
3558         \fi
3559     \fi
3560 \fi
3561 \fi
3562 }

```

By default, turn run: into file:

```

3563 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
3564     \hyper@linkurl{#2}{%
3565         \Hy@linkfileprefix
3566         #1%
3567         \ifx\#3\%
3568         \else
3569             \hyper@hash
3570             #3%
3571         \fi
3572     }%
3573 }

```

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

```

3574 \def\@hyper@linkfile file:#1\#2#3{%
3575     %file url,link string, name
3576     \filename@parse{#1}%
3577     \ifx\filename@ext\relax
3578         \edef\filename@ext{\XR@ext}%
3579     \fi
3580     \def\use@file{\filename@area\filename@base.\filename@ext}%
3581     \ifx\filename@ext\XR@ext
3582         \hyper@linkfile{#2}{\use@file}{#3}%
3583     \else
3584         \ifx\@baseurl\@empty
3585             \hyper@linkurl{#2}{%
3586                 \Hy@linkfileprefix\use@file\ifx\#3\\\else\hyper@hash#3\fi
3587             }%
3588         \else
3589             \hyper@linkurl{#2}{\use@file\ifx\#3\\\else\hyper@hash#3\fi}%
3590         \fi
3591     \fi
3592 }

```

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.

```

3593 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
3594 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
3595     \ifx\#1\%
3596         #2\Hy@WarningNoLine{empty link? #1: #2#3}%
3597     \else
3598         \def\anchor@spot{#2#3}%
3599         \let\put@me@back\@empty
3600         \ifx\relax#2\relax

```

```

3601 \else
3602 \ifHy@nesting
3603 \else
3604 \ifcat a\noexpand#2\relax
3605 \else
3606 \ifcat 0\noexpand#2 \relax
3607 \else
3608 % \typeout{Anchor start is not alphanumeric %
3609 % on input line\the\inputlineno%
3610 % }%
3611 \let\anchor@spot\@empty
3612 \def\put@me@back{#2#3}%
3613 \fi
3614 \fi
3615 \fi
3616 \fi
3617 \ifHy@activeanchor
3618 \anchor@spot
3619 \else
3620 \hyper@anchor{#1}%
3621 \fi
3622 \expandafter\put@me@back
3623 \fi
3624 \let\anchor@spot\@empty
3625 }

```

## 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.

```

3626 \let\htmladdimg\hyperimage
3627 \def\htmladdnormallink#1#2{\href{#2}{#1}}
3628 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
3629 \def\htmlref#1#2{% anchor text, label
3630 \label@hyperref[{#2}]{#1}%
3631 }

```

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.

```

3632 \def\@@latextohtmlX{%
3633 \let\hyperref\hyperref
3634 \def\hyperref##1##2##3##4{% anchor text for HTML
3635 % text to print before label in print
3636 % label
3637 % post-label text in print
3638 ##2\ref{##4}##3%
3639 }%
3640 }

```

## 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.

```
3641 \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
```

```
3642 \def\HyField@NewFlag#1#2{%
3643   \lowercase{\HyField@NewOption{#2}}%
3644   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3645 }
```

```
\HyField@NewFlagOnly
```

```
3646 \def\HyField@NewFlagOnly#1#2{%
3647   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3648 }
```

```
\HyField@NewOption #1: option name
```

```
3649 \def\HyField@NewOption#1{%
3650   \expandafter\newif\csname ifFld@#1\endcsname
3651   \define@key{Field}{#1}[true]{%
3652     \lowercase{\Field@boolkey{##1}}{#1}%
3653   }%
3654 }
```

```
\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
```

```
3655 \def\HyField@NewBitsetFlag#1#2#3#4{%
3656   \begingroup
3657     \count@=#4\relax
3658     \advance\count@\m@ne
3659     \def\x##1{%
3660       \endgroup
3661       \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
3662       \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
3663         \expandafter\edef\csname HyField@#3@##1\endcsname{%
3664           (\number#4) #2%
3665         }%
3666       \else
3667         \expandafter\edef\csname HyField@#3@##1\endcsname{%
```

```

3668         \csname HyField@#3@##1\endcsname
3669         /#2%
3670     }%
3671     \fi
3672 }%
3673 \expandafter\x\expandafter{\the\count@}%
3674 }

\HyField@UseFlag The bit set is HyField@#1
3675 \def\HyField@UseFlag#1#2{%
3676     \lowercase{\HyField@@UseFlag{#2}}{#1}%
3677 }

\HyField@@UseFlag
3678 \def\HyField@@UseFlag#1#2{%
3679     \bitsetSetValue{HyField@#2}{%
3680         \csname HyField@#2@#1\endcsname
3681     }{%
3682         \csname ifFld@#1\endcsname 1\else 0\fi
3683     }%
3684 }

\HyField@SetFlag The bit set is HyField@#1
3685 \def\HyField@SetFlag#1#2{%
3686     \lowercase{\HyField@@SetFlag{#2}}{#1}%
3687 }

\HyField@@SetFlag
3688 \def\HyField@@SetFlag#1#2{%
3689     \bitsetSetValue{HyField@#2}{%
3690         \csname HyField@#2@#1\endcsname
3691     }{1}%
3692 }

\HyField@PrintFlags
3693 \def\HyField@PrintFlags#1#2{%
3694     \ifHy@verbose
3695         \begingroup
3696         \let\Hy@temp\@empty
3697         \let\MessageBreak\relax
3698         \expandafter\@for\expandafter\x\expandafter:\expandafter=%
3699         \bitsetGetSetBitList{HyField@#1}\do{%
3700             \edef\Hy@temp{%
3701                 \Hy@temp
3702                 \csname HyField@#1@\x\endcsname\MessageBreak
3703             }%
3704         }%
3705         \edef\x{\endgroup
3706             \noexpand\Hy@Info{%
3707                 Field flags: %
3708                 \expandafter\ifx\@car#1\@nil S\else/\fi
3709                 #1 %
3710                 \bitsetGetDec{HyField@#1} %
3711                 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
3712                 \Hy@temp
3713                 for #2%

```

```

3714      }%
3715      }\x
3716      \fi
3717 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

3718 \HyField@NewFlag{Ff}{ReadOnly}{1}
3719 \HyField@NewFlag{Ff}{Required}{2}
3720 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

3721 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
3722 \HyField@NewFlag{Ff}{Radio}{16}
3723 \HyField@NewFlag{Ff}{Pushbutton}{17}
3724 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

3725 \HyField@NewFlag{Ff}{Multiline}{13}
3726 \HyField@NewFlag{Ff}{Password}{14}
3727 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
3728 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3729 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
3730 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
3731 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

3732 \HyField@NewFlag{Ff}{Combo}{18}
3733 \HyField@NewFlag{Ff}{Edit}{19}
3734 \HyField@NewFlag{Ff}{Sort}{20}
3735 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
3736 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3737 \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.

```

3738 \newif\ifFld@popdown
3739 \define@key{Field}{popdown}[true]{%
3740   \lowercase{\Field@boolkey{#1}}{popdown}%
3741 }

```

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.

```

3742 \HyField@NewFlag{F}{Invisible}{1}
3743 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
3744 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
3745 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
3746 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
3747 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
3748 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
3749 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
3750 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

```

```

3751 \ifHy@pdfa
3752   \def\HyField@PDFAFlagWarning#1#2{%
3753     \Hy@Warning{%
3754       PDF/A: Annotation flag ‘#1’ must\MessageBreak
3755       be set to ‘#2’%
3756     }%
3757   }%
3758   \Fld@invisiblefalse
3759   \def\Fld@invisibletrue{%
3760     \HyField@PDFAFlagWarning{invisible}{false}%
3761   }%
3762   \Fld@hiddenfalse
3763   \def\Fld@hiddentrue{%
3764     \HyField@PDFAFlagWarning{hidden}{false}%
3765   }%
3766   \Fld@printtrue
3767   \def\Fld@printfalse{%
3768     \HyField@PDFAFlagWarning{print}{true}%
3769   }%
3770   \Fld@nozoomtrue
3771   \def\Fld@nozoomfalse{%
3772     \HyField@PDFAFlagWarning{nozoom}{true}%
3773   }%
3774   \Fld@norotatetrue
3775   \def\Fld@norotatefalse{%
3776     \HyField@PDFAFlagWarning{norotate}{true}%
3777   }%
3778   \Fld@noviewfalse
3779   \def\Fld@noviewtrue{%
3780     \HyField@PDFAFlagWarning{noview}{false}%
3781   }%
3782 \fi

```

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

```

3783 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
3784 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
3785 \HyField@NewFlag{Submit}{GetMethod}{4}
3786 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
3787 \HyField@NewFlagOnly{Submit}{XFDF}{6}
3788 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
3789 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
3790 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
3791 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
3792 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
3793 \HyField@NewFlag{Submit}{ExclFKey}{12}
3794 \HyField@NewFlag{Submit}{EmbedForm}{14}

3795 \define@key{Field}{export}{%
3796   \lowercase{\def\Hy@temp{#1}}%
3797   \@ifundefined{Fld@export@\Hy@temp}{%
3798     \onelevel@sanitize\Hy@temp
3799     \PackageError{hyperref}{%
3800       Unknown export format ‘\Hy@temp’.\MessageBreak
3801       Known formats are ‘FDF’, ‘HTML’, ‘XFDF’, and ‘PDF’%
3802     }%\ehc
3803   }{%
3804     \let\Fld@export\Hy@temp
3805   }%

```



```

3806 }
3807 \def\Fld@export{fdf}
3808 \@namedef{Fld@export@fdf}{0}%
3809 \@namedef{Fld@export@html}{1}%
3810 \@namedef{Fld@export@xfdf}{2}%
3811 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

3812 \def\HyField@FlagsSubmit{%
3813   \bitsetReset{HyField@Submit}%
3814   \ifcase\@nameuse{Fld@export@}\Fld@export} %
3815   % FDF
3816   \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3817   \HyField@UseFlag{Submit}{SubmitCoordinates}%
3818   \HyField@UseFlag{Submit}{IncludeAppendSaves}%
3819   \HyField@UseFlag{Submit}{IncludeAnnotations}%
3820   \HyField@UseFlag{Submit}{CanonicalFormat}%
3821   \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
3822   \HyField@UseFlag{Submit}{ExclFKey}%
3823   \HyField@UseFlag{Submit}{EmbedForm}%
3824   \or % HTML
3825   \HyField@SetFlag{Submit}{ExportFormat}%
3826   \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3827   \HyField@UseFlag{Submit}{GetMethod}%
3828   \HyField@UseFlag{Submit}{SubmitCoordinates}%
3829   \HyField@UseFlag{Submit}{CanonicalFormat}%
3830   \or % XFDF
3831   \HyField@SetFlag{Submit}{XFDF}%
3832   \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3833   \HyField@UseFlag{Submit}{SubmitCoordinates}%
3834   \HyField@UseFlag{Submit}{CanonicalFormat}%
3835   \or % PDF
3836   \HyField@SetFlag{Submit}{SubmitPDF}%
3837   \HyField@UseFlag{Submit}{GetMethod}%
3838   \fi
3839   \HyField@PrintFlags{Submit}{submit button field}%
3840   \bitsetIsEmpty{HyField@Submit}{%
3841     \def\Fld@submitflags{%
3842     }{%
3843     \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
3844     }%
3845   }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

3846 \def\HyField@FlagsAnnot#1{%
3847   \bitsetReset{HyField@F}%
3848   \HyField@UseFlag{F}{Invisible}%
3849   \HyField@UseFlag{F}{Hidden}%
3850   \HyField@UseFlag{F}{Print}%
3851   \HyField@UseFlag{F}{NoZoom}%
3852   \HyField@UseFlag{F}{NoRotate}%
3853   \HyField@UseFlag{F}{NoView}%

```

```

3854 \HyField@UseFlag{F}{Locked}%
3855 \HyField@UseFlag{F}{ToggleNoView}%
3856 \HyField@UseFlag{F}{LockedContents}%
3857 \HyField@PrintFlags{F}{#1}%
3858 \bitsetIsEmpty{HyField@F}{%
3859     \def\Fld@annotflags{%
3860     }{%
3861     \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
3862     }%
3863 }

```

#### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

3864 \def\HyField@FlagsPushButton{%
3865 \HyField@FlagsAnnot{push button field}%
3866 \bitsetReset{HyField@Ff}%
3867 \HyField@UseFlag{Ff}{ReadOnly}%
3868 \HyField@UseFlag{Ff}{Required}%
3869 \HyField@UseFlag{Ff}{NoExport}%
3870 \HyField@SetFlag{Ff}{Pushbutton}%
3871 \HyField@PrintFlags{Ff}{push button field}%
3872 \bitsetIsEmpty{HyField@Ff}{%
3873     \def\Fld@flags{%
3874     }{%
3875     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3876     }%
3877 }

```

#### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

3878 \def\HyField@FlagsCheckBox{%
3879 \HyField@FlagsAnnot{check box field}%
3880 \bitsetReset{HyField@Ff}%
3881 \HyField@UseFlag{Ff}{ReadOnly}%
3882 \HyField@UseFlag{Ff}{Required}%
3883 \HyField@UseFlag{Ff}{NoExport}%
3884 \HyField@PrintFlags{Ff}{check box field}%
3885 \bitsetIsEmpty{HyField@Ff}{%
3886     \def\Fld@flags{%
3887     }{%
3888     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3889     }%
3890 }

```

#### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

3891 \def\HyField@FlagsRadioButton{%
3892 \HyField@FlagsAnnot{radio button field}%
3893 \bitsetReset{HyField@Ff}%
3894 \HyField@UseFlag{Ff}{ReadOnly}%
3895 \HyField@UseFlag{Ff}{Required}%
3896 \HyField@UseFlag{Ff}{NoExport}%
3897 \HyField@UseFlag{Ff}{NoToggleToOff}%

```

```

3898 \HyField@SetFlag{Ff}{Radio}%
3899 \HyField@UseFlag{Ff}{RadiosInUnison}%
3900 \HyField@PrintFlags{Ff}{radio button field}%
3901 \bitsetIsEmpty{HyField@Ff}{%
3902   \def\Fld@flags{%
3903 }{%
3904   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3905 }%
3906 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

3907 \def\HyField@FlagsText{%
3908   \HyField@FlagsAnnot{text field}%
3909   \bitsetReset{HyField@Ff}%
3910   \HyField@UseFlag{Ff}{ReadOnly}%
3911   \HyField@UseFlag{Ff}{Required}%
3912   \HyField@UseFlag{Ff}{NoExport}%
3913   \HyField@UseFlag{Ff}{Multiline}%
3914   \HyField@UseFlag{Ff}{Password}%
3915   \HyField@UseFlag{Ff}{FileSelect}%
3916   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
3917   \HyField@UseFlag{Ff}{DoNotScroll}%
3918   \ifFld@comb
3919     \ifcase0\ifFld@multiline
3920       \else\ifFld@password
3921       \else\ifFld@fileselect
3922       \else 1\fi\fi\fi\relax
3923     \PackageError{hyperref}{%
3924       Field option 'comb' cannot be used together with\MessageBreak
3925       'multiline', 'password', or 'fileselect'%
3926     }\@ehc
3927   \else
3928     \HyField@UseFlag{Ff}{Comb}%
3929   \fi
3930 \fi
3931 \HyField@UseFlag{Ff}{RichText}%
3932 \HyField@PrintFlags{Ff}{text field}%
3933 \bitsetIsEmpty{HyField@Ff}{%
3934   \def\Fld@flags{%
3935 }{%
3936   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3937 }%
3938 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

3939 \def\HyField@FlagsChoice{%
3940   \HyField@FlagsAnnot{choice field}%
3941   \bitsetReset{HyField@Ff}%
3942   \HyField@UseFlag{Ff}{ReadOnly}%
3943   \HyField@UseFlag{Ff}{Required}%
3944   \HyField@UseFlag{Ff}{NoExport}%
3945   \HyField@UseFlag{Ff}{Combo}%

```

```

3946 \ifFld@combo
3947   \HyField@UseFlag{Ff}{Edit}%
3948 \fi
3949 \HyField@UseFlag{Ff}{Sort}%
3950 \HyField@UseFlag{Ff}{MultiSelect}%
3951 \ifFld@combo
3952   \ifFld@edit
3953     \HyField@UseFlag{Ff}{DoNotSpellCheck}%
3954   \fi
3955 \fi
3956 \HyField@UseFlag{Ff}{CommitOnSelChange}%
3957 \HyField@PrintFlags{Ff}{choice field}%
3958 \bitsetIsEmpty{HyField@Ff}{%
3959   \def\Fld@flags{%
3960   }{%
3961     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3962   }%
3963 }

```

## 19.2 Choice field

```

3964 \RequirePackage{kvsetkeys}[2007/09/29]

```

`\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`.

```

3965 \def\HyField@PDFChoices#1{%
3966   \begingroup
3967     \gdef\Fld@choices{%
3968       \def\HyTmp@optlist{%
3969         \let\HyTmp@optitem\relax
3970         \count@=0 %
3971         \kv@parse{#1}{%
3972           \Hy@pdfstringdef\kv@key\kv@key
3973           \ifx\kv@value\relax
3974             \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
3975               \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
3976             \else
3977               \xdef\Fld@choices{\Fld@choices(\kv@key)}%
3978             \fi
3979           \else
3980             \Hy@pdfstringdef\kv@value\kv@value
3981             \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@value)]}%
3982           \fi
3983         \edef\HyTmp@optlist{%
3984           \HyTmp@optlist
3985           \HyTmp@optitem{\the\count@}{\kv@key}0%
3986         }%
3987         \advance\count@ by 1 %
3988         \@gobbletwo
3989       }%
3990       \xdef\Fld@choices{/Opt[\Fld@choices]}%
3991     \ifFld@multiselect
3992       \HyField@@PDFChoices{DV}\Fld@default
3993       \HyField@@PDFChoices{V}\Fld@value
3994     \else
3995       \ifx\Fld@default\relax

```

```

3996     \else
3997     \pdfstringdef\Hy@gtemp\Fld@default
3998     \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
3999     \fi
4000     \ifx\Fld@value\relax
4001     \else
4002     \pdfstringdef\Hy@gtemp\Fld@value
4003     \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
4004     \fi
4005     \fi
4006 \endgroup
4007 }

```

\HyField@@PDFChoices

```

4008 \def\HyField@@PDFChoices#1#2{%
4009     \ifx#2\relax
4010     \else
4011     \count@=0 %
4012     \def\HyTmp@optitem##1##2##3{%
4013     \def\HyTmp@key{##2}%
4014     \ifx\HyTmp@key\Hy@gtemp
4015     \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
4016     \HyTmp@optlist
4017     \HyTmp@optitem{##1}{##2}1%
4018     }%
4019     \let\HyTmp@found=Y%
4020     \else
4021     \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
4022     \HyTmp@optlist
4023     \HyTmp@optitem{##1}{##2}##3%
4024     }%
4025     \fi
4026     }%
4027     \expandafter\comma@parse\expandafter{#2}{%
4028     \pdfstringdef\Hy@gtemp\comma@entry
4029     \let\HyTmp@found=N %
4030     \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
4031     \HyTmp@optlist
4032     \ifx\HyTmp@found Y%
4033     \advance\count@ by 1 %
4034     \else
4035     \@onelevel@sanitize\comma@entry
4036     \PackageWarning{hyperref}{%
4037     \string\ChoiceBox: Ignoring value ‘\comma@entry’,%
4038     \MessageBreak
4039     it cannot be found in the choices%
4040     }%
4041     \fi
4042     \@gobble
4043     }%
4044     \def\HyTmp@optitem##1##2##3{%
4045     \ifnum##3=1 %
4046     (##2)%
4047     \fi
4048     }%
4049     \ifcase\count@
4050     \or

```

```

4051 \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
4052 \else
4053 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]]}%
4054 \ifx#1V%
4055 \def\HyTmp@optitem##1##2##3{%
4056 \ifnum##3=1 %
4057 \@firstofone{ ##1}%
4058 \fi
4059 }%
4060 \edef\HyTmp@optlist{\HyTmp@optlist}%
4061 \xdef\Fld@choices{%
4062 \Fld@choices
4063 /I[\expandafter\@firstofone\HyTmp@optlist]}%
4064 }%
4065 \fi
4066 \fi
4067 \fi
4068 }

```

## 19.3 Forms

\HyField@SetKeys

```

4069 \def\HyField@SetKeys{%
4070 \setkeys{Field}%
4071 }

4072 \newif\ifFld@checked
4073 \newif\ifFld@disabled
4074 \Fld@checkedfalse
4075 \Fld@disabledfalse
4076 \newcount\Fld@menulength
4077 \newdimen\Field@Width
4078 \newdimen\Fld@charsize
4079 \Fld@charsize=10\p@
4080 \def\Fld@maxlen{0}
4081 \def\Fld@align{0}
4082 \def\Fld@color{0 0 0 rg}
4083 \def\Fld@bcolor{1 1 1}
4084 \def\Fld@bordercolor{1 0 0}
4085 \def\Fld@bordersep{1\p@}
4086 \def\Fld@borderwidth{1}
4087 \def\Fld@borderstyle{S}
4088 \def\Fld@cbsymbol{4}
4089 \def\Fld@rotation{0}
4090 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
4091 \def\endForm{\@endForm}
4092 \newif\ifForm@html
4093 \Form@htmlfalse
4094 \def\Form@boolkey#1#2{%
4095 \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
4096 }
4097 \define@key{Form}{action}{%
4098 \hyper@normalise\Hy@DefFormAction{#1}%
4099 }
4100 \def\Hy@DefFormAction{\def\Form@action}
4101 \def\enc@html{html}
4102 \define@key{Form}{encoding}{%

```

```

4103 \def\Hy@tempa{#1}%
4104 \ifx\Hy@tempa\enc@html
4105   \Form@htmltrue
4106   \def\Fld@export{html}%
4107 \else
4108   \typeout{hyperref: form 'encoding' key set to #1 %
4109     -- unknown type%
4110   }%
4111   \Form@htmlfalse
4112 \fi
4113 }
4114 \define@key{Form}{method}{%
4115   \lowercase{\def\Hy@temp{#1}}%
4116   \@ifundefined{Form@method@\Hy@temp}{%
4117     \@onelevel@sanitize\Hy@temp
4118     \PackageError{hyperref}{%
4119       Unknown method '\Hy@temp'.\MessageBreak
4120       Known values are 'post' and 'get'%
4121     }\@ehc
4122   }{%
4123     \let\Form@method\Hy@temp
4124     \ifcase\@nameuse{Form@method@\Hy@temp} %
4125       \Fld@getmethodfalse
4126     \else
4127       \Fld@getmethodtrue
4128     \fi
4129   }%
4130 }
4131 \def\Form@method{}
4132 \@namedef{Form@method@post}{0}
4133 \@namedef{Form@method@get}{1}
4134 \def\Field@boolkey#1#2{%
4135   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
4136 }
4137 \newtoks\Field@toks
4138 \Field@toks={ }%
4139 \def\Field@addtoks#1#2{%
4140   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
4141   \@processme
4142 }
4143 \def\Fld@checkequals#1=#2=#3\{\%
4144   \def\@currDisplay{#1}%
4145   \ifx\#2\%
4146     \def\@currValue{#1}%
4147   \else
4148     \def\@currValue{#2}%
4149   \fi
4150 }
4151 \define@key{Field}{loc}{%
4152   \def\Fld@loc{#1}%
4153 }
4154 \define@key{Field}{checked}[true]{%
4155   \lowercase{\Field@boolkey{#1}}{checked}%
4156 }
4157 \define@key{Field}{disabled}[true]{%
4158   \lowercase{\Field@boolkey{#1}}{disabled}%
4159 }

```

```

4160 \define@key{Field}{accesskey}{%
4161   \Field@addtoks{accesskey}{#1}%
4162 }
4163 \define@key{Field}{tabkey}{%
4164   \Field@addtoks{tabkey}{#1}%
4165 }
4166 \define@key{Field}{name}{%
4167   \def\Fld@name{#1}%
4168 }
4169 \define@key{Field}{width}{%
4170   \def\Fld@width{#1}%
4171   \Field@Width#1\setbox0=\hbox{m}%
4172 }
4173 \define@key{Field}{maxlen}{%
4174   \def\Fld@maxlen{#1}%
4175 }
4176 \define@key{Field}{menulength}{%
4177   \Fld@menulength=#1\relax
4178 }
4179 \define@key{Field}{height}{%
4180   \def\Fld@height{#1}%
4181 }
4182 \define@key{Field}{charsize}{%
4183   \Fld@charsize#1%
4184 }
4185 \define@key{Field}{borderwidth}{%
4186   \def\Fld@borderwidth{#1}%
4187 }
4188 \define@key{Field}{borderstyle}{%
4189   \def\Fld@borderstyle{#1}%
4190 }
4191 \define@key{Field}{bordersep}{%
4192   \def\Fld@bordersep{#1}%
4193 }
4194 \define@key{Field}{default}{%
4195   \def\Fld@default{#1}%
4196 }
4197 \define@key{Field}{align}{%
4198   \def\Fld@align{#1}%
4199 }
4200 \define@key{Field}{value}{%
4201   \def\Fld@value{#1}%
4202 }
4203 \define@key{Field}{checkboxsymbol}{%
4204   \def\Fld@cbsymbol{#1}%
4205 }
4206 \define@key{Field}{rotation}{%
4207   \def\Fld@rotation{#1}%
4208 }
4209 \define@key{Field}{backgroundcolor}{%
4210   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
4211 }
4212 \define@key{Field}{bordercolor}{%
4213   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
4214 }
4215 \define@key{Field}{color}{%
4216   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%

```



```

4217 }
4218 \def\Fld@format@code{}
4219 \def\Fld@validate@code{}
4220 \def\Fld@calculate@code{}
4221 \def\Fld@keystroke@code{}
4222 \def\Fld@onfocus@code{}
4223 \def\Fld@onblur@code{}
4224 \def\Fld@onmousedown@code{}
4225 \def\Fld@onmouseup@code{}
4226 \def\Fld@onenter@code{}
4227 \def\Fld@onexit@code{}
4228 \def\Hy@temp#1{%
4229   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
4230 }
4231 \def\Hy@@temp#1#2{%
4232   \ifHy@pdfa
4233     \define@key{Field}{#2}{%
4234       \PackageError{hyperref}{%
4235         PDF/A: Additional action ‘#2’ is prohibited%
4236       }\@ehc
4237     }%
4238   \else
4239     \define@key{Field}{#2}{%
4240       \def#1{##1}%
4241     }%
4242   \fi
4243 }
4244 \Hy@temp{keystroke}
4245 \Hy@temp{format}
4246 \Hy@temp{validate}
4247 \Hy@temp{calculate}
4248 \Hy@temp{onfocus}
4249 \Hy@temp{onblur}
4250 \Hy@temp{onenter}
4251 \Hy@temp{onexit}
4252 \def\Hy@temp#1{%
4253   \define@key{Field}{#1}{%
4254     \Field@addtoks{#1}{##1}%
4255   }%
4256 }
4257 \Hy@temp{onselect}
4258 \Hy@temp{onchange}
4259 \Hy@temp{ondblclick}
4260 \Hy@temp{onmousedown}
4261 \Hy@temp{onmouseup}
4262 \Hy@temp{onmouseover}
4263 \Hy@temp{onmousemove}
4264 \Hy@temp{onmouseout}
4265 \Hy@temp{onkeypress}
4266 \Hy@temp{onkeydown}
4267 \Hy@temp{onkeyup}
4268 \ifHy@pdfa
4269   \define@key{Field}{onclick}{%
4270     \PackageError{hyperref}{%
4271       PDF/A: Action ‘onclick’ is prohibited%
4272     }\@ehc
4273   }%

```

```

4274 \else
4275   \define@key{Field}{onclick}{%
4276     \def\Fld@onclick{#1}%
4277     \Field@addtoks{onclick}{#1}%
4278   }%
4279 \fi

4280 \DeclareRobustCommand\TextField{%
4281   \@ifnextchar[{\@TextField}{\@TextField[]}%
4282 }
4283 \DeclareRobustCommand\ChoiceMenu{%
4284   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
4285 }
4286 \DeclareRobustCommand\CheckBox{%
4287   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
4288 }
4289 \DeclareRobustCommand\PushButton{%
4290   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
4291 }
4292 \DeclareRobustCommand\Gauge{%
4293   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
4294 }
4295 \DeclareRobustCommand\Submit{%
4296   \@ifnextchar[{\@Submit}{\@Submit[]}%
4297 }
4298 \DeclareRobustCommand\Reset{%
4299   \@ifnextchar[{\@Reset}{\@Reset[]}%
4300 }
4301 \def\LayoutTextField#1#2{% label, field
4302   #1 #2%
4303 }
4304 \def\LayoutChoiceField#1#2{% label, field
4305   #1 #2%
4306 }
4307 \def\LayoutCheckField#1#2{% label, field
4308   #1 #2%
4309 }
4310 \def\LayoutPushButtonField#1{% button
4311   #1%
4312 }
4313 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4314 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4315 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4316 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4317 \def\MakeButtonField#1{%
4318   \sbox0{%
4319     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
4320   }%
4321   \@tempdima\ht0 %
4322   \advance\@tempdima by \Fld@borderwidth bp %
4323   \advance\@tempdima by \Fld@borderwidth bp %
4324   \ht0\@tempdima
4325   \@tempdima\dp0 %
4326   \advance\@tempdima by \Fld@borderwidth bp %
4327   \advance\@tempdima by \Fld@borderwidth bp %
4328   \dp0\@tempdima
4329   \box0\relax
4330 }

```

```

4331 \def\DefaultHeightofSubmit{14pt}
4332 \def\DefaultWidthofSubmit{2cm}
4333 \def\DefaultHeightofReset{14pt}
4334 \def\DefaultWidthofReset{2cm}
4335 \def\DefaultHeightofCheckBox{\baselineskip}
4336 \def\DefaultWidthofCheckBox{\baselineskip}
4337 \def\DefaultHeightofChoiceMenu{\baselineskip}
4338 \def\DefaultWidthofChoiceMenu{\baselineskip}
4339 \def\DefaultHeightofText{\baselineskip}
4340 \def\DefaultHeightofTextMultiline{4\baselineskip}
4341 \def\DefaultWidthofText{3cm}
4342 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
4343 \def\DefaultOptionsofReset{print,name=Reset,noexport}
4344 \def\DefaultOptionsofPushButton{print}
4345 \def\DefaultOptionsofCheckBox{print}
4346 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

4347 \def\DefaultOptionsofListBox{print}
4348 \def\DefaultOptionsofComboBox{print,edit,sort}
4349 \def\DefaultOptionsofPopdownBox{print}
4350 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

4351 \ifHy@figures
4352 \Hy@Info{Hyper figures ON}%
4353 \else
4354 \Hy@Info{Hyper figures OFF}%
4355 \fi
4356 \ifHy@nesting
4357 \Hy@Info{Link nesting ON}%
4358 \else
4359 \Hy@Info{Link nesting OFF}%
4360 \fi
4361 \ifHy@hyperindex
4362 \Hy@Info{Hyper index ON}%
4363 \else
4364 \Hy@Info{Hyper index OFF}%
4365 \fi
4366 \ifHy@backref
4367 \Hy@Info{backreferencing ON}%
4368 \else
4369 \Hy@Info{backreferencing OFF}%
4370 \fi
4371 \ifHy@colorlinks
4372 \Hy@Info{Link coloring ON}%
4373 \else
4374 \Hy@Info{Link coloring OFF}%
4375 \fi
4376 \ifHy@ocgcolorlinks
4377 \Hy@Info{Link coloring with OCG ON}%
4378 \else
4379 \Hy@Info{Link coloring with OCG OFF}%
4380 \fi
4381 \ifHy@pdfa
4382 \Hy@Info{PDF/A mode ON}%

```

```

4383 \else
4384   \Hy@Info{PDF/A mode OFF}%
4385 \fi

```

## 21 Low-level utility macros

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

```

4386 \edef\hyper@hash{\string#}
4387 \edef\hyper@tilde{\string~}
4388 \edef\hyper@quote{\string"}
4389 \let\@currentHref\@empty
4390 \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.

```

4391 \AfterBeginDocument{%
4392   \Hy@pdfstringtrue
4393   \PDF@SetupDoc
4394   \let\PDF@SetupDoc\@empty
4395   \Hy@DisableOption{pdfpagescrop}%
4396   \Hy@DisableOption{pdfpagemode}%
4397   \Hy@DisableOption{pdfnonfullscreenpagemode}%
4398   \Hy@DisableOption{pdfdirection}%
4399   \Hy@DisableOption{pdfviewarea}%
4400   \Hy@DisableOption{pdfviewclip}%
4401   \Hy@DisableOption{pdfprintarea}%
4402   \Hy@DisableOption{pdfprintclip}%
4403   \Hy@DisableOption{pdfprintscaling}%
4404   \Hy@DisableOption{pdfduplex}%
4405   \Hy@DisableOption{pdfpicktraybypdfsize}%
4406   \Hy@DisableOption{pdfprintpagerange}%
4407   \Hy@DisableOption{pdfnumcopies}%
4408   \Hy@DisableOption{pdfstartview}%
4409   \Hy@DisableOption{pdfstartpage}%
4410   \Hy@DisableOption{pdftoolbar}%
4411   \Hy@DisableOption{pdfmenubar}%
4412   \Hy@DisableOption{pdfwindowui}%
4413   \Hy@DisableOption{pdffitwindow}%
4414   \Hy@DisableOption{pdfcenterwindow}%
4415   \Hy@DisableOption{pdfdisplaydoctitle}%
4416   \Hy@DisableOption{pdfpagelayout}%
4417   \Hy@DisableOption{pdflang}%
4418   \Hy@DisableOption{baseurl}%
4419   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
4420   \Hy@pdfstringfalse
4421 }

```

## 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.

```

4422 \def\NoHyper{%
4423   \def\hyper@link@{##1}##2##3##4{##4}%
4424   \def\hyper@@anchor##1{ }%

```

```

4425 \global\let\hyper@livelink\hyper@link
4426 \gdef\hyper@link##1##2##3{##3}%
4427 \def\hyper@anchorstart##1{}%
4428 \let\hyper@anchorend\@empty
4429 \def\hyper@linkstart##1##2{}%
4430 \let\hyper@linkend\@empty
4431 \def\hyper@linkurl##1##2{##1}%
4432 \def\hyper@linkfile##1##2##3{##1}%
4433 \def\hyper@link@{##1}##2##3{}%
4434 \let\Hy@backout\@gobble
4435 }
4436 \def\stop@hyper{%
4437 \def\hyper@link@{##1}##2##3##4{##4}%
4438 \let\Hy@backout\@gobble
4439 \def\hyper@@anchor##1{}%
4440 \def\hyper@link##1##2##3{##3}%
4441 \def\hyper@anchorstart##1{}%
4442 \let\hyper@anchorend\@empty
4443 \def\hyper@linkstart##1##2{}%
4444 \let\hyper@linkend\@empty
4445 \def\hyper@linkurl##1##2{##1}%
4446 \def\hyper@linkfile##1##2##3{##1}%
4447 \def\hyper@link@{##1}##2##3{}%
4448 }
4449 \def\endNoHyper{%
4450 \global\let\hyper@link\hyper@livelink
4451 }
4452 \</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:

```

4453 \*nohyperref
4454 \let\hyper@@anchor\@gobble
4455 \def\hyper@link#1#2#3{#3}%
4456 \let\hyper@anchorstart\@gobble
4457 \let\hyper@anchorend\@empty
4458 \let\hyper@linkstart\@gobbletwo
4459 \let\hyper@linkend\@empty
4460 \def\hyper@linkurl#1#2{#1}%
4461 \def\hyper@linkfile#1#2#3{#1}%
4462 \def\hyper@link@{#1}#2#3{}%
4463 \let\PDF@SetupDoc\@empty
4464 \let\PDF@FinishDoc\@empty

```

Some top-level commands:

```

4465 \def\Acrobatmenu#1#2{\leavevmode#2}
4466 \let\pdfstringdefDisableCommands\@gobbletwo
4467 \let\texorpdfstring\@firstoftwo
4468 \let\pdfbookmark\@undefined
4469 \newcommand\pdfbookmark[3][]{ }

```

```

4470 \let\phantomsection\@empty
4471 \let\hypersetup\@gobble
4472 \let\hyperbaseurl\@gobble
4473 \let\href\@gobble
4474 \let\hyperdef\@gobbletwo
4475 \let\hyperlink\@gobble
4476 \let\hypertarget\@gobble
4477 \def\hyperref{%
4478   \@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
4479 }
4480 \long\def\@gobbleopt[#1]{%
4481 \let\hyperpage\@empty
4482 \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}`

```

4483 \*package
4484 \AfterBeginDocument{%

```

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.

```

4485 \if@filesw
4486   \ifHy@typexml
4487     \immediate\closeout\@mainaux
4488     \immediate\openout\@mainaux\jobname.aux\relax
4489     \immediate\write\@auxout{<relaxxml>\relax}%
4490   \fi
4491   \immediate\write\@auxout{%
4492     \string\ifx\string\hyper@anchor\string\@undefined^^J%
4493     \global\let\string\oldcontentsline\string\contentsline^^J%
4494     \gdef\string\contentsline%
4495       \string#1\string#2\string#3\string#4{%
4496       \string\oldcontentsline%
4497       {\string#1}{\string#2}{\string#3}}^^J%
4498     \global\let\string\oldnewlabel\string\newlabel^^J%
4499     \gdef\string\newlabel\string#1\string#2{%
4500     \string\newlabelxx{\string#1}\string#2}^^J%
4501     \gdef\string\newlabelxx%
4502       \string#1\string#2\string#3\string#4\string#5\string#6{%
4503       \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.

```

4504   \string\AtEndDocument{%
4505     \let\string\contentsline\string\oldcontentsline^^J%
4506     \let\string\newlabel\string\oldnewlabel^^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.

```

4507   \string\else^^J%
4508   \global\let\string\hyper@last\relax^^J%
4509   \string\fi^^J%

```

```

4510 }%
4511 \fi

```

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.

```

4512 \ifx\hyper@last\@undefined
4513   \def\@starttoc#1{%
4514     \begingroup
4515       \makeatletter
4516       \IfFileExists{\jobname.#1}{%
4517         \Hy@WarningNoLine{%
4518           old #1 file detected, not used; run LaTeX again%
4519         }%
4520       }{%
4521         \if@filesw
4522           \expandafter\newwrite\csname tf@#1\endcsname
4523           \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
4524         \fi
4525         \@nobreakfalse
4526       \endgroup
4527     }%
4528     \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
4529   \fi
4530 }

```

## 25 Title strings

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

```

4531 \ifHy@usetitle
4532   \let\HyOrg@title\title
4533   \let\HyOrg@author\author
4534   \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
4535   \def\Hy@scanopttitle[#1]{%
4536     \gdef\Hy@title{#1}%
4537     \HyOrg@title[#1]%
4538   }%
4539   \def\Hy@scantitle#1{%
4540     \gdef\Hy@title{#1}%
4541     \HyOrg@title{#1}%
4542   }%
4543   \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
4544   \def\Hy@scanoptauthor[#1]{%
4545     \gdef\Hy@author{#1}%
4546     \HyOrg@author[#1]%
4547   }%
4548   \def\Hy@scanauthor#1{%
4549     \gdef\Hy@author{#1}%
4550     \HyOrg@author{#1}%
4551   }%

```

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.

```

4552 \begingroup
4553   \def\process@me#1\@nil#2{%
4554     \expandafter\let\expandafter\x\csname @#2\endcsname
4555     \edef\y{\expandafter\strip@prefix\meaning\x}%
4556     \def\c##1##2\@nil{%
4557       \ifx\\##1\\%
4558         \else
4559           \expandafter\gdef\csname Hy@#2\expandafter\endcsname
4560             \expandafter{\x}%
4561         \fi
4562       }%
4563       \expandafter\c\y\relax#1\@nil
4564     }%
4565     \expandafter\process@me\string\@latex@\@nil{title}%
4566     \expandafter\process@me\string\@latex@\@nil{author}%
4567 \endgroup
4568 \fi
4569 \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.

```

4570 \def\Hy@UseMaketitleString#1{%
4571   \@ifundefined{Hy@#1}{}{%
4572     \begingroup
4573     \let\Hy@saved@hook\pdfstringdefPreHook
4574     \pdfstringdefDisableCommands{%
4575       \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
4576       \let\newline\\%
4577     }%
4578     \expandafter\ifx\csname @pdf#1\endcsname\@empty
4579       \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
4580         \csname Hy@#1\endcsname\@empty
4581       }%
4582     \fi
4583     \global\let\pdfstringdefPreHook\Hy@saved@hook
4584   \endgroup
4585 }%
4586 }
4587 \def\Hy@newline@title#1{ #1}
4588 \def\Hy@newline@author#1{, #1}
4589 \def\Hy@UseMaketitleInfos{%
4590   \Hy@UseMaketitleString{title}%
4591   \Hy@UseMaketitleString{author}%
4592 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.



## 27 Every page

```

4593 \RequirePackage{atbegshi}[2007/09/09]
4594 \def\Hy@EveryPageHook{}
4595 \def\Hy@EveryPageBoxHook{}
4596 \def\Hy@FirstPageHook{}
4597 \AtBeginShipout{%
4598   \Hy@EveryPageHook
4599   \ifx\Hy@EveryPageBoxHook\@empty
4600   \else
4601     \setbox\AtBeginShipoutBox=\vbox{%
4602       \offinterlineskip
4603       \Hy@EveryPageBoxHook
4604       \box\AtBeginShipoutBox
4605     }%
4606   \fi
4607 }
4608 \AtBeginShipoutFirst{%
4609   \Hy@FirstPageHook
4610 }
4611 \g@addto@macro\Hy@FirstPageHook{%
4612   \PDF@FinishDoc
4613   \gdef\PDF@FinishDoc{}}%
4614 }

```

### 27.1 PDF /PageLabels

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

```

4615 \ifHy@pagelabels
4616   \begingroup\expandafter\expandafter\expandafter\endgroup
4617   \expandafter\ifx\csname thepage\endcsname\relax
4618     \Hy@pagelabelsfalse
4619     \Hy@WarningNoLine{%
4620       Option 'pdfpagelabels' is turned off\MessageBreak
4621       because \string\thepage\space is undefined%
4622     }%
4623     \csname fi\endcsname
4624     \csname iffalse\expandafter\endcsname
4625   \fi

```

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

```

4626 \def\thispdfpagelabel#1{%
4627   \gdef\HyPL@thisLabel{#1}%
4628 }%
4629 \global\let\HyPL@thisLabel\relax

```

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

```

4630 \def\HyPL@Labels{}%

```

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

```

4631 \newcount\Hy@abspage
4632 \Hy@abspage=0 %

```

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

```

4633 \def\HyPL@LastType{init}%
4634 \def\HyPL@LastNumber{0}%
4635 \def\HyPL@LastPrefix{}%

```

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

```

4636 \def\HyPL@arabic{D}%
4637 \def\HyPL@Roman{R}%
4638 \def\HyPL@roman{r}%
4639 \def\HyPL@Alph{A}%
4640 \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.

```

4641 \def\HyPL@EveryPage{%
4642   \begingroup
4643   \ifx\HyPL@thisLabel\relax
4644     \let\HyPL@page\thepage
4645   \else
4646     \let\HyPL@page\HyPL@thisLabel
4647   \global\let\HyPL@thisLabel\relax
4648   \fi
4649   \let\HyPL@Type\relax
4650   \ifnum\the\c@page>0 %
4651     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
4652   \fi
4653   \let\Hy@temp Y%
4654   \ifx\HyPL@Type\HyPL@LastType
4655   \else
4656     \let\Hy@temp N%
4657   \fi
4658   \ifx\HyPL@Type\relax
4659     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
4660   \else
4661     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
4662   \fi
4663   \ifx\HyPL@Prefix\HyPL@LastPrefix
4664   \else
4665     \let\Hy@temp N%
4666   \fi
4667   \if Y\Hy@temp
4668     \advance\c@page by -1 %
4669     \ifnum\HyPL@LastNumber=\the\c@page\relax
4670     \else
4671       \let\Hy@temp N%
4672     \fi
4673     \Hy@StepCount\c@page
4674   \fi
4675   \if N\Hy@temp
4676     \ifx\HyPL@Type\relax
4677       \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
4678     \else
4679       \HyPL@StorePageLabel{%
4680         \ifx\HyPL@Prefix\empty
4681         \else
4682           /P(\HyPL@Prefix)%
4683         \fi
4684         /S/\csname HyPL\HyPL@Type\endcsname
4685         \ifnum\the\c@page=1 %
4686         \else
4687           \space/St \the\c@page
4688         \fi

```

```

4689         }%
4690         \fi
4691     \fi
4692     \xdef\HyPL@LastNumber{\the\c@page}%
4693     \global\let\HyPL@LastType\HyPL@Type
4694     \global\let\HyPL@LastPrefix\HyPL@Prefix
4695 \endgroup
4696 \Hy@GlobalStepCount\Hy@abspage
4697 }%

```

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

```

4698 \def\HyPL@CheckThePage#1\@nil{%
4699     \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
4700 }%

```

`\HyPL@@CheckThePage` The first check is, is `\thepage` is defined such as in  $\text{\LaTeX}$ , e. g.: `\csname @arabic\endcsname\c@page`. In the current implementation the check fails, if there is another `\csname` before.

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

```

4701 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
4702     \def\Hy@tempa{#4}%
4703     \def\Hy@tempb{\csname\endcsname\c@page}%
4704     \ifx\Hy@tempa\Hy@tempb
4705         \expandafter\ifx\csname HyPL#3\endcsname\relax
4706         \else
4707             \def\HyPL@Type{#3}%
4708             \def\HyPL@Prefix{#2}%
4709         \fi
4710     \else
4711         \begingroup
4712             \let\Hy@next\endgroup
4713             \let\HyPL@found\@undefined
4714             \def\arabic{\HyPL@Format{arabic}}%
4715             \def\Roman{\HyPL@Format{Roman}}%
4716             \def\roman{\HyPL@Format{roman}}%
4717             \def\Alph{\HyPL@Format{Alph}}%
4718             \def\alph{\HyPL@Format{alph}}%
4719             \protected@edef\Hy@temp{#1}%
4720             \ifx\HyPL@found\relax
4721                 \toks@{\expandafter\Hy@temp}%
4722                 \edef\Hy@next{\endgroup
4723                     \noexpand\HyPL@@@CheckThePage\the\toks@
4724                     \noexpand\HyPL@found\relax\noexpand\@nil
4725                 }%
4726             \fi
4727             \Hy@next
4728         \fi
4729     }%

```

`\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`.

```

4730 \def\HyPL@Format#1#2{%
4731     \ifx\HyPL@found\@undefined
4732         \expandafter\ifx\csname c@#2\endcsname\c@page
4733             \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
4734         \else

```

```

4735      \expandafter\noexpand\csname#1\endcsname{#2}%
4736      \fi
4737      \else
4738      \expandafter\noexpand\csname#1\endcsname{#2}%
4739      \fi
4740  }%

```

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

```

4741  \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
4742    \def\Hy@tempa{#3}%
4743    \def\Hy@tempb{\HyPL@found\relax}%
4744    \ifx\Hy@tempa\Hy@tempb
4745      \def\HyPL@Type{#2}%
4746      \def\HyPL@Prefix{#1}%
4747    \fi
4748  }%

```

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

```

4749  \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`.

```

4750  \def\HyPL@Useless{0<</S/D>>}%
4751  \@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.

```

4752  \def\HyPL@SetPageLabels{%
4753    \@onelevel@sanitize\HyPL@Labels
4754    \ifx\HyPL@Labels\@empty
4755      \else
4756        \ifx\HyPL@Labels\HyPL@Useless
4757          \else
4758            \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
4759          \fi
4760        \fi
4761      }%

```

```

4762  \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
4763  \fi

```

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

```

4764  \Hy@DisableOption{pdfpagelabels}
4765  </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`

```

4766  <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.

```

4767 < *vtex >
4768 \providecommand*{\XR@ext}{pdf}
4769 \edef\Hy@VTeXversion{%
4770   \ifx\VTeXversion\undefined
4771     \z@
4772   \else
4773     \ifx\VTeXversion\relax
4774       \z@
4775     \else
4776       \VTeXversion
4777     \fi
4778   \fi
4779 }
4780 \begingroup
4781   \ifnum\Hy@VTeXversion<660 %
4782     \gdef\Hy@PutCatalog#1{%
4783       \Hy@WarningNoLine{%
4784         VTeX 6.59g or above required for pdfpagelabels%
4785       }%
4786     }%
4787   \else
4788     \gdef\Hy@PutCatalog#1{%
4789       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
4790     }%
4791     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
4792       \ifx\#2\%
4793         \else
4794           \immediate\special{!pdfpagelabels #2}%
4795         \fi
4796       }%
4797     \fi
4798 \endgroup
4799 < /vtex >

4800 < *pdfTeX | vtex >

```

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

```

4801 \ifHy@pagelabels
4802   \def\HyPL@StorePageLabel#1{%
4803     \toks@\expandafter{\HyPL@Labels}%
4804     \xdef\HyPL@Labels{%
4805       \the\toks@
4806       \the\Hy@abspage<<#1>>%
4807     }%
4808   }%

```

At the end of the document, \clearpage tries to make sure, that no further pages will follow. Then the PDF catalog entry for \PageLabels is set.

```

4809 \@ifclassloaded{revtex4}{%
4810   \g@addto@macro\clear@document{\HyPL@SetPageLabels}%
4811 }{%
4812   \AtEndDocument{\clearpage\HyPL@SetPageLabels}%
4813 }%

```

```

4814 \fi
4815 </pdfTeX | vTeX>

```

## 27.1.2 pdfmarkbase, dvipdfm

```

4816 <*pdfmarkbase>
4817 \begingroup
4818   \toks@ \expandafter {\Hy@FirstPageHook}%
4819   \xdef \Hy@FirstPageHook{%
4820     \noexpand\headerps@out{%
4821       systemdict /pdfmark known%
4822       {%
4823         userdict /?pdfmark systemdict /exec get put%
4824         }{%
4825         userdict /?pdfmark systemdict /pop get put %
4826         userdict /pdfmark systemdict /cleartomark get put%
4827         }%
4828         ifelse%
4829         }%
4830     \the\toks@
4831   }%
4832 \endgroup
4833 </pdfmarkbase>

```

\Hy@PutCatalog

```

4834 (dvipdfm) \def \Hy@PutCatalog#1 {\@pdfmark{docview << #1 >>}}
4835 <*pdfmarkbase>
4836 \def \Hy@PutCatalog#1{%
4837   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog}\string} << #1 >>}}%
4838 }
4839 </pdfmarkbase>

4840 <*pdfmarkbase | dvipdfm>
4841 \ifHy@pagelabels

```

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

```

4842 \def \HyPL@StorePageLabel#1{%
4843   \if@filesw
4844     \begingroup
4845       \edef \Hy@tempa {\the \Hy@abspage << #1 >>}%
4846       \immediate \write \@mainaux {%
4847         \string \HyPL@Entry {\Hy@tempa}%
4848       }%
4849     \endgroup
4850   \fi
4851 }%

```

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.

```

4852 \AfterBeginDocument{%
4853   \if@filesw
4854     \immediate \write \@mainaux {%
4855       \string \providecommand \string* \string \HyPL@Entry [1] {}%
4856     }%
4857   \fi
4858   \ifx \HyPL@Labels \@empty
4859     \Hy@WarningNoLine {Rerun to get /PageLabels entry}%

```

```

4860     \else
4861         \HyPL@SetPageLabels
4862     \fi
4863     \let\HyPL@Entry\@gobble
4864 }%

\HyPL@Entry
4865 \def\HyPL@Entry#1{%
4866     \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
4867         \HyPL@Labels
4868         #1%
4869     }%
4870 }%

4871 \fi
4872 </pdfmarkbase | dvipdfm>
4873 <*package>
4874 \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

```

4875 \def\Hy@CounterExists#1{%
4876     \begingroup\expandafter\expandafter\expandafter\endgroup
4877     \expandafter\ifx\csname c@#1\endcsname\relax
4878         \expandafter\@gobble
4879     \else
4880         \begingroup\expandafter\expandafter\expandafter\endgroup
4881         \expandafter\ifx\csname the#1\endcsname\relax
4882             \expandafter\expandafter\expandafter\@gobble
4883         \else
4884             \expandafter\expandafter\expandafter\@firstofone
4885         \fi
4886     \fi
4887 }
4888 \Hy@CounterExists{section}{%
4889     \newcommand\theHequation{\theHsection.\arabic{equation}}}%
4890 }
4891 \Hy@CounterExists{part}{%

```

```

4892 \newcommand\theHpart{\arabic{part}}%
4893 }
4894 \@ifundefined{thechapter}{%
4895   \newcommand\theHsection   {\arabic{section}}%
4896   \newcommand\theHfigure    {\arabic{figure}}%
4897   \newcommand\theHtable     {\arabic{table}}%
4898 }{%
4899   \newcommand\theHchapter    {\arabic{chapter}}%
4900   \newcommand\theHfigure     {\theHchapter.\arabic{figure}}%
4901   \newcommand\theHtable      {\theHchapter.\arabic{table}}%
4902   \newcommand\theHsection     {\theHchapter.\arabic{section}}%
4903 }
4904 \newcommand\theHsubsection   {\theHsection.\arabic{subsection}}
4905 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
4906 \newcommand\theHparagraph    {\theHsubsubsection.\arabic{paragraph}}
4907 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
4908 \newcommand\theHtheorem      {\theHsection.\arabic{theorem}}
4909 \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.

```

4910 \let\H@item\item
4911 \newcounter{Item}
4912 \def\theHItem{\arabic{Item}}
4913 \def\item{%
4914   \@hyper@itemfalse
4915   \if@nmbrrlist\@hyper@itemtrue\fi
4916   \H@item
4917 }
4918 \newcommand\theHenumi      {\theHItem}
4919 \newcommand\theHenumii     {\theHItem}
4920 \newcommand\theHenumiii    {\theHItem}
4921 \newcommand\theHenumiv     {\theHItem}
4922 \newcommand\theHHfootnote  {\arabic{Hfootnote}}
4923 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
4924 \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.

```

4925 \let\H@refstepcounter\refstepcounter
4926 \edef\name@of@eq{equation}%
4927 \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.

```

4928 \newif\if@hyper@item
4929 \newif\if@skiphyperref
4930 \@hyper@itemfalse
4931 \@skiphyperreffalse
4932 \def\refstepcounter#1{%
4933   \ifHy@pdfstring
4934   \else
4935     \H@refstepcounter{#1}%
4936     \edef\This@name{#1}%
4937     \ifx\This@name\name@of@slide

```



```

4938 \else
4939 \if@skiphyperref
4940 \else
4941 \if@hyper@item
4942 \stepcounter{Item}%
4943 \hyper@refstepcounter{Item}%
4944 \@hyper@itemfalse
4945 \else
4946 \hyper@refstepcounter{#1}%
4947 \fi
4948 \fi
4949 \fi
4950 \fi
4951 }

```

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

```

4952 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

4953 \def\hyper@refstepcounter#1{%
4954 \edef\This@name{#1}%
4955 \ifx\This@name\name@of@eq
4956 \@ifundefined{theHequation}{%
4957 \make@stripped@name{\theequation}%
4958 \let\theHequation\newname
4959 }{}%
4960 \fi
4961 \@ifundefined{theH#1}{%
4962 \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
4963 }{}%
4964 \hyper@makecurrent{#1}%
4965 \ifmeasuring@
4966 \else
4967 \Hy@raisedlink{%
4968 \hyper@anchorstart{\@currentHref}\hyper@anchorend
4969 }%
4970 \fi
4971 }

```

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`.

```

4972 \begingroup\expandafter\expandafter\expandafter\endgroup
4973 \expandafter\ifx\csname chapter\endcsname\relax
4974 \def\Hy@chapterstring{section}%
4975 \else
4976 \def\Hy@chapterstring{chapter}%
4977 \fi
4978 \def\Hy@appendixstring{appendix}
4979 \def\Hy@chapapp{\Hy@chapterstring}
4980 \let\HyOrg@appendix\appendix
4981 \def\appendix{%

```

```

4982 \@ifundefined{chapter}%
4983   {\gdef\theHsection{\Alph{section}}}%
4984   {\gdef\theHchapter{\Alph{chapter}}}%
4985   \xdef\Hy@chapapp{\Hy@appendixstring}%
4986   \HyOrg@appendix
4987 }

```

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

```

4988 \def\hyper@makecurrent#1{%
4989   \begingroup
4990     \edef\Hy@param{#1}%
4991     \ifx\Hy@param\Hy@chapterstring
4992       \let\Hy@param\Hy@chapapp
4993     \fi
4994     \ifHy@hypertextnames
4995       \let\@number\@firstofone
4996       \@ifundefined{latin@Alph}{-}{%
4997         \ifx\@Alph\greek@Alph
4998           \def\@Alph{Alph\@arabic}%
4999         \fi
5000       }%
5001       \ifx\@Alph\@Alph@bul
5002         \def\@Alph{Alph\@arabic}%
5003       \fi
5004       \ifx\@alph\@alph@bul
5005         \def\@alph{alph\@arabic}%
5006       \fi
5007       \ifHy@naturalnames
5008         \let\textlatin\@firstofone
5009         \xdef\@currentHlabel{\csname the#1\endcsname}%
5010       \else
5011         \xdef\@currentHlabel{\csname theH#1\endcsname}%
5012       \fi
5013       \xdef\@currentHref{%
5014         \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
5015       }%
5016     \else
5017       \Hy@GlobalStepCount\Hy@linkcounter
5018       \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
5019     \fi
5020   \endgroup
5021 }

5022 \@ifpackageloaded{fancyvrb}{%
5023   \def\FV@StepLineNo{%
5024     \FV@SetLineNo
5025     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
5026     \FV@StepLineNo
5027   }%
5028 }{}

```

## 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 `hypertexnames` 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`

```

5029 \AtBeginDocument{%
5030   \@ifclassloaded{revtex4}{%
5031     \namedef{ver@lastpage.sty}{1994/06/25}%
5032   }{}%
5033   \@ifpackageloaded{lastpage}{%
5034     \ifHy@pageanchor
5035     \else
5036       \Hy@WarningNoLine{%
5037         The \string\pageref{LastPage} link doesn't work\MessageBreak
5038         with disabled option 'pageanchor'%
5039       }%
5040     \fi
5041     \def\lastpage@putlabel{%
5042       \addtocounter{page}{-1}%
5043       \if@filesw
5044         \begingroup
5045           \let\@number\@firstofone
5046           \ifHy@pageanchor
5047             \ifHy@hypertexnames
5048               \ifHy@plainpages
5049                 \def\Hy@temp{\arabic{page}}%
5050               \else
5051                 \Hy@unicodedefalse
5052                 \pdfstringdef\Hy@temp{\thepage}%
5053               \fi
5054             \else
5055               \def\Hy@temp{\the\Hy@pagecounter}%
5056             \fi
5057           \fi
5058           \immediate\write\@auxout{%
5059             \string\newlabel
5060             {LastPage}{\the\Hy@temp}{\thepage}{\thepage}{%
5061               \ifHy@pageanchor page.\Hy@temp\fi}{}}%
5062           }%
5063         \endgroup
5064       \fi
5065       \addtocounter{page}{1}%
5066     }%
5067   \@ifclassloaded{revtex4}{%
5068     \begingroup
5069     \toks@{\expandafter{\lastpage@putlabel}}%
5070     \edef\x{\endgroup
5071       \def\noexpand\lastpage@putlabel{%
5072         \noexpand\stepcounter{page}%
5073         \the\toks@
5074         \noexpand\addtocounter{page}\noexpand\m@ne
5075       }%
5076     }%
5077     \x
5078   }{}%
5079 }{}%
```

```

5080 }
5081 </package>
5082 <*check>
5083 \checkpackage{lastpage}[1994/06/25]
5084 \checkcommand\def\lastpage@putlabel{%
5085   \addtocounter{page}{-1}%
5086   \immediate\write\@auxout{%
5087     \string\newlabel{LastPage}{\the\thepage}}%
5088   }%
5089   \addtocounter{page}{1}%
5090 }
5091 </check>
5092 <*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.

```

5093 \def\hypergetref#1{\getrefbykeydefault{#1}{}}{??}
5094 \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:

```

5095 \@ifpackageloaded{titlesec}{%
5096   \def\ttl@Hy@steplink#1{%
5097     \Hy@GlobalStepCount\Hy@linkcounter
5098     \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
5099     \def\ttl@Hy@saveanchor{%
5100       \Hy@raisedlink{%
5101         \hyper@anchorstart{\@currentHref}\hyper@anchorend
5102       }%
5103     }%
5104   }%
5105   \def\ttl@Hy@refstepcounter#1{%
5106     \let\ttl@b\Hy@raisedlink
5107     \def\Hy@raisedlink##1{%
5108       \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
5109     }%
5110     \refstepcounter{#1}%
5111     \let\Hy@raisedlink\ttl@b
5112   }%
5113 }{}

```

Package titletoc support:

```

5114 \@ifpackageloaded{titletoc}{%
5115   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
5116 }{}

```

## 32 Package varioref support

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

```
5117 \def\Hy@varioref@undefined{{??}{??}{}}{}{}
5118 \@ifpackageloaded{varioref}{%
5119   \def\vref@pagenum#1#2{%
5120     \ifundefined{r@#2}{%
5121       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
5122     }{}%
5123     \edef#1{\getpagerefnumber{#2}}%
5124   }%
5125 }
```

## 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

```
5126 \@ifpackageloaded{longtable}{%
5127   \begingroup
5128     \def\y{\LT@array}%
5129     \ifundefined{scr@LT@array}{}{\def\y{\scr@LT@array}}%
5130     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
5131       \expandafter\endgroup
5132       \expandafter\def\y[#1]##2{%
5133         \H@refstepcounter{#1}%
5134         \hyper@makecurrent{table}%
5135         \let\Hy@LT@currentHlabel\@currentHlabel
5136         \let\Hy@LT@currentHref\@currentHref
5137         #2\@sharp####4%
5138       }%
5139     }%
5140   \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil
```

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

```
5141   \begingroup
5142     \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
5143     \endgroup
5144     \def\LT@start{%
5145       #1%
5146       \let\@currentHlabel\Hy@LT@currentHlabel
5147       \let\@currentHref\Hy@LT@currentHref
5148       \Hy@raisedlink{%
5149         \hyper@anchorstart{\@currentHref}\hyper@anchorend
5150       }%
5151       \ifvoid\LT@firsthead\copy
5152       #2%
5153     }%
5154   }%
5155   \expandafter\x\LT@start\@nil
5156 }
```

## 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.

```

5157 \let\new@refstepcounter\refstepcounter
5158 \let\H@equation\equation
5159 \let\H@endequation\endequation

5160 \ifpackageloaded{amsmath}{%
5161   \long\def\Hy@temp{%
5162     \incr@eqnum
5163     \mathdisplay@push
5164     \st@rredfalse \global\@eqnswtrue
5165     \mathdisplay{equation}%
5166   }%
5167   \ifx\Hy@temp\equation
5168     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
5169       \csname iftrue\endcsname
5170   \else
5171     \long\def\equation{%
5172       \mathdisplay@push
5173       \st@rredfalse \global\@eqnswtrue
5174       \mathdisplay{equation}%
5175       \incr@eqnum
5176     }%
5177   \fi
5178 \fi
5179 }{%
5180 \def\equation{%
5181   \let\refstepcounter\H@refstepcounter
5182   \H@equation
5183   \@ifundefined{theHequation}{%
5184     \make@stripped@name{\theequation}%
5185     \let\theHequation\newname
5186   }{}%
5187   \hyper@makecurrent{equation}%
5188   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
5189   \let\refstepcounter\new@refstepcounter
5190 }%
5191 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
5192 }

```

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.

```

5193 \newif\if@eqnstar
5194 \@eqnstarfalse
5195 \let\H@eqnarray\eqnarray
5196 \let\H@endeqnarray\endeqnarray
5197 \def\eqnarray{%
5198   \let\Hy@reserved@a\relax
5199   \def\@currentHref{}%

```

```

5200 \H@eqnarray
5201 \if@eqnstar
5202 \else
5203   \ifx\\ \@currentHref\\%
5204   \else
5205     \ifundefined{theHequation}{%
5206       \make@stripped@name{\theequation}%
5207       \let\theHequation\newname
5208     }{}%
5209     \hyper@makecurrent{equation}%
5210     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
5211   \fi
5212 \fi
5213 }
5214 \def\endeqnarray{%
5215   \H@endeqnarray
5216 }

```

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.

```

5217 \@namedef{eqnarray*}{%
5218   \def\@eqnocr{\nonumber\@seqnocr}\@eqnstartrue\eqnarray
5219 }
5220 \@namedef{endeqnarray*}{%
5221   \nonumber\endeqnarray\@eqnstarfalse
5222 }

```

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

```

5223 \@ifundefined{subeqnarray}{%
5224   \let\H@subeqnarray\subeqnarray
5225   \let\H@endsubeqnarray\endsubeqnarray
5226   \def\subeqnarray{%
5227     \let\Hy@reserved@a\relax
5228     \H@subeqnarray
5229     \@ifundefined{theHequation}{%
5230       \make@stripped@name{\theequation}%
5231       \let\theHequation\newname
5232     }{}%
5233     \hyper@makecurrent{equation}%
5234     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
5235   }%
5236   \def\endsubeqnarray{%
5237     \H@endsubeqnarray
5238   }%
5239   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
5240 }

```

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

```

5241 \def\make@stripped@name#1{%
5242   \begingroup
5243     \escapechar\m@ne
5244     \global\let\newname\@empty
5245     \protected@edef\Hy@tempa{#1}%
5246     \edef\@tempb{%
5247       \noexpand\@tfor\noexpand\Hy@tempa:=%
5248       \expandafter\strip@prefix\meaning\Hy@tempa
5249     }%
5250     \@tempb\do{%

```

```

5251     \if{\Hy@tempa\else
5252     \if}\Hy@tempa\else
5253     \xdef\newname{\newname\Hy@tempa}%
5254     \fi
5255     \fi
5256   }%
5257 \endgroup
5258 }

Support for amsmath's subequations:

5259 \begingroup\expandafter\expandafter\expandafter\endgroup
5260 \expandafter\ifx\csname subequations\endcsname\relax
5261 \else
5262   \let\HyOrg@subequations\subequations
5263   \def\subequations{%
5264     \stepcounter{equation}%
5265     \protected@edef\theHparentequation{%
5266       \@ifundefined{theHequation}\theequation\theHequation
5267     }%
5268     \addtocounter{equation}{-1}%
5269     \HyOrg@subequations
5270     \def\theHequation{\theHparentequation\alph{equation}}%
5271     \ignorespaces
5272   }%
5273 \fi

```

## 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.

```

5274 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
5275 \ifHy@hyperfootnotes
5276   \newcounter{Hfootnote}%
5277   \let\H@@footnotetext\@footnotetext
5278   \let\H@@footnotemark\@footnotemark
5279   \def\@xfootnotenext[#1]{%
5280     \begingroup
5281       \csname c@\@mpfn\endcsname #1\relax
5282       \unrestored@protected@xdef\@thefnmark{\thempfn}%
5283     \endgroup
5284     \ifx\@footnotetext\@mpfootnotetext
5285       \expandafter\H@@mpfootnotetext
5286     \else
5287       \expandafter\H@@footnotetext
5288     \fi
5289   }%
5290   \def\@xfootnotemark[#1]{%
5291     \begingroup
5292       \c@footnote #1\relax
5293       \unrestored@protected@xdef\@thefnmark{\thefootnote}%
5294     \endgroup
5295     \H@@footnotemark
5296   }%

```



```

5297 \let\H@@mpfootnotetext\@mpfootnotetext
5298 \long\def\@mpfootnotetext#1{%
5299   \H@@mpfootnotetext{%
5300     \ifHy@nesting
5301       \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
5302     \else
5303       \Hy@raisedlink{%
5304         \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5305       }#1%
5306     \fi
5307   }%
5308 }%
5309 \long\def\@footnotetext#1{%
5310   \H@@footnotetext{%
5311     \ifHy@nesting
5312       \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
5313     \else
5314       \Hy@raisedlink{%
5315         \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5316       }%
5317       \let\@currentHlabel\Hy@footnote@currentHlabel
5318       \let\@currentHref\Hy@footnote@currentHref
5319       \let\@currentlabelname\@empty
5320       #1%
5321     \fi
5322   }%
5323 }%

```

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.

```

5324 \def\@footnotemark{%
5325   \leavevmode
5326   \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
5327   \stepcounter{Hfootnote}%
5328   \global\let\Hy@saved@currentHlabel\@currentHlabel
5329   \global\let\Hy@saved@currentHref\@currentHref
5330   \hyper@makecurrent{Hfootnote}%
5331   \global\let\Hy@footnote@currentHlabel\@currentHlabel
5332   \global\let\Hy@footnote@currentHref\@currentHref
5333   \global\let\@currentHlabel\Hy@saved@currentHlabel
5334   \global\let\@currentHref\Hy@saved@currentHref
5335   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
5336   \@makefnmark
5337   \hyper@linkend
5338   \ifhmode\spacefactor\x@sf\fi
5339   \relax
5340 }%

```

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

```

5341 \@ifpackageloaded{longtable}{%
5342   \CheckCommand*\LT@p@ftntext}[1]{%
5343     \edef\@tempa{%
5344       \the\LT@p@ftn

```

```

5345     \noexpand\footnotetext[\the\c@footnote]%
5346   }%
5347   \global\LT@p@ftn\expandafter{\@tempa{#1}}%
5348 }%
5349 \long\def\LT@p@ftntext#1{%
5350   \edef\@tempa{%
5351     \the\LT@p@ftn
5352     \begingroup
5353       \noexpand\c@footnote=\the\c@footnote\relax
5354       \noexpand\protected@xdef
5355         \noexpand\@thefnmark{\noexpand\thempfn}%
5356       \noexpand\protected@xdef\noexpand\@thefnmark{%
5357         \noexpand\thempfn
5358       }%
5359       \expandafter\expandafter\expandafter\noexpand
5360       \expandafter\expandafter\expandafter\Hy@LT@footnotetext
5361       \expandafter\expandafter\expandafter{%
5362         \expandafter\Hy@footnote@currentHref\expandafter
5363         }\expandafter{\Hy@footnote@currentHlabel}%
5364   }%
5365   \global\LT@p@ftn\expandafter{%
5366     \@tempa{#1}%
5367   \endgroup
5368 }%
5369 }%
5370 \long\def\Hy@LT@footnotetext#1#2#3{%
5371   \H@@footnotetext{%
5372     \ifHy@nesting
5373       \hyper@@anchor{#1}{#3}%
5374     \else
5375       \Hy@raisedlink{%
5376         \hyper@@anchor{#1}{\relax}%
5377       }%
5378       \def\@currentHlabel{#2}%
5379       \def\@currentHref{#1}%
5380       \let\@currentlabelname\@empty
5381       #3%
5382     \fi
5383   }%
5384 }%
5385 }-%

```

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

```

5386 \ifpackageloaded{fancyvrb}{%
5387   \def\V@@footnotetext{%
5388     \insert\footins\bgroup
5389     \csname reset@font\endcsname
5390     \footnotesize
5391     \interlinepenalty\interfootnotelinepenalty
5392     \splittopskip\footnotesep
5393     \splitmaxdepth\dp\strutbox
5394     \floatingpenalty \MM
5395     \hsize\columnwidth
5396     \@parboxrestore
5397     \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
5398     \@makefntext{}%
5399     \rule{\z@}{\footnotesep}%
5400   \bgroup

```

```

5401 \aftergroup\V@@@footnotetext
5402 \Hy@raisedlink{%
5403   \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5404 }%
5405 \let\@currentHlabel\Hy@footnote@currentHlabel
5406 \let\@currentHref\Hy@footnote@currentHref
5407 \let\@currentlabelname\@empty
5408 \ignorespaces
5409 }%
5410 }{}%

```

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.

```

5411 \let\HyOrg@maketitle\maketitle
5412 \def\maketitle{%
5413   \let\Hy@saved@footnotemark\@footnotemark
5414   \let\Hy@saved@footnotetext\@footnotetext
5415   \let\@footnotemark\H@@footnotemark
5416   \let\@footnotetext\H@@footnotetext
5417   \@ifnextchar[\Hy@maketitle@optarg{% ]
5418     \HyOrg@maketitle
5419     \Hy@maketitle@end
5420   }%
5421 }%
5422 \def\Hy@maketitle@optarg[#1]{%
5423   \HyOrg@maketitle[#{#1}]%
5424   \Hy@maketitle@end
5425 }%
5426 \def\Hy@maketitle@end{%
5427   \ifx\@footnotemark\H@@footnotemark
5428     \let\@footnotemark\Hy@saved@footnotemark
5429   \fi
5430   \ifx\@footnotetext\H@@footnotetext
5431     \let\@footnotetext\Hy@saved@footnotetext
5432   \fi
5433 }%

```

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

```

5434 \def\realfootnote{%
5435   \@ifnextchar[\@xfootnote{%
5436     \stepcounter{\@mpfn}%
5437     \protected@xdef\@thefnmark{\thempfn}%
5438     \H@@footnotemark\H@@footnotetext
5439   }%
5440 }%

5441 \fi
5442 \Hy@DisableOption{hyperfootnotes}

5443 </package>
5444 <*check>
5445 \checklatex
5446 \checkcommand\def\@xfootnotenext[#1]{%
5447   \begingroup
5448     \csname c@\@mpfn\endcsname #1\relax
5449     \unrestored@protected@xdef\@thefnmark{\thempfn}%
5450   \endgroup
5451   \@footnotetext

```

```

5452 }
5453 \checkcommand\def\xfootnotemark[#1]{%
5454   \begingroup
5455     \c@footnote #1\relax
5456     \unrestored@protected@xdef\thefnmark{\thefootnote}%
5457   \endgroup
5458   \@footnotemark
5459 }
5460 \checkcommand\def\@footnotemark{%
5461   \leavevmode
5462   \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
5463   \@makefnmark
5464   \ifhmode\spacefactor\x@sf\fi
5465   \relax
5466 }
5467 </check>
5468 <*package>

```

## 36 Float captions

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

```

5469 \def\caption{%
5470   \ifx\@captype\@undefined
5471     \@latex@error{\noexpand\caption outside float}\@ehd
5472     \expandafter\@gobble
5473   \else
5474     \H@refstepcounter\@captype
5475     \let\Hy@tempa\@caption
5476     \@ifundefined{float@caption}{%
5477       }{%
5478         \expandafter\ifx\csname @float@c@\@captype\endcsname
5479           \float@caption
5480         \let\Hy@tempa\Hy@float@caption
5481       \fi
5482     }%
5483     \expandafter\@firstofone
5484   \fi
5485   {\@dblarg{\Hy@tempa\@captype}}%
5486 }
5487 \long\def\@caption#1[#2]#3{%
5488   \expandafter\ifx\csname if@capstart\expandafter\endcsname
5489     \csname iftrue\endcsname
5490     \global\let\@currentHref\hc@currentHref
5491   \else
5492     \hyper@makecurrent{\@captype}%
5493   \fi
5494   \def\@currentlabelname{#2}%
5495   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
5496     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
5497   }%
5498   \begingroup
5499     \@parboxrestore
5500     \if@minipage
5501       \setminipage
5502     \fi

```

```

5503 \normalsize
5504 \expandafter\ifx\csname if@capstart\expandafter\endcsname
5505 \csname iftrue\endcsname
5506 \global\@capstartfalse
5507 \makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
5508 \else
5509 \makecaption{\csname fnum@#1\endcsname}{%
5510 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

5511 \ifHy@nesting
5512 \hyper@@anchor{\@currentHref}{#3}%
5513 \else
5514 \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
5515 \fi
5516 }%
5517 \fi
5518 \par
5519 \endgroup
5520 }

```

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.

```

5521 \let\Hy@float@caption\@caption
5522 \ifpackageloaded{float}{%
5523 \def\Hy@float@caption{%
5524 \ifx\Hy@float@currentHref\@undefined
5525 \hyper@makecurrent{\@cuptype}%
5526 \global\let\Hy@float@currentHref\@currentHref
5527 \else
5528 \let\@currentHref\Hy@float@currentHref
5529 \fi
5530 \float@caption
5531 }%
5532 \let\HyOrg@float@makebox\float@makebox
5533 \renewcommand{\float@makebox}[1]{%
5534 \HyOrg@float@makebox{%
5535 #1\relax
5536 \ifx\Hy@float@currentHref\@undefined
5537 \else
5538 \hyper@@anchor{\Hy@float@currentHref}{\relax}%
5539 \global\let\Hy@float@currentHref\@undefined
5540 \fi
5541 }%
5542 }%
5543 }{}
5544 \</package>
5545 \<*check>
5546 \checklatex[1999/06/01 - 2000/06/01]
5547 \checkcommand\def\caption{%
5548 \ifx\@cuptype\@undefined
5549 \@latex@error{noexpand\caption outside float}\@ehd
5550 \expandafter\@gobble
5551 \else
5552 \refstepcounter{\@cuptype
5553 \expandafter\@firstofone
5554 \fi
5555 {\@dblarg{\@caption\@cuptype}}%

```

```

5556 }
5557 \checkcommand\long\def\caption#1[#2]#3{%
5558   \par
5559   \addcontentsline{\csname ext@#1\endcsname}{#1}%
5560     {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
5561   \begingroup
5562     \@parboxrestore
5563     \if@minipage
5564       \setminipage
5565     \fi
5566     \normalsize
5567     \makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
5568   \endgroup
5569 }
5570 \</check>
5571 \<*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) has provided hooks for us, so all we need to do is activate them.

```

5572 \def\hyper@natlinkstart#1{%
5573   \Hy@backout{#1}%
5574   \hyper@linkstart{cite}{cite.#1}%
5575   \def\hyper@nat@current{#1}%
5576 }
5577 \def\hyper@natlinkend{%
5578   \hyper@linkend
5579 }
5580 \def\hyper@natlinkbreak#1#2{%
5581   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
5582 }
5583 \def\hyper@natanchorstart#1{%
5584   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
5585 }
5586 \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.

```

5587 \ifundefined{NAT@parse}{%
5588   \providecommand*\@extra@binfo{}%
5589   \providecommand*\@extra@b@citeb{}%
5590   \def\bibcite#1#2{%
5591     \newl@bel{b}{#1\@extra@binfo}{%
5592       \hyper@link{cite}{cite.#1\@extra@b@citeb}{#2}%
5593     }%
5594   }%
5595   \gdef\@extra@binfo{}%

```

Package babel redefines \bibtex with macro \bbl@cite@choice. It needs to be overwritten to avoid the warning “Label(s) may have changed.”.

```

5596 \let\Hy@bibtex\bibtex
5597 \begingroup
5598   \@ifundefined{bbl@cite@choice}{\%
5599     \g@addto@macro\bbl@cite@choice{\%
5600       \let\bibtex\Hy@bibtex
5601     }%
5602   }%
5603 \endgroup

```

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

```

5604 \providecommand*\@BIBLABEL{\@biblabel}%
5605 \def\@bibitem[#1]#2{%
5606   \@skiphyperreftrue
5607   \H@item[%
5608     \ifx\Hy@raisedlink\@empty
5609       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
5610       \@BIBLABEL{#1}%
5611       \hyper@anchorend
5612     \else
5613       \Hy@raisedlink{%
5614         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
5615       }%
5616       \@BIBLABEL{#1}%
5617     \fi
5618     \hfill
5619   ]%
5620   \@skiphyperreffalse
5621   \if@filesw
5622     \begingroup
5623       \let\protect\noexpand
5624       \immediate\write\@auxout{%
5625         \string\bibtex{#2}{#1}%
5626       }%
5627     \endgroup
5628   \fi
5629   \ignorespaces
5630 }%

```

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

```

5631 \def\@bibitem#1{%
5632   \@skiphyperreftrue\H@item\@skiphyperreffalse
5633   \Hy@raisedlink{%
5634     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
5635   }%
5636   \if@filesw
5637     \begingroup
5638       \let\protect\noexpand
5639       \immediate\write\@auxout{%
5640         \string\bibtex{#1}{\the\value{\@listctr}}%
5641       }%
5642     \endgroup
5643   \fi
5644   \ignorespaces
5645 }%
5646 }{}

```

```

5647 </package>
5648 <*check>
5649 \checklatex
5650 \checkcommand\def\@bibitem[#1]#2{%
5651   \item[\@biblabel{#1}\hfill]%
5652   \if@filesw
5653     {%
5654       \let\protect\noexpand
5655       \immediate\write\@auxout{%
5656         \string\bibcite{#2}{#1}%
5657       }%
5658     }%
5659   \fi
5660   \ignorespaces
5661 }
5662 \checkcommand\def\@bibitem#1{%
5663   \item
5664   \if@filesw
5665     \immediate\write\@auxout{%
5666       \string\bibcite{#1}{\the\value{\@listctr}}%
5667     }%
5668   \fi
5669   \ignorespaces
5670 }
5671 </check>
5672 <*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.

```

5673 \@ifclassloaded{revtex}{%
5674   \Hy@Info{*** compatibility with revtex **** }%
5675   \def\revtex@checking#1#2{%
5676     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
5677     \expandafter\def\csname b@#1\endcsname{#2}%
5678     \@SetMaxRnhefLabel{#1}%
5679     \expandafter\let\csname b@#1\endcsname\T@temp
5680   }%

```

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

```

5681 \ifundefined{CITE}{\def\CITE{\@cite}}{}%
5682 \providecommand*{\@extra@b@citeb}{}%
5683 \def\CITE[#1]#2{%
5684   \let\@citea\@empty
5685   \leavevmode
5686   \unskip
5687   $^{}%
5688   \scriptstyle
5689   \CITE{%
5690     \@for\@citeb:=#2\do{%
5691       \@citea
5692       \def\@citea{\penalty\@m }%
5693       \edef\@citeb{\expandafter\@firstofone\@citeb}%
5694       \if@filesw
5695         \immediate\write\@auxout{\string\citation{\@citeb}}%
5696       \fi
5697       \@ifundefined{b@\@citeb\extra@b@citeb}{}%

```



```

5698         \mbox{\reset@font\bfseries ?}%
5699         \G@refundefinedtrue
5700         \@latex@warning{%
5701             Citation ‘\@citeb’ on page \thepage \space undefined%
5702         }%
5703     }{%
5704         {\csname b@\@citeb\@extra@b@citeb\endcsname}%
5705     }%
5706 }%
5707 }{#1}%
5708 }$%
5709 }%

```

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.

```

5710 \def\@citex[#1]#2{%
5711     \let\@citea\@empty
5712     \@cite{%
5713         \@for\@citeb:=#2\do{%
5714             \@citea
5715             \def\@citea{,\penalty\@m\ }%
5716             \edef\@citeb{\expandafter\@firstofone\@citeb}%
5717             \if@filesw
5718                 \immediate\write\@auxout{\string\citation{\@citeb}}%
5719             \fi
5720             \@ifundefined{b@\@citeb\@extra@b@citeb}{%
5721                 \mbox{\reset@font\bfseries ?}%
5722                 \G@refundefinedtrue
5723                 \@latex@warning{%
5724                     Citation ‘\@citeb’ on page \thepage \space undefined%
5725                 }%
5726             }{%
5727                 \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
5728             }%
5729         }%
5730     }{#1}%
5731 }%
5732 }{}

```

### 37.1 Package harvard

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

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

```

5733 \@ifpackageloaded{harvard}{%
5734     \AtBeginDocument{%
5735         \Hy@Info{*** compatibility with harvard ***}%
5736         \Hy@raiselinksfalse
5737         \def\harvardcite#1#2#3#4{%
5738             \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{\cite.#1}{#2}}%
5739             \global\@namedef{HAR@an@#1}{\hyper@link[cite]{\cite.#1}{#3}}%
5740             \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{\cite.#1}{#4}}%
5741             \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
5742         }%

```

```

5743 \def\HAR@citetoaux#1{%
5744 \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
5745 \ifHy@backref
5746 \ifx\@empty\@currentlabel
5747 \else
5748 \@bsphack
5749 \if@filesw
5750 \protected@write\@auxout{}\fi%
5751 \string\@writefile{brf}{%
5752 \string\backcite{#1}{%
5753 {\thepage}{\@currentlabel}{\@currentHref}%
5754 }%
5755 }%
5756 }%
5757 \fi
5758 \@esphack
5759 \fi
5760 \fi
5761 }%
5762 \def\harvarditem{%
5763 \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
5764 }%
5765 \def\@harvarditem[#1]#2#3#4#5\par{%
5766 \item[]%
5767 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
5768 \if@filesw
5769 \begingroup
5770 \def\protect##1{\string ##1\space}%
5771 \ifthenelse{\equal{#1}{\null}}%
5772 {\def\next{{#4}{#2}{#2}{#3}}}%
5773 {\def\next{{#4}{#2}{#1}{#3}}}%
5774 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
5775 \endgroup
5776 \fi
5777 \protect\hspace*{-\labelwidth}%
5778 \protect\hspace*{-\labelsep}%
5779 \ignorespaces
5780 #5%
5781 \ifHy@backref
5782 \newblock
5783 \backref{\csname br@#4\endcsname}%
5784 \fi
5785 \par
5786 }%

```

\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:

```

5787 \long\def\HAR@checkcitations#1#2#3#4{%
5788 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
5789 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
5790 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
5791 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
5792 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
5793 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
5794 \else
5795 \@tempswatrue

```

```

5796         \fi
5797     \else
5798         \@tempswatrue
5799     \fi
5800 \else
5801     \@tempswatrue
5802 \fi
5803 }%
5804 }%

5805 }{}

```

## 37.2 Package chicago

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

```

5806 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

5807 \def\citeN{%
5808     \def\@citesep{-1000}%
5809     \def\@cite##1##2{##1}%
5810     \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
5811     \@citedata@opt
5812 }%

```

`\shortciteN`

```

5813 \def\shortciteN{%
5814     \def\@citesep{-1000}%
5815     \def\@cite##1##2{##1}%
5816     \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
5817     \@citedata@opt
5818 }%

```

`\@citedata@opt`

```

5819 \def\@citedata@opt{%
5820     \let\@cite@opt\@empty
5821     \@ifnextchar [{%
5822         \@tempswatrue
5823         \@citedatax@opt
5824     }{%
5825         \@tempswafalse
5826         \@citedatax[]%
5827     }%
5828 }%

```

`\@citedatax@opt`

```

5829 \def\@citedatax@opt[#1]{%
5830     \def\@cite@opt{, #1}%
5831     \@citedatax[{#1}]%
5832 }%

5833 }{}

```

## 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.

```
5834 \def\Hy@EveryPageAnchor{%
5835   \Hy@DistillerDestFix
5836   \ifHy@pageanchor
5837     \ifHy@hypertextnames
5838     \ifHy@plainpages
5839       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
5840     \else
5841       \begingroup
5842         \let\@number\@firstofone
5843         \Hy@unicodedefalse
5844         \pdfstringdef\@theH@page{\thepage}%
5845       \endgroup
5846       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@theH@page}}%
5847     \fi
5848   \else
5849     \Hy@GlobalStepCount\Hy@pagecounter
5850     \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}%
5851   \fi
5852   \vbox to 0pt{%
5853     \kern\voffset
5854     \kern\topmargin
5855     \kern-1bp\relax
5856     \hbox to 0pt{%
5857       \kern\hoffset
5858       \kern\ifodd\value{page}%
5859         \oddsidemargin
5860       \else
5861         \evensidemargin
5862       \fi
5863       \kern-1bp\relax
5864       \Hy@TempPageAnchor
5865     \hss
5866   }%
5867   \vss
5868 }%
5869 \fi
5870 }
5871 \g@addto@macro\Hy@EveryPageBoxHook{%
5872   \Hy@EveryPageAnchor
5873 }
```

## 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.

```
5874 \begingroup\expandafter\expandafter\expandafter\endgroup
```

```

5875 \expandafter\ifx\csname chapter\endcsname\relax
5876   \def\toclevel@part{0}%
5877 \else
5878   \def\toclevel@part{-1}%
5879 \fi
5880 \def\toclevel@chapter{0}
5881 \def\toclevel@section{1}
5882 \def\toclevel@subsection{2}
5883 \def\toclevel@subsubsection{3}
5884 \def\toclevel@paragraph{4}
5885 \def\toclevel@subparagraph{5}
5886 \def\toclevel@figure{0}
5887 \def\toclevel@table{0}
5888 \@ifpackageloaded{listings}{%
5889   \providecommand*\theHlstlisting{\thelstlisting}%
5890   \providecommand*\toclevel@lstlisting{0}%
5891 }{}
5892 \@ifpackageloaded{listing}{%
5893   \providecommand*\theHlisting{\thelisting}%
5894   \providecommand*\toclevel@listing{0}%
5895 }{}
5896 \def\addcontentsline#1#2#3{% toc extension, type, tag
5897   \begingroup
5898     \let\label@gobble
5899     \let\textlatin@firstofone
5900     \ifx\@currentHref\@empty
5901       \Hy@Warning{%
5902         No destination for bookmark of \string\addcontentsline,%
5903         \MessageBreak destination is added%
5904       }%
5905     \phantomsection
5906   \fi
5907   \expandafter\ifx\csname toclevel@#2\endcsname\relax
5908     \begingroup
5909       \def\Hy@tempa{#1}%
5910       \ifx\Hy@tempa\Hy@bookmarkstype
5911         \Hy@WarningNoLine{%
5912           bookmark level for unknown #2 defaults to 0%
5913         }%
5914       \else
5915         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
5916       \fi
5917     \endgroup
5918   \expandafter\gdef\csname toclevel@#2\endcsname{0}%
5919   \fi
5920   \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
5921   \Hy@writebookmark{\csname the#2\endcsname}%
5922     {#3}%
5923     {\@currentHref}%
5924     {\Hy@toclevel}%
5925     {#1}%
5926   \ifHy@verbose
5927     \def\Hy@tempa{#3}%
5928     \@onelevel@sanitize\Hy@tempa
5929     \typeout{pdfTeX: bookmark at \the\inputlineno: %
5930       {\csname the#2\endcsname}%
5931       {\Hy@tempa}%

```

```

5932         {\@currentHref}%
5933         {\Hy@toclevel}%
5934         {#1}%
5935     }%
5936 \fi
5937 \addtocontents{#1}{%
5938     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
5939 }%
5940 \endgroup
5941 }
5942 \def\contentsline#1#2#3#4{%
5943     \ifx\#4\%
5944         \csname l@#1\endcsname{#2}{#3}%
5945     \else
5946         \ifcase\Hy@linktoc % none
5947             \csname l@#1\endcsname{#2}{#3}%
5948         \or % section
5949             \csname l@#1\endcsname{%
5950                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
5951             }{#3}%
5952         \or % page
5953             \csname l@#1\endcsname{#2}{#3}{%
5954                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
5955             }%
5956         \else % all
5957             \csname l@#1\endcsname{%
5958                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
5959             }{%
5960                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
5961             }%
5962         \fi
5963     \fi
5964 }
5965 \</package>
5966 \<check>
5967 \checklatex
5968 \checkcommand\def\addcontentsline#1#2#3{%
5969     \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
5970 }
5971 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
5972 \</check>
5973 \<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.

```

5974 \let\H@definecounter\@definecounter
5975 \def\@definecounter#1{%
5976     \H@definecounter{#1}%
5977     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
5978 }

```

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.

```

5979 \let\H@newctr\@newctr

```

```

5980 \def\@newctr#1[#2]{%
5981   \H@newctr#1[#2]}%
5982 \expandafter\def\csname theH#1\endcsname{%
5983   \csname the\@ifundefined{theH#2}{H}#2\endcsname.\arabic{#1}%
5984 }%
5985 }

```

## 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.

```

5986 \@ifpackageloaded{amsmath}{%
5987   \def\Hy@make@anchor{%
5988     \Hy@GlobalStepCount\Hy@linkcounter
5989     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5990     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5991   }%
5992   \def\Hy@make@df@tag@@#1{%
5993     \gdef\df@tag{%
5994       \maketag@@@{\Hy@make@anchor#1}%
5995       \def\@currentlabel{#1}%
5996     }%
5997   }%
5998   \def\Hy@make@df@tag@@@#1{%
5999     \gdef\df@tag{%
6000       \tagform@{\Hy@make@anchor#1}%
6001       \toks@{\p@equation{#1}}%
6002       \edef\@currentlabel{\the\toks@}%
6003     }%
6004   }%
6005   \let\HyOrg@make@df@tag@@\make@df@tag@@
6006   \let\HyOrg@make@df@tag@@@\make@df@tag@@@
6007   \let\make@df@tag@@\Hy@make@df@tag@@
6008   \let\make@df@tag@@@\Hy@make@df@tag@@@
6009 }{}

```

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

```

6010 \@ifpackagewith{hyperref}{pdf $\TeX$ }{%
6011   \let\H@seteqlabel\@seteqlabel
6012   \def\@seteqlabel#1{%
6013     \H@seteqlabel{#1}%
6014     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
6015     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
6016   }%
6017 }{}

```

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@tagform0{\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.

```

6018 \let\HyOrg@addtoreset\@addtoreset
6019 \def\@addtoreset#1#2{%
6020   \HyOrg@addtoreset{#1}{#2}%
6021   \expandafter\xdef\csname theH#1\endcsname{%
6022     \expandafter\noexpand
6023     \csname the\@ifundefined{theH#2}{}H#2\endcsname
6024     .\noexpand\the\noexpand\value{#1}%
6025   }%
6026 }

```

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

```

6027 </package>
6028 <*check>
6029 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
6030 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
6031   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
6032     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
6033       \@addtoreset{#2}{#3}%
6034       \@xp\xdef\csname the#2\endcsname{%
6035         \@xp@nx\csname the#3\endcsname .\@nx#1{#2}%
6036       }%
6037     }%
6038   }%
6039 }%
6040 </check>
6041 <*package>
6042 \@ifpackageloaded{amsmath}{%
6043   \@ifpackagelater{amsmath}{1999/12/14}{%
6044     \renewcommand*{\numberwithin}[3][\arabic]{%
6045       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
6046         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
6047           \HyOrg@addtoreset{#2}{#3}%
6048           \@xp\xdef\csname the#2\endcsname{%
6049             \@xp@nx\csname the#3\endcsname .\@nx#1{#2}%
6050           }%
6051           \@xp\xdef\csname theH#2\endcsname{%
6052             \@xp@nx
6053             \csname the\@ifundefined{theH#3}{}H#3\endcsname
6054             .\@nx#1{#2}%
6055           }%
6056         }%
6057       }%
6058     }%
6059   }{%
6060     \Hy@WarningNoLine{%
6061       \string\numberwithin\space of package 'amsmath' %
6062       only fixed\MessageBreak

```



```

6063     for version 2000/06/06 v2.12 or newer%
6064   }%
6065 }%
6066 {}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

6067 \ifHy@figures
6068   \let\Hy@Gin@setfile\Gin@setfile
6069   \def\Gin@setfile#1#2#3{%
6070     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
6071   }%
6072 \fi
6073 \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 emboldening entries. That would make Makeindex fail (cannot have two | specifiers). The solution is for the author to use generic coding, and put in the requisite \hyperpage in his/her own macros along with the boldness.

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

```

6074 \ifHy@hyperindex
6075   \def\HyInd@ParenLeft{({}%
6076   \def\HyInd@ParenRight{)}}%
6077   \Hy@nextfalse
6078   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
6079   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
6080   \begingroup
6081     \lccode'\|=\expandafter'\HyInd@EncapChar\relax
6082   \lowercase{\endgroup
6083     \ifHy@next
6084       \let\HyInd@org@wrindex\@wrindex
6085       \def\@wrindex#1#2{\HyInd@wrindex{#1}#2||\}%
6086       \def\HyInd@wrindex#1#2|#3|#4\{\%
6087         \ifx\|#3\%
6088           \HyInd@org@wrindex{#1}{#2|hyperpage}%
6089         \else
6090           \def\Hy@temp@A{#3}%
6091           \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
6092             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
6093             \relax
6094           \HyInd@org@wrindex{#1}{#2|#3}%
6095         \else
6096           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
6097         \fi
6098       \fi
6099     }%
6100   \else

```

```

6101 \def\@wrindex#1{\@wrindex#1||\}%
6102 \def\@wrindex#1|#2|#3\{\%
6103 \if@files
6104 \ifx\#2\%
6105 \protected@write\@indexfile{}\%
6106 \string\indexentry{#1|hyperpage}{\thepage}%
6107 }%
6108 \else
6109 \def\Hy@temp@A{#2}%
6110 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
6111 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
6112 \relax
6113 \protected@write\@indexfile{}\%
6114 \string\indexentry{#1|#2}{\thepage}%
6115 }%
6116 \else
6117 \protected@write\@indexfile{}\%
6118 \string\indexentry{#1|#2hyperpage}{\thepage}%
6119 }%
6120 \fi
6121 \fi
6122 \fi
6123 \endgroup
6124 \@esphack
6125 }%
6126 \fi
6127 }%
6128 \fi
6129 \Hy@DisableOption{hyperindex}
6130 \Hy@DisableOption{encap}

```

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.

```

6131 \def\hyperpage#1{\@hyperpage#1----\}
6132 \def\@hyperpage#1--#2--#3\{\%
6133 \ifx\#2\%
6134 \@commahyperpage{#1}%
6135 \else
6136 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
6137 \fi
6138 }
6139 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
6140 \def\@commahyperpage#1, #2,#3\{\%
6141 \ifx\#2\%
6142 \HyInd@pagelink{#1}%
6143 \else
6144 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
6145 \fi
6146 }

```

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

```

6147 \def\HyInd@pagelink#1{\%
6148 \begingroup
6149 \toks@={}%
6150 \HyInd@removespaces#1 \@nil
6151 \endgroup
6152 }

```

```

6153 \def\HyInd@removespaces#1 #2\@nil{%
6154   \toks@=\expandafter{\the\toks@#1}%
6155   \ifx\#2\%
6156     \edef\x{\the\toks@}%
6157     \ifx\x\@empty
6158       \else
6159         \hyperlink{page.\the\toks@}{\the\toks@}%
6160       \fi
6161     \else
6162       \Hy@ReturnAfterFi{%
6163         \HyInd@removespaces#2\@nil
6164       }%
6165     \fi
6166 }

```

## 44 Compatibility with foiltex

```

6167 \@ifclassloaded{foils}{%
6168   \providecommand*\ext@table{lot}%
6169   \providecommand*\ext@figure{lof}%
6170 }{}

```

## 45 Compatibility with seminar slide package

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

```

6171 \@ifclassloaded{seminar}{%
6172   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}%
6173 }{%
6174   \Hy@seminarslidesfalse
6175 }
6176 \@ifpackageloaded{slidesec}{%
6177   \newcommand\theHslidesection {\arabic{slidesection}}%
6178   \newcommand\theHslidesubsection{%
6179     \theHslidesection.\arabic{slidesubsection}}%
6180   }%
6181   \def\slide@heading[#1]#2{%
6182     \H@refstepcounter{slidesection}%
6183     \@addtoreset{slidesubsection}{slidesection}%
6184     \addtocontents{los}{%
6185       \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
6186       {\@SCTR}{\slideheading.\theslidesection}}%
6187   }%
6188   \def\Hy@tempa{#2}%
6189   \ifx\Hy@tempa\@empty
6190     \else
6191       {%
6192         \edef\@currentlabel{%
6193           \csname p@slidesection\endcsname\theslidesection
6194         }%
6195         \makeslideheading{#2}%
6196       }%
6197     \fi
6198     \gdef\theslideheading{#1}%
6199     \gdef\theslidesubheading{}%
6200     \ifHy@bookmarksnumbered

```

```

6201     \def\Hy@slidetitle{\theslidesection\space #1}%
6202 \else
6203     \def\Hy@slidetitle{#1}%
6204 \fi
6205 \ifHy@hypertextnames
6206     \ifHy@naturalnames
6207         \hyper@@anchor{slideheading.\theslidesection}{\relax}%
6208         \Hy@writebookmark
6209             {\theslidesection}%
6210             {\Hy@slidetitle}%
6211             {slideheading.\theslidesection}%
6212             {1}%
6213             {toc}%
6214     \else
6215         \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
6216         \Hy@writebookmark
6217             {\theslidesection}%
6218             {\Hy@slidetitle}%
6219             {slideheading.\theHslidesection}%
6220             {1}%
6221             {toc}%
6222     \fi
6223 \else
6224     \Hy@GlobalStepCount\Hy@linkcounter
6225     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
6226     \Hy@writebookmark
6227         {\theslidesection}%
6228         {\Hy@slidetitle}%
6229         {slideheading.\the\Hy@linkcounter}%
6230         {1}%
6231         {toc}%
6232 \fi
6233 }%
6234 \def\slide@subheading[#1]#2{%
6235     \H@refstepcounter{slidesubsection}%
6236     \addtocontents{los}{%
6237         \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
6238         {\@SCTR}{slideheading.\theslidesubsection}%
6239     }%
6240     \def\Hy@tempa{#2}%
6241     \ifx\Hy@tempa\@empty
6242     \else
6243         {%
6244             \edef\@currentlabel{%
6245                 \csname p@slidesubsection\endcsname\theslidesubsection
6246             }%
6247             \makeslidesubheading{#2}%
6248         }%
6249     \fi
6250     \gdef\theslidesubheading{#1}%
6251     \ifHy@bookmarksnumbered
6252         \def\Hy@slidetitle{\theslidesubsection\space #1}%
6253     \else
6254         \def\Hy@slidetitle{#1}%
6255     \fi
6256     \ifHy@hypertextnames
6257         \ifHy@naturalnames

```

```

6258     \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
6259     \Hy@writebookmark
6260         {\theslidesubsection}%
6261         {\Hy@slidetitle}%
6262         {slideheading.\theslidesubsection}%
6263         {2}%
6264         {toc}%
6265     \else
6266     \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
6267     \Hy@writebookmark
6268         {\theslidesubsection}%
6269         {\Hy@slidetitle}%
6270         {slideheading.\theHslidesubsection}%
6271         {2}%
6272         {toc}%
6273     \fi
6274 \else
6275     \Hy@GlobalStepCount\Hy@linkcounter
6276     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
6277     \Hy@writebookmark
6278         {\theslidesubsection}%
6279         {\Hy@slidetitle}%
6280         {slideheading.\the\Hy@linkcounter}%
6281         {1}%
6282         {toc}%
6283 \fi
6284 }%
6285 \providecommand*{\listslidenam}{List of Slides}%
6286 \def\listofslides{%
6287     \section*{%
6288         \listslidenam
6289         \@mkboth{%
6290             \expandafter\MakeUppercase\listslidenam
6291         }{%
6292             \expandafter\MakeUppercase\listslidenam
6293         }%
6294     }%
6295     \def\l@slide##1##2##3##4{%
6296         \slide@undottedcline{%
6297             \slidenumberline{##3}{\hyperlink{##4}{##2}}%
6298         }{%
6299         }%
6300     \let\l@subslide\l@slide
6301     \@startlos
6302 }%
6303 \def\slide@contents{%
6304     \def\l@slide##1##2##3##4{%
6305         \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
6306     }%
6307     \let\l@subslide\@gobblefour
6308     \@startlos
6309 }%
6310 \def\Slide@contents{%
6311     \def\l@slide##1##2##3##4{%
6312         \ifcase\lslide@flag
6313             \message{##1 ** \the\c@slidesection}%
6314             \ifnum##1>\c@slidesection

```

```

6315         \def\lslide@flag{1}%
6316         {%
6317             \large
6318             \slide@ccline{%
6319                 \slidenumberline{$\rightarrow\bullet$}%
6320                 {\hyperlink{##4}{##2}}%
6321             }{##3}%
6322         }%
6323     \else
6324     {%
6325         \large
6326         \slide@ccline{%
6327             \slidenumberline{$\surd\;\bullet$}%
6328             {\hyperlink{##4}{##2}}%
6329         }{##3}%
6330     }%
6331     \fi
6332 \or
6333     \def\lslide@flag{2}%
6334     {%
6335         \large
6336         \slide@ccline{%
6337             \slidenumberline{$\bullet$}%
6338             {\hyperlink{##4}{##2}}%
6339         }{##3}%
6340     }%
6341 \or
6342     {%
6343         \large
6344         \slide@ccline{%
6345             \slidenumberline{$\bullet$}%
6346             {\hyperlink{##4}{##2}}%
6347         }{##3}%
6348     }%
6349     \fi
6350 }%
6351 \def\l@subslide##1##2##3##4{%
6352     \ifnum\lslide@flag=1 %
6353         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
6354     \fi
6355 }%
6356 \def\lslide@flag{0}%
6357 \@startlos
6358 }%
6359 }{}

```

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.)

```

6360 \ifHy@texht
6361     \expandafter\endinput
6362 \fi
6363 \let\real@setref\@setref
6364 \def\@setref#1#2#3{% csname, extract group, refname
6365     \ifx#1\relax
6366         \protect\G@refundefinedtrue
6367         \nfss@text{\reset@font\bfseries ??}%
6368         \@latex@warning{%

```

```

6369      Reference ‘#3’ on page \thepage \space undefined%
6370    }%
6371  \else
6372    \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
6373  \fi
6374 }

```

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

```

6375 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
6376   \begingroup
6377   \toks0={\hyper@@link{#5}{#4}}%
6378   \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
6379   \edef\x{\endgroup
6380     \the\toks0 \the\toks1 }%
6381   }%
6382   \x
6383 }
6384 \def\@pagesetref#1#2#3{% csname, extract macro, ref
6385   \ifx#1\relax
6386     \protect\G@refundefinedtrue
6387     \nfss@text{\reset@font\bfseries ??}%
6388     \@latex@warning{%
6389       Reference ‘#3’ on page \thepage \space undefined%
6390     }%
6391   \else
6392     \protect\hyper@@link
6393     {\expandafter\@fifthoffive#1}%
6394     {page.\expandafter\@secondoffive#1}%
6395     {\expandafter\@secondoffive#1}%
6396   \fi
6397 }
6398 </package>
6399 <*check>
6400 \checklatex
6401 \checkcommand\def\@setref#1#2#3{%
6402   \ifx#1\relax
6403     \protect\G@refundefinedtrue
6404     \nfss@text{\reset@font\bfseries ??}%
6405     \@latex@warning{%
6406       Reference ‘#3’ on page \thepage\space undefined%
6407     }%
6408   \else
6409     \expandafter#2#1\null
6410   \fi
6411 }
6412 </check>
6413 <*package>

```

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

```

6414 \def\HyRef@StarSetRef#1{%
6415   \begingroup
6416   \Hy@safe@activestrue
6417   \edef\x{#1}%
6418   \@onelevel@sanitize\x
6419   \edef\x{\endgroup
6420     \noexpand\HyRef@@StarSetRef

```

```

6421      \expandafter\noexpand\csname r@\x\endcsname{\x}%
6422    }%
6423  \x
6424 }
6425 \def\HyRef@StarSetRef#1#2#3{%
6426   \ifx#1\undefined
6427     \let#1\relax
6428   \fi
6429   \real@setref#1#3{#2}%
6430 }
6431 \def\@refstar#1{%
6432   \HyRef@StarSetRef{#1}\@firstoffive
6433 }
6434 \def\@pagerefstar#1{%
6435   \HyRef@StarSetRef{#1}\@secondoffive
6436 }
6437 \AtBeginDocument{%
6438   \@ifpackageloaded{varioref}{%
6439     \def\@Refstar#1{%
6440       \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
6441     }%
6442     \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
6443       \MakeUppercase#1%
6444     }%
6445     \DeclareRobustCommand*\@Ref*{%
6446       \@ifstar\@Refstar\HyRef@Ref
6447     }%
6448     \def\HyRef@Ref#1{%
6449       \hyperref[#{1}]{\Ref*{#1}}%
6450     }%
6451     \def\Vr@f#1{%
6452       \leavevmode\unskip\vref@space
6453       \hyperref[#{1}]{%
6454         \Ref*{#1}%
6455         \let\vref@space\nobreakspace
6456         \vpageref[\unskip]{#1}%
6457       }%
6458     }%
6459     \def\vr@f#1{%
6460       \leavevmode\unskip\vref@space
6461       \begingroup
6462         \let\T@pageref\@pagerefstar
6463         \hyperref[#{1}]{%
6464           \ref*{#1}%
6465           \vpageref[\unskip]{#1}%
6466         }%
6467       \endgroup
6468     }%
6469   }{}%
6470 }
6471 \DeclareRobustCommand*\@autopageref{%
6472   \@ifstar{%
6473     \HyRef@autopagerefname\pageref*%
6474   }\HyRef@autopageref
6475 }
6476 \def\HyRef@autopageref#1{%
6477   \hyperref[#{1}]{\HyRef@autopagerefname\pageref*{#1}}%

```



```

6478 }
6479 \def\HyRef@autopagerefname{%
6480   \@ifundefined{pageautorefname}{%
6481     \@ifundefined{pagename}{%
6482       \Hy@Warning{No autoref name for 'page'}%
6483     }{%
6484       \pagename\nobreakspace
6485     }%
6486   }{%
6487     \pageautorefname\nobreakspace
6488   }%
6489 }
6490 \DeclareRobustCommand*{\autoref}{%
6491   \@ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}%
6492 }
6493 \def\HyRef@autoref#1#2{%
6494   \begingroup
6495     \Hy@safe@activetrue
6496     \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
6497   \endgroup
6498 }
6499 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
6500   \HyRef@ShowKeysRef{#2}%
6501   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
6502     \edef\HyRef@thisref{%
6503       \expandafter\@fourthoffive#1\@empty\@empty\@empty
6504     }%
6505     \expandafter\HyRef@testreftype\HyRef@thisref.\.%
6506     \Hy@safe@activesfalse
6507     #3{%
6508       \expandafter\@fifthoffive#1\@empty\@empty\@empty
6509     }{%
6510       \expandafter\@fourthoffive#1\@empty\@empty\@empty
6511     }{%
6512       \HyRef@currentHtag
6513       \expandafter\@firstoffive#1\@empty\@empty\@empty
6514       \null
6515     }%
6516   \else
6517     \protect\G@refundefinedtrue
6518     \nfss@text{\reset@font\bfseries ??}%
6519     \@latex@warning{%
6520       Reference '#2' on page \thepage\space undefined%
6521     }%
6522   \fi
6523 }
6524 \def\HyRef@testreftype#1.#2\{\%
6525   \@ifundefined{#1autorefname}{%
6526     \@ifundefined{#1name}{%
6527       \HyRef@StripStar#1\*\@nil{#1}%
6528       \@ifundefined{\HyRef@name autorefname}{%
6529         \@ifundefined{\HyRef@name name}{%
6530           \def\HyRef@currentHtag{%
6531             \Hy@Warning{No autoref name for '#1'}%
6532           }{%
6533             \edef\HyRef@currentHtag{%
6534               \expandafter\noexpand\csname\HyRef@name name\endcsname

```

```

6535         \noexpand~%
6536     }%
6537 }%
6538 }{%
6539     \edef\HyRef@currentHtag{%
6540         \expandafter\noexpand\csname\HyRef@name\autorefname\endcsname
6541         \noexpand~%
6542     }%
6543 }%
6544 }{%
6545     \edef\HyRef@currentHtag{%
6546         \expandafter\noexpand\csname#1name\endcsname
6547         \noexpand~%
6548     }%
6549 }%
6550 }{%
6551     \edef\HyRef@currentHtag{%
6552         \expandafter\noexpand\csname#1autorefname\endcsname
6553         \noexpand~%
6554     }%
6555 }%
6556 }
6557 \def\HyRef@StripStar#1*\#2\@nil#3{%
6558     \def\HyRef@name{#2}%
6559     \ifx\HyRef@name\HyRef@CaseStar
6560         \def\HyRef@name{#1}%
6561     \else
6562         \def\HyRef@name{#3}%
6563     \fi
6564 }
6565 \def\HyRef@CaseStar{*\\}
6566 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

6567 \let\HyRef@ShowKeysRef\@gobble
6568 \def\HyRef@ShowKeysInit{%
6569     \begingroup\expandafter\expandafter\expandafter\endgroup
6570     \expandafter\ifx\csname SK@@label\endcsname\relax
6571     \else
6572         \ifx\SK@ref\@empty
6573         \else
6574             \def\HyRef@ShowKeysRef{%
6575                 \SK@\SK@@ref
6576             }%
6577         \fi
6578     \fi
6579 }
6580 \@ifpackageloaded{showkeys}{%
6581     \HyRef@ShowKeysInit
6582 }{%
6583     \AtBeginDocument{%
6584         \@ifpackageloaded{showkeys}{%
6585             \HyRef@ShowKeysInit
6586         }{%
6587         }%
6588     }%

```

Defaults for the names that `\autoref` uses.

```

6589 \providecommand*{\AMSautorefname}{\equationautorefname}
6590 \providecommand*{\Hfootnoteautorefname}{\footnoteautorefname}
6591 \providecommand*{\Itemautorefname}{\itemautorefname}
6592 \providecommand*{\itemautorefname}{item}
6593 \providecommand*{\equationautorefname}{Equation}
6594 \providecommand*{\footnoteautorefname}{footnote}
6595 \providecommand*{\itemautorefname}{item}
6596 \providecommand*{\figureautorefname}{Figure}
6597 \providecommand*{\tableautorefname}{Table}
6598 \providecommand*{\partautorefname}{Part}
6599 \providecommand*{\appendixautorefname}{Appendix}
6600 \providecommand*{\chapterautorefname}{chapter}
6601 \providecommand*{\sectionautorefname}{section}
6602 \providecommand*{\subsectionautorefname}{subsection}
6603 \providecommand*{\subsubsectionautorefname}{subsubsection}
6604 \providecommand*{\paragraphautorefname}{paragraph}
6605 \providecommand*{\subparagraphautorefname}{subparagraph}
6606 \providecommand*{\FancyVerbLineautorefname}{line}
6607 \providecommand*{\theoremautorefname}{Theorem}
6608 \providecommand*{\pageautorefname}{page}
6609 </package>

```

## 46 Configuration files

### 46.1 PS/PDF strings

Some drivers write PS or PDF strings. These strings are delimited by parentheses, therefore a lonely unmatched parenthesis must be avoided to avoid PS or PDF syntax errors. Also the backslash character itself has to be protected.

`\Hy@pstringdef` Therefore such strings should be passed through `\Hy@pstringdef`. The first argument holds a macro for the result, the second argument is the string that needs protecting. Since version 1.30.0 pdf<sub>T</sub>E<sub>X</sub> offers `\pdfescapestring`.

```

6610 <*pdfTex | dvipdfm | vtEx | pdfmarkbase | dviwindo>
6611 \RequirePackage{pdfTexcmds}[2007/11/11]
6612 \begingroup\expandafter\expandafter\expandafter\endgroup
6613 \expandafter\ifx\csname pdfTescapestring\endcsname\relax
6614 \begingroup
6615 \catcode'\|=0 %
6616 \@makeother\| %
6617 |@firstofone{|endgroup
6618 |def|Hy@pstringdef#1#2{%
6619 |begingroup
6620 |edef~{|string~}%
6621 |xdef|Hy@gtemp{#2}%
6622 |endgroup
6623 |let#1|Hy@gtemp
6624 |@onelevel@sanitize#1%
6625 |edef#1{|expandafter|Hy@ExchangeBackslash#1|@nil}%
6626 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
6627 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1|@nil}%
6628 }%
6629 |def|Hy@ExchangeBackslash#1\#2|@nil{%
6630 #1%

```

```

6631     |ifx|\#2|\%%
6632     |else
6633     \\\%
6634     |Hy@ReturnAfterFi{%
6635     |Hy@ExchangeBackslash#2|@nil
6636     }%
6637     |fi
6638     }%
6639 }%
6640 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
6641     #1%
6642     \ifx\\#2\\%
6643     \else
6644     \@backslashchar(%
6645     \Hy@ReturnAfterFi{%
6646     \Hy@ExchangeLeftParenthesis#2\@nil
6647     }%
6648     \fi
6649 }%
6650 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
6651     #1%
6652     \ifx\\#2\\%
6653     \else
6654     \@backslashchar)%
6655     \Hy@ReturnAfterFi{%
6656     \Hy@ExchangeRightParenthesis#2\@nil
6657     }%
6658     \fi
6659 }%
6660 \else
6661 \def\Hy@pstringdef#1#2{%
6662     \begingroup
6663     \edef~{\string~}%
6664     \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
6665     \endgroup
6666     \let#1\Hy@gtemp
6667 }%
6668 \fi
6669 </pdfTeX | dvipdfm | vtex | pdfmarkbase | dviwindo>

```

## 46.2 pdfTeX

```

6670 <*pdfTeX>
6671 \providecommand*{\XR@ext}{pdf}
6672 \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, 2005-08-08: `\pdfminorversion`

```

6673 \let\Hy@pdfminorversion\relax
6674 \begingroup\expandafter\expandafter\expandafter\endgroup
6675 \expandafter\ifx\csname pdfminorversion\endcsname\relax
6676 \begingroup\expandafter\expandafter\expandafter\endgroup

```

```

6677 \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
6678 \else
6679 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
6680 \fi
6681 \else
6682 \def\Hy@pdfminorversion{\pdfminorversion}%
6683 \fi
6684 \@ifundefined{Hy@pdfminorversion}{%
6685 \PackageInfo{hyperref}{%
6686 PDF version is not set, because pdfTeX is too old (<1.10a)%
6687 }%
6688 }{%
6689 \ifHy@ocgcolorlinks
6690 \ifnum\Hy@pdfminorversion<5 %
6691 \setkeys{Hyp}{pdfversion=1.5}%
6692 \fi
6693 \fi
6694 \ifHy@setpdfversion
6695 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
6696 \else
6697 \Hy@pdfminorversion=\Hy@pdfversion\relax
6698 \fi
6699 \PackageInfo{hyperref}{%
6700 \expandafter\string\Hy@pdfminorversion
6701 :=\number\Hy@pdfversion\space
6702 }%
6703 \fi
6704 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
6705 }
6706 \Hy@DisableOption{pdfversion}%
6707 \ifHy@ocgcolorlinks
6708 \immediate\pdfobj{%
6709 <<%
6710 /Type/OCG%
6711 /Name(View)%
6712 /Usage<<%
6713 /Print<<%
6714 /PrintState/OFF%
6715 >>%
6716 /View<<%
6717 /ViewState/ON%
6718 >>%
6719 >>%
6720 >>%
6721 }%
6722 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
6723 \immediate\pdfobj{%
6724 <<%
6725 /Type/OCG%
6726 /Name(Print)%
6727 /Usage<<%
6728 /Print<<%
6729 /PrintState/ON%
6730 >>%
6731 /View<<%
6732 /ViewState/OFF%
6733 >>%

```

```

6734     >>%
6735     >>%
6736 }%
6737 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
6738 \immediate\pdfobj{%
6739   [%
6740     \OBJ@OCG@view\space\OBJ@OCG@print
6741   ]%
6742 }%
6743 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
6744 \pdfcatalog{%
6745   /OCProperties<<%
6746     /OCGs \OBJ@OCGs
6747   /D<<%
6748     /OFF[\OBJ@OCG@print]%
6749     /AS[%
6750       <<%
6751         /Event/View%
6752         /OCGs \OBJ@OCGs
6753         /Category[/View]%
6754       >>%
6755       <<%
6756         /Event/Print%
6757         /OCGs \OBJ@OCGs
6758         /Category[/Print]%
6759       >>%
6760       <<%
6761         /Event/Export%
6762         /OCGs \OBJ@OCGs
6763         /Category[/Print]%
6764       >>%
6765     ]%
6766   >>%
6767   >>%
6768 }%
6769 \beginngroup
6770   \edef\x{\endgroup
6771     \pdfpageresources{%
6772       /Properties<<%
6773         /OCView \OBJ@OCG@view
6774         /OCPrint \OBJ@OCG@print
6775       >>%
6776     }%
6777   }%
6778 \x
6779 \AtBeginDocument{%
6780   \def\Hy@colorlink#1{%
6781     \beginngroup
6782       \ifHy@ocgcolorlinks
6783         \def\Hy@ocgcolor{#1}%
6784         \setbox0=\color@hbox
6785       \else
6786         \HyColor@UseColor#1%
6787       \fi
6788     }%
6789   \def\Hy@endcolorlink{%
6790     \ifHy@ocgcolorlinks

```

```

6791      \color@endbox
6792      \mbox{%
6793          \pdfliteral page{/OC/OCPrint BDC}%
6794          \rlap{\copy0}%
6795          \pdfliteral page{EMC/OC/OCView BDC}%
6796          \begingroup
6797              \expandafter\HyColor@UseColor\Hy@ocgcolor
6798              \box0 %
6799          \endgroup
6800          \pdfliteral page{EMC}%
6801      }%
6802  \fi
6803 \endgroup
6804 }%
6805 }%
6806 \else
6807   \Hy@DisableOption{ocgcolorlinks}%
6808 \fi

```

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

```

6809 \def\setpdflinkmargin#1{\pdflinkmargin#1}
6810 \ifx\pdfstartlink\undefined% less than version 14
6811   \let\pdfstartlink\pdfannotlink
6812   \let\pdflinkmargin\@tempdima
6813   \let\pdfxform\pdfform
6814   \let\pdflastxform\pdfastform
6815   \let\pdfrefxform\pdfreiform
6816 \else
6817   \pdflinkmargin1pt %
6818 \fi

```

First set up the default linking

```

6819 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

6820 \def\new@pdflink#1{%
6821   \ifHy@verbose
6822     \typeout{pdftex: define anchor at line \the\inputlineno: #1}%
6823   \fi
6824   \Hy@SaveLastskip
6825   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
6826   \Hy@DestName\Hy@pstringDest\@pdfview
6827   \Hy@RestoreLastskip
6828 }
6829 \let\pdf@endanchor\@empty

```

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

```

6830 \def\Hy@DestName#1#2{%
6831   \pdfdest name{#1}#2\relax
6832 }

```

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.

```

6833 \providecommand*\@pdfborder{0 0 1}
6834 \providecommand*\@pdfborderstyle{}

```

```

6835 \def\Hy@undefinedname{UNDEFINED}
6836 \def\find@pdflink#1#2{%
6837   \leavevmode
6838   \protected@edef\Hy@testname{#2}%
6839   \ifx\Hy@testname\@empty
6840     \let\Hy@testname\Hy@undefinedname
6841   \else
6842     \Hy@pstringdef\Hy@testname{%
6843       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
6844     }%
6845   \fi
6846   \Hy@StartlinkName{%
6847     \ifHy@pdfa /F 4\fi
6848     \Hy@setpdfborder
6849     \ifx\@pdfhighlight\@empty
6850     \else
6851       /H\@pdfhighlight
6852     \fi
6853     \ifx\CurrentBorderColor\relax
6854     \else
6855       /C[\CurrentBorderColor]%
6856     \fi
6857   }\Hy@testname
6858   \expandafter\Hy@colorlink\csname @#1color\endcsname
6859 }
6860 \def\Hy@StartlinkName#1#2{%
6861   \pdfstartlink attr{#1}goto name{#2}\relax
6862 }
6863 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
6864 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
6865 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
6866 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
6867 \def\hyper@linkstart#1#2{%
6868   \@ifundefined{#1bordercolor}{%
6869     \let\CurrentBorderColor\relax
6870   }{%
6871     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6872   }%
6873   \find@pdflink{#1}{#2}%
6874 }
6875 \def\hyper@linkend{\close@pdflink}
6876 \def\hyper@link#1#2#3{%
6877   \@ifundefined{#1bordercolor}{%
6878     \let\CurrentBorderColor\relax
6879   }{%
6880     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6881   }%
6882   \find@pdflink{#1}{#2}#3%
6883   \close@pdflink
6884 }
6885 \let\CurrentBorderColor\@linkbordercolor
6886 \def\hyper@linkurl#1#2{%
6887   \begingroup
6888     \Hy@pstringdef\Hy@pstringURI{#2}%
6889     \hyper@chars
6890     \leavevmode
6891     \pdfstartlink

```



```

6892     attr{%
6893         \Hy@setpdfborder
6894         \ifx\@pdfhighlight\@empty
6895         \else
6896             /H\@pdfhighlight
6897         \fi
6898         \ifx\@urlbordercolor\relax
6899         \else
6900             /C[\@urlbordercolor]%
6901         \fi
6902     }%
6903     user{%
6904         /Subtype/Link%
6905         \ifHy@pdfa /F 4\fi
6906         /A<<%
6907             /Type/Action%
6908             /S/URI%
6909             /URI(\Hy@pstringURI)%
6910         >>%
6911     }%
6912     \relax
6913     \Hy@colorlink\@urlcolor#1%
6914     \close@pdflink
6915 \endgroup
6916 }
6917 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
6918     \begingroup
6919     \Hy@pstringdef\Hy@pstringF{#2}%
6920     \Hy@pstringdef\Hy@pstringD{#3}%
6921     \leavevmode
6922     \pdfstartlink
6923     attr{%
6924         \Hy@setpdfborder
6925         \ifx\@pdfhighlight\@empty
6926         \else
6927             /H\@pdfhighlight
6928         \fi
6929         \ifx\@filebordercolor\relax
6930         \else
6931             /C[\@filebordercolor]%
6932         \fi
6933     }%
6934     user {%
6935         /Subtype/Link%
6936         \ifHy@pdfa /F 4\fi
6937         /A<<%
6938             /F(\Hy@pstringF)%
6939             /S/GoToR%
6940         \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}

6941         \ifx\\#3\\%
6942             /D[0 \@pdfstartview]%
6943         \else
6944             /D(\Hy@pstringD)%
6945         \fi
6946     >>%
6947 }%
6948 \relax
6949 \Hy@colorlink\@filecolor#1%
6950 \close@pdflink
6951 \endgroup
6952 }
6953 \def\@hyper@launch run:#1\\#2#3{% filename, anchor text linkname
6954 \begingroup
6955     \Hy@pstringdef\Hy@pstringF{#1}%
6956     \Hy@pstringdef\Hy@pstringP{#3}%
6957     \leavevmode
6958     \pdfstartlink
6959     attr{%
6960         \Hy@setpdfborder
6961         \ifx\@pdfhighlight\@empty
6962         \else
6963             /H\@pdfhighlight
6964         \fi
6965         \ifx\@runbordercolor\relax
6966         \else
6967             /C[\@runbordercolor]%
6968         \fi
6969     }%
6970     user {%
6971         /Subtype/Link%
6972         \ifHy@pdfa /F 4\fi
6973         /A<<%
6974             /F(\Hy@pstringF)%
6975             /S/Launch%
6976             \Hy@SetNewWindow
6977             \ifx\\#3\\%
6978             \else
6979                 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
6980             \fi
6981         >>%
6982     }%
6983 \relax
6984 \Hy@colorlink\@runcolor#2%
6985 \close@pdflink
6986 \endgroup
6987 }

\@pdfproducer

6988 \ifx\@pdfproducer\relax
6989 \begingroup\expandafter\expandafter\expandafter\endgroup
6990 \expandafter\ifx\csname luatexversion\endcsname\relax
6991     \def\@pdfproducer{pdfTeX}%
6992     \ifx\eTeXversion\@undefined
6993     \else

```

```

6994     \ifx\TeXversion\relax
6995     \else
6996         \ifnum\TeXversion>0 %
6997             \def\pdfproducer{pdfTeX}%
6998         \fi
6999     \fi
7000 \fi
7001 \ifx\pdftexversion\@undefined
7002 \else
7003     \ifnum\pdftexversion<100 %
7004         \edef\pdfproducer{%
7005             \@pdfproducer
7006             \the\pdftexversion.\pdftexrevision
7007         }%
7008     \else
7009         \ifnum\pdftexversion<130 %
7010             \edef\pdfproducer{%
7011                 \@pdfproducer-%
7012                 \expandafter\@car\the\pdftexversion\@empty\@nil.%
7013                 \expandafter\@cdr\the\pdftexversion\@empty\@nil
7014                 \pdftexrevision
7015             }%
7016         \else
7017             \ifnum\pdftexversion<140 %
7018                 \else
7019                     \def\pdfproducer{pdfTeX}%
7020                 \fi
7021                 \edef\pdfproducer{%
7022                     \@pdfproducer-%
7023                     \expandafter\@car\the\pdftexversion\@empty\@nil.%
7024                     \expandafter\@cdr\the\pdftexversion\@empty\@nil.%
7025                     \pdftexrevision
7026                 }%
7027             \fi
7028         \fi
7029     \fi
7030 \else
7031     \begingroup
7032         \count@=\luatexversion
7033         \divide\count@ by 100 %
7034         \edef\x{\the\count@}%
7035         \count@=-\x\relax
7036         \multiply\count@ by 100 %
7037         \advance\count@ by \luatexversion
7038         \edef\x{\endgroup
7039             \def\noexpand\pdfproducer{%
7040                 LuaTeX-\x.\the\count@.\luatexrevision
7041             }%
7042         }%
7043     \x
7044 \fi
7045 \fi

```

\PDF@SetupDox

```

7046 \def\PDF@SetupDoc{%
7047     \ifx\@pdfpagescrop\@empty
7048     \else

```

```

7049 \edef\process@me{%
7050 \pdfpagesattr={%
7051 /CropBox[\@pdfpagescrop]%
7052 \expandafter\ifx\expandafter\\the\pdfpagesattr\%
7053 \else
7054 ^^J\the\pdfpagesattr
7055 \fi
7056 }%
7057 }%
7058 \process@me
7059 \fi
7060 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7061 \pdfcatalog{%
7062 /PageMode/\@pdfpagemode
7063 \ifx\@baseurl\@empty
7064 \else
7065 /URI<</Base(\Hy@pstringB)>>%
7066 \fi
7067 }%
7068 \ifx\@pdfstartpage\@empty
7069 \else
7070 \ifx\@pdfstartview\@empty
7071 \else
7072 openaction goto page\@pdfstartpage{\@pdfstartview}%
7073 \fi
7074 \fi
7075 \edef\Hy@temp{%
7076 \ifHy@toolbar\else /HideToolbar true\fi
7077 \ifHy@menubar\else /HideMenubar true\fi
7078 \ifHy>windowui\else /HideWindowUI true\fi
7079 \ifHy@fitwindow /FitWindow true\fi
7080 \ifHy@centerwindow /CenterWindow true\fi
7081 \ifHy@displaydoctitle /DisplayDocTitle true\fi
7082 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7083 \Hy@UseNameKey{Direction}\@pdfdirection
7084 \Hy@UseNameKey{ViewArea}\@pdfviewarea
7085 \Hy@UseNameKey{ViewClip}\@pdfviewclip
7086 \Hy@UseNameKey{PrintArea}\@pdfprintarea
7087 \Hy@UseNameKey{PrintClip}\@pdfprintclip
7088 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7089 \Hy@UseNameKey{Duplex}\@pdfduplex
7090 \ifx\@pdfpicktraybypdfsize\@empty
7091 \else
7092 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7093 \fi
7094 \ifx\@pdfprintpagerange\@empty
7095 \else
7096 /PrintPageRange[\@pdfprintpagerange]%
7097 \fi
7098 \ifx\@pdfnumcopies\@empty
7099 \else
7100 /NumCopies \@pdfnumcopies
7101 \fi
7102 }%
7103 \pdfcatalog{%
7104 \ifx\Hy@temp\@empty
7105 \else

```

```

7106     /ViewerPreferences<<\Hy@temp>>%
7107     \fi
7108     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7109     \ifx\@pdflang\@empty
7110     \else
7111     /Lang(\@pdflang)%
7112     \fi
7113 }%
7114 }

```

\PDF@FinishDoc

```

7115 \def\PDF@FinishDoc{%
7116   \Hy@UseMaketitleInfos
7117   \pdfinfo{%
7118     /Author(\@pdfauthor)%
7119     /Title(\@pdftitle)%
7120     /Subject(\@pdfsubject)%
7121     /Creator(\@pdfcreator)%
7122     \ifx\@pdfcreationdate\@empty
7123     \else
7124     /CreationDate(\@pdfcreationdate)%
7125     \fi
7126     \ifx\@pdfmoddate\@empty
7127     \else
7128     /ModDate(\@pdfmoddate)%
7129     \fi
7130     \ifx\@pdfproducer\relax
7131     \else
7132     /Producer(\@pdfproducer)%
7133     \fi
7134     /Keywords(\@pdfkeywords)%
7135   }%
7136   \Hy@DisableOption{pdfauthor}%
7137   \Hy@DisableOption{pdftitle}%
7138   \Hy@DisableOption{pdfsubject}%
7139   \Hy@DisableOption{pdfcreator}%
7140   \Hy@DisableOption{pdfcreationdate}%
7141   \Hy@DisableOption{pdfmoddate}%
7142   \Hy@DisableOption{pdfproducer}%
7143   \Hy@DisableOption{pdfkeywords}%
7144 }

```

\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.

```

7145 \def\hyper@pagetransition{%
7146   \ifx\@pdfpagetransition\relax
7147   \else
7148     \expandafter\Hy@RemoveTransPageAttr
7149     \the\pdfpageattr^^J/Trans{ }>>\END
7150     \ifx\@pdfpagetransition\@empty
7151     \else
7152       \edef\@processme{%
7153         \global\pdfpageattr{%
7154           \the\pdfpageattr
7155           ^^J/Trans << /S /\@pdfpagetransition\space >>%
7156         }%

```

```

7157     }%
7158     \@processme
7159     \fi
7160 \fi
7161 }

```

**\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.

```

7162 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
7163   \ifx\#2\%
7164     \global\pdfpageattr{#1}%
7165   \else
7166     \Hy@RemoveTransPageAttr#1#4\END
7167   \fi
7168 }

```

**\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`.

```

7169 \def\hyper@pageduration{%
7170   \ifx\@pdfpageduration\relax
7171   \else
7172     \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{ } \END
7173     \ifx\@pdfpageduration\empty
7174     \else
7175       \edef\@processme{%
7176         \global\pdfpageattr{%
7177           \the\pdfpageattr
7178           ^^J/Dur \@pdfpageduration\space
7179         }%
7180       }%
7181       \@processme
7182     \fi
7183   \fi
7184 }

```

**\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.

```

7185 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
7186   \ifx\#2\%
7187     \global\pdfpageattr{#1}%
7188   \else
7189     \Hy@RemoveDurPageAttr#1#4\END
7190   \fi
7191 }

```

**\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).

```

7192 \def\hyper@pagehidden{%
7193   \ifHy@useHidKey
7194     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{ } \END

```

```

7195 \ifHy@pdfpagehidden
7196 \edef\@processme{%
7197 \global\pdfpageattr{%
7198 \the\pdfpageattr
7199 ^^J/Hid true % SPACE
7200 }%
7201 }%
7202 \@processme
7203 \fi
7204 \fi
7205 }

```

`\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.

```

7206 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
7207 \ifx\#2\%
7208 \global\pdfpageattr{#1}%
7209 \else
7210 \Hy@RemoveHidPageAttr#1#4\END
7211 \fi
7212 }

7213 \g@addto@macro\Hy@EveryPageHook{%
7214 \hyper@pagetransition
7215 \hyper@pageduration
7216 \hyper@pagehidden
7217 }

7218 \AtBeginDocument{%
7219 \ifHy@setpagesize
7220 \expandafter\@firstofone
7221 \else
7222 \expandafter\@gobble
7223 \fi
7224 {%
7225 \@ifclassloaded{seminar}{%
7226 \setlength{\pdfhorigin}{1truein}%
7227 \setlength{\pdfvorigin}{1truein}%
7228 \ifportrait
7229 \ifdim\paperwidth=\z@
7230 \else
7231 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
7232 \fi
7233 \ifdim\paperheight=\z@
7234 \else
7235 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
7236 \fi
7237 \else
7238 \ifdim\paperheight=\z@
7239 \else
7240 \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
7241 \fi
7242 \ifdim\paperwidth=\z@
7243 \else
7244 \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
7245 \fi

```

```

7246     \fi
7247   }{%
7248     \@ifundefined{stockwidth}{%
7249       \ifdim\paperwidth=\z@
7250       \else
7251         \setlength{\pdfpagewidth}{\paperwidth}%
7252       \fi
7253       \ifdim\paperheight=\z@
7254       \else
7255         \setlength{\pdfpageheight}{\paperheight}%
7256       \fi
7257     }{%
7258       \ifdim\stockwidth=\z@
7259       \else
7260         \setlength{\pdfpagewidth}{\stockwidth}%
7261       \fi
7262       \ifdim\stockheight=\z@
7263       \else
7264         \setlength{\pdfpageheight}{\stockheight}%
7265       \fi
7266     }%
7267   }%
7268 }%
7269 \Hy@DisableOption{setpagesize}%
7270 }
7271 \def\Acrobatmenu#1#2{%
7272   \Hy@Acrobatmenu{#1}{#2}{%
7273     \pdfstartlink
7274     attr{%
7275       \Hy@setpdfborder
7276       \ifx\@pdfhighlight\@empty
7277       \else
7278         /H\@pdfhighlight
7279       \fi
7280       \ifx\@menubordercolor\relax
7281       \else
7282         /C[\@menubordercolor]%
7283       \fi
7284     }%
7285     user{%
7286       /Subtype/Link%
7287       \ifHy@pdfa /F 4\fi
7288       /A<<%
7289         /S/Named/N/#1%
7290       >>%
7291     }%
7292     \relax
7293     \Hy@colorlink\@menucolor#2%
7294     \close@pdflink
7295   }%
7296 }
7297 </pdfTeX>
7298 <*hypertex>

```



## 46.3 hypertext

The HyperTeX specification (this is borrowed from an article by Arthur Smith) says that conformant viewers/translators must recognize the following set of `\special` commands:

**href:** `html:<a href = "href_string">`

**name:** `html:<a name = "name_string">`

**end:** `html:</a>`

**image:** `html:<img src = "href_string">`

**base\_name:** `html:<base href = "href_string">`

The *href*, *name* and *end* commands are used to do the basic hypertext operations of establishing links between sections of documents. The *image* command is intended (as with current html viewers) to place an image of arbitrary graphical format on the page in the current location. The *base\_name* command is be used to communicate to the *dvi* viewer the full (URL) location of the current document so that files specified by relative URL's may be retrieved correctly.

The *href* and *name* commands must be paired with an *end* command later in the TeX file — the TeX commands between the two ends of a pair form an *anchor* in the document. In the case of an *href* command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by *href\_string*. The *anchor* associated with a name command represents a possible location to which other hypertext links may refer, either as local references (of the form `href="#name_string"` with the *name\_string* identical to the one in the name command) or as part of a URL (of the form `URL#name_string`). Here *href\_string* is a valid URL or local identifier, while *name\_string* could be any string at all: the only caveat is that `'` characters should be escaped with a backslash (`\`), and if it looks like a URL name it may cause problems.

```
7299 \providecommand*{\XR@ext}{dvi}
7300 \def\PDF@FinishDoc{}
7301 \def\PDF@SetupDoc{%
7302   \ifx\@baseurl\@empty
7303   \else
7304     \special{html:<base href="\@baseurl">}%
7305   \fi
7306 }
7307 \def\hyper@anchor#1{%
7308   \Hy@SaveLastskip
7309   \begingroup
7310     \let\protect=\string
7311     \hyper@chars
7312     \special{html:<a name=%
7313       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
7314   \endgroup
7315   \Hy@activeanchortrue
7316   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7317   \special{html:</a>}%
7318   \Hy@activeanchorfalse
7319   \Hy@RestoreLastskip
7320 }
7321 \def\hyper@anchorstart#1{%
7322   \Hy@SaveLastskip
```

```

7323 \begingroup
7324   \hyper@chars
7325   \special{html:<a name=%
7326     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
7327 \endgroup
7328 \Hy@activeanchortrue
7329 }
7330 \def\hyper@anchorend{%
7331   \special{html:</a>}%
7332   \Hy@activeanchorfalse
7333   \Hy@RestoreLastskip
7334 }
7335 \def\@urltype{url}
7336 \def\hyper@linkstart#1#2{%
7337   \expandafter\Hy@colorlink\csname @#1color\endcsname
7338   \def\Hy@tempa{#1}%
7339   \ifx\Hy@tempa\@urltype
7340     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7341   \else
7342     \begingroup
7343       \hyper@chars
7344       \special{html:<a href=%
7345         \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
7346     \endgroup
7347   \fi
7348 }
7349 \def\hyper@linkend{%
7350   \special{html:</a>}%
7351   \Hy@endcolorlink
7352 }
7353 \def\hyper@linkfile#1#2#3{%
7354   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
7355 }
7356 \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.

```

7357 \leavevmode
7358 \ifHy@raiselinks
7359   \setbox\@tempboxa=\color@hbox #1\color@endbox
7360   \@linkdim\dp\@tempboxa
7361   \lower\@linkdim\hbox{%
7362     \hyper@chars
7363     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7364   }%
7365   \Hy@colorlink\@urlcolor#1%
7366   \@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).

```

7367   \advance\@linkdim by -6.5\p@
7368   \raise\@linkdim\hbox{\special{html:</a>}}%
7369   \Hy@endcolorlink
7370 \else
7371   \begingroup
7372   \hyper@chars

```

```

7373     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
7374     \Hy@colorlink\@urlcolor#1%
7375     \special{html:</a>}}%
7376     \Hy@endcolorlink
7377   \endgroup
7378 \fi
7379 }

```

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

```

7380 \def\hyper@link#1#2#3{%
7381   \hyper@linkurl{#3}{\# \HyperDestNameFilter{#2}}}%
7382 }

7383 \def\hyper@image#1#2{%
7384   \begingroup
7385     \hyper@chars
7386     \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
7387   \endgroup
7388 }
7389 </hypertext>
7390 <*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 hypertext 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.

```

7391 \providecommand*\XR@ext{dvi}
7392 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
7393 \def\hyper@anchor#1{%
7394   \Hy@SaveLastskip
7395   \begingroup
7396     \let\protect=\string
7397     \special{mark: #1}%
7398   \endgroup
7399   \Hy@activeanchortrue
7400   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7401   \Hy@activeanchorfalse
7402   \Hy@RestoreLastskip
7403 }
7404 \def\hyper@anchorstart#1{%
7405   \Hy@SaveLastskip
7406   \special{mark: #1}%
7407   \Hy@activeanchortrue
7408 }
7409 \def\hyper@anchorend{%
7410   \Hy@activeanchorfalse
7411   \Hy@RestoreLastskip
7412 }
7413 \def\hyper@linkstart#1#2{%

```

```

7414 \expandafter\Hy@colorlink\csname @#1color\endcsname
7415 \special{button: %
7416 10000000 %
7417 \number\baselineskip\space
7418 #2%
7419 }%
7420 }
7421 \def\hyper@linkend{%
7422 \Hy@endcolorlink
7423 }
7424 \def\hyper@link#1#2#3{%
7425 \setbox\@tempboxa=\color@hbox #3\color@endbox
7426 \leavevmode
7427 \ifHy@raiselinks
7428 \@linkdim\dp\@tempboxa
7429 \lower\@linkdim\hbox{%
7430 \special{button: %
7431 \number\wd\@tempboxa\space
7432 \number\ht\@tempboxa\space
7433 #2%
7434 }%
7435 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
7436 \Hy@endcolorlink
7437 }%
7438 \@linkdim\ht\@tempboxa
7439 \advance\@linkdim by -6.5\p@
7440 \raise\@linkdim\hbox{}}%
7441 \else
7442 \special{button: %
7443 \number\wd\@tempboxa\space
7444 \number\ht\@tempboxa\space
7445 #2%
7446 }%
7447 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
7448 \Hy@endcolorlink
7449 \fi
7450 }
7451 \def\hyper@linkurl#1#2{%
7452 \begingroup
7453 \hyper@chars
7454 \leavevmode
7455 \setbox\@tempboxa=\color@hbox #1\color@endbox
7456 \ifHy@raiselinks
7457 \@linkdim\dp\@tempboxa
7458 \lower\@linkdim\hbox{%
7459 \special{button: %
7460 \number\wd\@tempboxa\space
7461 \number\ht\@tempboxa\space
7462 launch: \wwwbrowser\space
7463 #2%
7464 }%
7465 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7466 }%
7467 \@linkdim\ht\@tempboxa
7468 \advance\@linkdim by -6.5\p@
7469 \raise\@linkdim\hbox{}}%
7470 \else

```

```

7471     \special{button: %
7472         \number\wd\@tempboxa\space
7473         \number\ht\@tempboxa\space
7474         launch: \wwwbrowser\space
7475         #2%
7476     }%
7477     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7478 \fi
7479 \endgroup
7480 }
7481 \def\hyper@linkfile#1#2#3{%
7482 \begingroup
7483     \hyper@chars
7484     \leavevmode
7485     \setbox\@tempboxa=\color@hbox #1\color@endbox
7486     \ifHy@raiselinks
7487         \@linkdim\dp\@tempboxa
7488         \lower\@linkdim\hbox{%
7489             \special{button: %
7490                 \number\wd\@tempboxa\space
7491                 \number\ht\@tempboxa\space
7492                 #3,%
7493                 file: #2%
7494             }%
7495             \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7496         }%
7497         \@linkdim\ht\@tempboxa
7498         \advance\@linkdim by -6.5\p@
7499         \raise\@linkdim\hbox{}}%
7500     \else
7501         \special{button: %
7502             \number\wd\@tempboxa\space
7503             \number\ht\@tempboxa\space
7504             #3,%
7505             file: #2%
7506         }%
7507         \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7508     \fi
7509 \endgroup
7510 }
7511 \ifx\@pdfproducer\relax
7512 \def\@pdfproducer{dviwindo + Distiller}%
7513 \fi
7514 \def\PDF@FinishDoc{%
7515     \Hy@UseMaketitleInfos
7516     \special{PDF: Keywords \@pdfkeywords}%
7517     \special{PDF: Title \@pdftitle}%
7518     \special{PDF: Creator \@pdfcreator}%
7519     \ifx\@pdfcreationdate\@empty
7520     \else
7521         \special{PDF: CreationDate \@pdfcreationdate}%
7522     \fi
7523     \ifx\@pdfmoddate\@empty
7524     \else
7525         \special{PDF: ModDate \@pdfmoddate}%
7526     \fi
7527     \special{PDF: Author \@pdfauthor}%

```

```

7528 \ifx\@pdfproducer\relax
7529 \else
7530 \special{PDF: Producer \@pdfproducer}%
7531 \fi
7532 \special{PDF: Subject \@pdfsubject}%
7533 \Hy@DisableOption{pdfauthor}%
7534 \Hy@DisableOption{pdftitle}%
7535 \Hy@DisableOption{pdfsubject}%
7536 \Hy@DisableOption{pdfcreator}%
7537 \Hy@DisableOption{pdfcreationdate}%
7538 \Hy@DisableOption{pdfmoddate}%
7539 \Hy@DisableOption{pdfproducer}%
7540 \Hy@DisableOption{pdfkeywords}%
7541 }
7542 \def\PDF@SetupDoc{%
7543 \ifx\@baseurl\@empty
7544 \else
7545 \special{PDF: Base \@baseurl}%
7546 \fi
7547 \ifx\@pdfpagescrop\@empty\else
7548 \special{PDF: BBox \@pdfpagescrop}%
7549 \fi
7550 \def\Hy@temp{%
7551 \ifx\@pdfstartpage\@empty
7552 \else
7553 \ifx\@pdfstartview\@empty
7554 \else
7555 \edef\Hy@temp{%
7556 ,Page=\@pdfstartpage
7557 ,View=\@pdfstartview
7558 }%
7559 \fi
7560 \fi
7561 \edef\Hy@temp{%
7562 \noexpand\pdfmark{%
7563 pdfmark=/DOCVIEW,%
7564 PageMode=/\@pdfpagemode
7565 \Hy@temp
7566 }%
7567 }%
7568 \Hy@temp
7569 \ifx\@pdfpagescrop\@empty
7570 \else
7571 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7572 \fi
7573 \edef\Hy@temp{%
7574 \ifHy@toolbar\else /HideToolbar true\fi
7575 \ifHy@menubar\else /HideMenubar true\fi
7576 \ifHy>windowui\else /HideWindowUI true\fi
7577 \ifHy@fitwindow /FitWindow true\fi
7578 \ifHy@centerwindow /CenterWindow true\fi
7579 \ifHy@displaydoctitle /DisplayDocTitle true\fi
7580 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7581 \Hy@UseNameKey{Direction}\@pdfdirection
7582 \Hy@UseNameKey{ViewArea}\@pdfviewarea
7583 \Hy@UseNameKey{ViewClip}\@pdfviewclip
7584 \Hy@UseNameKey{PrintArea}\@pdfprintarea

```

```

7585 \Hy@UseNameKey{PrintClip}\@pdfprintclip
7586 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7587 \Hy@UseNameKey{Duplex}\@pdfduplex
7588 \ifx\@pdfpicktraybypdfsize\@empty
7589 \else
7590 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7591 \fi
7592 \ifx\@pdfprintpagerange\@empty
7593 \else
7594 /PrintPageRange[\@pdfprintpagerange]%
7595 \fi
7596 \ifx\@pdfnumcopies\@empty
7597 \else
7598 /NumCopies \@pdfnumcopies
7599 \fi
7600 }%
7601 \pdfmark{pdfmark=/PUT,%
7602 Raw={%
7603 \string{Catalog\string}<<%
7604 \ifx\Hy@temp\@empty
7605 \else
7606 /ViewerPreferences<<\Hy@temp>>%
7607 \fi
7608 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7609 \ifx\@pdflang\@empty
7610 \else
7611 /Lang(\@pdflang)%
7612 \fi
7613 >>%
7614 }%
7615 }%
7616 }
7617 </dviwindo>
7618 <*dvi pdfm>

```

## 46.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

7619 \providecommand*\XR@ext}{pdf}
7620 \Hy@setbreaklinks{true}
7621 \newsavebox{\pdfm@box}
7622 \def\@pdfm@mark#1{\special{pdf:#1}}
7623 \def\@pdfm@dest#1{%
7624 \Hy@SaveLastskip
7625 \beginingroup
7626 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
7627 \def\x{XYZ}%
7628 \ifx\x\@pdfview
7629 \def\x{XYZ @xpos @ypos null}%
7630 \else
7631 \def\x{FitH}%
7632 \ifx\x\@pdfview
7633 \def\x{FitH @ypos}%
7634 \else
7635 \def\x{FitBH}%
7636 \ifx\x\@pdfview
7637 \def\x{FitBH @ypos}%

```

```

7638     \else
7639         \def\x{FitV}%
7640         \ifx\x\@pdfview
7641             \def\x{FitV @xpos}%
7642         \else
7643             \def\x{FitBV}%
7644             \ifx\x\@pdfview
7645                 \def\x{FitBV @xpos}%
7646             \else
7647                 \def\x{Fit}%
7648                 \ifx\x\@pdfview
7649                     \let\x\@pdfview
7650                 \else
7651                     \def\x{FitB}%
7652                     \ifx\x\@pdfview
7653                         \let\x\@pdfview
7654                     \else
7655                         \def\x{FitR}%
7656                         \ifx\x\@pdfview
7657                             \Hy@Warning{'pdfview=FitR' is not supported}%
7658                             \def\x{XYZ @xpos @ypos null}%
7659                         \else
7660                             \@onelevel@sanitize\@pdfview
7661                             \Hy@Warning{Unknown value '\@pdfview' for pdfview}%
7662                             \def\x{XYZ @xpos @ypos null}%
7663                         \fi
7664                     \fi
7665                 \fi
7666             \fi
7667         \fi
7668     \fi
7669 \fi
7670 \fi
7671 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
7672 \endgroup
7673 \Hy@RestoreLastskip
7674 }
7675 \providecommand*\@pdfview{XYZ}
7676 \providecommand*\@pdfborder{0 0 1}
7677 \providecommand*\@pdfborderstyle{}
7678 \def\hyper@anchor#1{%
7679     \@pdfm@dest{#1}%
7680 }
7681 \def\hyper@anchorstart#1{%
7682     \Hy@activeanchortrue
7683     \@pdfm@dest{#1}%
7684 }
7685 \def\hyper@anchorend{%
7686     \Hy@activeanchorfalse
7687 }
7688 \ifHy@ocgcolorlinks
7689     \def\OBJ@OCG@view{\@OCG@view}%
7690     \@pdfm@mark{%
7691         obj \OBJ@OCG@view <<%
7692         /Type/OCG%
7693         /Name(View)%
7694         /Usage<<%

```



```

7695         /Print<<%
7696         /PrintState/OFF%
7697     >>%
7698     /View<<%
7699     /ViewState/ON%
7700 >>%
7701 >>%
7702 >>%
7703 }%
7704 \@pdfmark{close \OBJ@OCG@view}%
7705 \def\OBJ@OCG@print{@OCG@print}%
7706 \@pdfmark{%
7707     obj \OBJ@OCG@print <<%
7708     /Type/OCG%
7709     /Name(Print)%
7710     /Usage<<%
7711     /Print<<%
7712     /PrintState/ON%
7713     >>%
7714     /View<<%
7715     /ViewState/OFF%
7716     >>%
7717     >>%
7718     >>%
7719 }%
7720 \@pdfmark{close \OBJ@OCG@print}%
7721 \def\OBJ@OCGs{@OCGs}%
7722 \@pdfmark{%
7723     obj \OBJ@OCGs [%
7724         \OBJ@OCG@view\space\OBJ@OCG@print
7725     ]%
7726 }%
7727 \@pdfmark{close \OBJ@OCGs}%
7728 \@pdfmark{%
7729     put @catalog <<%
7730     /OCProperties<<%
7731     /OCGs \OBJ@OCGs
7732     /D<<%
7733     /OFF[\OBJ@OCG@print]%
7734     /AS[%
7735         <<%
7736         /Event/View%
7737         /OCGs \OBJ@OCGs
7738         /Category[/View]%
7739         >>%
7740         <<%
7741         /Event/Print%
7742         /OCGs \OBJ@OCGs
7743         /Category[/Print]%
7744         >>%
7745         <<%
7746         /Event/Export%
7747         /OCGs \OBJ@OCGs
7748         /Category[/Print]%
7749         >>%
7750     ]%
7751     >>%

```

```

7752     >>%
7753     >>%
7754 }%
7755 \@pdfm@mark{%
7756     put @resources <<%
7757     /Properties<<%
7758         /OCView \OBJ@OCG@view
7759         /OCPrint \OBJ@OCG@print
7760     >>%
7761     >>%
7762 }%
7763 \AtBeginDocument{%
7764     \def\Hy@colorlink#1{%
7765         \begingroup
7766         \ifHy@ocgcolorlinks
7767             \def\Hy@ocgcolor{#1}%
7768             \setbox0=\color@hbox
7769         \else
7770             \HyColor@UseColor#1%
7771         \fi
7772     }%
7773     \def\Hy@endcolorlink{%
7774         \ifHy@ocgcolorlinks
7775             \color@endbox
7776             \mbox{%
7777                 \@pdfm@mark{content /OC/OCPrint BDC}%
7778                 \rlap{\copy0}%
7779                 \@pdfm@mark{content EMC/OC/OCView BDC}%
7780                 \begingroup
7781                     \expandafter\HyColor@UseColor\Hy@ocgcolor
7782                 \box0 %
7783                 \endgroup
7784                 \@pdfm@mark{content EMC}%
7785             }%
7786             \fi
7787         \endgroup
7788     }%
7789 }%
7790 \else
7791     \Hy@DisableOption{ocgcolorlinks}%
7792 \fi

7793 \def\Hy@undefinedname{UNDEFINED}
7794 \def\hyper@linkstart#1#2{%
7795     \protected@edef\Hy@testname{#2}%
7796     \ifx\Hy@testname\@empty
7797         \let\Hy@testname\Hy@undefinedname
7798     \else
7799         \Hy@pstringdef\Hy@testname{%
7800             \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
7801         }%
7802     \fi
7803     \@pdfm@mark{%
7804         bann<<%
7805         /Type/Annot%
7806         /Subtype/Link%
7807         \ifHy@pdfa /F 4\fi
7808         \Hy@setpdfborder

```

```

7809     \expandafter\ifx\csname @#1bordercolor\endcsname\relax
7810     \else
7811     /C[\csname @#1bordercolor\endcsname]%
7812     \fi
7813     /A<<%
7814     /S/GoTo%
7815     /D(\Hy@testname)%
7816     >>%
7817     >>%
7818     }%
7819     \expandafter\Hy@colorlink\csname @#1color\endcsname
7820 }
7821 \def\hyper@linkend{%
7822   \Hy@endcolorlink
7823   \@pdfm@mark{eann}%
7824 }
7825 \def\hyper@link#1#2#3{%
7826   \hyper@linkstart{#1}{#2}#3\hyper@linkend
7827 }
7828 \def\hyper@linkfile#1#2#3{%
7829   \Hy@pstringdef\Hy@pstringF{#2}%
7830   \Hy@pstringdef\Hy@pstringD{#3}%
7831   \leavevmode
7832   \@pdfm@mark{%
7833     bann<<%
7834     /Type/Annot%
7835     /Subtype/Link%
7836     \ifHy@pdfa /F 4\fi
7837     \Hy@setpdfborder
7838     \ifx\@filebordercolor\relax
7839     \else
7840       /C[\@filebordercolor]%
7841     \fi
7842     /A<<%
7843     /S/GoToR%
7844     /F(\Hy@pstringF)%
7845     /D\ifx\@#3\@pdfstartview\else(\Hy@pstringD)\fi
7846     \Hy@SetNewWindow
7847     >>%
7848     >>%
7849     }%
7850   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7851   \@pdfm@mark{eann}%
7852 }
7853 \def\hyper@linkurl#1#2{%
7854   \Hy@pstringdef\Hy@pstringURI{#2}%
7855   \leavevmode
7856   \@pdfm@mark{%
7857     bann<<%
7858     /Type/Annot%
7859     /Subtype/Link%
7860     \ifHy@pdfa /F 4\fi
7861     \Hy@setpdfborder
7862     \ifx\@urlbordercolor\relax
7863     \else
7864       /C[\@urlbordercolor]%
7865     \fi

```

```

7866      /A<<%
7867      /S/URI%
7868      /URI(\Hy@pstringURI)%
7869      >>%
7870      >>%
7871    }%
7872    \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7873    \@pdfm@mark{eann}%
7874  }
7875  \def\Acrobatmenu#1#2{%
7876    \Hy@Acrobatmenu{#1}{#2}{%
7877      \@pdfm@mark{%
7878        bann<<%
7879        /Type/Annot%
7880        /Subtype/Link%
7881        \ifHy@pdfa /F 4\fi
7882        /A<<%
7883        /S/Named%
7884        /N/#1%
7885        >>%
7886        \Hy@setpdfborder
7887        \ifx\@menubordercolor\relax
7888          \relax
7889          /C[\@menubordercolor]%
7890        \fi
7891        >>%
7892      }%
7893      \Hy@colorlink\@menucolor#2\Hy@endcolorlink
7894      \@pdfm@mark{eann}%
7895    }%
7896  }
7897  \ifx\@pdfproducer\relax
7898    \def\@pdfproducer{dvipdfm}%

```

Detect XeTeX. However, but xdvipdfmx will overwrite it in the final PDF file.

```

7899  \begingroup\expandafter\expandafter\expandafter\endgroup
7900  \expandafter\ifx\csname XeTeXversion\endcsname\relax
7901  \else
7902    \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
7903  \fi
7904  \fi
7905  \def\PDF@FinishDoc{%
7906    \Hy@UseMaketitleInfos
7907    \@pdfm@mark{%
7908      docinfo<<%
7909      /Title(\@pdftitle)%
7910      /Subject(\@pdfsubject)%
7911      /Creator(\@pdfcreator)%
7912      \ifx\@pdfcreationdate\empty
7913      \else
7914        /CreationDate(\@pdfcreationdate)%
7915      \fi
7916      \ifx\@pdfmoddate\empty
7917      \else
7918        /ModDate(\@pdfmoddate)%
7919      \fi
7920      /Author(\@pdfauthor)%
7921      \ifx\@pdfproducer\relax

```

```

7922         \else
7923             /Producer(\@pdfproducer)%
7924         \fi
7925         /Keywords(\@pdfkeywords)%
7926     >>%
7927 }%
7928 \Hy@DisableOption{pdfauthor}%
7929 \Hy@DisableOption{pdftitle}%
7930 \Hy@DisableOption{pdfsubject}%
7931 \Hy@DisableOption{pdfcreator}%
7932 \Hy@DisableOption{pdfcreationdate}%
7933 \Hy@DisableOption{pdfmoddate}%
7934 \Hy@DisableOption{pdfproducer}%
7935 \Hy@DisableOption{pdfkeywords}%
7936 }

7937 \def\PDF@SetupDoc{%
7938     \edef\Hy@temp{%
7939         \ifHy@toolbar\else /HideToolbar true\fi
7940         \ifHy@menubar\else /HideMenubar true\fi
7941         \ifHy@windowui\else /HideWindowUI true\fi
7942         \ifHy@fitwindow /FitWindow true\fi
7943         \ifHy@centerwindow /CenterWindow true\fi
7944         \ifHy@displaydoctitle /DisplayDocTitle true\fi
7945         \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7946         \Hy@UseNameKey{Direction}\@pdfdirection
7947         \Hy@UseNameKey{ViewArea}\@pdfviewarea
7948         \Hy@UseNameKey{ViewClip}\@pdfviewclip
7949         \Hy@UseNameKey{PrintArea}\@pdfprintarea
7950         \Hy@UseNameKey{PrintClip}\@pdfprintclip
7951         \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7952         \Hy@UseNameKey{Duplex}\@pdfduplex
7953         \ifx\@pdfpicktraybypdfsize\@empty
7954             \else
7955                 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7956             \fi
7957         \ifx\@pdfprintpagerange\@empty
7958             \else
7959                 /PrintPageRange[\@pdfprintpagerange]%
7960             \fi
7961         \ifx\@pdfnumcopies\@empty
7962             \else
7963                 /NumCopies \@pdfnumcopies
7964             \fi
7965     }%
7966     \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7967     \@pdfm@mark{%
7968         docview<<%
7969         \ifx\@pdfstartpage\@empty
7970             \else
7971                 \ifx\@pdfstartview\@empty
7972                     \else
7973                         /OpenAction[@page\@pdfstartpage\@pdfstartview]%
7974                     \fi
7975                 \fi
7976                 \ifx\@baseurl\@empty
7977                     \else
7978                         /URI<</Base(\Hy@pstringB)>>%

```

```

7979 \fi
7980 /PageMode/\@pdfpagemode
7981 \ifx\Hy@temp\@empty
7982 \else
7983 /ViewerPreferences<<\Hy@temp>>%
7984 \fi
7985 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7986 \ifx\@pdflang\@empty
7987 \else
7988 /Lang(\@pdflang)%
7989 \fi
7990 >>%
7991 }%
7992 \ifx\@pdfpagescrop\@empty
7993 \else
7994 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
7995 \fi
7996 }

7997 \AtBeginShipoutFirst{%
7998 \ifx\special@paper\@empty\else
7999 \ifHy@setpagesize
8000 \special{papersize=\special@paper}%
8001 \fi
8002 \fi
8003 \Hy@DisableOption{setpagesize}%
8004 }
8005 </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.

```

8006 <*vtexhtml>
8007 \providecommand*{\XR@ext}{htm}
8008 \RequirePackage{vtexhtml}
8009 \newif\if@Localurl
8010 \def\PDF@FinishDoc{}
8011 \def\PDF@SetupDoc{%
8012 \ifx\@baseurl\@empty
8013 \else
8014 \special{!direct <base href="\@baseurl">}%
8015 \fi
8016 }
8017 \def\@urltype{url}
8018 \def\hyper@link#1#2#3{%
8019 \leavevmode
8020 \special{!direct <a href=%
8021 \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
8022 #3%
8023 \special{!direct </a>}%
8024 }
8025 \def\hyper@linkurl#1#2{%
8026 \begingroup
8027 \hyper@chars
8028 \leavevmode
8029 \MathBSuppress=1\relax

```

```

8030 \special{!direct <a href=%
8031 \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
8032 #1%
8033 \MathBSuppress=0\relax
8034 \special{!direct </a>}%
8035 \endgroup
8036 }
8037 \def\hyper@linkfile#1#2#3{%
8038 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
8039 }
8040 \def\hyper@linkstart#1#2{%
8041 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
8042 \@Localurltrue
8043 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
8044 \else
8045 \@Localurlfalse
8046 \begingroup
8047 \hyper@chars
8048 \special{!aref \HyperDestNameFilter{#2}}%
8049 \endgroup
8050 \fi
8051 }
8052 \def\hyper@linkend{%
8053 \if@Localurl
8054 \special{!endaref}%
8055 \else
8056 \special{!direct </a>}%
8057 \fi
8058 }
8059 \def\hyper@anchorstart#1{%
8060 \Hy@SaveLastskip
8061 \begingroup
8062 \hyper@chars
8063 \special{!aname #1}%
8064 \special{!direct <a name=%
8065 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8066 \endgroup
8067 \Hy@activeanchortrue
8068 }
8069 \def\hyper@anchorend{%
8070 \special{!direct </a>}%
8071 \Hy@activeanchorfalse
8072 \Hy@RestoreLastskip
8073 }
8074 \def\hyper@anchor#1{%
8075 \Hy@SaveLastskip
8076 \begingroup
8077 \let\protect=\string
8078 \hyper@chars
8079 \leavevmode
8080 \special{!aname #1}%
8081 \special{!direct <a name=%
8082 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8083 \endgroup
8084 \Hy@activeanchortrue
8085 \bgroup\anchor@spot\egroup
8086 \special{!direct </a>}%

```

```

8087 \Hy@activeanchorfalse
8088 \Hy@RestoreLastskip
8089 }
8090 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
8091 \def\@endForm{}
8092 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8093 \typeout{Sorry, TeXpider does not yet support FORM gauges}%
8094 }
8095 \def\@TextField[#1]#2{% parameters, label
8096 \typeout{Sorry, TeXpider does not yet support FORM text fields}%
8097 }
8098 \def\@CheckBox[#1]#2{% parameters, label
8099 \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
8100 }
8101 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8102 \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
8103 }
8104 \def\@PushButton[#1]#2{% parameters, label
8105 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
8106 }
8107 \def\@Reset[#1]#2{%
8108 \typeout{Sorry, TeXpider does not yet support FORMs}%
8109 }
8110 \def\@Submit[#1]#2{%
8111 \typeout{Sorry, TeXpider does not yet support FORMs}%
8112 }
8113 \</vtexhtml>
8114 \<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.

```

8115 \ifx\mediaheight\@undefined
8116 \else
8117 \ifx\mediaheight\relax
8118 \else
8119 \ifHy@setpagesize
8120 \providecommand*\VTeXInitMediaSize{%
8121 \@ifundefined{stockwidth}{%
8122 \ifdim\paperheight>0pt %
8123 \setlength\mediaheight\paperheight
8124 \fi
8125 \ifdim\paperheight>0pt %
8126 \setlength\mediawidth\paperwidth
8127 \fi
8128 }{%
8129 \ifdim\stockheight>0pt %
8130 \setlength\mediaheight\stockheight
8131 \fi
8132 \ifdim\stockwidth>0pt %
8133 \setlength\mediawidth\stockwidth
8134 \fi
8135 }%
8136 }%
8137 \AtBeginDocument{\VTeXInitMediaSize}%
8138 \fi
8139 \Hy@DisableOption{setpagesize}%

```



```

8140 \fi
8141 \fi

```

Older versions of VTeX require xyz in lower case.

```

8142 \providecommand*\@pdfview{xyz}
8143 \providecommand*\@pdfborder{0 0 1}
8144 \providecommand*\@pdfborderstyle{}
8145 \let\CurrentBorderColor\@linkbordercolor
8146 \def\hyper@anchor#1{%
8147   \Hy@SaveLastskip
8148   \begingroup
8149     \let\protect=\string
8150     \hyper@chars
8151     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
8152   \endgroup
8153   \Hy@activeanchortrue
8154   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8155   \Hy@activeanchorfalse
8156   \Hy@RestoreLastskip
8157 }
8158 \def\hyper@anchorstart#1{%
8159   \Hy@SaveLastskip
8160   \begingroup
8161     \hyper@chars
8162     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
8163   \endgroup
8164   \Hy@activeanchortrue
8165 }
8166 \def\hyper@anchorend{%
8167   \Hy@activeanchorfalse
8168   \Hy@RestoreLastskip
8169 }
8170 \def\@urltype{url}
8171 \def\Hy@undefinedname{UNDEFINED}
8172 \def\hyper@linkstart#1#2{%
8173   \Hy@pstringdef\Hy@pstringURI{#2}%
8174   \expandafter\Hy@colorlink\csname @#1color\endcsname
8175   \@ifundefined{#1bordercolor}{%
8176     \let\CurrentBorderColor\relax
8177   }{%
8178     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8179   }%
8180   \def\Hy@tempa{#1}%
8181   \ifx\Hy@tempa\@urltype
8182     \special{!%
8183       aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
8184       a=<%
8185         \ifHy@pdfa /F 4\fi
8186         \Hy@setpdfborder
8187         \ifx\CurrentBorderColor\relax
8188           \else
8189             /C [\CurrentBorderColor]%
8190           \fi
8191       >%
8192     }%
8193   \else
8194     \protected@edef\Hy@testname{#2}%
8195     \ifx\Hy@testname\@empty

```

```

8196     \let\Hy@testname\Hy@undefinedname
8197     \fi
8198     \special{!%
8199       aref \expandafter\HyperDestNameFilter
8200         \expandafter{\Hy@testname};%
8201       a=<%
8202         \ifHy@pdfa /F 4\fi
8203         \Hy@setpdfborder
8204         \ifx\CurrentBorderColor\relax
8205         \else
8206           /C [\CurrentBorderColor]%
8207         \fi
8208       >%
8209     }%
8210   \fi
8211 }
8212 \def\hyper@linkend{%
8213   \special{!endaref}%
8214   \Hy@endcolorlink
8215 }
8216 \def\hyper@linkfile#1#2#3{%
8217   \leavevmode
8218   \special{!%
8219     aref <%
8220       \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
8221     f=#2>#3;%
8222     a=<%
8223       \ifHy@pdfa /F 4\fi
8224       \Hy@setpdfborder
8225       \ifx\@filebordercolor\relax
8226       \else
8227         /C [\@filebordercolor]%
8228       \fi
8229     >%
8230   }%
8231   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
8232   \special{!endaref}%
8233 }
8234 \def\hyper@linkurl#1#2{%
8235   \begingroup
8236     \Hy@pstringdef\Hy@pstringURI{#2}%
8237     \hyper@chars
8238     \leavevmode
8239     \special{!%
8240       aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
8241       a=<%
8242         \ifHy@pdfa /F 4\fi
8243         \Hy@setpdfborder
8244         \ifx\@urlbordercolor\relax
8245         \else
8246           /C [\@urlbordercolor]%
8247         \fi
8248       >%
8249     }%
8250     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
8251     \special{!endaref}%
8252   \endgroup

```

```

8253 }
8254 \def\hyper@link#1#2#3{%
8255   \@ifundefined{#@#1bordercolor}{%
8256     \let\CurrentBorderColor\relax
8257   }{%
8258     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8259   }%
8260   \leavevmode
8261   \protected@edef\Hy@testname{#2}%
8262   \ifx\Hy@testname\@empty
8263     \let\Hy@testname\Hy@undefinedname
8264   \fi
8265   \special{!%
8266     \expandafter\HyperDestNameFilter
8267       \expandafter{\Hy@testname};%
8268     a=<%
8269       \ifHy@pdfa /F 4\fi
8270       \Hy@setpdfborder
8271       \ifx\CurrentBorderColor\relax
8272         \else
8273           /C [\CurrentBorderColor]%
8274         \fi
8275       >%
8276     }%
8277   \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
8278   \special{!endaref}%
8279 }
8280 \def\hyper@image#1#2{%
8281   \hyper@linkurl{#2}{#1}%
8282 }
8283 \def\@hyper@launch run:#1\#2#3{%
8284   \Hy@pstringdef\Hy@pstringF{#1}%
8285   \Hy@pstringdef\Hy@pstringP{#3}%
8286   \leavevmode
8287   \special{!aref %
8288     <u=%
8289       /Type/Action%
8290       /S/Launch%
8291       /F(\Hy@pstringF)%
8292       \Hy@SetNewWindow
8293       \ifx\#3\else /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>\fi%
8294     >;%
8295     a=<%
8296       \ifHy@pdfa /F 4\fi
8297       \Hy@setpdfborder
8298       \ifx\@runbordercolor\relax
8299         \else
8300           /C[\@runbordercolor]%
8301         \fi
8302       >%
8303     }%
8304   \Hy@colorlink\@runcolor#2\Hy@endcolorlink
8305   \special{!endaref}%
8306 }
8307 \def\Acrobatmenu#1#2{%
8308   \Hy@Acrobatmenu{#1}{#2}{%
8309     \special{!%

```

```

8310     aref <u=/S /Named /N /#1>;%
8311     a=<%
8312         \ifHy@pdfa /F 4\fi
8313         \Hy@setpdfborder
8314         \ifx\@menubordercolor\relax
8315         \else
8316         /C[\@menubordercolor]%
8317         \fi
8318     >%
8319 }%
8320 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
8321 \special{!endaref}%
8322 }%
8323 }

```

The following code (transition effects) is made by Alex Kostin.

The code below makes sense for VT<sub>E</sub>X 7.02 or later.

Please never use `\ifundefined{VTeXversion}{...}{...}` globally.

```

8324 \ifnum\Hy@VTeXversion<702 %
8325 \else
8326 \def\hyper@pagetransition{%
8327     \ifx\@pdfpagetransition\relax
8328     \else
8329     \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

8330     \else
8331     \hvtex@parse@trans\@pdfpagetransition
8332     \fi
8333 \fi
8334 }%

```

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

Syntax of VT<sub>E</sub>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:

```

8335 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
8336 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
8337 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
8338 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
8339 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%

```

```

8340 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
8341 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

8342 \def\hvtex@par@dimension{/Dm}%
8343 \def\hvtex@par@direction{/Di}%
8344 \def\hvtex@par@duration{/D}%
8345 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

8346 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}%

```

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

```

8347 \def\hvtex@gettoken@#1 #2\@nil{%
8348   \edef\hvtex@token{#1}%
8349   \edef\hvtex@buffer{#2}%
8350 }%
8351 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

8352 \let\hvtex@trans@code\@empty
8353 \let\hvtex@param@dimension\@empty
8354 \let\hvtex@param@direction\@empty
8355 \let\hvtex@param@duration\@empty
8356 \let\hvtex@param@motion\@empty
8357 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

8358 \hvtex@gettoken
8359 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

8360 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

8361 \else
8362   \hvtex@gettoken
8363 \fi
8364 \fi
8365 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

8366 \hvtex@trans@params
8367 }%

```

Reentrant macro to parse optional parameters.

```

8368 \def\hvtex@trans@params{%
8369   \ifx\hvtex@buffer\@empty
8370   \else
8371     \hvtex@gettoken
8372     \let\hvtex@trans@par\hvtex@token
8373     \ifx\hvtex@buffer\@empty
8374     \else
8375       \hvtex@gettoken
8376       \ifx\hvtex@trans@par\hvtex@par@duration

```

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

```

8377         \let\hvtex@param@duration\hvtex@token
8378       \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```
8379      \expandafter\edef\expandafter\hvtex@param@motion
8380      \expandafter{\expandafter\@gobble\hvtex@token}%
8381      \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
8382      \expandafter\edef\expandafter\hvtex@param@dimension
8383      \expandafter{\expandafter\@gobble\hvtex@token}%
8384      \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).

```
8385      \let\hvtex@param@direction\hvtex@token
8386      \fi\fi\fi\fi
8387      \fi
8388      \fi
8389      \ifx\hvtex@buffer\@empty
8390      \let\next\hvtex@produce@trans
8391      \else
8392      \let\next\hvtex@trans@params
8393      \fi
8394      \next
8395      }%
```

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

```
8396      \def\hvtex@produce@trans{%
8397      \let\vtex@trans@special\@empty
8398      \if S\hvtex@trans@code
8399      \edef\vtex@trans@special{\hvtex@trans@code
8400      \hvtex@param@dimension\hvtex@param@motion}%
8401      \else\if B\hvtex@trans@code
8402      \edef\vtex@trans@special{%
8403      \hvtex@trans@code\hvtex@param@dimension
8404      }%
8405      \else\if X\hvtex@trans@code
8406      \edef\vtex@trans@special{%
8407      \hvtex@trans@code\hvtex@param@motion
8408      }%
8409      \else\if W\hvtex@trans@code
8410      \edef\vtex@trans@special{%
8411      \hvtex@trans@code\hvtex@param@direction
8412      }%
8413      \else\if D\hvtex@trans@code
8414      \let\vtex@trans@special\hvtex@trans@code
8415      \else\if R\hvtex@trans@code
8416      \let\vtex@trans@special\hvtex@trans@code
8417      \else\if G\hvtex@trans@code
8418      \edef\vtex@trans@special{%
8419      \hvtex@trans@code\hvtex@param@direction
8420      }%
8421      \fi\fi\fi\fi\fi\fi\fi
8422      \ifx\vtex@trans@special\@empty
8423      \else
8424      \ifx\hvtex@param@duration\@empty
8425      \else
8426      \setlength{\dimen@}{\hvtex@param@duration\p}%
```

I'm not guilty of possible overflow.

```

8427      \multiply\dimen@ \@m
8428      \edef\vtex@trans@special{%
8429          \vtex@trans@special,\strip@pt\dimen@
8430      }%
8431      \fi

```

And all the mess is just for this.

```

8432      \special{!trans \vtex@trans@special}%
8433      \fi
8434  }%

8435  \def\hyper@pageduration{%
8436      \ifx\@pdfpageduration\relax
8437      \else
8438          \ifx\@pdfpageduration\@empty
8439              \special{!duration-}%
8440          \else
8441              \special{!duration \@pdfpageduration}%
8442          \fi
8443      \fi
8444  }%

8445  \def\hyper@pagehidden{%
8446      \ifHy@useHidKey
8447          \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
8448      \fi
8449  }%

8450  \g@addto@macro\Hy@EveryPageBoxHook{%
8451      \hyper@pagetransition
8452      \hyper@pageduration
8453      \hyper@pagehidden
8454  }%
8455  \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

```

8456 \ifx\@pdfproducer\relax
8457   \def\@pdfproducer{VTeX}%
8458   \ifnum\Hy@VTeXversion>\z@
8459       \count@\VTeXversion
8460       \divide\count@ 100 %
8461       \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
8462       \multiply\count@ -100 %
8463       \advance\count@\VTeXversion
8464       \edef\@pdfproducer{%
8465           \@pdfproducer
8466           .\ifnum\count@<10 0\fi\the\count@
8467       \ifx\VTeXOS\@undefined\else
8468           \ifnum\VTeXOS>0 %
8469               \ifnum\VTeXOS<6 %
8470                   \space%

```

```

8471         \ifcase\VTexOS
8472         \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
8473         \fi
8474         )%
8475     \fi
8476 \fi
8477 \fi
8478 ,\space
8479 \ifnum\OpMode=\@ne PDF\else PS\fi
8480 \space backend%
8481 \ifx\gexmode\@undefined\else
8482 \ifnum\gexmode>\z@\space with GeX\fi
8483 \fi
8484 }%
8485 \fi
8486 \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).

```

8487 \def\PDF@SetupDoc{%
8488   \ifx\@pdfpagescrop\@empty
8489   \else
8490     \special{!pdfinfo b=<\@pdfpagescrop>}%
8491   \fi
8492   \ifx\@pdfstartpage\@empty
8493   \else
8494     \ifx\@pdfstartview\@empty
8495     \else
8496       \special{!onopen Page\@pdfstartpage}%
8497     \fi
8498   \fi
8499   \special{!pdfinfo p=</\@pdfpagemode>}%
8500   \ifx\@baseurl\@empty
8501   \else
8502     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
8503   \fi
8504   \special{!pdfinfo v=<<<%
8505     \ifHy@toolbar\else /HideToolbar true\fi
8506     \ifHy@menubar\else /HideMenubar true\fi
8507     \ifHy>windowui\else /HideWindowUI true\fi
8508     \ifHy@fitwindow /FitWindow true\fi
8509     \ifHy@centerwindow /CenterWindow true\fi
8510     \ifHy@displaydoctitle /DisplayDocTitle true\fi
8511     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8512     \Hy@UseNameKey{Direction}\@pdfdirection

```



```

8513 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8514 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8515 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8516 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8517 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8518 \Hy@UseNameKey{Duplex}\@pdfduplex
8519 \ifx\@pdfpicktraybypdfsize\@empty
8520 \else
8521 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8522 \fi
8523 \ifx\@pdfprintpagerange\@empty
8524 \else
8525 /PrintPageRange[\@pdfprintpagerange]%
8526 \fi
8527 \ifx\@pdfnumcopies\@empty
8528 \else
8529 /NumCopies \@pdfnumcopies
8530 \fi
8531 >>>}%
8532 \ifx\@pdfpagelayout\@empty
8533 \else
8534 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
8535 \fi
8536 }%
8537 \def\PDF@FinishDoc{%
8538 \Hy@UseMaketitleInfos
8539 \special{!pdfinfo a=<\@pdfauthor>}%
8540 \special{!pdfinfo t=<\@pdftitle>}%
8541 \special{!pdfinfo s=<\@pdfsubject>}%
8542 \special{!pdfinfo c=<\@pdfcreator>}%
8543 \ifx\@pdfproducer\relax
8544 \else
8545 \special{!pdfinfo r=<\@pdfproducer>}%
8546 \fi
8547 \special{!pdfinfo k=<\@pdfkeywords>}%
8548 \Hy@DisableOption{pdfauthor}%
8549 \Hy@DisableOption{pdftitle}%
8550 \Hy@DisableOption{pdfsubject}%
8551 \Hy@DisableOption{pdfcreator}%
8552 \Hy@DisableOption{pdfcreationdate}%
8553 \Hy@DisableOption{pdfmoddate}%
8554 \Hy@DisableOption{pdfproducer}%
8555 \Hy@DisableOption{pdfkeywords}%
8556 }
8557 </vtx>

```

## 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.

```

8558 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
8559 <package>\providecommand*{\Hy@DistillerDestFix}{%
8560 <*pdfmark | dviwindo>
8561 \def\Hy@DistillerDestFix{%
8562   \begingroup
8563     \let\x\literalps@out

```

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

```

8564   \ifnum \@ifundefined{OpMode}{0}{%
8565     \@ifundefined{gexmode}{0}{%
8566       \ifnum\gexmode>0 \OpMode\else 0\fi
8567     }>1 %
8568   \def\x##1{%
8569     \immediate\special{!=##1}%
8570   }%
8571 \fi
8572 \x{%
8573   /product where{%
8574     pop %
8575     product(Distiller)search{%
8576       pop pop pop %
8577       version(.)search{%
8578         exch pop exch pop%
8579         (3011)eq{%
8580           gsave %
8581           newpath 0 0 moveto closepath clip%
8582           /Courier findfont 10 scalefont setfont %
8583           72 72 moveto(.)show %
8584           grestore%
8585         }if%
8586       }{pop}ifelse%
8587     }{pop}ifelse%
8588   }if%
8589 }%
8590 \endgroup
8591 }
8592 </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

```

8593 <*pdfmark>
8594 \Hy@breaklinks@unsupported
8595 \def\hyper@anchor#1{%

```

```

8596 \Hy@SaveLastskip
8597 \begingroup
8598 \pdfmark[\anchor@spot]{%
8599 pdfmark=/DEST,%
8600 linktype=anchor,%
8601 View=/\@pdfview \@pdfviewparams,%
8602 DestAnchor={#1}%
8603 }%
8604 \endgroup
8605 \Hy@RestoreLastskip
8606 }
8607 \@ifundefined{hyper@anchorstart}{-}{\endinput}
8608 \def\hyper@anchorstart#1{%
8609 \Hy@SaveLastskip
8610 \literalps@out{H.S}%
8611 \xdef\hyper@currentanchor{#1}%
8612 \Hy@activeanchortrue
8613 }
8614 \def\hyper@anchorend{%
8615 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
8616 \pdfmark{%
8617 pdfmark=/DEST,%
8618 linktype=anchor,%
8619 View=/\@pdfview \@pdfviewparams,%
8620 DestAnchor=\hyper@currentanchor,%
8621 }%
8622 \Hy@activeanchorfalse
8623 \Hy@RestoreLastskip
8624 }
8625 \def\hyper@linkstart#1#2{%
8626 \ifHy@breaklinks
8627 \else
8628 \leavevmode\hbox\bgroup
8629 \fi
8630 \expandafter\Hy@colorlink\csname @#1color\endcsname
8631 \literalps@out{H.S}%
8632 \xdef\hyper@currentanchor{#2}%
8633 \gdef\hyper@currentlinktype{#1}%
8634 }
8635 \def\hyper@linkend{%
8636 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
8637 \@ifundefined{@\hyper@currentlinktype bordercolor}{%
8638 \let\Hy@tempcolor\relax
8639 }{%
8640 \edef\Hy@tempcolor{%
8641 \csname @\hyper@currentlinktype bordercolor\endcsname
8642 }%
8643 }%
8644 \pdfmark{%
8645 pdfmark=/ANN,%
8646 linktype=link,%
8647 Subtype=/Link,%
8648 PDFAMark=4,%
8649 Dest=\hyper@currentanchor,%
8650 AcroHighlight=\@pdfhighlight,%
8651 Border=\@pdfborder,%
8652 BorderStyle=\@pdfborderstyle,%

```

```

8653     Color=\Hy@tempcolor,%
8654     Raw=H.B%
8655 }%
8656 \Hy@endcolorlink
8657 \ifHy@breaklinks
8658 \else
8659     \egroup
8660 \fi
8661 }

```

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.

```

8662 \begingroup
8663 \catcode'P=12 %
8664 \catcode'T=12 %
8665 \lowercase{\endgroup
8666 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
8667 }
8668 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

\hyper@pagetransition

```

8669 \def\hyper@pagetransition{%
8670 \ifx\@pdfpagetransition\relax
8671 \else
8672 \ifx\@pdfpagetransition\@empty
8673 % 1. Does an old entry have to be deleted?
8674 % 2. If 1=yes, how to delete?
8675 \else
8676 \pdfmark{%
8677 pdfmark=/PUT,%
8678 Raw={%
8679 \string{ThisPage\string}%
8680 <</Trans << /S /\@pdfpagetransition\space >> >>%
8681 }%
8682 }%
8683 \fi
8684 \fi
8685 }

```

\hyper@pageduration

```

8686 \def\hyper@pageduration{%
8687 \ifx\@pdfpageduration\relax
8688 \else
8689 \ifx\@pdfpageduration\@empty
8690 % 1. Does an old entry have to be deleted?
8691 % 2. If 1=yes, how to delete?
8692 \else
8693 \pdfmark{%
8694 pdfmark=/PUT,%
8695 Raw={%
8696 \string{ThisPage\string}%
8697 <</Dur \@pdfpageduration>>>%
8698 }%
8699 }%
8700 \fi
8701 \fi
8702 }

```

\hyper@pagehidden

```
8703 \def\hyper@pagehidden{%
8704   \ifHy@useHidKey
8705     \pdfmark{%
8706       pdfmark=/PUT,%
8707       Raw={%
8708         \string{ThisPage\string}%
8709         <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
8710       }%
8711     }%
8712   \fi
8713 }

8714 \g@addto@macro\Hy@EveryPageBoxHook{%
8715   \hyper@pagetransition
8716   \hyper@pageduration
8717   \hyper@pagehidden
8718 }

8719 \def\hyper@image#1#2{%
8720   \hyper@linkurl{#2}{#1}%
8721 }
8722 \def\Hy@undefinedname{UNDEFINED}
8723 \def\hyper@link#1#2#3{%
8724   \@ifundefined{#1bordercolor}{%
8725     \let\Hy@tempcolor\relax
8726   }{%
8727     \edef\Hy@tempcolor{\csname #1bordercolor\endcsname}%
8728   }%
8729   \begingroup
8730     \protected@edef\Hy@testname{#2}%
8731     \ifx\Hy@testname\@empty
8732       \let\Hy@testname\Hy@undefinedname
8733     \fi
8734     \pdfmark[{#3}]{%
8735       Color=\Hy@tempcolor,%
8736       linktype={#1},%
8737       AcroHighlight=\@pdfhighlight,%
8738       Border=\@pdfborder,%
8739       BorderStyle=\@pdfborderstyle,%
8740       pdfmark=/ANN,%
8741       Subtype=/Link,%
8742       PDFAFlags=4,%
8743       Dest=\Hy@testname
8744     }%
8745   \endgroup
8746 }
8747 \newtoks\pdf@docset
8748 \def\PDF@FinishDoc{%
8749   \Hy@UseMaketitleInfos
8750   \let\Hy@temp\@empty
8751   \ifx\@pdfcreationdate\@empty
8752   \else
8753     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
8754   \fi
8755   \ifx\@pdfmoddate\@empty
8756   \else
8757     \expandafter\def\expandafter\Hy@temp\expandafter{%
```

```

8758     \Hy@temp
8759     ModDate=\@pdfmoddate,%
8760 }%
8761 \fi
8762 \ifx\@pdfproducer\relax
8763 \else
8764     \expandafter\def\expandafter\Hy@temp\expandafter{%
8765         \Hy@temp
8766         Producer=\@pdfproducer,%
8767     }%
8768 \fi
8769 \expandafter
8770 \pdfmark\expandafter{%
8771     \Hy@temp
8772     pdfmark=/DOCINFO,%
8773     Title=\@pdftitle,%
8774     Subject=\@pdfsubject,%
8775     Creator=\@pdfcreator,%
8776     Author=\@pdfauthor,%
8777     Keywords=\@pdfkeywords
8778 }%
8779 \Hy@DisableOption{pdfauthor}%
8780 \Hy@DisableOption{pdftitle}%
8781 \Hy@DisableOption{pdfsubject}%
8782 \Hy@DisableOption{pdfcreator}%
8783 \Hy@DisableOption{pdfcreationdate}%
8784 \Hy@DisableOption{pdfmoddate}%
8785 \Hy@DisableOption{pdfproducer}%
8786 \Hy@DisableOption{pdfkeywords}%
8787 }
8788 \def\PDF@SetupDoc{%
8789     \def\Hy@temp{%
8790         \ifx\@pdfstartpage\@empty
8791         \else
8792             \ifx\@pdfstartview\@empty
8793             \else
8794                 \edef\Hy@temp{%
8795                     ,Page=\@pdfstartpage
8796                     ,View=\@pdfstartview
8797                 }%
8798             \fi
8799         \fi
8800         \edef\Hy@temp{%
8801             \noexpand\pdfmark{%
8802                 pdfmark=/DOCVIEW,%
8803                 PageMode=/\@pdfpagemode
8804                 \Hy@temp
8805             }%
8806         }%
8807         \Hy@temp
8808         \ifx\@pdfpagescrop\@empty
8809         \else
8810             \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
8811         \fi
8812         \edef\Hy@temp{%
8813             \ifHy@toolbar\else /HideToolbar true\fi
8814             \ifHy@menubar\else /HideMenubar true\fi

```

```

8815 \ifHy@windowui\else /HideWindowUI true\fi
8816 \ifHy@fitwindow /FitWindow true\fi
8817 \ifHy@centerwindow /CenterWindow true\fi
8818 \ifHy@displaydoctitle /DisplayDocTitle true\fi
8819 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8820 \Hy@UseNameKey{Direction}\@pdfdirection
8821 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8822 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8823 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8824 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8825 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8826 \Hy@UseNameKey{Duplex}\@pdfduplex
8827 \ifx\@pdfpicktraybypdfsize\@empty
8828 \else
8829 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8830 \fi
8831 \ifx\@pdfprintpagerange\@empty
8832 \else
8833 /PrintPageRange[\@pdfprintpagerange]%
8834 \fi
8835 \ifx\@pdfnumcopies\@empty
8836 \else
8837 /NumCopies \@pdfnumcopies
8838 \fi
8839 }%
8840 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8841 \pdfmark{%
8842 pdfmark=/PUT,%
8843 Raw={%
8844 \string{Catalog\string}<<%
8845 \ifx\Hy@temp\@empty
8846 \else
8847 /ViewerPreferences<<\Hy@temp>>%
8848 \fi
8849 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8850 \ifx\@pdflang\@empty
8851 \else
8852 /Lang(\@pdflang)%
8853 \fi
8854 \ifx\@baseurl\@empty
8855 \else
8856 /URI<</Base(\Hy@pstringB)>>%
8857 \fi
8858 >>%
8859 }%
8860 }%
8861 }
8862 \pdfmark
8863 \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.

```

8864 \newif\ifHy@pdfmarkerror
8865 \def\pdfmark{\@ifnextchar [{\pdfmark@}{\pdfmark@[]}}

```

```

8866 \def\pdfmark@[#1]#2{%
8867   \Hy@pdfmarkerrorfalse
8868   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
8869   \@processme
8870   \let\pdf@type\relax
8871   \setkeys{PDF}{#2}%
8872   \ifHy@pdfmarkerror
8873   \else
8874     \ifx\pdf@type\relax
8875       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
8876       \ifx\#1\%
8877       \else
8878         \pdf@rect{#1}%
8879       \fi
8880     \else
8881       \ifx\#1\%
8882         \literalps@out{%
8883           [\the\pdf@toks\space\pdf@type\space pdfmark%
8884           ]%
8885         \else
8886           \@ifundefined{@\pdf@linktype color}{%
8887             \Hy@colorlink\@linkcolor
8888           }{%
8889             \expandafter\Hy@colorlink
8890               \csname @\pdf@linktype color\endcsname
8891           }%
8892           \pdf@rect{#1}%
8893           \literalps@out{%
8894             [\the\pdf@toks\space\pdf@type\space pdfmark%
8895             ]%
8896           \Hy@endcolorlink
8897         \fi
8898       \fi
8899     \fi
8900 }

```

The complicated bit is working out the right enclosing rectangle of some piece of T<sub>E</sub>X text, needed by the /Rect key. This solution originates with Toby Thain (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}

8901 \newsavebox{\pdf@box}
8902 \providecommand*{\Hy@setouterhbox}{\sbox}
8903 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
8904 \def\Hy@DEST{/DEST}
8905 \def\pdf@rect#1{%
8906   \leavevmode
8907   \ifHy@breaklinks
8908     \Hy@setouterhbox\pdf@box{#1}%
8909   \else
8910     \sbox\pdf@box{#1}%
8911   \fi

```



```

8912 \dimen@ht\pdf@box
8913 \ifdim\dp\pdf@box=\z@
8914 \literalps@out{H.S}%
8915 \else
8916 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
8917 \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...).

```

8918 \ifHy@breaklinks
8919 \expandafter\Hy@breaklinksunhbox
8920 \else
8921 \expandafter\box
8922 \fi
8923 \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

8924 \ifdim\dimen@=\z@
8925 \literalps@out{H.R}%
8926 \else
8927 \raise\dimen@\hbox{\literalps@out{H.R}}%
8928 \fi
8929 \ifx\pdf@type\Hy@DEST
8930 \else
8931 \pdf@addtoksx{H.B}%
8932 \fi
8933 }

```

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.

```

8934 \newtoks\pdf@toks
8935 \newtoks\pdf@defaulttoks
8936 \pdf@defaulttoks={}
8937 \def\pdf@addtoks#1#2{%
8938 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
8939 \@processme
8940 }
8941 \def\pdf@addtoksx#1{%
8942 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
8943 \@processme
8944 }
8945 \def\PDFdefaults#1{%
8946 \pdf@defaulttoks={#1}%
8947 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

8948 % what is the type of pdfmark?
8949 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
8950 % what is the link type?
8951 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
8952 \def\pdf@linktype{link}
8953 % parameter is a stream of PDF
8954 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
8955 % parameter is a name

```

```

8956 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
8957 % parameter is a array
8958 \define@key{PDF}{Border}{%
8959   \edef\Hy@temp{#1}%
8960   \ifx\Hy@temp\@empty
8961   \else
8962     \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
8963   \fi
8964 }
8965 \let\Hy@BorderArrayPatch\@empty
8966 % parameter is a dictionary
8967 \define@key{PDF}{BorderStyle}{%
8968   \edef\Hy@temp{#1}%
8969   \ifx\Hy@temp\@empty
8970   \else
8971     \pdf@addtoks{<<#1>>}{BS}%
8972   \fi
8973 }
8974 % parameter is a array
8975 \define@key{PDF}{Color}{%
8976   \ifx\relax#1\relax
8977   \else
8978     \pdf@addtoks{[#1]}{Color}% hash-ok
8979   \fi
8980 }
8981 % parameter is a string
8982 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
8983 % parameter is a integer
8984 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
8985 % parameter is a array
8986 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
8987 % parameter is a string
8988 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
8989 % parameter is a string or file
8990 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
8991 % parameter is a destination
8992 \define@key{PDF}{Dest}{%
8993   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8994   \ifx\Hy@pstringDest\@empty
8995     \Hy@pdfmarkerrortrue
8996     \Hy@Warning{Destination with empty name ignored}%
8997   \else
8998     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
8999   \fi
9000 }
9001 \define@key{PDF}{DestAnchor}{%
9002   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9003   \ifx\Hy@pstringDest\@empty
9004     \Hy@pdfmarkerrortrue
9005     \Hy@Warning{Destination with empty name ignored}%
9006   \else
9007     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
9008   \fi
9009 }
9010 % parameter is a string
9011 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
9012 % parameter is a string

```

```

9013 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
9014 % parameter is a int
9015 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
9016 \define@key{PDF}{PDFAFlags}{%
9017   \ifHy@pdfa
9018     \pdf@addtoks{#1}{F}%
9019   \fi
9020 }
9021 % parameter is a name
9022 \define@key{PDF}{AcroHighlight}{%
9023   \begingroup
9024     \edef\x{#1}%
9025     \expandafter\endgroup\ifx\x\@empty
9026       \else
9027         \pdf@addtoks{#1}{H}%
9028       \fi
9029 }
9030 % parameter is a string
9031 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
9032 % parameter is a string
9033 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
9034 % parameter is a string
9035 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9036 % parameter is a string
9037 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
9038 % parameter is a Boolean
9039 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
9040 % parameter is a integer or name
9041 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
9042 % parameter is a name
9043 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
9044 % parameter is a string
9045 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
9046 % parameter is a array
9047 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
9048 % parameter is a integer
9049 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
9050 % parameter is a name
9051 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
9052 % parameter is a string
9053 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
9054 % parameter is a string
9055 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
9056 % parameter is a string
9057 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
9058 % parameter is an array
9059 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
9060 % parameter is a string
9061 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

9062 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
9063 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
9064 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
9065 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9066 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
9067 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
9068 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}

```

```

9069 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9070 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
9071 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
9072 </pdfmarkbase>
9073 <*pdfmark>
9074 \def\Acrobatmenu#1#2{%
9075   \Hy@Acrobatmenu{#1}{#2}{%
9076     \pdfmark[{#2}]{%
9077       linktype=menu,%
9078       pdfmark=/ANN,%
9079       AcroHighlight=\pdfhighlight,%
9080       Border=\pdfborder,%
9081       BorderStyle=\pdfborderstyle,%
9082       Action={<< /Subtype /Named /N /#1 >>},%
9083       Subtype=/Link,%
9084       PDFAFlags=4%
9085     }%
9086   }%
9087 }

```

And now for some useful examples:

```

9088 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
9089 \def\PDFNextPage@[#1]#2{%
9090   \pdfmark[{#2}]{%
9091     #1,%
9092     Border=\pdfborder,%
9093     BorderStyle=\pdfborderstyle,%
9094     Color=.2 .1 .5,%
9095     pdfmark=/ANN,%
9096     Subtype=/Link,%
9097     PDFAFlags=4,%
9098     Page=/Next%
9099   }%
9100 }
9101 \def\PDFPreviousPage{%
9102   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}}%
9103 }
9104 \def\PDFPreviousPage@[#1]#2{%
9105   \pdfmark[{#2}]{%
9106     #1,%
9107     Border=\pdfborder,%
9108     BorderStyle=\pdfborderstyle,%
9109     Color=.4 .4 .1,%
9110     pdfmark=/ANN,%
9111     Subtype=/Link,%
9112     PDFAFlags=4,%
9113     Page=/Prev%
9114   }%
9115 }
9116 \def\PDFOpen#1{%
9117   \pdfmark{#1,pdfmark=/DOCVIEW}%
9118 }

```

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

```

9119 \def\hyper@linkurl#1#2{%
9120   \begingroup
9121     \Hy@pstringdef\Hy@pstringURI{#2}%
9122     \hyper@chars

```

```

9123 \leavevmode
9124 \pdfmark[{#1}]{%
9125   pdfmark=/ANN,%
9126   linktype=url,%
9127   AcroHighlight=\@pdfhighlight,%
9128   Border=\@pdfborder,%
9129   BorderStyle=\@pdfborderstyle,%
9130   Color=\@urlbordercolor,%
9131   Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
9132   Subtype=/Link,%
9133   PDFAFlags=4%
9134 }%
9135 \endgroup
9136 }
9137 \def\hyper@linkfile#1#2#3{%
9138 \begingroup
9139 \Hy@pstringdef\Hy@pstringF{#2}%
9140 \Hy@pstringdef\Hy@pstringD{#3}%
9141 \leavevmode
9142 \pdfmark[{#1}]{%
9143   pdfmark=/ANN,%
9144   Subtype=/Link,%
9145   PDFAFlags=4,%
9146   AcroHighlight=\@pdfhighlight,%
9147   Border=\@pdfborder,%
9148   BorderStyle=\@pdfborderstyle,%
9149   linktype=file,%
9150   Color=\@filebordercolor,%
9151   Action={%
9152     <<%
9153       /S/GoToR%
9154       \Hy@SetNewWindow
9155       /F(\Hy@pstringF)%
9156       /D{ifx\#3\0 \@pdfstartview}\else(\Hy@pstringD)cvn\fi
9157     >>%
9158   }%
9159 }%
9160 \endgroup
9161 }
9162 \def\@hyper@launch run:#1\#2#3{%
9163 \begingroup
9164 \Hy@pstringdef\Hy@pstringF{#1}%
9165 \Hy@pstringdef\Hy@pstringP{#3}%
9166 \leavevmode
9167 \pdfmark[{#2}]{%
9168   pdfmark=/ANN,%
9169   Subtype=/Link,%
9170   PDFAFlags=4,%
9171   AcroHighlight=\@pdfhighlight,%
9172   Border=\@pdfborder,%
9173   BorderStyle=\@pdfborderstyle,%
9174   linktype=run,%
9175   Color=\@runbordercolor,%
9176   Action={%
9177     <<%
9178       /S/Launch%
9179       \Hy@SetNewWindow

```

```

9180      /F(\Hy@pstringF)%
9181      \ifx\|#3\%
9182      \else
9183      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9184      \fi
9185      >>%
9186      }%
9187      }%
9188      \endgroup
9189      }
9190      </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.

```

9191 < *dvips>
9192 \providecommand*\XR@ext}{pdf}
9193 \def\Hy@raisedlink{}
9194 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
9195 \def\headerps@out#1{\special{! #1}}%
9196 \input{pdfmark.def}%
9197 \ifx\@pdfproducer\relax
9198   \def\@pdfproducer{dvips + Distiller}%
9199 \fi
9200 \providecommand*\@pdfborder{0 0 1}
9201 \providecommand*\@pdfborderstyle{}
9202 \providecommand*\@pdfview{XYZ}
9203 \providecommand*\@pdfviewparams{ H.V}
9204 \def\Hy@BorderArrayPatch{BorderArrayPatch}
9205 \g@addto@macro\Hy@FirstPageHook{%
9206   \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.

```

9207   /DvipsToPDF{72.27 mul Resolution div} def%
9208   /PDFToDvips{72.27 div Resolution mul} def%
9209   /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.

```

9210 /BorderArrayPatch{%
9211   [exch{%
9212     dup dup type/integertype eq exch type/realttype eq or%
9213     {BPToDvips}if%
9214   }forall]%
9215 }def%

```

The rectangle around the links starts off *exactly* the size of the box; we will make it slightly bigger, 1 point on all sides.

```

9216 /HyperBorder {1 PDFToDvips} def%
9217 /H.V {pdf@hoff pdf@voff null} def%
9218 /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

```

9219 /H.S {%
9220   currentpoint %
9221   HyperBorder add /pdf@lly exch def %
9222   dup DvipsToPDF 72 add /pdf@hoff exch def %
9223   HyperBorder sub /pdf@llx exch def%
9224 } def%

```

The calculation of upper left  $y$  is done without raising the point in  $\text{\TeX}$ , by simply adding on the current `\baselineskip` to the current  $y$ . This is usually too much, so we remove a notional 2 points.

We have to see what the current `baselineskip` is, and convert it to the dvips coordinate system.

Argument: `baselineskip` in pt. The  $x$  and  $y$  coordinates of the current point, minus the `baselineskip`

```

9225 /H.L {%
9226   2 sub dup%
9227   /HyperBasePt exch def %
9228   PDFToDvips /HyperBaseDvips exch def %
9229   currentpoint %
9230   HyperBaseDvips sub /pdf@ury exch def%
9231   /pdf@urx exch def%
9232 } def%
9233 /H.A {%
9234   H.L %
9235 % |pdf@voff| = the distance from the top of the page to a point
9236 % |\baselineskip| above the current point in PDF coordinates
9237   currentpoint exch pop %
9238   vsize 72 sub exch DvipsToPDF %
9239   HyperBasePt sub % baseline skip
9240   sub /pdf@voff exch def%
9241 } def%
9242 /H.R {%
9243   currentpoint %
9244   HyperBorder sub /pdf@ury exch def %
9245   HyperBorder add /pdf@urx exch def %
9246 % |pdf@voff| = the distance from the top of the page to the current point, in
9247 % PDF coordinates
9248   currentpoint exch pop vsize 72 sub %
9249   exch DvipsToPDF sub /pdf@voff exch def%
9250 } def%
9251 }%
9252 }
9253 \AfterBeginDocument{%

```

```

9254 \ifx\special@paper\@empty\else
9255   \ifHy@setpagesize
9256     \special{papersize=\special@paper}%
9257   \fi
9258 \fi
9259 \Hy@DisableOption{setpagesize}%
9260 }
9261 </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.

```

9262 <*vtexpdfmark>
9263 \providecommand*\XR@ext}{pdf}
9264 \def\Hy@raisedlink{}
9265 \def\literalps@out#1{\special{pS:#1}}%
9266 \def\headerps@out#1{\immediate\special{pS:#1}}%
9267 \input{pdfmark.def}%
9268 \ifx\@pdfproducer\relax
9269   \ifnum\OpMode=\@one
9270     \def\@pdfproducer{VTeX}%
9271   \else
9272     \def\@pdfproducer{VTeX + Distiller}%
9273   \fi
9274 \fi
9275 \providecommand*\@pdfborder{0 0 1}
9276 \providecommand*\@pdfborderstyle{}
9277 \providecommand*\@pdfview{XYZ}
9278 \providecommand*\@pdfviewparams{ H.V}
9279 \g@addto@macro\Hy@FirstPageHook{%
9280   \headerps@out{%
9281     /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.

```

9282   /HyperBorder {1} def%
9283   /H.V {pdf@hoff pdf@voff null} def%
9284   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

9285   /H.S {%
9286     currentpoint %
9287     HyperBorder sub%
9288     /pdf@lly exch def %
9289     dup 72 add /pdf@hoff exch def %
9290     HyperBorder sub%
9291     /pdf@llx exch def%
9292   } def%

```

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

```

9293   /H.L {%

```



```

9294      2 sub%
9295      /HyperBasePt exch def %
9296      currentpoint %
9297      HyperBasePt add HyperBorder add%
9298      /pdf@ury exch def %
9299      HyperBorder add%
9300      /pdf@urx exch def%
9301    } def%
9302    /H.A {%
9303      H.L %
9304      currentpoint exch pop %
9305      vsize 72 sub exch %
9306      HyperBasePt add add%
9307      /pdf@voff exch def%
9308    } def%
pdf@ury =  $Y_c$  + HyperBorder, pdf@urx =  $X_c$  + HyperBorder
9309    /H.R {%
9310      currentpoint %
9311      HyperBorder add%
9312      /pdf@ury exch def %
9313      HyperBorder add%
9314      /pdf@urx exch def %
9315      currentpoint exch pop vsize 72 sub add%
9316      /pdf@voff exch def%
9317    } def%
9318  }%
9319 }
9320 </vtxpdfmark>

```

## 46.11 Textures

```

9321 <*textures>
9322 \providecommand*{\XR@ext}{pdf}

```

At the suggestion of Jacques Distler (distler@golem.ph.utexas.edu), try to derive a suitable driver for Textures. This was initially a copy of dvips, with some guesses about Textures behaviour. Ross Moore (ross@maths.mq.edu.au) has added modifications for better compatibility, and to support use of pdfmark.

Start by defining a macro that expands to the end-of-line character. This will be used to format the appearance of PostScript code, to enhance readability, and avoid excessively long lines which might otherwise become broken to bad places.

`\Hy@ps@CR` The macro `\Hy@ps@CR` contains the end-of-line character.

```

9323 \begingroup
9324   \obeylines %
9325   \gdef\Hy@ps@CR{\noexpand
9326     }%
9327 \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.

```

9328 \def\literalps@out#1{%
9329   \special{postscript 0 0 transform}%
9330   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
9331 }%
9332 %

```

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.

```

9333 \def\headerps@out#1{%
9334   \special{%
9335     prepostscript TeXdict begin\Hy@ps@CR
9336       #1\Hy@ps@CR
9337     end%
9338   }%
9339 }%
9340 %

```

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.

```

9341 \g@addto@macro\Hy@FirstPageHook{%
9342   \headerps@out{%
9343     /betterpdfmark {%
9344       systemdict begin %
9345         dup /BP eq%
9346         {cleartomark gsave nulldevice []}%
9347         {dup /EP eq%
9348           {cleartomark cleartomark grestore}%
9349           {cleartomark}}%
9350         ifelse%
9351       }ifelse %
9352     end%
9353   }def\Hy@ps@CR
9354   __pdfmark__ not{/pdfmark /betterpdfmark load def}if%
9355 }% end of \headerps@out
9356 }% end of \AtBeginShipoutFirst
9357 %
9358 \input{pdfmark.def}%
9359 %
9360 \ifx\@pdfproducer\relax
9361   \def\@pdfproducer{Textures + Distiller}%
9362 \fi
9363 \providecommand*\@pdfborder{0 0 1}
9364 \providecommand*\@pdfborderstyle{}
9365 \providecommand*\@pdfview{XYZ}
9366 \providecommand*\@pdfviewparams{ H.V}
9367 %

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called pdf@llx pdf@lly pdf@urx pdf@ury, which are the coordinates of the bounding rectangle of the link, and pdf@hoff pdf@voff which are the PDF page offsets. The Rect pair are called at the LL and UR corners of a box known to T<sub>E</sub>X.

```

9368 \headerps@out{%

```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

9369 /vsize {\Hy@pageheight} def%
9370 /DvipsToPDF {} def%
9371 /PDFToDvips {} def%
9372 /BPToDvips {} def%
9373 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
9374 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
9375 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
9376 /H.S {%
9377     currentpoint %
9378     HyperBorder add /pdf@lly exch def %
9379     dup DvipsToPDF 72 add /pdf@hoff exch def %
9380     HyperBorder sub /pdf@llx exch def%
9381 } def\Hy@ps@CR
9382 /H.L {%
9383     2 sub %
9384     PDFToDvips /HyperBase exch def %
9385     currentpoint %
9386     HyperBase sub /pdf@ury exch def%
9387     /pdf@urx exch def%
9388 } def\Hy@ps@CR
9389 /H.A {%
9390     H.L %
9391     currentpoint exch pop %
9392     vsize 72 sub exch DvipsToPDF %
9393     HyperBase sub % baseline skip
9394     sub /pdf@voff exch def%
9395 } def\Hy@ps@CR
9396 /H.R {%
9397     currentpoint %
9398     HyperBorder sub /pdf@ury exch def %
9399     HyperBorder add /pdf@urx exch def %
9400     currentpoint exch pop vsize 72 sub %
9401     exch DvipsToPDF sub /pdf@voff exch def%
9402 } def\Hy@ps@CR
9403 }

9404 \AfterBeginDocument{%
9405     \ifHy@colorlinks
9406         \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
9407     \fi
9408 }

```

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.

```

9409 \expandafter\let\expandafter\keepPDF@SetupDoc
9410 \csname PDF@SetupDoc\endcsname
9411 \def\PDF@SetupDoc{%
9412     \ifx\@baseurl\@empty
9413     \else
9414         \special{html:<base href="\@baseurl">}%
9415     \fi
9416     \keepPDF@SetupDoc
9417 }
9418 \def\hyper@anchor#1{%
9419     \Hy@SaveLastskip
9420     \begingroup

```

```

9421 \let\protect=\string
9422 \special{html:<a name=%
9423 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9424 \endgroup
9425 \Hy@activeanchortrue
9426 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9427 \special{html:</a>}%
9428 \Hy@activeanchorfalse
9429 \Hy@RestoreLastskip
9430 }
9431 \def\hyper@anchorstart#1{%
9432 \Hy@SaveLastskip
9433 \begingroup
9434 \hyper@chars
9435 \special{html:<a name=%
9436 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9437 \endgroup
9438 \Hy@activeanchortrue
9439 }
9440 \def\hyper@anchorend{%
9441 \special{html:</a>}%
9442 \Hy@activeanchorfalse
9443 \Hy@RestoreLastskip
9444 }
9445 \def\@urlltype{url}
9446 \def\hyper@linkstart#1#2{%
9447 \expandafter\Hy@colorlink\csname @#1color\endcsname
9448 \def\Hy@tempa{#1}%
9449 \ifx\Hy@tempa\@urlltype
9450 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9451 \else
9452 \begingroup
9453 \hyper@chars
9454 \special{html:<a href=%
9455 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9456 \endgroup
9457 \fi
9458 }
9459 \def\hyper@linkend{%
9460 \special{html:</a>}%
9461 \Hy@endcolorlink
9462 }
9463 \def\hyper@linkfile#1#2#3{%
9464 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9465 }
9466 \def\hyper@linkurl#1#2{%
9467 \leavevmode
9468 \ifHy@raiselinks
9469 \setbox\@tempboxa=\color@hbox #1\color@endbox
9470 \@linkdim\dp\@tempboxa
9471 \lower\@linkdim\hbox{%
9472 \hyper@chars
9473 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9474 }%
9475 \Hy@colorlink\@urlcolor#1%
9476 \@linkdim\ht\@tempboxa
9477 \advance\@linkdim by -6.5\p@

```

```

9478 \raise\@linkdim\hbox{\special{html:</a>}}%
9479 \Hy@endcolorlink
9480 \else
9481 \begingroup
9482 \hyper@chars
9483 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9484 \Hy@colorlink\@urlcolor#1%
9485 \special{html:</a>}%
9486 \Hy@endcolorlink
9487 \endgroup
9488 \fi
9489 }

```

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

```

9490 \def\hyper@link#1#2#3{%
9491 \hyper@linkurl{#3}{\#HyperDestNameFilter{#2}}%
9492 }
9493 \def\hyper@image#1#2{%
9494 \begingroup
9495 \hyper@chars
9496 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9497 \endgroup
9498 }
9499 </textures>

```

## 46.12 dvipsone

```

9500 % \subsection{dvipsone driver}
9501 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
9502 % |\special| commands.
9503 <*dvipsone>
9504 \providecommand*{\XR@ext}{pdf}
9505 \def\Hy@raisedlink{}
9506 \providecommand*{\pdfborder}{0 0 1}
9507 \providecommand*{\pdfborderstyle}{}
9508 \def\literalps@out#1{\special{ps:#1}}%
9509 \def\headerps@out#1{\special{headertext=#1}}%
9510 \input{pdfmark.def}%
9511 \ifx\@pdfproducer\relax
9512 \def\@pdfproducer{dvipsone + Distiller}%
9513 \fi
9514 \def\PDF@FinishDoc{%
9515 \Hy@UseMaketitleInfos
9516 \special{PDF: Keywords \@pdfkeywords}%
9517 \special{PDF: Title \@pdftitle}%
9518 \special{PDF: Creator \@pdfcreator}%
9519 \ifx\@pdfcreationdate\@empty
9520 \else
9521 \special{PDF: CreationDate \@pdfcreationdate}%
9522 \fi
9523 \ifx\@pdfmoddate\@empty
9524 \else
9525 \special{PDF: ModDate \@pdfmoddate}%
9526 \fi
9527 \special{PDF: Author \@pdfauthor}%
9528 \ifx\@pdfproducer\relax
9529 \else
9530 \special{PDF: Producer \@pdfproducer}%

```

```

9531 \fi
9532 \special{PDF: Subject \@pdfsubject}%
9533 \Hy@DisableOption{pdfauthor}%
9534 \Hy@DisableOption{pdftitle}%
9535 \Hy@DisableOption{pdfsubject}%
9536 \Hy@DisableOption{pdfcreator}%
9537 \Hy@DisableOption{pdfcreationdate}%
9538 \Hy@DisableOption{pdfmoddate}%
9539 \Hy@DisableOption{pdfproducer}%
9540 \Hy@DisableOption{pdfkeywords}%
9541 }
9542 \def\PDF@SetupDoc{%
9543   \def\Hy@temp{}%
9544   \ifx\@pdfstartpage\@empty
9545   \else
9546     \ifx\@pdfstartview\@empty
9547     \else
9548       \edef\Hy@temp{%
9549         ,Page=\@pdfstartpage
9550         ,View=\@pdfstartview
9551       }%
9552     \fi
9553   \fi
9554   \edef\Hy@temp{%
9555     \noexpand\pdfmark{%
9556       pdfmark=/DOCVIEW,%
9557       PageMode=/\@pdfpagemode
9558     }\Hy@temp
9559   }%
9560 }%
9561 \Hy@temp
9562 \ifx\@pdfpagescrop\@empty
9563 \else
9564   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9565 \fi
9566 \edef\Hy@temp{%
9567   \ifHy@toolbar\else /HideToolbar true\fi
9568   \ifHy@menubar\else /HideMenubar true\fi
9569   \ifHy>windowui\else /HideWindowUI true\fi
9570   \ifHy@fitwindow /FitWindow true\fi
9571   \ifHy@centerwindow /CenterWindow true\fi
9572   \ifHy@displaydoctitle /DisplayDocTitle true\fi
9573   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9574   \Hy@UseNameKey{Direction}\@pdfdirection
9575   \Hy@UseNameKey{ViewArea}\@pdfviewarea
9576   \Hy@UseNameKey{ViewClip}\@pdfviewclip
9577   \Hy@UseNameKey{PrintArea}\@pdfprintarea
9578   \Hy@UseNameKey{PrintClip}\@pdfprintclip
9579   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9580   \Hy@UseNameKey{Duplex}\@pdfduplex
9581   \ifx\@pdfpicktraybypdfsize\@empty
9582   \else
9583     /PickTrayByPDFSize \@pdfpicktraybypdfsize
9584   \fi
9585   \ifx\@pdfprintpagerange\@empty
9586   \else
9587     /PrintPageRange[\@pdfprintpagerange]%

```

```

9588 \fi
9589 \ifx\@pdfnumcopies\@empty
9590 \else
9591 /NumCopies \@pdfnumcopies
9592 \fi
9593 }%
9594 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9595 \pdfmark{%
9596 pdfmark=/PUT,%
9597 Raw={%
9598 \string{Catalog\string}<<%
9599 \ifx\Hy@temp\@empty
9600 \else
9601 /ViewerPreferences<<\Hy@temp>>%
9602 \fi
9603 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9604 \ifx\@pdflang\@empty
9605 \else
9606 /Lang(\@pdflang)%
9607 \fi
9608 \ifx\@baseurl\@empty
9609 \else
9610 /URI<</Base(\Hy@pstringB)>>%
9611 \fi
9612 >>%
9613 }%
9614 }%
9615 }
9616 \providecommand*\@pdfview{XYZ}
9617 \providecommand*\@pdfviewparams{ %
9618 gsave revscl currentpoint grestore %
9619 72 add exch pop null exch null%
9620 }
9621 \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  $\TeX$ .

```

9622 \g@addto@macro\Hy@FirstPageHook{%
9623 \headerps@out{%

```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

9624 /DvipsToPDF { 65781 div } def%
9625 /PDFToDvips { 65781 mul } def%
9626 /BPToDvips{65781 mul}def%
9627 /HyperBorder { 1 PDFToDvips } def%
9628 /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.

```

9629 /BorderArrayPatch{%
9630 [exch%
9631 dup dup type/integertype eq exch type/realtype eq or%
9632 {BPToDvips}if%
9633 }forall]%
9634 ]def%

```

```

9635 /H.S {%
9636     currentpoint %
9637     HyperBorder add /pdf@lly exch def %
9638     dup DvipsToPDF 72 add /pdf@hoff exch def %
9639     HyperBorder sub /pdf@llx exch def%
9640 } def%
9641 /H.L {%
9642     2 sub %
9643     PDFToDvips /HyperBase exch def %
9644     currentpoint %
9645     HyperBase sub /pdf@ury exch def%
9646     /pdf@urx exch def%
9647 } def%
9648 /H.A {%
9649     H.L %
9650     currentpoint exch pop %
9651     HyperBase sub % baseline skip
9652     DvipsToPDF /pdf@voff exch def%
9653 } def%
9654 /H.R {%
9655     currentpoint %
9656     HyperBorder sub /pdf@ury exch def %
9657     HyperBorder add /pdf@urx exch def %
9658     currentpoint exch pop DvipsToPDF /pdf@voff exch def%
9659 } def%
9660 }%
9661 }
9662 </dvipsone>

```

### 46.13 TeX4ht

```

9663 <*tex4ht>
9664 \providecommand*{\XR@ext}{html}
9665 \def\Hy@raisedlink{}
9666 \@ifpackageloaded{tex4ht}{%
9667   \typeout{hyperref tex4ht: tex4ht already loaded}%
9668 }{%
9669   \RequirePackage[hx4ht]{tex4ht}%
9670 }
9671 \hyperlinkfileprefix{}
9672 \def\PDF@FinishDoc{}
9673 \def\PDF@SetupDoc{%
9674   \ifx\@baseurl\@empty
9675   \else
9676     \special{t4ht=<base href="\@baseurl">}%
9677   \fi
9678 }
9679 \def\hyper@anchor#1{%
9680   \Hy@SaveLastskip
9681   \begingroup
9682     \let\protect=\string
9683     \special{t4ht=<a name=%
9684       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9685   \endgroup
9686   \Hy@activeanchortrue
9687   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9688   \special{t4ht=</a>}%
9689   \Hy@activeanchorfalse

```



```

9690 \Hy@RestoreLastskip
9691 }
9692 \def\hyper@anchorstart#1{%
9693 \Hy@SaveLastskip
9694 \begingroup
9695 \hyper@chars\special{t4ht=<a name=%
9696 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9697 \endgroup
9698 \Hy@activeanchortrue
9699 }
9700 \def\hyper@anchorend{%
9701 \special{t4ht=</a>}%
9702 \Hy@activeanchorfalse
9703 \Hy@RestoreLastskip
9704 }
9705 \def\@urltype{url}
9706 \def\hyper@linkstart#1#2{%
9707 \expandafter\Hy@colorlink\csname @#1color\endcsname
9708 \def\Hy@tempa{#1}%
9709 \ifx\Hy@tempa\@urltype
9710 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
9711 \else
9712 \begingroup
9713 \hyper@chars
9714 \special{t4ht=<a href=%
9715 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9716 \endgroup
9717 \fi
9718 }
9719 \def\hyper@linkend{%
9720 \special{t4ht=</a>}%
9721 \Hy@endcolorlink
9722 }
9723 \def\hyper@linkfile#1#2#3{%
9724 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
9725 }
9726 \def\hyper@linkurl#1#2{%
9727 \leavevmode
9728 \ifHy@raiselinks
9729 \setbox\@tempboxa=\color@hbox #1\color@endbox
9730 \@linkdim\dp\@tempboxa
9731 \lower\@linkdim\hbox{%
9732 \begingroup
9733 \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
9734 \endgroup
9735 }%
9736 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9737 \@linkdim\ht\@tempboxa
9738 \advance\@linkdim by -6.5\p@
9739 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
9740 \else
9741 \begingroup
9742 \hyper@chars
9743 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
9744 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9745 \special{t4ht=</a>}%
9746 \endgroup

```

```

9747 \fi
9748 }

```

Poor implementation of \hyper@link without considering #1.

```

9749 \def\hyper@link#1#2#3{%
9750   \hyper@linkurl{#3}{\#HyperDestNameFilter{#2}}%
9751 }
9752 \def\hyper@image#1#2{%
9753   \begingroup
9754     \hyper@chars
9755     \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
9756   \endgroup
9757 }
9758 \let\autoref\ref
9759 \ifx \rEfLiNK \UnDef
9760   \def\rEfLiNK #1#2{#2}%
9761 \fi
9762 \def\backref#1{}
9763 </tex4ht>
9764 <*tex4htcfg>
9765 \IfFileExists{\jobname.cfg}{\endinput}{%
9766 \Preamble{html}
9767   \begin{document}%
9768 \EndPreamble
9769 \def\TeX{TeX}
9770 \def\OMEGA{\Omega}
9771 \def\LaTeX{LaTeX}
9772 \def\LaTeXe{\LaTeX2e}
9773 \def\eTeX{e-TeX}
9774 \def\MF{Metafont}
9775 \def\MP{MetaPost}
9776 </tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

9777 <*pdfmark>
9778 \long\def\@Form[#1]{%
9779 \g@addto@macro\Hy@FirstPageHook{%
9780   \headerps@out{%
9781 [%
9782   /_objdef{pdfDocEncoding}%
9783   /type/dict%
9784 /OBJ pdfmark%
9785 [%
9786   {pdfDocEncoding}%
9787   <<%
9788     /Type/Encoding%
9789     /Differences[%
9790       24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
9791       /tilde %
9792       39/quotesingle %
9793       96/grave %
9794       128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
9795       /fraction/guilsinglleft/guilsinglright/minus/perthousand%
9796       /quotedblbase/quotedblleft/quotedblright/quoteleft%
9797       /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%

```

```

9798      /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
9799      164/currency %
9800      166/brokenbar %
9801      168/dieresis/copyright/ordfeminine %
9802      172/logicalnot/.notdef/registered/macron/degree/plusminus%
9803      /twosuperior/threesuperior/acute/mu %
9804      183/periodcentered/cedilla/onesuperior/ordmasculine %
9805      188/onequarter/onehalf/threequarters %
9806      192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
9807      /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
9808      /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
9809      /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
9810      /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
9811      /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
9812      /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
9813      /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
9814      /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
9815      /ucircumflex/udieresis/yacute/thorn/ydieresis%
9816      ]%
9817      >>%
9818 /PUT pdfmark%
9819 [%
9820      /_objdef{ZaDb}%
9821      /type/dict%
9822 /OBJ pdfmark%
9823 [%
9824      {ZaDb}%
9825      <<%
9826      /Type/Font%
9827      /Subtype/Type1%
9828      /Name/ZaDb%
9829      /BaseFont/ZapfDingbats%
9830      >>%
9831 /PUT pdfmark%
9832 [%
9833      /_objdef{Helv}%
9834      /type/dict%
9835 /OBJ pdfmark%
9836 [%
9837      {Helv}%
9838      <<%
9839      /Type/Font%
9840      /Subtype/Type1%
9841      /Name/Helv%
9842      /BaseFont/Helvetica%
9843      /Encoding{pdfDocEncoding}%
9844      >>%
9845 /PUT pdfmark%
9846 [%
9847      /_objdef{aform}%
9848      /type/dict%
9849 /OBJ pdfmark%
9850 [%
9851      /_objdef{afields}%
9852      /type/array%
9853 /OBJ pdfmark%
9854 {%

```

```

9855 [%
9856   /BBox[0 0 100 100]%
9857   /_objdef{Check}%
9858 /BP pdfmark %
9859 1 0 0 setrgbcolor%
9860 /ZapfDingbats 80 selectfont %
9861 20 20 moveto%
9862 (4)show%
9863 [/EP pdfmark%
9864 [%
9865   /BBox[0 0 100 100]%
9866   /_objdef{Cross}%
9867 /BP pdfmark %
9868 1 0 0 setrgbcolor%
9869 /ZapfDingbats 80 selectfont %
9870 20 20 moveto%
9871 (8)show%
9872 [/EP pdfmark%
9873 [%
9874   /BBox[0 0 250 100]%
9875   /_objdef{Submit}%
9876 /BP pdfmark %
9877 0.6 setgray %
9878 0 0 250 100 rectfill %
9879 1 setgray %
9880 2 2 moveto %
9881 2 98 lineto %
9882 248 98 lineto %
9883 246 96 lineto %
9884 4 96 lineto %
9885 4 4 lineto %
9886 fill %
9887 0.34 setgray %
9888 248 98 moveto %
9889 248 2 lineto %
9890 2 2 lineto %
9891 4 4 lineto %
9892 246 4 lineto %
9893 246 96 lineto %
9894 fill%
9895 /Helvetica 76 selectfont %
9896 0 setgray %
9897 8 22.5 moveto%
9898 (Submit)show%
9899 [/EP pdfmark%
9900 [%
9901   /BBox[0 0 250 100]%
9902   /_objdef{SubmitP}%
9903 /BP pdfmark %
9904 0.6 setgray %
9905 0 0 250 100 rectfill %
9906 0.34 setgray %
9907 2 2 moveto %
9908 2 98 lineto %
9909 248 98 lineto %
9910 246 96 lineto %
9911 4 96 lineto %

```

```

9912 4 4 lineto %
9913 fill %
9914 1 setgray %
9915 248 98 moveto %
9916 248 2 lineto %
9917 2 2 lineto %
9918 4 4 lineto %
9919 246 4 lineto %
9920 246 96 lineto %
9921 fill%
9922 /Helvetica 76 selectfont %
9923 0 setgray %
9924 10 20.5 moveto%
9925 (Submit)show%
9926 [/EP pdfmark%
9927 } ?pdfmark%
9928 [%
9929 {aform}%
9930 <<%
9931 /Fields{afields}%
9932 /DR<<%
9933 /Font<<%
9934 /ZaDb{ZaDb}%
9935 /Helv{Helv}%
9936 >>%
9937 >>%
9938 /DA(/Helv 10 Tf 0 g)%
9939 /CO{corder}%
9940 \ifHy@pdfa
9941 \else
9942 /NeedAppearances true%
9943 \fi
9944 >>%
9945 /PUT pdfmark%
9946 [%
9947 {Catalog}%
9948 <<%
9949 /AcroForm{aform}%
9950 >>%
9951 /PUT pdfmark%
9952 [%
9953 /_objdef{corder}%
9954 /type/array%
9955 /OBJ pdfmark% dps
9956 }}%
9957 \setkeys{Form}{#1}%
9958 }
9959 \def\@endForm{}
9960 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9961 \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
9962 }
9963 \def\@TextField[#1]#2{% parameters, label
9964 \def\Fld@name{#2}%
9965 \def\Fld@default{}%
9966 \let\Fld@value\@empty
9967 \def\Fld@width{\DefaultWidthofText}%
9968 \def\Fld@height{%

```

```

9969 \ifFld@multiline
9970 \DefaultHeightofTextMultiline
9971 \else
9972 \DefaultHeightofText
9973 \fi
9974 }%
9975 \begingroup
9976 \Field@toks={ }%
9977 \expandafter\HyField@SetKeys\expandafter{%
9978 \DefaultOptionsofText,#1%
9979 }%
9980 \HyField@FlagsText
9981 \ifFld@hidden\def\Fld@width{1sp}\fi
9982 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
9983 \LayoutTextField{#2}{%
9984 \Hy@escapeform\PDFForm@Text
9985 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
9986 pdfmark=/ANN,Raw={\PDFForm@Text}%
9987 }%
9988 }%
9989 \endgroup
9990 }
9991 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9992 \def\Fld@name{#2}%
9993 \let\Fld@default\relax
9994 \let\Fld@value\relax
9995 \def\Fld@width{\DefaultWidthofChoiceMenu}%
9996 \def\Fld@height{\DefaultHeightofChoiceMenu}%
9997 \begingroup
9998 \Fld@menulength=0 %
9999 \@tempdima\z@
10000 \@for\@curropt:=#3\do{%
10001 \expandafter\Fld@checkequals\@curropt==\%
10002 \Hy@StepCount\Fld@menulength
10003 \settowidth{\@tempdimb}{\@currDisplay}%
10004 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10005 }%
10006 \advance\@tempdima by 15\p@
10007 \Field@toks={ }%
10008 \begingroup
10009 \HyField@SetKeys{#1}%
10010 \edef\x{\endgroup
10011 \noexpand\expandafter
10012 \noexpand\HyField@SetKeys
10013 \noexpand\expandafter{%
10014 \expandafter\noexpand\cname DefaultOptionsof%
10015 \ifFld@radio
10016 Radio%
10017 \else
10018 \ifFld@combo
10019 \ifFld@popdown
10020 PopdownBox%
10021 \else
10022 ComboBox%
10023 \fi
10024 \else
10025 ListBox%

```

```

10026         \fi
10027     \fi
10028     \endcsname
10029 }%
10030 }\x
10031 \HyField@SetKeys{#1}%
10032 \ifFld@hidden\def\Fld@width{1sp}\fi
10033 \ifx\Fld@value\relax
10034     \let\Fld@value\Fld@default
10035 \fi
10036 \LayoutChoiceField{#2}{%
10037     \ifFld@radio
10038         \HyField@FlagsRadioButton
10039         \@@Radio{#3}%
10040     \else
10041         \begingroup
10042             \HyField@FlagsChoice
10043             \ifdim\Fld@width<\@tempdima
10044                 \ifdim\@tempdima<1cm\@tempdima1cm\fi
10045                 \edef\Fld@width{\the\@tempdima}%
10046             \fi
10047             \ifFld@combo
10048             \else
10049                 \@tempdima=\the\Fld@menulength\Fld@charsize
10050                 \advance\@tempdima by \Fld@borderwidth bp %
10051                 \advance\@tempdima by \Fld@borderwidth bp %
10052                 \edef\Fld@height{\the\@tempdima}%
10053             \fi
10054             \@@ListBox{#3}%
10055         \endgroup
10056     \fi
10057 }%
10058 \endgroup
10059 }
10060 \def\@@Radio#1{%
10061     \Fld@listcount=0 %
10062     \@for\@curropt:=#1\do{%
10063         \expandafter\Fld@checkequals\@curropt==\%
10064         \Hy@StepCount\Fld@listcount
10065         \currDisplay\space
10066         \Hy@escapeform\PDFForm@Radio
10067         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
10068             pdfmark=/ANN,%
10069             Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
10070         } % deliberate space between radio buttons
10071     }%
10072 }
10073 \newcount\Fld@listcount
10074 \def\@@ListBox#1{%
10075     \HyField@PDFChoices{#1}%
10076     \Hy@escapeform\PDFForm@List
10077     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
10078         pdfmark=/ANN,Raw={\PDFForm@List}%
10079     }%
10080 }
10081 \def\@PushButton[#1]#2{% parameters, label
10082     \def\Fld@name{#2}%

```

```

10083 \begingroup
10084   \Field@toks={ }%
10085   \expandafter\HyField@SetKeys\expandafter{%
10086     \DefaultOptionsofPushButton,#1%
10087   }%
10088   \ifHy@pdfa
10089     \PackageError{hyperref}{%
10090       PDF/A: Push button with JavaScript is prohibited%
10091     }\@ehc
10092     \LayoutPushButtonField{%
10093       \leavevmode
10094       \MakeButtonField{#2}%
10095     }%
10096   \else
10097     \HyField@FlagsPushButton
10098     \ifFld@hidden\def\Fld@width{1sp}\fi
10099     \LayoutPushButtonField{%
10100       \leavevmode
10101       \Hy@escapeform\PDFForm@Push
10102       \pdfmark[\MakeButtonField{#2}]{%
10103         pdfmark=/ANN,Raw={\PDFForm@Push}%
10104       }%
10105     }%
10106   \fi
10107 \endgroup
10108 }
10109 \def\@Submit[#1]#2{%
10110   \Field@toks={ }%
10111   \def\Fld@width{\DefaultWidthofSubmit}%
10112   \def\Fld@height{\DefaultHeightofSubmit}%
10113   \begingroup
10114     \expandafter\HyField@SetKeys\expandafter{%
10115       \DefaultOptionsofSubmit,#1%
10116     }%
10117     \HyField@FlagsPushButton
10118     \HyField@FlagsSubmit
10119     \ifFld@hidden\def\Fld@width{1sp}\fi
10120     \Hy@escapeform\PDFForm@Submit
10121     \pdfmark[\MakeButtonField{#2}]{%
10122       pdfmark=/ANN,%
10123       Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
10124     }%
10125   \endgroup
10126 }
10127 \def\@Reset[#1]#2{%
10128   \Field@toks={ }%
10129   \def\Fld@width{\DefaultWidthofReset}%
10130   \def\Fld@height{\DefaultHeightofReset}%
10131   \begingroup
10132     \expandafter\HyField@SetKeys\expandafter{%
10133       \DefaultOptionsofReset,#1%
10134     }%
10135     \leavevmode
10136     \ifHy@pdfa
10137       \PackageError{hyperref}{%
10138         PDF/A: Reset action is prohibited%
10139       }\@ehc

```



```

10140     \MakeButtonField{#2}%
10141     \else
10142     \HyField@FlagsPushButton
10143     \ifFld@hidden\def\Fld@width{1sp}\fi
10144     \Hy@escapeform\PDFForm@Reset
10145     \pdfmark[\MakeButtonField{#2}]{%
10146         pdfmark=/ANN,Raw={\PDFForm@Reset}%
10147     }%
10148     \fi
10149 \endgroup
10150 }%
10151 \def\@CheckBox[#1]#2{% parameters, label
10152     \def\Fld@name{#2}%
10153     \def\Fld@default{0}%
10154     \beginingroup
10155     \def\Fld@width{\DefaultWidthofCheckBox}%
10156     \def\Fld@height{\DefaultHeightofCheckBox}%
10157     \Field@toks={ }%
10158     \expandafter\HyField@SetKeys\expandafter{%
10159         \DefaultOptionsofCheckBox,#1%
10160     }%
10161     \HyField@FlagsCheckBox
10162     \ifFld@hidden\def\Fld@width{1sp}\fi
10163     \LayoutCheckField{#2}{%
10164         \Hy@escapeform\PDFForm@Check
10165         \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
10166             pdfmark=/ANN,Raw={\PDFForm@Check}%
10167         }%
10168     }%
10169 \endgroup
10170 }
10171 \</pdfmark>

```

## 47.2 HyperTeX

```

10172 \<hypertex>
10173 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
10174 \def\@endForm{}
10175 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10176     \typeout{Sorry, HyperTeX does not support FORM gauges}%
10177 }
10178 \def\@TextField[#1]#2{% parameters, label
10179     \typeout{Sorry, HyperTeX does not support FORM text fields}%
10180 }
10181 \def\@CheckBox[#1]#2{% parameters, label
10182     \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
10183 }
10184 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10185     \typeout{Sorry, HyperTeX does not support FORM choice menus}%
10186 }
10187 \def\@PushButton[#1]#2{% parameters, label
10188     \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
10189 }
10190 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
10191 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
10192 \</hypertex>

```

## 47.3 TeX4ht

```

10193 <*tex4ht>
10194 \def\@Form[#1]{%
10195   \setkeys{Form}{#1}%
10196   \HCode{<form action="\Form@action" method="\Form@method">}%
10197 }
10198 \def\@endForm{\HCode{</form>}}
10199 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10200   \typeout{Sorry, TeX4ht does not support gauges}%
10201 }
10202 \def\@TextField[#1]#2{% parameters, label
10203   \let\Hy@reserved@a\@empty
10204   \def\Fld@name{#2}%
10205   \def\Fld@default{}%
10206   \bgroup
10207     \Field@toks={ }%
10208     \setkeys{Field}{#1}%
10209     \HCode{<label for="\Fld@name">#2</label>}%
10210     \ifFld@password
10211       \@@PasswordField
10212     \else
10213       \@@TextField
10214     \fi
10215   \egroup
10216 }
10217 \def\@@PasswordField{%
10218   \HCode{%
10219     <input type="password" %
10220       id="\Fld@name" %
10221       name="\Fld@name" %
10222       \ifFld@hidden type="hidden" \fi
10223       value="\Fld@default" %
10224       \the\Field@toks
10225     >%
10226   }%
10227 }
10228 \def\@@TextField{%
10229   \ifFld@multiline
10230     \HCode{<textarea %
10231       \ifFld@readonly readonly \fi
10232       id="\Fld@name" %
10233       name="\Fld@name" %
10234       \ifFld@hidden type="hidden" \fi
10235       \the\Field@toks>%
10236     }%
10237     \Fld@default
10238     \HCode{</textarea>}%
10239   \else
10240     \HCode{<input type="text" %
10241       \ifFld@readonly readonly \fi
10242       id="\Fld@name" %
10243       name="\Fld@name" %
10244       \ifFld@hidden type="hidden" \fi
10245       value="\Fld@default" %
10246       \the\Field@toks>%
10247     }%
10248   \fi
10249 }

```

```

10250 \def \@ChoiceMenu[#1]#2#3{% parameters, label, choices
10251   \def \Fld@name{#2}%
10252   \def \Fld@default{}%
10253   \let \Hy@reserved@a\relax
10254   \begingroup
10255     \expandafter \Fld@findlength#3\\%
10256     \Field@toks={ }%
10257     \setkeys{Field}{#1}%
10258     #2%
10259     \ifFld@radio
10260       \expandafter \@Radio#3\\%
10261     \else
10262       \expandafter \@Menu#3\\%
10263     \fi
10264   \endgroup
10265 }
10266 \def \Fld@findlength#1\\{%
10267   \Fld@menulength=0 %
10268   \@for \@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
10269 }
10270 \def \@Menu#1\\{%
10271   \HCode{<select size="\the\Fld@menulength" %
10272     name="\Fld@name" %
10273     \the\Field@toks>%
10274   }%
10275   \@for \@curropt:=#1\do{%
10276     \expandafter \Fld@checkequals \@curropt==\\%
10277     \HCode{<option %
10278       \ifx \@curropt\Fld@default selected \fi
10279       value="\@currValue">\@currDisplay</option>%
10280     }%
10281   }%
10282   \HCode{</select>}%
10283 }
10284 \def \@Radio#1\\{%
10285   \@for \@curropt:=#1\do{%
10286     \expandafter \Fld@checkequals \@curropt==\\%
10287     \HCode{<input type="radio" %
10288       \ifx \@curropt\Fld@default checked \fi
10289       name="\Fld@name" %
10290       value="\@currValue" %
10291       \the\Field@toks>%
10292     }%
10293     \@currDisplay
10294   }%
10295 }
10296 \def \@PushButton[#1]#2{% parameters, label
10297   \def \Fld@name{#2}%
10298   \bgroup
10299     \Field@toks={ }%
10300     \setkeys{Field}{#1}%
10301     \HCode{<input type="button" %
10302       name="\Fld@name" %
10303       value="#2" %
10304       \the\Field@toks>%
10305     }%
10306     \HCode{</button>}%

```

```

10307 \egroup
10308 }
10309 \def\@Submit[#1]#2{%
10310 \HCode{<button type="submit">#2</button>}%
10311 }
10312 \def\@Reset[#1]#2{%
10313 \HCode{<button type="reset">#2</button>}%
10314 }
10315 \def\@CheckBox[#1]#2{% parameters, label
10316 \let\Hy@reserved@a\@empty
10317 \def\Fld@name{#2}%
10318 \def\Fld@default{0}%
10319 \bgroup
10320 \Field@toks={ }%
10321 \setkeys{Field}{#1}%
10322 \HCode{<input type="checkbox" %
10323 \ifFld@checked checked \fi
10324 \ifFld@disabled disabled \fi
10325 \ifFld@readonly readonly \fi
10326 name="\Fld@name" %
10327 \ifFld@hidden type="hidden" \fi
10328 value="\Fld@default" %
10329 \the\Field@toks>%
10330 #2%
10331 }%
10332 \egroup
10333 }
10334 </tex4ht>

```

## 47.4 pdfTeX

```

10335 <*pdfTeX>
10336 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10337 \typeout{Sorry, pdfTeX does not support FORM gauges}%
10338 }
10339 \def\MakeFieldObject#1#2{\sbox0{#1}%
10340 \immediate\pdfxform0 %
10341 \expandafter\edef\csname #2Object\endcsname{%
10342 \the\pdflastxform\space 0 R%
10343 }%
10344 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
10345 }%
10346 \def\@Form[#1]{%
10347 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
10348 \setkeys{Form}{#1}%
10349 \ifnum\pdfTeXversion>13 %
10350 \pdfrefobj\OBJ@pdfdocencoding
10351 \pdfrefobj\OBJ@ZaDb
10352 \pdfrefobj\OBJ@Helv
10353 \pdfrefobj\OBJ@acroform
10354 \fi
10355 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
10356 \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

10357 \begingroup
10358 \fontfamily{pzd}%
10359 \fontencoding{U}%
10360 \fontseries{m}%

```

```

10361     \fontshape{n}%
10362     \selectfont
10363     \char123 %
10364   \endgroup
10365 }{Ding}%
10366 \MakeFieldObject{%
10367   \fbox{\textcolor{yellow}{\textsf{Submit}}}%
10368 }{Submit}%
10369 \MakeFieldObject{%
10370   \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
10371 }{SubmitP}%
10372 }
10373 \def\@endForm{
10374 \def\@TextField[#1]#2{% parameters, label
10375   \def\Fld@name{#2}%
10376   \def\Fld@default{}%
10377   \let\Fld@value\@empty
10378   \def\Fld@width{\DefaultWidthofText}%
10379   \def\Fld@height{%
10380     \ifFld@multiline
10381       \DefaultHeightofTextMultiline
10382     \else
10383       \DefaultHeightofText
10384     \fi
10385   }%
10386   \begingroup
10387     \Field@toks={ }%
10388     \expandafter\HyField@SetKeys\expandafter{%
10389       \DefaultOptionsofText,#1%
10390     }%
10391     \PDFForm@Name
10392     \HyField@FlagsText
10393     \ifFld@hidden\def\Fld@width{1sp}\fi
10394     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
10395     \LayoutTextField{#2}{%
10396       \Hy@escapeform\PDFForm@Text
10397       \pdfstartlink user {\PDFForm@Text}\relax
10398       \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
10399     }%
10400   \endgroup
10401 }
10402 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10403   \def\Fld@name{#2}%
10404   \let\Fld@default\relax
10405   \let\Fld@value\relax
10406   \def\Fld@width{\DefaultWidthofChoiceMenu}%
10407   \def\Fld@height{\DefaultHeightofChoiceMenu}%
10408   \begingroup
10409     \Fld@menulength=0 %
10410     \@tempdima\z@
10411     \@for\@curropt:=#3\do{%
10412       \expandafter\Fld@checkequals\@curropt==\%
10413       \Hy@StepCount\Fld@menulength
10414       \settowidth{\@tempdimb}{\@currDisplay}%
10415       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10416     }%
10417     \advance\@tempdima by 15\p@

```

```

10418 \Field@toks={ }%
10419 \begingroup
10420 \HyField@SetKeys{#1}%
10421 \edef\x{\endgroup
10422 \noexpand\expandafter
10423 \noexpand\HyField@SetKeys
10424 \noexpand\expandafter{%
10425 \expandafter\noexpand\csname DefaultOptionsof%
10426 \ifFld@radio
10427 Radio%
10428 \else
10429 \ifFld@combo
10430 \ifFld@popdown
10431 PopdownBox%
10432 \else
10433 ComboBox%
10434 \fi
10435 \else
10436 ListBox%
10437 \fi
10438 \fi
10439 \endcsname
10440 }%
10441 }\x
10442 \HyField@SetKeys{#1}%
10443 \PDFForm@Name
10444 \ifFld@hidden\def\Fld@width{1sp}\fi
10445 \ifx\Fld@value\relax
10446 \let\Fld@value\Fld@default
10447 \fi
10448 \LayoutChoiceField{#2}{%
10449 \ifFld@radio
10450 \HyField@FlagsRadioButton
10451 \@@Radio{#3}%
10452 \else
10453 \begingroup
10454 \HyField@FlagsChoice
10455 \ifdim\Fld@width<\@tempdima
10456 \ifdim\@tempdima<1cm\@tempdima1cm\fi
10457 \edef\Fld@width{\the\@tempdima}%
10458 \fi
10459 \ifFld@combo
10460 \else
10461 \@tempdima=\the\Fld@menulength\Fld@charsize
10462 \advance\@tempdima by \Fld@borderwidth bp %
10463 \advance\@tempdima by \Fld@borderwidth bp %
10464 \edef\Fld@height{\the\@tempdima}%
10465 \fi
10466 \@@ListBox{#3}%
10467 \endgroup
10468 \fi
10469 }%
10470 \endgroup
10471 }
10472 \def\@@Radio#1{%
10473 \Fld@listcount=0 %
10474 \@for\@curropt:=#1\do{%

```

```

10475 \expandafter\Fld@checkequals\@curropt==\%
10476 \Hy@StepCount\Fld@listcount
10477 \@currDisplay\space
10478 \leavevmode
10479 \Hy@escapeform\PDFForm@Radio
10480 \pdfstartlink user {%
10481 \PDFForm@Radio
10482 /AP<<%
10483 /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.

```

10484 /\@currValue\space \DingObject
10485 >>%
10486 >>%
10487 }%
10488 \relax
10489 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
10490 \space % deliberate space between radio buttons
10491 }%
10492 }
10493 \newcount\Fld@listcount
10494 \def\@@ListBox#1{%
10495 \HyField@PDFChoices{#1}%
10496 \leavevmode
10497 \Hy@escapeform\PDFForm@List
10498 \pdfstartlink user {\PDFForm@List}\relax
10499 \MakeChoiceField{\Fld@width}{\Fld@height}%
10500 \pdfendlink
10501 }
10502 \def\@PushButton[#1]#2{% parameters, label
10503 \def\Fld@name{#2}%
10504 \begingroup
10505 \Field@toks={ }%
10506 \expandafter\HyField@SetKeys\expandafter{%
10507 \DefaultOptionsofPushButton,#1%
10508 }%
10509 \PDFForm@Name
10510 \ifHy@pdfa
10511 \PackageError{hyperref}{%
10512 PDF/A: Push button with JavaScript is prohibited%
10513 }\@ehc
10514 \LayoutPushButtonField{%
10515 \leavevmode
10516 \MakeButtonField{#2}%
10517 }%
10518 \else
10519 \HyField@FlagsPushButton
10520 \ifFld@hidden\def\Fld@width{1sp}\fi
10521 \LayoutPushButtonField{%
10522 \leavevmode
10523 \Hy@escapeform\PDFForm@Push
10524 \pdfstartlink user {\PDFForm@Push}\relax
10525 \MakeButtonField{#2}%
10526 \pdfendlink
10527 }%
10528 \fi

```

```

10529 \endgroup
10530 }
10531 \def\@Submit[#1]#2{%
10532   \Field@toks={ }%
10533   \def\Fld@width{\DefaultWidthofSubmit}%
10534   \def\Fld@height{\DefaultHeightofSubmit}%
10535   \begingroup
10536     \expandafter\HyField@SetKeys\expandafter{%
10537       \DefaultOptionsofSubmit,#1%
10538     }%
10539     \HyField@FlagsPushButton
10540     \HyField@FlagsSubmit
10541     \ifFld@hidden\def\Fld@width{1sp}\fi
10542     \leavevmode
10543     \Hy@escapeform\PDFForm@Submit
10544     \pdfstartlink user {%
10545       \PDFForm@Submit
10546       /AP<</N \SubmitObject/D \SubmitPObject>>%
10547     }%
10548     \relax
10549     \MakeButtonField{#2}%
10550     \pdfendlink
10551 \endgroup
10552 }
10553 \def\@Reset[#1]#2{%
10554   \Field@toks={ }%
10555   \def\Fld@width{\DefaultWidthofReset}%
10556   \def\Fld@height{\DefaultHeightofReset}%
10557   \begingroup
10558     \expandafter\HyField@SetKeys\expandafter{%
10559       \DefaultOptionsofReset,#1%
10560     }%
10561     \leavevmode
10562     \ifHy@pdfa
10563       \PackageError{hyperref}{%
10564         PDF/A: Reset action is prohibited%
10565       }\@ehc
10566       \MakeButtonField{#2}%
10567     \else
10568       \HyField@FlagsPushButton
10569       \ifFld@hidden\def\Fld@width{1sp}\fi
10570       \Hy@escapeform\PDFForm@Reset
10571       \pdfstartlink user {\PDFForm@Reset}\relax
10572       \MakeButtonField{#2}%
10573       \pdfendlink
10574     \fi
10575 \endgroup
10576 }
10577 \def\@CheckBox[#1]#2{% parameters, label
10578   \def\Fld@name{#2}%
10579   \def\Fld@default{0}%
10580   \begingroup
10581     \def\Fld@width{\DefaultWidthofCheckBox}%
10582     \def\Fld@height{\DefaultHeightofCheckBox}%
10583     \Field@toks={ }%
10584     \expandafter\HyField@SetKeys\expandafter{%
10585       \DefaultOptionsofCheckBox,#1%

```



```

10586 }%
10587 \PDFForm@Name
10588 \HyField@FlagsCheckBox
10589 \ifFld@hidden\def\Fld@width{1sp}\fi
10590 \LayoutCheckField{#2}{%
10591   \Hy@escapeform\PDFForm@Check
10592   \pdfstartlink user {\PDFForm@Check}\relax
10593   \MakeCheckField{\Fld@width}{\Fld@height}%
10594   \pdfendlink
10595 }%
10596 \endgroup
10597 }
10598 \pdfobj {%
10599   <<%
10600     /Type/Encoding%
10601     /Differences[%
10602       24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
10603       /ring/tilde %
10604       39/quotesingle %
10605       96/grave %
10606       128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10607       /fraction/guilsinglleft/guilsinglright/minus/perthousand%
10608       /quotedblbase/quotedblleft/quotedblright/quoteleft%
10609       /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
10610       /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
10611       164/currency %
10612       166/brokenbar %
10613       168/dieresis/copyright/ordfeminine %
10614       172/logicalnot/.notdef/registered/macron/degree/plusminus%
10615       /twosuperior/threesuperior/acute/mu %
10616       183/periodcentered/cedilla/onesuperior/ordmasculine %
10617       188/onequarter/onehalf/threequarters %
10618       192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
10619       /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
10620       /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
10621       /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
10622       /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
10623       /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
10624       /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
10625       /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
10626       /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
10627       /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
10628     ]%
10629   >>%
10630 }
10631 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
10632 \pdfobj{%
10633   <<%
10634     /Type/Font%
10635     /Subtype/Type1%
10636     /Name/ZaDb%
10637     /BaseFont/ZapfDingbats%
10638   >>%
10639 }
10640 \edef\OBJ@ZaDb{\the\pdflastobj}
10641 \pdfobj{%
10642   <<%

```

```

10643 /Type/Font%
10644 /Subtype/Type1%
10645 /Name/Helv%
10646 /BaseFont/Helvetica%
10647 /Encoding \OBJ@pdfdocencoding\space 0 R%
10648 >>%
10649 }
10650 \edef\OBJ@Helv{\the\pdflastobj}
10651 \pdfobj{%
10652 <<%
10653 /Fields []%
10654 /DR<<%
10655 /Font<<%
10656 /ZaDb \OBJ@ZaDb\space 0 R%
10657 /Helv \OBJ@Helv\space 0 R%
10658 >>%
10659 >>%
10660 /DA(/Helv 10 Tf 0 g)%
10661 \ifHy@pdfa
10662 \else
10663 /NeedAppearances true%
10664 \fi
10665 >>%
10666 }
10667 \edef\OBJ@acroform{\the\pdflastobj}
10668 \pdfobj{

```

## 47.5 dvipdfm

D. P. Story adapted the pdf<sub>T</sub>E<sub>X</sub> forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```
10669 \dvipdfm
```

\@Gauge

```

10670 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10671 \typeout{Sorry, dvipdfm does not support FORM gauges}%
10672 }

```

\@Form

```

10673 \def\@Form[#1]{%
10674 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
10675 \setkeys{Form}{#1}%
10676 \@pdfm@mark{obj @afields []}%
10677 \@pdfm@mark{obj @corder []}%
10678 \@pdfm@mark{%
10679 obj @aform <<%
10680 /Fields @afields%
10681 /DR<<%
10682 /Font<<%
10683 /ZaDb @OBJ@ZaDb%
10684 /Helv @OBJ@Helv%
10685 >>%
10686 >>%
10687 /DA(/Helv 10 Tf 0 g)%
10688 /CO @corder%
10689 \ifHy@pdfa
10690 \else

```

```

10691         /NeedAppearances true%
10692         \fi
10693     >>%
10694 }%
10695 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
10696 }

\@endForm

10697 \def\@endForm{}

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.
10698 \def\dvipdfm@setdim{%
10699     height \the\ht\pdfm@box\space
10700     width \the\wd\pdfm@box\space
10701     depth \the\dp\pdfm@box\space
10702 }

\HyField@AnnotCount
10703 \newcount\HyField@AnnotCount
10704 \HyField@AnnotCount=\z@

\HyField@AdvanceAnnotCount
10705 \def\HyField@AdvanceAnnotCount{%
10706     \global\advance\HyField@AnnotCount\@ne
10707 }

\HyField@TheAnnotCount
10708 \def\HyField@TheAnnotCount{%
10709     \the\HyField@AnnotCount
10710 }

\@TextField
10711 \def\@TextField[#1]#2{% parameters, label
10712     \def\Fld@name{#2}%
10713     \def\Fld@default{}%
10714     \let\Fld@value\@empty
10715     \def\Fld@width{\DefaultWidthofText}%
10716     \def\Fld@height{%
10717         \ifFld@multiline
10718             \DefaultHeightofTextMultiline
10719         \else
10720             \DefaultHeightofText
10721         \fi
10722     }%
10723     \begingroup
10724         \Field@toks={ }%
10725         \expandafter\HyField@SetKeys\expandafter{%
10726             \DefaultOptionsofText,#1%
10727         }%
10728         \PDFForm@Name
10729         \HyField@FlagsText
10730         \ifFld@hidden\def\Fld@width{1sp}\fi
10731         \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
10732         \setbox\pdfm@box=\hbox{%
10733             \MakeTextField{\Fld@width}{\Fld@height}%
10734         }%

```

```

10735 \HyField@AdvanceAnnotCount
10736 \LayoutTextField{#2}{%
10737 \Hy@escapeform\PDFForm@Text
10738 \@pdfm@mark{%
10739 ann @text\HyField@TheAnnotCount\space
10740 \dvipdfm@setdim << \PDFForm@Text >>%
10741 }%
10742 }%
10743 \unhbox\pdfm@box
10744 \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
10745 % record in @afields array
10746 \endgroup
10747 }

```

\@ChoiceMenu

```

10748 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10749 \def\Fld@name{#2}%
10750 \let\Fld@default\relax
10751 \let\Fld@value\relax
10752 \def\Fld@width{\DefaultWidthofChoiceMenu}%
10753 \def\Fld@height{\DefaultHeightofChoiceMenu}%
10754 \begingroup
10755 \Fld@menulength=0 %
10756 \@tempdima\z@
10757 \@for\@curropt:=#3\do{%
10758 \expandafter\Fld@checkequals\@curropt==\%
10759 \Hy@StepCount\Fld@menulength
10760 \settowidth{\@tempdimb}{\@currDisplay}%
10761 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10762 }%
10763 \advance\@tempdima by 15\p@
10764 \Field@toks={ }%
10765 \begingroup
10766 \HyField@SetKeys{#1}%
10767 \edef\x{\endgroup
10768 \noexpand\expandafter
10769 \noexpand\HyField@SetKeys
10770 \noexpand\expandafter{%
10771 \expandafter\noexpand\cname DefaultOptionsof%
10772 \ifFld@radio
10773 Radio%
10774 \else
10775 \ifFld@combo
10776 \ifFld@popdown
10777 PopdownBox%
10778 \else
10779 ComboBox%
10780 \fi
10781 \else
10782 ListBox%
10783 \fi
10784 \fi
10785 \endcname
10786 }%
10787 }\x
10788 \HyField@SetKeys{#1}%
10789 \PDFForm@Name

```

```

10790 \ifFld@hidden\def\Fld@width{1sp}\fi
10791 \ifx\Fld@value\relax
10792 \let\Fld@value\Fld@default
10793 \fi
10794 \LayoutChoiceField{#2}{%
10795 \ifFld@radio
10796 \HyField@FlagsRadioButton
10797 \@@Radio{#3}%
10798 \else
10799 \begingroup
10800 \HyField@FlagsChoice
10801 \ifdim\Fld@width<\@tempdima
10802 \ifdim\@tempdima<1cm\@tempdima1cm\fi
10803 \edef\Fld@width{\the\@tempdima}%
10804 \fi
10805 \ifFld@combo
10806 \else
10807 \@tempdima=\the\Fld@menulength\Fld@charsize
10808 \advance\@tempdima by \Fld@borderwidth bp %
10809 \advance\@tempdima by \Fld@borderwidth bp %
10810 \edef\Fld@height{\the\@tempdima}%
10811 \fi
10812 \@@ListBox{#3}%
10813 \endgroup
10814 \fi
10815 }%
10816 \endgroup
10817 }

```

\@@Radio

```

10818 \def\@@Radio#1{%
10819 \Fld@listcount=0 %
10820 \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
10821 \@for\@curropt:=#1\do{%
10822 \expandafter\Fld@checkequals\@curropt==\%
10823 \Hy@StepCount\Fld@listcount
10824 \@currDisplay\space
10825 \leavevmode
10826 \Hy@escapeform\PDFForm@Radio
10827 \ifnum\Fld@listcount=1 %
10828 \HyField@AdvanceAnnotCount
10829 \fi
10830 \@pdfm@mark{%
10831 ann \ifnum\Fld@listcount=1 @radio\HyField@TheAnnotCount\space\fi
10832 \dvi pdfm@setdim
10833 <<%
10834 \PDFForm@Radio
10835 /AP<</N<</\@currValue /null>>>>%
10836 >>%
10837 }%
10838 \unhcopy\pdfm@box\space% deliberate space between radio buttons
10839 \ifnum\Fld@listcount=1 %
10840 \@pdfm@mark{put @afields @radio\HyField@TheAnnotCount}%
10841 \fi
10842 }%
10843 }

```

```

\Fld@listcount
10844 \newcount\Fld@listcount

\@@Listbox
10845 \def\@@Listbox#1{%
10846   \HyField@PDFChoices{#1}%
10847   \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
10848   \leavevmode
10849   \Hy@escapeform\PDFForm@List
10850   \HyField@AdvanceAnnotCount
10851   \@pdfm@mark{%
10852     ann @list\HyField@TheAnnotCount\space
10853     \dvi pdfm@setdim
10854     <<\PDFForm@List>>%
10855   }%
10856   \unhbox\pdfm@box
10857   \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
10858 }

\@PushButton
10859 \def\@PushButton[#1]#2{% parameters, label
10860   \def\Fld@name{#2}%
10861   \begingroup
10862     \Field@toks={ }%
10863     \expandafter\HyField@SetKeys\expandafter{%
10864       \DefaultOptionsofPushButton,#1%
10865     }%
10866     \PDFForm@Name
10867     \ifHy@pdfa
10868       \PackageError{hyperref}{%
10869         PDF/A: Push button with JavaScript is prohibited%
10870       }\@ehc
10871       \LayoutPushButtonField{%
10872         \leavevmode
10873         \MakeButtonField{#2}%
10874       }%
10875     \else
10876       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10877       \HyField@FlagsPushButton
10878       \ifFld@hidden\def\Fld@width{1sp}\fi
10879       \HyField@AdvanceAnnotCount
10880       \LayoutPushButtonField{%
10881         \leavevmode
10882         \Hy@escapeform\PDFForm@Push
10883         \@pdfm@mark{%
10884           ann @push\HyField@TheAnnotCount\space
10885           \dvi pdfm@setdim
10886           <<\PDFForm@Push>>%
10887         }%
10888       }%
10889       \unhbox\pdfm@box
10890       \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
10891     \fi
10892   \endgroup
10893 }

\@Submit

```

```

10894 \def \@Submit[#1]#2{%
10895   \Field@toks={ }%
10896   \def \Fld@width{\DefaultWidthofSubmit}%
10897   \def \Fld@height{\DefaultHeightofSubmit}%
10898   \begingroup
10899     \expandafter\HyField@SetKeys\expandafter{%
10900       \DefaultOptionsofSubmit,#1%
10901     }%
10902     \HyField@FlagsPushButton
10903     \HyField@FlagsSubmit
10904     \ifFld@hidden\def \Fld@width{1sp}\fi
10905     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10906     \leavevmode
10907     \Hy@escapeform\PDFForm@Submit
10908     \HyField@AdvanceAnnotCount
10909     \@pdfm@mark{%
10910       ann @submit\HyField@TheAnnotCount\space
10911       \dvi pdfm@setdim
10912       <<\PDFForm@Submit>>%
10913     }%
10914     \unhbox\pdfm@box%
10915     \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
10916   \endgroup
10917 }

\@Reset
10918 \def \@Reset[#1]#2{%
10919   \Field@toks={ }%
10920   \def \Fld@width{\DefaultWidthofReset}%
10921   \def \Fld@height{\DefaultHeightofReset}%
10922   \begingroup
10923     \expandafter\HyField@SetKeys\expandafter{%
10924       \DefaultOptionsofReset,#1%
10925     }%
10926     \leavevmode
10927     \ifHy@pdfa
10928       \PackageError{hyperref}{%
10929         PDF/A: Reset action is prohibited%
10930       }{@ehc}
10931       \MakeButtonField{#2}%
10932     \else
10933       \HyField@FlagsPushButton
10934       \ifFld@hidden\def \Fld@width{1sp}\fi
10935       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10936       \Hy@escapeform\PDFForm@Reset
10937       \HyField@AdvanceAnnotCount
10938       \@pdfm@mark{%
10939         ann @reset\HyField@TheAnnotCount\space
10940         \dvi pdfm@setdim
10941         <<\PDFForm@Reset>>%
10942       }%
10943       \unhbox\pdfm@box
10944       \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
10945     \fi
10946   \endgroup
10947 }

```

\@CheckBox

```
10948 \def\@CheckBox[#1]#2{% parameters, label
10949   \def\Fld@name{#2}%
10950   \def\Fld@default{0}%
10951   \begingroup
10952     \def\Fld@width{\DefaultWidthofCheckBox}%
10953     \def\Fld@height{\DefaultHeightofCheckBox}%
10954     \Field@toks={ }%
10955     \expandafter\HyField@SetKeys\expandafter{%
10956       \DefaultOptionsofCheckBox,#1%
10957     }%
10958     \PDFForm@Name
10959     \HyField@FlagsCheckBox
10960     \ifFld@hidden\def\Fld@width{1sp}\fi
10961     \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
10962     \HyField@AdvanceAnnotCount
10963     \LayoutCheckField{#2}{%
10964       \Hy@escapeform\PDFForm@Check
10965       \@pdfm@mark{%
10966         ann @check\HyField@TheAnnotCount\space
10967         \dvipdfm@setdim
10968         <<\PDFForm@Check>>%
10969       }%
10970       \unhbox\pdfm@box
10971       \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
10972     }%
10973   \endgroup
10974 }

10975 \@pdfm@mark{obj @OBJpdfdocencoding%
10976 <<%
10977   /Type/Encoding%
10978   /Differences[%
10979     24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
10980     39/quotesingle %
10981     96/grave %
10982     128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10983     /fraction/guilsinglleft/guilsinglright/minus/perthousand%
10984     /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
10985     /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
10986     /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
10987     164/currency %
10988     166/brokenbar %
10989     168/dieresis/copyright/ordfeminine %
10990     172/logicalnot/.notdef/registered/macron/degree/plusminus%
10991     /twosuperior/threesuperior/acute/mu %
10992     183/periodcentered/cedilla/onesuperior/ordmasculine %
10993     188/onequarter/onehalf/threequarters %
10994     192/Agave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
10995     /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
10996     /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
10997     /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
10998     /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
10999     /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
11000     /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
11001     /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
11002     /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
```



```

11003      /thorn/ydieresis%
11004    ]%
11005  >>%
11006 }
11007 \@pdfm@mark{obj @OBJZaDb%
11008 <<%
11009   /Type/Font%
11010   /Subtype/Type1%
11011   /Name/ZaDb%
11012   /BaseFont/ZapfDingbats%
11013 >>%
11014 }
11015 \@pdfm@mark{obj @OBJHelv%
11016 <<%
11017   /Type/Font%
11018   /Subtype/Type1%
11019   /Name/Helv%
11020   /BaseFont/Helvetica%
11021   /Encoding @OBJpdfdocencoding%
11022 >>%
11023 }
11024 </dvipdfm>

```

## 47.6 Common forms part

```
11025 <*pdfmform>
```

\Hy@escapestring

```

11026 \begingroup\expandafter\expandafter\expandafter\endgroup
11027 \expandafter\ifx\csname pdfescapestring\endcsname\relax
11028   \let\Hy@escapestring\@firstofone
11029   \def\Hy@escapeform#1{%
11030     \ifHy@escapeform
11031       \def\Hy@escapestring##1{%
11032         \noexpand\Hy@escapestring{\noexpand##1}%
11033       }%
11034       \edef\Hy@temp{#1}%
11035       \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
11036     \def\Hy@escapestring##1{%
11037       \@ifundefined{Hy@esc@\string##1}{%
11038         ##1%
11039         \ThisShouldNotHappen
11040       }{%
11041         \csname Hy@esc@\string##1\endcsname
11042       }%
11043     }%
11044   \else
11045     \let\Hy@escapestring\@firstofone
11046   \fi
11047 }%
11048 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
11049   \ifx\#3\%
11050   \else
11051     \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
11052     \Hy@ReturnAfterFi{%
11053       \Hy@@escapeform#3\@nil
11054     }%

```

```

11055     \fi
11056   }%
11057 \else
11058   \def\Hy@escapeform#1{%
11059     \ifHy@escapeform
11060       \let\Hy@escapestring\pdfescapestring
11061     \else
11062       \let\Hy@escapestring\@firstofone
11063     \fi
11064   }%
11065   \Hy@escapeform{}}%
11066 \fi

\PDFForm@Name
11067 \def\PDFForm@Name{%
11068   \begingroup
11069     \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
11070       \ifHy@unicode
11071         \Hy@unicodedefalse
11072       \fi
11073     \fi
11074     \pdfstringdef\Hy@gtemp\Fld@name
11075   \endgroup
11076   \let\Fld@name\Hy@gtemp
11077 }

\PDFForm@Check
11078 \def\PDFForm@Check{%
11079   /Subtype/Widget%
11080   \Fld@annotflags
11081   /T(\Fld@name)%
11082   /FT/Btn%
11083   \Fld@flags
11084   /Q \Fld@align
11085   /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
11086   /MK<<%
11087     \ifnum\Fld@rotation=\z@
11088     \else
11089       /R \Fld@rotation
11090     \fi
11091     \ifx\Fld@bordercolor\relax
11092     \else
11093       /BC[\Fld@bordercolor]%
11094     \fi
11095     \ifx\Fld@bcolor\relax
11096     \else
11097       /BG[\Fld@bcolor]%
11098     \fi
11099     /CA(\Hy@escapestring{\Fld@cbsymbol})%
11100   >>%
11101   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
11102     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11103   /H/P%
11104   \ifFld@checked /V/Yes\else /V/Off\fi
11105 }

\PDFForm@Push

```

```

11106 \ifHy@pdfa
11107 \else
11108   \def\PDFForm@Push{%
11109     /Subtype/Widget%
11110     \Fld@annotflags
11111     /T(\Fld@name)%
11112     /FT/Btn%
11113     \Fld@flags
11114     /H/P%
11115     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11116     \ifcase0\ifnum\Fld@rotation=\z@   \else 1\fi
11117       \ifx\Fld@bordercolor\relax\else 1\fi
11118       \space
11119   \else
11120     /MK<<%
11121       \ifnum\Fld@rotation=\z@
11122       \else
11123         /R \Fld@rotation
11124       \fi
11125       \ifx\Fld@bordercolor\relax
11126       \else
11127         /BC[\Fld@bordercolor]%
11128       \fi
11129     >>%
11130   \fi
11131   /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick})>>%
11132 }%
11133 \fi

```

\Fld@additionalactions

```

11134 \def\Fld@@additionalactions{%
K input (keystroke) format
11135   \ifx\Fld@keystroke@code\@empty
11136   \else
11137     /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
11138   \fi
F display format
11139   \ifx\Fld@format@code\@empty
11140   \else
11141     /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
11142   \fi
V validation
11143   \ifx\Fld@validate@code\@empty
11144   \else
11145     /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
11146   \fi
C calculation
11147   \ifx\Fld@calculate@code\@empty
11148   \else
11149     /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
11150   \fi
Fo receiving the input focus
11151   \ifx\Fld@onfocus@code\@empty
11152   \else

```

```

11153     /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
11154   \fi

Bl loosing the input focus (blurred)
11155   \ifx\Fld@onblur@code\@empty
11156   \else
11157     /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
11158   \fi

D pressing the mouse button (down)
11159   \ifx\Fld@onmousedown@code\@empty
11160   \else
11161     /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
11162   \fi

U releasing the mouse button (up)
11163   \ifx\Fld@onmouseup@code\@empty
11164   \else
11165     /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
11166   \fi

E cursor enters the annotation's active area.
11167   \ifx\Fld@onenter@code\@empty
11168   \else
11169     /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
11170   \fi

X cursor exits the annotation's active area.
11171   \ifx\Fld@onexit@code\@empty
11172   \else
11173     /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
11174   \fi
11175 }
11176 \def\Fld@additionalactions{%
11177   \if-\Fld@@additionalactions-%
11178   \else
11179     \ifHy@pdfa
11180     \else
11181       /AA<<\Fld@@additionalactions>>%
11182     \fi
11183   \fi
11184 }

```

\PDFForm@List

```

11185 \def\PDFForm@List{%
11186   /Subtype/Widget%
11187   \Fld@annotflags
11188   /T(\Fld@name)%
11189   /FT/Ch%
11190   \Fld@flags
11191   /Q \Fld@align
11192   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11193   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11194     \ifx\Fld@bordercolor\relax\else 1\fi
11195     \ifx\Fld@bcolor\relax \else 1\fi
11196     \space
11197   \else
11198     /MK<<%
11199     \ifnum\Fld@rotation=\z@

```

```

11200     \else
11201         /R \Fld@rotation
11202     \fi
11203     \ifx\Fld@bordercolor\relax
11204     \else
11205         /BC[\Fld@bordercolor]%
11206     \fi
11207     \ifx\Fld@bcolor\relax
11208     \else
11209         /BG[\Fld@bcolor]%
11210     \fi
11211     >>%
11212 \fi
11213 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
11214     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11215 \Fld@choices
11216 \Fld@additionalactions
11217 }

```

#### \PDFForm@Radio

```

11218 \def\PDFForm@Radio{%
11219     /Subtype/Widget%
11220     \Fld@annotflags
11221     /T(\Fld@name)%
11222     /FT/Btn%
11223     \Fld@flags
11224     /H/P%
11225     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11226     /MK<<%
11227         \ifnum\Fld@rotation=\z@
11228         \else
11229             /R \Fld@rotation
11230         \fi
11231         \ifx\Fld@bordercolor\relax
11232         \else
11233             /BC[\Fld@bordercolor]%
11234         \fi
11235         \ifx\Fld@bcolor\relax
11236         \else
11237             /BG[\Fld@bcolor]%
11238         \fi
11239         /CA(H)%
11240     >>%
11241     /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
11242         \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11243     \ifx\@currValue\Fld@default
11244         /V/\Fld@default
11245     \else
11246         /V/Off%
11247     \fi
11248     \Fld@additionalactions
11249 }

```

#### \PDFForm@Text

```

11250 \def\PDFForm@Text{%
11251     /Subtype/Widget%
11252     \Fld@annotflags

```

```

11253 /T(\Fld@name)%
11254 /FT/Tx%
11255 \Fld@flags
11256 /Q \Fld@align
11257 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
11258 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11259 \ifx\Fld@bordercolor\relax\else 1\fi
11260 \ifx\Fld@bcolor\relax \else 1\fi
11261 \space
11262 \else
11263 /MK<<%
11264 \ifnum\Fld@rotation=\z@
11265 \else
11266 /R \Fld@rotation
11267 \fi
11268 \ifx\Fld@bordercolor\relax
11269 \else
11270 /BC[\Fld@bordercolor]%
11271 \fi
11272 \ifx\Fld@bcolor\relax
11273 \else
11274 /BG[\Fld@bcolor]%
11275 \fi
11276 >>%
11277 \fi
11278 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
11279 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11280 /DV(\Hy@escapestring{\Fld@default})%
11281 /V(\Hy@escapestring{\Fld@value})%
11282 \Fld@additionalactions
11283 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
11284 }

```

\PDFForm@Submit

```

11285 \def\PDFForm@Submit{%
11286 /Subtype/Widget%
11287 \Fld@annotflags
11288 /T(\Fld@name)%
11289 /FT/Btn%
11290 \Fld@flags
11291 /H/P%
11292 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11293 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11294 \ifx\Fld@bordercolor\relax\else 1\fi
11295 \space
11296 \else
11297 /MK<<%
11298 \ifnum\Fld@rotation=\z@
11299 \else
11300 /R \Fld@rotation
11301 \fi
11302 \ifx\Fld@bordercolor\relax
11303 \else
11304 /BC[\Fld@bordercolor]%
11305 \fi
11306 >>%
11307 \fi

```

```

11308 /A<<%
11309 /S/SubmitForm%
11310 /F<<%
11311 /FS/URL%
11312 /F(\Hy@escapestring{\Form@action})%
11313 >>%
11314 \Fld@submitflags
11315 >>%
11316 }

\PDFForm@Reset

11317 \ifHy@pdfa
11318 \else
11319 \def\PDFForm@Reset{%
11320 /Subtype/Widget%
11321 \Fld@annotflags
11322 /T(\Fld@name)%
11323 /FT/Btn%
11324 \Fld@flags
11325 /H/P%
11326 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
11327 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11328 \ifx\Fld@bordercolor\relax\else 1\fi
11329 \space
11330 \else
11331 /MK<<%
11332 \ifnum\Fld@rotation=\z@
11333 \else
11334 /R \Fld@rotation
11335 \fi
11336 \ifx\Fld@bordercolor\relax
11337 \else
11338 /BC[\Fld@bordercolor]%
11339 \fi
11340 % /CA (Clear)
11341 % /AC (Done)
11342 >>%
11343 \fi
11344 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11345 /A<</S/ResetForm>>%
11346 }%
11347 \fi

11348 </pdfform>
11349 <*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  $\text{\LaTeX}$  macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```

11350 \def\phantomsection{%
11351   \Hy@GlobalStepCount\Hy@linkcounter
11352   \xdef\@currentHref{section*.\the\Hy@linkcounter}%
11353   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
11354 }
11355 \</package>

```

## 48.1 Bookmarks

```

11356 \<*outlines>

```

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper.pdf and slides.pdf in the doc directory of hyperref.

```

11357 \def\Hy@writebookmark#1#2#3#4#5{%
11358   % section number, text, label, level, file
11359   \ifx\WriteBookmarks\relax%
11360   \else
11361     \ifnum#4>\Hy@bookmarksdepth\relax
11362     \else
11363       \@writetorep{#1}{#2}{#3}{#4}{#5}%
11364     \fi
11365   \fi
11366 }
11367 \def\Hy@currentbookmarklevel{0}
11368 \def\Hy@numberline#1{#1 }
11369 \def\@writetorep#1#2#3#4#5{%
11370   \begingroup
11371     \edef\Hy@tempa{#5}%
11372     \ifx\Hy@tempa\Hy@bookmarkstype
11373       \edef\Hy@level{#4}%
11374       \ifx\Hy@levelcheck Y%
11375         \@tempcnta\Hy@level\relax
11376         \advance\@tempcnta by -1 %
11377         \ifnum\Hy@currentbookmarklevel<\@tempcnta
11378           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
11379           \advance\@tempcnta by 1 %
11380           \Hy@Warning{%
11381             Difference (\the\@tempcnta) between bookmark levels is %
11382             greater \MessageBreak than one, level fixed%
11383           }%
11384           \@tempcnta\Hy@currentbookmarklevel
11385           \advance\@tempcnta by 1 %
11386           \edef\Hy@level{\the\@tempcnta}%
11387         \fi
11388       \else
11389         \global\let\Hy@levelcheck Y%
11390       \fi
11391       \global\let\Hy@currentbookmarklevel\Hy@level
11392       \@tempcnta\Hy@level\relax
11393       \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
11394       \advance\@tempcnta by -1 %
11395       \edef\Hy@tempa{#3}%
11396       \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
11397       \ifx\Hy@tempa\Hy@tempb

```



```

11398     \Hy@Warning{%
11399         The anchor of a bookmark and its parent's must not%
11400         \MessageBreak be the same. Added a new anchor%
11401     }%
11402     \phantomsection
11403 \fi
11404 \ifHy@bookmarksnumbered
11405     \let\numberline\Hy@numberline
11406     \let\partnumberline\Hy@numberline
11407     \let\chapternumberline\Hy@numberline
11408 \else
11409     \let\numberline\@gobble
11410     \let\partnumberline\@gobble
11411     \let\chapternumberline\@gobble
11412 \fi
11413 \pdfstringdef\Hy@tempa{#2}%
11414 \if@filesw
11415     \protected@write\@outlinefile{}\{%
11416         \protect\BOOKMARK
11417         [\Hy@level] [\@bookmarkopenstatus{\Hy@level}]{#3}%
11418         {\Hy@tempa}{\Hy@tempb}%
11419     }%
11420 \fi
11421 \fi
11422 \endgroup
11423 }

```

In the call of `\BOOKMARK` the braces around #4 are omitted, because it is not likely, that the level number contains ] .

```

11424 \newcommand{\currentpdfbookmark}{%
11425     \pdfbookmark[\Hy@currentbookmarklevel]%
11426 }
11427 \newcommand{\subpdfbookmark}{%
11428     \@tempcnta\Hy@currentbookmarklevel
11429     \Hy@StepCount\@tempcnta
11430     \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
11431 }
11432 \newcommand{\belowpdfbookmark}[2]{%
11433     \@tempcnta\Hy@currentbookmarklevel
11434     \Hy@StepCount\@tempcnta
11435     \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
11436     \advance\@tempcnta by -1 %
11437     \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
11438 }

```

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.

```

11439 \renewcommand\pdfbookmark[3][0]{%
11440     \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
11441     \hyper@anchorstart{#3.#1}\hyper@anchorend
11442 }
11443 \def\BOOKMARK{\@ifnextchar[{\@BOOKMARK}{\@BOOKMARK[1] [-]}}
11444 \def\@BOOKMARK[#1]{\@ifnextchar[{\@BOOKMARK[#1] }{\@BOOKMARK[#1] [-]}}

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfo` macros.

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.

11445 \\*vtex)

11446 \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.

11447 \begingroup

11448 \catcode'\'=12 %

11449 \ifnum\Hy@VTeXversion<650 %

11450 \catcode'\ "=12 %

11451 \gdef\hv@pdf@char#1#2#3{%

11452 \char

11453 \ifcase'#1#2#3 %

11454 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%

11455 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%

11456 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%

11457 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%

11458 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%

11459 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%

11460 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%

11461 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%

11462 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%

11463 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%

11464 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%

11465 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%

11466 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%

11467 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%

11468 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%

11469 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%

11470 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%

11471 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%

11472 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%

11473 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%

11474 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%

11475 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%

11476 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%

11477 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%

11478 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%

11479 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%

11480 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%

11481 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%

11482 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%

11483 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%

11484 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%

11485 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%

11486 \fi

11487 }%

11488 \else

11489 \gdef\hv@pdf@char{\char'}%

11490 \fi

11491 \endgroup

\@@BOOKMARK

11492 \def\@@BOOKMARK[#1][#2]#3#4#5{%

11493 \expandafter\edef\csname @count#3\endcsname{\the\@serial@counter}%

```

11494 \edef\@mycount{\the\@serial@counter}%
11495 \Hy@StepCount\@serial@counter
11496 \edef\@parcount{%
11497   \expandafter\ifx\csname @count@#5\endcsname\relax
11498     0%
11499   \else
11500     \csname @count@#5\endcsname
11501   \fi
11502 }%
11503 \immediate\special{%
11504   !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
11505   s=\ifx#2-c\else o\fi,t=#4%
11506 }%
11507 }%

```

#### \ReadBookmarks

```

11508 \def\ReadBookmarks{%
11509   \begingroup
11510   \def\O{\hv@pdf@char 0}%
11511   \def\1{\hv@pdf@char 1}%
11512   \def\2{\hv@pdf@char 2}%
11513   \def\3{\hv@pdf@char 3}%
11514   \def\({}%
11515   \def\)}%
11516   \def\do##1{%
11517     \ifnum\the\catcode'##1=\active
11518       \makeother##1%
11519     \fi
11520   }%
11521   \dospecials
11522   \InputIfFileExists{\jobname.out}{-}{-}%
11523 \endgroup
11524 \ifx\WriteBookmarks\relax
11525 \else
11526   \if@filesw
11527     \newwrite\@outlinefile
11528     \immediate\openout\@outlinefile=\jobname.out\relax
11529     \ifHy@typexml
11530       \immediate\write\@outlinefile{<relaxxml>\relax}%
11531     \fi
11532   \fi
11533 \fi
11534 }

11535 </vtex>
11536 <*\vtex>
11537 \def\ReadBookmarks{%
11538   \begingroup
11539   \escapechar='\\%
11540   \let\escapechar\@gobble %
11541   \def\@@BOOKMARK[##1][##2]##3##4##5{\calc@bm@number{##5}}%
11542   \InputIfFileExists{\jobname.out}{-}{-}%
11543   \ifx\WriteBookmarks\relax
11544     \global\let\WriteBookmarks\relax
11545   \fi
11546   \def\@@BOOKMARK[##1][##2]##3##4##5{%
11547     \def\Hy@temp{##4}%

```

```

11548 <*pdftex>
11549     \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
11550     \Hy@OutlineName{}\Hy@pstringName{%
11551         ##2\check@bm@number{##3}%
11552     }{%
11553         \expandafter\strip@prefix\meaning\Hy@temp
11554     }%
11555 </pdftex>
11556 <*pdfmark>
11557     \pdfmark{%
11558         pdfmark=/OUT,%
11559         Count={##2\check@bm@number{##3}},%
11560         Dest={##3},%
11561         Title=\expandafter\strip@prefix\meaning\Hy@temp
11562     }%
11563 </pdfmark>
11564 <*dvipdfm>
11565     \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
11566     \@pdfm@mark{%
11567         outline \ifHy@DvipdfmxOutlineOpen
11568             [%
11569             \ifnum##21>\z@
11570             \else
11571             -%
11572             \fi
11573             ] %
11574             \fi
11575             ##1<%
11576             /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
11577             /A<%
11578             /S/GoTo%
11579             /D(\Hy@pstringName)%
11580             >>%
11581             >>%
11582         }%
11583 </dvipdfm>
11584     }%
11585     {%
11586         \def\WriteBookmarks{0}%
11587         \InputIfFileExists{\jobname.out}{\relax}%
11588     }%
11589     {%\escapechar\m@ne\InputIfFileExists{\jobname.out}{\relax}%
11590     \ifx\WriteBookmarks\relax
11591     \else
11592         \if@files
11593             \newwrite\@outlinefile
11594             \immediate\openout\@outlinefile=\jobname.out\relax
11595             \ifHy@typexml
11596                 \immediate\write\@outlinefile{<relaxxml>\relax}%
11597             \fi
11598             \fi
11599         \fi
11600     \endgroup
11601 }
11602 <*pdftex>
11603 \def\Hy@OutlineName#1#2#3#4{%
11604     \pdfoutline goto name{#2}count#3{#4}%

```

```

11605 }
11606 </pdfTeX>
11607 \def\check@bm@number#1{%
11608   \expandafter\ifx\csname B_#1\endcsname\relax
11609     0%
11610   \else
11611     \csname B_#1\endcsname
11612   \fi
11613 }
11614 \def\calc@bm@number#1{%
11615   \@tempcnta=\check@bm@number{#1}\relax
11616   \advance\@tempcnta by 1 %
11617   \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
11618 }
11619 </!vTeX>

11620 \ifHy@implicit
11621 \else
11622   \expandafter\endinput
11623 \fi

11624 </outlines>
11625 <*outlines | hypertex>

11626 \let\H@old@ssect\@ssect
11627 \def\@ssect#1#2#3#4#5{%
11628   \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
11629   \phantomsection
11630 }
11631 \let\H@old@schapter\@schapter
11632 \def\@schapter#1{%
11633   \H@old@schapter{#1}%
11634   \begingroup
11635     \let\mkboth\@gobbletwo
11636     \Hy@GlobalStepCount\Hy@linkcounter
11637     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11638     \Hy@raisedlink{%
11639       \hyper@anchorstart{\@currentHref}\hyper@anchorend
11640     }%
11641   \endgroup
11642 }

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:

11643 \@ifundefined{@chapter}{-}{%
11644   \let\Hy@org@chapter\@chapter
11645   \def\@chapter{%
11646     \def\Hy@next{%
11647       \Hy@GlobalStepCount\Hy@linkcounter
11648       \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11649       \Hy@raisedlink{%
11650         \hyper@anchorstart{\@currentHref}\hyper@anchorend
11651       }%
11652     }%
11653     \ifnum\c@secnumdepth>\m@ne
11654       \@ifundefined{if@mainmatter}%
11655       \iftrue{\csname if@mainmatter\endcsname}%
11656       \let\Hy@next\relax

```

```

11657     \fi
11658     \fi
11659     \Hy@next
11660     \Hy@org@chapter
11661 }%
11662 }

11663 \let\H@old@part\@part
11664 \begingroup\expandafter\expandafter\expandafter\endgroup
11665 \expandafter\ifx\csname chapter\endcsname\relax
11666   \let\Hy@secnum@part\z@
11667 \else
11668   \let\Hy@secnum@part\m@ne
11669 \fi
11670 \def\@part{%
11671   \ifnum\Hy@secnum@part>\c@secnumdepth
11672     \phantomsection
11673   \fi
11674   \H@old@part
11675 }

11676 \let\H@old@spart\@spart
11677 \def\@spart#1{%
11678   \H@old@spart{#1}%
11679   \Hy@GlobalStepCount\Hy@linkcounter
11680   \xdef\@currentHref{part*.\the\Hy@linkcounter}%
11681   \Hy@raisedlink{%
11682     \hyper@anchorstart{\@currentHref}\hyper@anchorend
11683   }%
11684 }

11685 \let\H@old@sect\@sect
11686 \def\@sect#1#2#3#4#5#6[#7]#8{%
11687   \ifnum #2>\c@secnumdepth
11688     \Hy@GlobalStepCount\Hy@linkcounter
11689     \xdef\@currentHref{section*.\the\Hy@linkcounter}%
11690   \fi
11691   \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}%
11692   \ifnum #2>\c@secnumdepth
11693     \Hy@raisedlink{%
11694       \hyper@anchorstart{\@currentHref}\hyper@anchorend
11695     }%
11696   \fi
11697 }

11698 </outlines | hypertex>
11699 <*outlines>

11700 \expandafter\def\csname Parent-4\endcsname{}
11701 \expandafter\def\csname Parent-3\endcsname{}
11702 \expandafter\def\csname Parent-2\endcsname{}
11703 \expandafter\def\csname Parent-1\endcsname{}
11704 \expandafter\def\csname Parent0\endcsname{}
11705 \expandafter\def\csname Parent1\endcsname{}
11706 \expandafter\def\csname Parent2\endcsname{}
11707 \expandafter\def\csname Parent3\endcsname{}
11708 \expandafter\def\csname Parent4\endcsname{}

11709 </outlines>

```

## 49 Compatibility with koma-script classes

11710 < \*outlines | hypertex >

Hard-wire in an unpleasant over-ride of komascript 'scrbook' class for 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.

```
11711 \def\Hy@tempa{%
11712   \def\@addchap[##1]##2{%
11713     \typeout{##2}%
11714     \if@twoside
11715       \mkboth{##1}{}%
11716     \else
11717       \mkboth{}{##1}%
11718     \fi
11719     \addtocontents{lof}{\protect\addvspace{10\p@}}%
11720     \addtocontents{lot}{\protect\addvspace{10\p@}}%
11721     \Hy@GlobalStepCount\Hy@linkcounter
11722     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11723     \Hy@raisedlink{%
11724       \hyper@anchorstart{\@currentHref}\hyper@anchorend
11725     }%
11726     \if@twocolumn
11727       \topnewpage[\@makeschapterhead{##2}]%
11728     \else
11729       \@makeschapterhead{##2}%
11730       \afterheading
11731     \fi
11732     \addcontentsline{toc}{chapter}{##1}%
11733   }%
11734 }
11735 \@ifclassloaded{scrbook}{%
11736   \@ifclasslater{scrbook}{2001/01/01}{%
11737     \let\Hy@tempa\empty
11738   }{}%
11739 }{%
11740   \@ifclassloaded{scrreprt}{%
11741     \@ifclasslater{scrreprt}{2001/01/01}{%
11742       \let\Hy@tempa\empty
11743     }{}%
11744   }{%
11745     \let\Hy@tempa\empty
11746   }%
11747 }%
11748 \Hy@tempa
11749 < /outlines | hypertex >
```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek oberdiek@ruf.uni-freiburg.de

### 50.1 PD1 encoding

```
11750 < *pd1enc >
11751 \DeclareFontEncoding{PD1}{}{}
```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```
11752 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
```

```

11753 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
11754 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
11755 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
11756 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed

```

#### Accents

```

11757 \DeclareTextAccent{\'}{PD1}{\textgrave}
11758 \DeclareTextAccent{\'}{PD1}{\textacute}
11759 \DeclareTextAccent{\`}{PD1}{\textcircumflex}
11760 \DeclareTextAccent{\~}{PD1}{\texttilde}
11761 \DeclareTextAccent{\"}{PD1}{\textdieresis}
11762 \DeclareTextAccent{\r}{PD1}{\textring}
11763 \DeclareTextAccent{\v}{PD1}{\textcaron}
11764 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
11765 \DeclareTextAccent{\c}{PD1}{\textcedilla}
11766 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textgrave}
11767 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
11768 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textcircumflex}
11769 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
11770 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textdieresis}
11771 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
11772 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}
11773 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
11774 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
11775 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}

```

#### Accent glyph names

```

11776 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve
11777 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
11778 \DeclareTextCommand{\textcircumflex}{PD1}{\032} % circumflex
11779 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
11780 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
11781 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
11782 \DeclareTextCommand{\textring}{PD1}{\036} % ring
11783 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde

```

\040: space

\041: exclam

```

11784 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042

```

```

11785 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign

```

```

11786 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar

```

```

11787 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent

```

```

11788 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand

```

\047: quotesingle

```

11789 \DeclareTextCommand{\textparenleft}{PD1}{\string\({} % parenleft \050

```

```

11790 \DeclareTextCommand{\textparenright}{PD1}{\string\)} % parenright \051

```

\052: asterisk

\053: plus

\054: comma

\055: hyphen

\056: period

\057: slash

\060... \071: 0...9

\072: colon

\073: semicolon

```

11791 \DeclareTextCommand{\textless}{PD1}{<} % less \074

```

\075: equal

```

11792 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076

```



\077: question  
 \100: at  
 \101... \132: A...Z  
 \133: bracketleft  
 11793 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash  
 \135: bracketright  
 11794 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum  
 11795 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore  
 11796 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave  
 \141... \172: a...z  
 11797 \DeclareTextCompositeCommand{.}{PD1}{i}{i} % i  
 11798 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft  
 11799 \DeclareTextCommand{\textbar}{PD1}{|} % bar  
 11800 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright  
 11801 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde  
 No glyph \177 in PDFDocEncoding.  
 11802 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet  
 11803 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger  
 11804 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl  
 11805 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis  
 11806 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash  
 11807 \DeclareTextCommand{\textendash}{PD1}{\205} % endash  
 11808 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin  
 11809 \DeclareTextCommand{\textfractionmark}{PD1}{\207} % fraction, \207  
 11810 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft  
 11811 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright  
 11812 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212  
 11813 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand  
 11814 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase  
 11815 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft  
 11816 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright  
 11817 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft  
 11818 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright  
 11819 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase  
 11820 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark  
 11821 \DeclareTextCommand{\textfi}{PD1}{\223} % fi ?? \223  
 11822 \DeclareTextCommand{\textfl}{PD1}{\224} % fl ?? \224  
 11823 \DeclareTextCommand{\L}{PD1}{\225} % Lslash, \225  
 11824 \DeclareTextCommand{\OE}{PD1}{\226} % OE  
 11825 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron  
 11826 \DeclareTextCompositeCommand{\Y}{PD1}{Y}{\230} % Ydieresis  
 11827 \DeclareTextCommand{\IJ}{PD1}{\230}  
 11828 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231} % Zcaron, \231  
 11829 \DeclareTextCommand{\i}{PD1}{\232} % dotlessi, \232  
 11830 \DeclareTextCommand{\l}{PD1}{\233} % lslash, \233  
 11831 \DeclareTextCommand{\oe}{PD1}{\234} % oe  
 11832 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron  
 11833 \DeclareTextCompositeCommand{\v}{PD1}{z}{\236} % zcaron, 236  
 No glyph \237 in PDFDocEncoding.  
 The euro \240 is inserted in version 1.3 of the pdf specification.  
 11834 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro  
 11835 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown  
 11836 \DeclareTextCommand{\textcent}{PD1}{\242} % cent  
 11837 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling  
 11838 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency  
 11839 \DeclareTextCommand{\textyen}{PD1}{\245} % yen

```

11840 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
11841 \DeclareTextCommand{\textsection}{PD1}{\247} % section
11842 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
11843 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
11844 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
11845 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
11846 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

No glyph \255 in PDFDocEncoding.

11847 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
11848 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
11849 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
11850 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
11851 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
11852 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
11853 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
11854 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
11855 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
11856 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
11857 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
11858 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior
11859 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine
11860 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright
11861 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter
11862 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf
11863 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters
11864 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown
11865 \DeclareTextCompositeCommand{\'}{PD1}{A}{\300} % Agrave
11866 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301} % Acute
11867 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302} % Acircumflex
11868 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303} % Atilde
11869 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304} % Adieresis
11870 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring
11871 \DeclareTextCommand{\AE}{PD1}{\306} % AE
11872 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla
11873 \DeclareTextCompositeCommand{\'}{PD1}{E}{\310} % Egrave
11874 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311} % Eacute
11875 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312} % Ecircumflex
11876 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313} % Edieresis
11877 \DeclareTextCompositeCommand{\'}{PD1}{I}{\314} % Igrave
11878 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315} % Iacute
11879 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316} % Icircumflex
11880 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317} % Idieresis
11881 \DeclareTextCommand{\DH}{PD1}{\320} % Eth
11882 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth
11883 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321} % Ntilde
11884 \DeclareTextCompositeCommand{\'}{PD1}{O}{\322} % Ograve
11885 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323} % Oacute
11886 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324} % Ocircumflex
11887 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325} % Otilde
11888 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326} % Odieresis
11889 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply
11890 \DeclareTextCommand{\O}{PD1}{\330} % Oslash
11891 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331} % Ugrave
11892 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute
11893 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333} % Ucircumflex
11894 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis
11895 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335} % Yacute

```

```

11896 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn
11897 \DeclareTextCommand{\ss}{PD1}{\337} % germandbls
11898 \DeclareTextCompositeCommand{\'}{PD1}{a}{\340} % agrave
11899 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute
11900 \DeclareTextCompositeCommand{\`}{PD1}{a}{\342} % acircumflex
11901 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343} % atilde
11902 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344} % adieresis
11903 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring
11904 \DeclareTextCommand{\ae}{PD1}{\346} % ae
11905 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla
11906 \DeclareTextCompositeCommand{\'}{PD1}{e}{\350} % egrave
11907 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute
11908 \DeclareTextCompositeCommand{\`}{PD1}{e}{\352} % ecircumflex
11909 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353} % edieresis
11910 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
11911 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
11912 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
11913 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
11914 \DeclareTextCompositeCommand{\`}{PD1}{i}{\356} % icircumflex
11915 \DeclareTextCompositeCommand{\`}{PD1}{i}{\356} % icircumflex
11916 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
11917 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
11918 \DeclareTextCommand{\dh}{PD1}{\360} % eth
11919 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361} % ntilde
11920 \DeclareTextCompositeCommand{\'}{PD1}{o}{\362} % ograve
11921 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363} % oacute
11922 \DeclareTextCompositeCommand{\`}{PD1}{o}{\364} % ocircumflex
11923 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365} % otilde
11924 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366} % odieresis
11925 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
11926 \DeclareTextCommand{\o}{PD1}{\370} % oslash
11927 \DeclareTextCompositeCommand{\'}{PD1}{u}{\371} % ugrave
11928 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372} % uacute
11929 \DeclareTextCompositeCommand{\`}{PD1}{u}{\373} % ucircumflex
11930 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374} % udieresis
11931 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375} % yacute
11932 \DeclareTextCommand{\th}{PD1}{\376} % thorn
11933 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377} % ydieresis
11934 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

11935 \DeclareTextCommand{\SS}{PD1}{SS}
11936 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

11937 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
11938 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
11939 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
11940 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
11941 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
11942 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
11943 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
11944 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

11945 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
11946 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
11947 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
11948 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}

```

```

11949 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
11950 \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;

```

11951 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
11952 \DeclareTextCompositeCommand{\'}{PD1}{c}{c} % cacute
11953 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
11954 \DeclareTextCompositeCommand{\'}{PD1}{n}{n} % nacute
11955 \DeclareTextCompositeCommand{\'}{PD1}{s}{s} % sacute
11956 \DeclareTextCompositeCommand{\'}{PD1}{z}{z} % zacute
11957 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot
11958 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
11959 \DeclareTextCompositeCommand{\'}{PD1}{C}{C} % Cacute
11960 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
11961 \DeclareTextCompositeCommand{\'}{PD1}{N}{N} % Nacute
11962 \DeclareTextCompositeCommand{\'}{PD1}{S}{S} % Sacute
11963 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z} % Zacute
11964 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot

```

```

11965 </pdlenc>

```

## 50.2 PU encoding

```

11966 <*puenc>
11967 \DeclareFontEncoding{PU}{-}{-}

```

### 50.2.1 Basic Latin

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

11968 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
11969 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
11970 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
11971 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
11972 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed

```

#### Accents

```

11973 \DeclareTextAccent{\'}{PU}{\textgrave}
11974 \DeclareTextAccent{\'}{PU}{\textacute}
11975 \DeclareTextAccent{\^}{PU}{\textcircumflex}
11976 \DeclareTextAccent{\~}{PU}{\texttilde}
11977 \DeclareTextAccent{\"}{PU}{\textdieresis}
11978 \DeclareTextAccent{\r}{PU}{\textring}
11979 \DeclareTextAccent{\v}{PU}{\textcaron}
11980 \DeclareTextAccent{\.}{PU}{\textdotaccent}
11981 \DeclareTextAccent{\c}{PU}{\textcedilla}
11982 \DeclareTextAccent{\U}{PU}{\textbreve}
11983 \DeclareTextAccent{\C}{PU}{\textdoublegrave}
11984 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textgrave}
11985 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
11986 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textcircumflex}
11987 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
11988 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textdieresis}
11989 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
11990 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
11991 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
11992 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
11993 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
11994 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}
11995 \DeclareTextCommand{\=}{PU}[1]{\TextSymbolUnavailable{\={#1}}#1}

```

```

11996 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
11997 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
11998 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}

Accent glyph names
11999 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
12000 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
12001 \DeclareTextCommand{\textcirc{circumflex}}{PU}{\80\032} % circumflex
12002 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
12003 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
12004 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
12005 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
12006 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
12007 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave

\040: space
\041: exclam

12008 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
12009 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
12010 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
12011 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
12012 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand

\047: quotesingle

12013 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft
12014 \DeclareTextCommand{\textparenright}{PU}{\80\051} % parenright

\052: asterisk
\053: plus
\054: comma
\055: hyphen
\056: period
\057: slash
\060... \071: 0...9
\072: colon
\073: semicolon

12015 \DeclareTextCommand{\textless}{PU}{<} % less \80\074
\075: equal

12016 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076

\077: question
\100: at
\101... \132: A...Z
\133: bracketleft

12017 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash
\135: bracketright

12018 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum
12019 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore
12020 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave
\141... \172: a...z

12021 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % i
12022 \DeclareTextCommand{\j}{PU}{j} % jdotless
12023 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft
12024 \DeclareTextCommand{\textbar}{PU}{|} % bar
12025 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright
12026 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde

No glyph \177 in PDFDocEncoding.

```

## 50.2.2 Latin-1 Supplement

```
12027 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212
12028 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223
12029 \DeclareTextCommand{\textfl}{PU}{fl} % fl ?? \80\224
```

There are two positions for the glyphs from \80\225 until \80\236. See the test files testbmoe., testbml, testbmisc, testbmzc, and testbmyi for details. Problematic are all positions, but especially \OE, \oe, and \i.

```
12030 \DeclareTextCommand{\OE}{PU}{OE} % OE
12031 \DeclareTextCommand{\oe}{PU}{oe} % oe
```

The euro \240 is inserted in version 1.3 of the pdf specification.

```
12032 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown
12033 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent
12034 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling
12035 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency
12036 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen
12037 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar
12038 \DeclareTextCommand{\textsection}{PU}{\80\247} % section
12039 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis
12040 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright
12041 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine
12042 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft
12043 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot
```

No glyph \255 in PDFDocEncoding.

```
12044 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered
12045 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron
12046 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree
12047 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus
12048 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior
12049 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior
12050 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute
12051 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu
12052 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph
12053 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered
12054 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla
12055 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior
12056 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine
12057 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright
12058 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter
12059 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf
12060 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters
12061 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown
12062 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300} % Agrave
12063 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute
12064 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302} % Acircumflex
12065 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303} % Atilde
12066 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis
12067 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring
12068 \DeclareTextCommand{\AE}{PU}{\80\306} % AE
12069 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla
12070 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310} % Egrave
12071 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311} % Eacute
12072 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312} % Ecircumflex
12073 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis
12074 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314} % Igrave
12075 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315} % Iacute
12076 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316} % Icircumflex
```

```

12077 \DeclareTextCompositeCommand{"}{PU}{I}{\80\317} % Idieresis
12078 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth
12079 \DeclareTextCompositeCommand{~}{PU}{N}{\80\321} % Ntilde
12080 \DeclareTextCompositeCommand{'}{PU}{O}{\80\322} % Ograve
12081 \DeclareTextCompositeCommand{'}{PU}{O}{\80\323} % Oacute
12082 \DeclareTextCompositeCommand{^}{PU}{O}{\80\324} % Ocircumflex
12083 \DeclareTextCompositeCommand{~}{PU}{O}{\80\325} % Otilde
12084 \DeclareTextCompositeCommand{"}{PU}{O}{\80\326} % Odieresis
12085 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply
12086 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash
12087 \DeclareTextCompositeCommand{'}{PU}{U}{\80\331} % Ugrave
12088 \DeclareTextCompositeCommand{'}{PU}{U}{\80\332} % Uacute
12089 \DeclareTextCompositeCommand{^}{PU}{U}{\80\333} % Ucircumflex
12090 \DeclareTextCompositeCommand{"}{PU}{U}{\80\334} % Udieresis
12091 \DeclareTextCompositeCommand{'}{PU}{Y}{\80\335} % Yacute
12092 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn
12093 \DeclareTextCommand{\ss}{PU}{\80\337} % germanbls
12094 \DeclareTextCompositeCommand{'}{PU}{a}{\80\340} % agrave
12095 \DeclareTextCompositeCommand{'}{PU}{a}{\80\341} % aacute
12096 \DeclareTextCompositeCommand{^}{PU}{a}{\80\342} % acircumflex
12097 \DeclareTextCompositeCommand{~}{PU}{a}{\80\343} % atilde
12098 \DeclareTextCompositeCommand{"}{PU}{a}{\80\344} % adieresis
12099 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
12100 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
12101 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
12102 \DeclareTextCompositeCommand{'}{PU}{e}{\80\350} % egrave
12103 \DeclareTextCompositeCommand{'}{PU}{e}{\80\351} % eacute
12104 \DeclareTextCompositeCommand{^}{PU}{e}{\80\352} % ecircumflex
12105 \DeclareTextCompositeCommand{"}{PU}{e}{\80\353} % edieresis
12106 \DeclareTextCompositeCommand{'}{PU}{i}{\80\354} % igrave
12107 \DeclareTextCompositeCommand{'}{PU}{i}{\80\354} % igrave
12108 \DeclareTextCompositeCommand{'}{PU}{i}{\80\355} % iacute
12109 \DeclareTextCompositeCommand{'}{PU}{i}{\80\355} % iacute
12110 \DeclareTextCompositeCommand{^}{PU}{i}{\80\356} % icircumflex
12111 \DeclareTextCompositeCommand{~}{PU}{i}{\80\356} % icircumflex
12112 \DeclareTextCompositeCommand{"}{PU}{i}{\80\357} % idieresis
12113 \DeclareTextCompositeCommand{"}{PU}{i}{\80\357} % idieresis
12114 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
12115 \DeclareTextCompositeCommand{~}{PU}{n}{\80\361} % ntilde
12116 \DeclareTextCompositeCommand{'}{PU}{o}{\80\362} % ograve
12117 \DeclareTextCompositeCommand{'}{PU}{o}{\80\363} % oacute
12118 \DeclareTextCompositeCommand{^}{PU}{o}{\80\364} % ocircumflex
12119 \DeclareTextCompositeCommand{~}{PU}{o}{\80\365} % otilde
12120 \DeclareTextCompositeCommand{"}{PU}{o}{\80\366} % odieresis
12121 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
12122 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
12123 \DeclareTextCompositeCommand{'}{PU}{u}{\80\371} % ugrave
12124 \DeclareTextCompositeCommand{'}{PU}{u}{\80\372} % uacute
12125 \DeclareTextCompositeCommand{^}{PU}{u}{\80\373} % ucircumflex
12126 \DeclareTextCompositeCommand{"}{PU}{u}{\80\374} % udieresis
12127 \DeclareTextCompositeCommand{'}{PU}{y}{\80\375} % yacute
12128 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
12129 \DeclareTextCompositeCommand{"}{PU}{y}{\80\377} % ydieresis
12130 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```
12131 \DeclareTextCommand{\SS}{PU}{SS}
```

Aliases (german.sty)

```

12132 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
12133 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
12134 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
12135 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
12136 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
12137 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
12138 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
12139 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

12140 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
12141 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
12142 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
12143 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
12144 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

### 50.2.3 Latin Extended-A

```

12145 \DeclareTextCompositeCommand{=} {PU}{A}{\81\000}% Amacron
12146 \DeclareTextCompositeCommand{a} {PU}{a}{\81\001}% amacron
12147 \DeclareTextCompositeCommand{u} {PU}{A}{\81\002}% Abreve
12148 \DeclareTextCompositeCommand{u} {PU}{a}{\81\003}% abreve
12149 \DeclareTextCompositeCommand{k} {PU}{A}{\81\004}% Aogonek
12150 \DeclareTextCompositeCommand{k} {PU}{a}{\81\005}% aogonek
12151 \DeclareTextCompositeCommand{'} {PU}{C}{\81\006}% Cacute
12152 \DeclareTextCompositeCommand{' } {PU}{c}{\81\007}% cacute
12153 \DeclareTextCompositeCommand{^} {PU}{C}{\81\010}% Ccircumflex
12154 \DeclareTextCompositeCommand{^} {PU}{c}{\81\011}% ccircumflex
12155 \DeclareTextCompositeCommand{.} {PU}{C}{\81\012}% Cdot
12156 \DeclareTextCompositeCommand{.} {PU}{c}{\81\013}% cdot
12157 \DeclareTextCompositeCommand{v} {PU}{C}{\81\014}% Ccaron
12158 \DeclareTextCompositeCommand{v} {PU}{c}{\81\015}% ccaron
12159 \DeclareTextCompositeCommand{v} {PU}{D}{\81\016}% Dcaron
12160 \DeclareTextCompositeCommand{v} {PU}{d}{\81\017}% dcaron
12161 \DeclareTextCommand{DJ} {PU}{\81\020}% Dslash
12162 \DeclareTextCommand{dj} {PU}{\81\021}% dslash
12163 \DeclareTextCompositeCommand{=} {PU}{E}{\81\022}% Emacron
12164 \DeclareTextCompositeCommand{=} {PU}{e}{\81\023}% emacron
12165 \DeclareTextCompositeCommand{u} {PU}{E}{\81\024}% Ebreve
12166 \DeclareTextCompositeCommand{u} {PU}{e}{\81\025}% ebreve
12167 \DeclareTextCompositeCommand{.} {PU}{E}{\81\026}% Edot
12168 \DeclareTextCompositeCommand{.} {PU}{e}{\81\027}% edot
12169 \DeclareTextCompositeCommand{k} {PU}{E}{\81\030}% Eogonek
12170 \DeclareTextCompositeCommand{k} {PU}{e}{\81\031}% eogonek
12171 \DeclareTextCompositeCommand{v} {PU}{E}{\81\032}% Ecaron
12172 \DeclareTextCompositeCommand{v} {PU}{e}{\81\033}% ecaron
12173 \DeclareTextCompositeCommand{^} {PU}{G}{\81\034}% Gcircumflex
12174 \DeclareTextCompositeCommand{^} {PU}{g}{\81\035}% gcircumflex
12175 \DeclareTextCompositeCommand{u} {PU}{G}{\81\036}% Gbreve
12176 \DeclareTextCompositeCommand{u} {PU}{g}{\81\037}% gbreve
12177 \DeclareTextCompositeCommand{.} {PU}{G}{\81\040}% Gdot
12178 \DeclareTextCompositeCommand{.} {PU}{g}{\81\041}% gdot
12179 \DeclareTextCompositeCommand{c} {PU}{G}{\81\042}% Gcedilla
12180 \DeclareTextCompositeCommand{c} {PU}{g}{\81\043}% gcedilla
12181 \DeclareTextCompositeCommand{^} {PU}{H}{\81\044}% Hcircumflex
12182 \DeclareTextCompositeCommand{^} {PU}{h}{\81\045}% hcircumflex
12183 \DeclareTextCommand{\textHslash} {PU}{\81\046}% Hslash
12184 \DeclareTextCommand{\texthslash} {PU}{\81\047}% hslash
12185 \DeclareTextCompositeCommand{~} {PU}{I}{\81\050}% Itilde

```



```

12186 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde
12187 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde
12188 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052} % Imacron
12189 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053} % imacron
12190 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053} % imacron
12191 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054} % Ibreve
12192 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
12193 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
12194 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056} % Iogonek
12195 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
12196 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
12197 \DeclareTextCompositeCommand{.}{PU}{I}{\81\060} % Idot
12198 \DeclareTextCommand{\i}{PU}{\81\061} % idotless
12199 % IJlig
12200 % ijlig
12201 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064} % Jcircumflex
12202 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
12203 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
12204 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
12205 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
12206 % kgreen
12207 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
12208 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
12209 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
12210 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
12211 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
12212 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
12213 % L middle dot
12214 % l middle dot
12215 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
12216 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
12217 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute
12218 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
12219 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
12220 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
12221 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
12222 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
12223 % n apostrophe
12224 \DeclareTextCommand{\NG}{PU}{\81\112} % NG
12225 \DeclareTextCommand{\ng}{PU}{\81\113} % ng
12226 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114} % Omacron
12227 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115} % omacron
12228 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve
12229 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
12230 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
12231 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
12232 \DeclareTextCommand{\OE}{PU}{\81\122} % OE
12233 \DeclareTextCommand{\oe}{PU}{\81\123} % oe
12234 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
12235 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
12236 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
12237 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
12238 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
12239 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
12240 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
12241 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
12242 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134} % Scircumflex

```

```

12243 \DeclareTextCompositeCommand{\~}{PU}{s}{\81\135} % scircumflex
12244 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
12245 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
12246 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
12247 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
12248 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
12249 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
12250 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
12251 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
12252 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
12253 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
12254 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150} % Utilde
12255 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151} % utilde
12256 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152} % Umacron
12257 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153} % umacron
12258 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
12259 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
12260 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring
12261 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
12262 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
12263 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute
12264 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Uogonek
12265 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % uogonek
12266 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164} % Wcircumflex
12267 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165} % wcircumflex
12268 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166} % Ycircumflex
12269 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167} % ycircumflex
12270 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170} % Ydieresis
12271 \DeclareTextCommand{\IJ}{PU}{\81\170}
12272 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
12273 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
12274 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
12275 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
12276 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
12277 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

```

#### 50.2.4 Latin Extended-B

```

12278 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
12279 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
12280 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
12281 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
12282 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
12283 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
12284 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
12285 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
12286 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
12287 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
12288 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
12289 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
12290 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
12291 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
12292 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
12293 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
12294 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Oogonek
12295 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

```

#### 50.2.5 Greek

12296 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}  
12297 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}  
12298 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}  
12299 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}  
12300 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}  
12301 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}  
12302 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}  
12303 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}  
12304 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}  
12305 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}  
12306 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}  
12307 \DeclareTextCommand{\textAlpha}{PU}{\83\221}  
12308 \DeclareTextCommand{\textBeta}{PU}{\83\222}  
12309 \DeclareTextCommand{\textGamma}{PU}{\83\223}  
12310 \DeclareTextCommand{\textDelta}{PU}{\83\224}  
12311 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}  
12312 \DeclareTextCommand{\textZeta}{PU}{\83\226}  
12313 \DeclareTextCommand{\textEta}{PU}{\83\227}  
12314 \DeclareTextCommand{\textTheta}{PU}{\83\230}  
12315 \DeclareTextCommand{\textIota}{PU}{\83\231}  
12316 \DeclareTextCommand{\textKappa}{PU}{\83\232}  
12317 \DeclareTextCommand{\textLambda}{PU}{\83\233}  
12318 \DeclareTextCommand{\textMu}{PU}{\83\234}  
12319 \DeclareTextCommand{\textNu}{PU}{\83\235}  
12320 \DeclareTextCommand{\textXi}{PU}{\83\236}  
12321 \DeclareTextCommand{\textOmicron}{PU}{\83\237}  
12322 \DeclareTextCommand{\textPi}{PU}{\83\240}  
12323 \DeclareTextCommand{\textRho}{PU}{\83\241}  
12324 \DeclareTextCommand{\textSigma}{PU}{\83\243}  
12325 \DeclareTextCommand{\textTau}{PU}{\83\244}  
12326 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}  
12327 \DeclareTextCommand{\textPhi}{PU}{\83\246}  
12328 \DeclareTextCommand{\textChi}{PU}{\83\247}  
12329 \DeclareTextCommand{\textPsi}{PU}{\83\250}  
12330 \DeclareTextCommand{\textOmega}{PU}{\83\251}  
12331 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}  
12332 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}  
12333 \DeclareTextCompositeCommand{\'}{PU}{\textalpha}{\83\254}  
12334 \DeclareTextCompositeCommand{\'}{PU}{\textepsilon}{\83\255}  
12335 \DeclareTextCompositeCommand{\'}{PU}{\texteta}{\83\256}  
12336 \DeclareTextCompositeCommand{\'}{PU}{\textiota}{\83\257}  
12337 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}  
12338 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}  
12339 \DeclareTextCommand{\textalpha}{PU}{\83\261}  
12340 \DeclareTextCommand{\textbeta}{PU}{\83\262}  
12341 \DeclareTextCommand{\textgamma}{PU}{\83\263}  
12342 \DeclareTextCommand{\textdelta}{PU}{\83\264}  
12343 \DeclareTextCommand{\textepsilon}{PU}{\83\265}  
12344 \DeclareTextCommand{\textzeta}{PU}{\83\266}  
12345 \DeclareTextCommand{\texteta}{PU}{\83\267}  
12346 \DeclareTextCommand{\texttheta}{PU}{\83\270}  
12347 \DeclareTextCommand{\textiota}{PU}{\83\271}  
12348 \DeclareTextCommand{\textkappa}{PU}{\83\272}  
12349 \DeclareTextCommand{\textlambda}{PU}{\83\273}  
12350 \DeclareTextCommand{\textmu}{PU}{\83\274}  
12351 \DeclareTextCommand{\textnu}{PU}{\83\275}  
12352 \DeclareTextCommand{\textxi}{PU}{\83\276}

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12353 \DeclareTextCommand{\textomicron}{PU}{\83\277}
12354 \DeclareTextCommand{\textpi}{PU}{\83\300}
12355 \DeclareTextCommand{\textrho}{PU}{\83\301}
12356 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
12357 \DeclareTextCommand{\textsigma}{PU}{\83\303}
12358 \DeclareTextCommand{\texttau}{PU}{\83\304}
12359 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
12360 \DeclareTextCommand{\textphi}{PU}{\83\306}
12361 \DeclareTextCommand{\textchi}{PU}{\83\307}
12362 \DeclareTextCommand{\textpsi}{PU}{\83\310}
12363 \DeclareTextCommand{\textomega}{PU}{\83\311}
12364 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}
12365 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}
12366 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}
12367 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}
12368 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}
12369 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}
12370 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}
12371 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}
12372 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}
12373 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}
12374 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}
12375 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}
12376 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}
12377 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}
12378 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}
12379 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}
12380 %\DeclareTextCommand{\textvarkappa}{PU}{\83\360}
12381 %\DeclareTextCommand{\textvarrho}{PU}{\83\361}

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## 50.2.6 Cyrillic

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names.

```

12382 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
12383 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}%
12384 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
12385 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% GJE
12386 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
12387 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
12388 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
12389 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI
12390 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
12391 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
12392 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE
12393 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
12394 \DeclareTextCompositeCommand{'}{PU}{\CYRK}{\84\014}% KJE
12395 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
12396 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
12397 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A
12398 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
12399 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
12400 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
12401 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
12402 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
12403 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
12404 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
12405 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I

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12406 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
12407 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}%
12408 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
12409 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
12410 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM
12411 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN
12412 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O
12413 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE
12414 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER
12415 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES
12416 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE
12417 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U
12418 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF
12419 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA
12420 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE
12421 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE
12422 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA
12423 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA
12424 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN
12425 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU
12426 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN
12427 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E
12428 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU
12429 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA
12430 \DeclareTextCommand{\cyr a}{PU}{\84\060}% a
12431 \DeclareTextCommand{\cyr b}{PU}{\84\061}% be
12432 \DeclareTextCommand{\cyr v}{PU}{\84\062}% ve
12433 \DeclareTextCommand{\cyr g}{PU}{\84\063}% ghe
12434 \DeclareTextCommand{\cyr d}{PU}{\84\064}% de
12435 \DeclareTextCommand{\cyr e}{PU}{\84\065}% ie
12436 \DeclareTextCommand{\cyr zh}{PU}{\84\066}% zhe
12437 \DeclareTextCommand{\cyr z}{PU}{\84\067}% ze
12438 \DeclareTextCommand{\cyr i}{PU}{\84\070}% i
12439 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i
12440 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\071}%
12441 \DeclareTextCommand{\cyr k}{PU}{\84\072}% ka
12442 \DeclareTextCommand{\cyr l}{PU}{\84\073}% el
12443 \DeclareTextCommand{\cyr m}{PU}{\84\074}% em
12444 \DeclareTextCommand{\cyr n}{PU}{\84\075}% en
12445 \DeclareTextCommand{\cyr o}{PU}{\84\076}% o
12446 \DeclareTextCommand{\cyr p}{PU}{\84\077}% pe
12447 \DeclareTextCommand{\cyr r}{PU}{\84\100}% er
12448 \DeclareTextCommand{\cyr s}{PU}{\84\101}% es
12449 \DeclareTextCommand{\cyr t}{PU}{\84\102}% te
12450 \DeclareTextCommand{\cyr u}{PU}{\84\103}% u
12451 \DeclareTextCommand{\cyr f}{PU}{\84\104}% ef
12452 \DeclareTextCommand{\cyr h}{PU}{\84\105}% ha
12453 \DeclareTextCommand{\cyr c}{PU}{\84\106}% tse
12454 \DeclareTextCommand{\cyr ch}{PU}{\84\107}% che
12455 \DeclareTextCommand{\cyr sh}{PU}{\84\110}% sha
12456 \DeclareTextCommand{\cyr shch}{PU}{\84\111}% shcha
12457 \DeclareTextCommand{\cyr hrd sn}{PU}{\84\112}% hard sign
12458 \DeclareTextCommand{\cyr ery}{PU}{\84\113}% yeru
12459 \DeclareTextCommand{\cyr sft sn}{PU}{\84\114}% soft sign
12460 \DeclareTextCommand{\cyr erev}{PU}{\84\115}% e
12461 \DeclareTextCommand{\cyr yu}{PU}{\84\116}% yu
12462 \DeclareTextCommand{\cyr ya}{PU}{\84\117}% ya

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12463 \DeclareTextCommand{\cyrjo}{PU}{\84\121}% io  
12464 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}%  
12465 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% dje  
12466 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% gje  
12467 \DeclareTextCommand{\cyrje}{PU}{\84\124}% ukrainian ie  
12468 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% dze  
12469 \DeclareTextCommand{\cyrrii}{PU}{\84\126}% byelorussian-ukrainian i  
12470 \DeclareTextCommand{\cyrri}{PU}{\84\127}% yi  
12471 \DeclareTextCommand{\cyrje}{PU}{\84\130}% je  
12472 \DeclareTextCommand{\cyrlyje}{PU}{\84\131}% lje  
12473 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% nje  
12474 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% tshe  
12475 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% kje  
12476 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% short u  
12477 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% dzhe  
12478 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA  
12479 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega  
12480 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT  
12481 \DeclareTextCommand{\cyrjat}{PU}{\84\143}% yat  
12482 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E  
12483 \DeclareTextCommand{\cyriote}{PU}{\84\145}% iotified e  
12484 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS  
12485 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% little yus  
12486 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS  
12487 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% iotified little yus  
12488 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS  
12489 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% big yus  
12490 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS  
12491 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% iotified big yus  
12492 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI  
12493 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% ksi  
12494 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI  
12495 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi  
12496 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA  
12497 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita  
12498 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA  
12499 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa  
12500 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave  
12501 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave  
12502 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK  
12503 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk  
12504 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA  
12505 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega  
12506 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo  
12507 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo  
12508 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT  
12509 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot  
12510 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA  
12511 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa  
12512 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign  
12513 \% \DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO  
12514 \% \DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION  
12515 \% \DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA  
12516 \% \DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA  
12517 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn  
12518 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn  
12519 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke

12520 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke  
12521 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook  
12522 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook  
12523 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender  
12524 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender  
12525 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender  
12526 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender  
12527 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender  
12528 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% ka descender  
12529 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke  
12530 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke  
12531 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke  
12532 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% ka stroke  
12533 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA  
12534 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka  
12535 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender  
12536 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender  
12537 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE  
12538 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe  
12539 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook  
12540 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook  
12541 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA  
12542 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha  
12543 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender  
12544 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% es descender  
12545 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender  
12546 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% te descender  
12547 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U  
12548 \DeclareTextCommand{\cyr}{PU}{\84\257}% straight u  
12549 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke  
12550 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% straight u stroke  
12551 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender  
12552 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% ha descender  
12553 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE  
12554 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% ligature te tse  
12555 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender  
12556 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender  
12557 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke  
12558 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% che vertical stroke  
12559 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA  
12560 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha  
12561 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhasian CHE  
12562 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhasian che  
12563 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% abkhasian CHE descender  
12564 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhasian che descender  
12565 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% palochka  
12566 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve  
12567 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% zhe breve  
12568 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook  
12569 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% ka hook  
12570 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook  
12571 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% en hook  
12572 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE  
12573 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che  
12574 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve  
12575 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve  
12576 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% A diaeresis

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12577 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% a diaeresis
12578 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE
12579 \DeclareTextCommand{\cyrae}{PU}{\84\325}% ligature a ie
12580 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve
12581 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve
12582 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA
12583 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% schwa
12584 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis
12585 \DeclareTextCompositeCommand{"}{PU}{\cyrschwa}{\84\333}% schwa diaeresis
12586 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% ZHE diaeresis
12587 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% zhe diaeresis
12588 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% ZE diaeresis
12589 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% ze diaeresis
12590 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhasian DZE
12591 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhasian dze
12592 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% I macron
12593 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% i macron
12594 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% I diaeresis
12595 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% i diaeresis
12596 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% O diaeresis
12597 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% o diaeresis
12598 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O
12599 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% barred o
12600 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% barred O diaeresis
12601 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% barred o diaeresis
12602 \DeclareTextCompositeCommand{\=}{PU}{\CYRU}{\84\356}% U macron
12603 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% u macron
12604 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U diaeresis
12605 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% u diaeresis
12606 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U double acute
12607 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% u double acute
12608 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% CHE diaeresis
12609 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% che diaeresis
12610 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% YERU diaeresis
12611 \DeclareTextCompositeCommand{"}{PU}{\cyrery}{\84\371}% yeru diaeresis

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### 50.2.7 Symbols

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12612 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash
12613 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash
12614 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030} % quoteleft
12615 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright
12616 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase
12617 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
12618 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
12619 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
12620 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
12621 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
12622 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet
12623 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
12624 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
12625 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
12626 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
12627 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
12628 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
12629 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160} % superscript zero
12630 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164} % superscript four

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12631 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165} % superscript five
12632 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166} % superscript six
12633 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167} % superscript seven
12634 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170} % superscript eight
12635 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171} % superscript nine
12636 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200} % subscript zero
12637 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201} % subscript one
12638 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202} % subscript two
12639 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203} % subscript three
12640 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204} % subscript four
12641 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205} % subscript five
12642 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206} % subscript six
12643 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207} % subscript seven
12644 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210} % subscript eight
12645 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211} % subscript nine
12646 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
12647 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}
12648 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
12649 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
12650 \DeclareTextCommand{\cyrlangle}{PU}{\9043\051}
12651 \DeclareTextCommand{\cyrrangle}{PU}{\9043\052}

12652 </puenc>

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### 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

12653 <*puvnenc>

12654 \DeclareTextCommand{\abreve}{PU}{\81\003}
12655 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
12656 \DeclareTextCommand{\dj}{PU}{\81\021}
12657 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
12658 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
12659 \DeclareTextCommand{\ohorn}{PU}{\81\241}
12660 \DeclareTextCommand{\uhorn}{PU}{\81\260}
12661 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
12662 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
12663 \DeclareTextCommand{\DJ}{PU}{\81\020}
12664 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
12665 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
12666 \DeclareTextCommand{\OHORN}{PU}{\81\240}
12667 \DeclareTextCommand{\UHORN}{PU}{\81\257}

12668 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
12669 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
12670 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
12671 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
12672 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
12673 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
12674 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
12675 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
12676 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
12677 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
12678 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
12679 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
12680 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
12681 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}
12682 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}

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12683 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
12684 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
12685 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
12686 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
12687 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
12688 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
12689 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
12690 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
12691 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
12692 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
12693 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
12694 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
12695 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
12696 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
12697 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
12698 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
12699 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
12700 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
12701 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
12702 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
12703 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
12704 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
12705 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
12706 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
12707 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
12708 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
12709 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
12710 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
12711 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
12712 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
12713 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
12714 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
12715 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
12716 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
12717 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
12718 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
12719 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
12720 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
12721 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
12722 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
12723 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
12724 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
12725 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
12726 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
12727 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
12728 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
12729 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
12730 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
12731 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
12732 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
12733 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
12734 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
12735 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
12736 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
12737 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}  
12738 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}  
12739 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}

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12740 \DeclareTextCompositeCommand{\`}{PU}{\ACIRCUMFLEX}{\9036\246}
12741 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}
12742 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}
12743 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}
12744 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}
12745 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}
12746 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}
12747 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}
12748 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}
12749 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}
12750 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}
12751 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}
12752 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}
12753 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}
12754 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}
12755 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}
12756 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}
12757 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}
12758 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}
12759 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}
12760 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}
12761 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}
12762 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}
12763 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}
12764 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}
12765 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}
12766 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}
12767 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}
12768 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}
12769 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}
12770 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}
12771 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}
12772 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
12773 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
12774 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
12775 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}
12776 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
12777 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
12778 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}
12779 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
12780 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
12781 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
12782 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
12783 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}
12784 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
12785 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
12786 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
12787 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
12788 </puvnenc>

```

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```
12789 <*puarenc>
```

```
12790 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LETTER HAMZA
```

```
12791 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADD A
```

12792 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA ABOVE  
12793 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE  
12794 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW  
12795 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE  
12796 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF  
12797 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH  
12798 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA  
12799 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH  
12800 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH  
12801 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM  
12802 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH  
12803 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH  
12804 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL  
12805 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL  
12806 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH  
12807 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN  
12808 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN  
12809 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN  
12810 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD  
12811 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD  
12812 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH  
12813 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH  
12814 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN  
12815 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN  
12816 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEL  
12817 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afii57441;ARABIC LETTER FEH  
12818 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF  
12819 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF  
12820 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM  
12821 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LETTER MEEM  
12822 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON  
12823 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH  
12824 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afii57448;ARABIC LETTER WAW  
12825 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afii57449;ARABIC LETTER ALEF MAKSURA  
12826 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afii57450;ARABIC LETTER YEH  
12827 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afii57451;ARABIC FATHATAN  
12828 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afii57452;ARABIC DAMMATAN  
12829 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN  
12830 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afii57454;ARABIC FATHA  
12831 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afii57455;ARABIC DAMMA  
12832 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA  
12833 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA  
12834 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afii57458;ARABIC SUKUN

## Farsi

12835 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afii57506;ARABIC LETTER PEH  
12836 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afii57507;ARABIC LETTER TCHEH  
12837 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afii57508;ARABIC LETTER JEH  
12838 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afii????;FARSI LETTER KAF  
12839 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF  
12840 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afii????;FARSI LETTER YEH  
12841 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%  
12842 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ  
12843 </puarenc>

## **51    End of file hyccheck.tex**

```
12844 \check  
12845 \typeout{  
12846 \begin{document}  
12847 \end{document}  
12848 \check
```

## 52 Index

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<code>\@cite@opt</code> 5810, 5816, 5820, 5830	<code>\@eqnswtrue</code> ..... 5164, 5173	<code>\@hyper@launch</code> 3554, 3563, 6953, 8283, 9162
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