

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

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## 1 Documentation overview for hyperref

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

**Manual** The user documentation is also available as HTML.

**README** 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.

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

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

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

Source code documentation:

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

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

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

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### 3 File 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  }%
41 }
```

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

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

`\HyC@DeclareRobustCommand` `\DeclareRobustCommand{\cmd}` makes the command `\cmd` robust, that then calls `\cmd_` 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{hycolor}
234 \def\Hy@Warning#1{\PackageWarning{hyperref}{#1}}
235 \def\Hy@WarningNoLine#1{\PackageWarningNoLine{hyperref}{#1}}
236 \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`.

```

237 \@ifundefined{AfterBeginDocument}{%
238   \def\AfterBeginDocument{\AtBeginDocument}%
239 }{}%

```

## 4.3 Switches

```

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

```

```

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

```

Defaults for the switches are now set.

```

283 \Hy@backreffalse
284 \Hy@bookmarksnumberedfalse
285 \Hy@bookmarksopenfalse
286 \Hy@bookmarkstrue
287 \Hy@breaklinksfalse
288 \Hy@centerwindowfalse
289 \Hy@CJKbookmarksfalse
290 \Hy@escapeformfalse
291 \Hy@figuresfalse
292 \Hy@fitwindowfalse
293 \Hy@hyperfootnotesttrue
294 \Hy@hyperindextrue
295 \Hy@hypertextnamesttrue
296 \Hy@implicittrue
297 \Hy@linktocpagefalse
298 \Hy@menubartrue
299 \Hy@naturalnamesfalse
300 \Hy@nestingfalse
301 \Hy@newwindowsetfalse
302 \Hy@newwindowfalse
303 \Hy@pageanchorttrue
304 \Hy@pagelabelstrue
305 \Hy@pdfpagehiddenfalse
306 \Hy@pdfstringfalse
307 \Hy@plainpagesfalse
308 \Hy@raiselinksfalse
309 \Hy@setpagesizetrue
310 \Hy@texhtfalse
311 \Hy@toolbartrue

```

```

312 \Hy@typexmlfalse
313 \Hy@unicodedefalse
314 \Hy@usetitlefalse
315 \Hy@verbosefalse
316 \Hy>windowuitrue
317 \Hy@displaydoctitlefalse

```

## 5 Common help macros

`\Hy@StepCount`

```

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

```

`\Hy@GlobalStepCount`

```

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

320 \newdimen\@linkdim
321 \let\Hy@driver\@empty
322 \let\MaybeStopEarly\relax
323 \newcount\Hy@linkcounter
324 \newcount\Hy@pagecounter
325 \Hy@linkcounter0
326 \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.

```

327 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
328 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

329 \let\Hy@ReturnEnd\@empty
330 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
331 \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@activetrue` babel is not loaded.

```

332 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
333 \def\Hy@safe@activetruefalse{\csname @safe@activetruefalse\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

334 \begingroup\expandafter\expandafter\expandafter\endgroup
335 \expandafter\ifx\csname dimexpr\endcsname\relax
336   \def\hypercalcbpdef#1#2{%
337     \begingroup
338       \toks@{%
339         \HyCal@scan#2\hypercalcbp\@nil
340       \expandafter\endgroup
341       \expandafter\def\expandafter#1\expandafter{\the\toks@}%
342   }%
343   \def\HyCal@scan#1\hypercalcbp#2\@nil{%
344     \toks@\expandafter{\the\toks@ #1}%
345     \ifx\\#2\\%
346       \else
347         \Hy@ReturnAfterFi{%
348           \HyCal@do#2\@nil
349         }%
350       \fi
351   }%
352   \def\HyCal@do#1#2\@nil{%
353     \@ifpackageloaded{calc}{-}{-}%
354     \Hy@Warning{%
355       For calculations \string\hypercalcbp\space needs\MessageBreak
356       package calc or e-TeX%
357     }%
358   }%
359   \setlength{\dimen@}{#1}%
360   \setlength{\dimen@}{0.99626401\dimen@}%
361   \edef\x{%
362     \toks@{%
363       \the\toks@
364       \strip@pt\dimen@
365     }%
366   }\x
367   \HyCal@scan#2\@nil
368 }%
369 \else
370   \def\hypercalcbp#1{%
371     \strip@pt\dimexpr 0.99626401\dimexpr #1\relax\relax
372   }%
373   \def\hypercalcbpdef{\def}%
374 \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 ISO Latin1 and is compatible with Unicode with character codes below 256, or in Unicode.

### 6.2 Definition of `\pdfstringdef`

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

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

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

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

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

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

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

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

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

```
376 \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.

```
377 \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.

```
378 \edef\0{\string\0}%
379 \edef\1{\string\1}%
380 \edef\2{\string\2}%
381 \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.

```
382 \ifHy@unicode
383 \edef\8{\string\8}%
384 \edef\9{\string\9}%
385 \fontencoding{PU}%
386 \HyPsd@UTFviii
387 \else
388 \fontencoding{PD1}%
389 \fi
390 \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).

```
391 \@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).

```
392 \let\@inmathwarn\HyPsd@inmathwarn
```



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

```
393 \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.

```
394 \let\{\textbraceleft
395 \let\}\textbraceright
396 \let\\\textbackslash
397 \let\#\textnumbersign
398 \let\$\textdollar
399 \let\%\textpercent
400 \let\&\textampersand
401 % \let\~\textasciitilde
402 \let\_ \textunderscore
403 \let\P\textparagraph
404 \let\ldots\textellipsis
405 \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.

```
406 \def\{\pdfstringdefWarn\\}%
407 \def\newline{\pdfstringdefWarn\newline}%
```

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

```
408 \def\TeX{\TeX}%
409 \def\LaTeX{La\TeX}%
410 \def\LaTeXe{LaTeX2e}%
411 \def\eTeX{e-\TeX}%
412 \def\MF{Metafont}%
413 \def\MP{Metapost}%
```

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

```
414 \let\emph\@firstofone
415 \let\textnormal\@firstofone
416 \let\textrm\@firstofone
417 \let\textsf\@firstofone
418 \let\texttt\@firstofone
419 \let\textbf\@firstofone
420 \let\textmd\@firstofone
421 \let\textit\@firstofone
422 \let\textsc\@firstofone
```

```

423 \let\textsl\@firstofone
424 \let\textup\@firstofone
425 \let\normalfont\@empty
426 \let\rmfamily\@empty
427 \let\sffamily\@empty
428 \let\ttfamily\@empty
429 \let\bfseries\@empty
430 \let\mdseries\@empty
431 \let\itshape\@empty
432 \let\scshape\@empty
433 \let\slshape\@empty
434 \let\upshape\@empty
435 \let\em\@empty
436 \let\rm\@empty
437 \let\Huge\@empty
438 \let\LARGE\@empty
439 \let\Large\@empty
440 \let\footnotesize\@empty
441 \let\huge\@empty
442 \let\large\@empty
443 \let\normalsize\@empty
444 \let\scriptsize\@empty
445 \let\small\@empty
446 \let\tiny\@empty
447 \let\mathversion\@gobble

```

#### Package color.

```

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

```

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

```

449 \let\textlatin\@firstofone
450 \@ifundefined{language@group}{\}%
451 \csname HyPsd@babel@language@group\endcsname
452 }%
453 \HyPsd@GreekPatch

454 \let\@safe@activetrue\relax
455 \let\@safe@activesfalse\relax

```

Disable \cyr, used in russianb.ldf.

```

456 \let\cyr\relax

```

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

```

457 \let\es@roman\@Roman

```

#### Package german.

```

458 \let\glqq\textglqq
459 \let\grqq\textgrqq
460 \let\glq\textglq
461 \let\grq\textgrq
462 \let\flqq\textflqq
463 \let\frqq\textfrqq
464 \let\flq\textflq
465 \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}
466 \let\if@mid@expandable\@firstoftwo

```

**AMS classes.**

```

467 \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.

```

468 \let\hspace\HyPsd@hspace

```

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

```

469 \let\label\@gobble
470 \let\index\@gobble
471 \let\glossary\@gobble
472 \let\href\@secondoftwo
473 \let\@mkboth\@gobbletwo

```

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

```

474 \let\ref\HyPsd@ref
475 \let\pageref\HyPsd@pageref
476 \let\autoref\HyPsd@autoref

```

**Miscellaneous commands.**

```

477 \let\leavevmode\@empty
478 \let\mbox\@empty

```

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

```

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

```

**Patch for cjk bookmarks.**

```

480 \ifHy@CJKbookmarks
481 \HyPsd@CJKhook
482 \fi

```

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

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

```

483 \Hy@pdfstringtrue
484 \pdfstringdefPreHook

```

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

```

485 \HyPsd@LetUnexpandableSpace\space
486 \HyPsd@LetUnexpandableSpace\ %
487 \HyPsd@LetUnexpandableSpace~%
488 \HyPsd@LetUnexpandableSpace\nobreakspace

```

**Package xspace.**

```

489 \@ifundefined{xspace}{%
490 \let\xspace\HyPsd@ITALCORR
491 }{%
492 \let\xspace\HyPsd@XSPACE
493 }%
494 \let\/\HyPsd@ITALCORR
495 \let\bgroup\/%
496 \let\egroup\/%

```

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

```

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

```

```

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

```

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

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

```

498 \let\@ifnextchar\HyPsd@ifnextchar
499 \let\@ifnextchar\HyPsd@new@ifnextchar
500 \let\@protected@testopt\HyPsd@protected@testopt

```

## 6.2.2 Expansion

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

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

\csname: First the string is expanded within a \csname and \endcsname. Then the command name is converted to characters with catcode 12 by \string and the first escape character removed by \@gobble. This method has the great *advantage* that stomach tokens that aren't allowed in PDF strings are detected by T<sub>E</sub>X and reported as errors in order to force the user to write correct things. So he get no wrong results by forgetting the proofreading of his text. But the *disadvantage* is that old wrong code cannot processed without errors. Mainly the error message is very cryptic and for the normal user hard to understand. T<sub>E</sub>X provides no way to catch the error caused by \csname or allows to support the user with a descriptive error message. Therefore the experienced user had to enable this behaviour by an option exactdef in previous versions less or equal 6.50.

\edef This version uses this standard form for expansion. It is stronger than L<sup>A</sup>T<sub>E</sub>X's \protected@edef. So the font encoding mechanism works and the glyph commands are converted to the correct tokens for PDF strings with the definitions of

the PDF1 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).

```
501 \begingroup
502 \let\GenericError\@gobblefour
503 \let\GenericWarning\@gobbletwo
504 \let\GenericInfo\@gobbletwo
```

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

```
505 \ifx\nofrenchguillemets\@undefined
506 \else
507 \nofrenchguillemets
508 \fi
```

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

```
509 \let\Hy@temp\xdef
510 \let\def\HyPsd@DefCommand
511 \let\gdef\HyPsd@DefCommand
512 \let\edef\HyPsd@DefCommand
513 \let\xdef\HyPsd@DefCommand
514 \let\futurelet\HyPsd@LetCommand
515 \let\let\HyPsd@LetCommand
516 \Hy@temp#1{#2}%
517 \endgroup
```

### 6.2.3 Postprocessing

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

```
518 \ifx#1\@empty
519 \else
```

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

- $\TeX$  does not accept a space as an undelimited argument, it cancels space tokens while looking for an undelimited argument. Therefore we must protect the spaces now.

- An argument can be a single token or a group of many tokens. And within curly braces tokens aren't find by  $\TeX$ 's argument scanning process. Third curly braces as grouping characters cannot be expanded further, so they don't vanish by the string expansion above. So these characters with catcode 1 and 2 are removed in the following and replaced by a marker for the xspace support.
- $\TeX$  silently removes the outmost pair of braces of an argument. To prevent this on unwanted places, in the following the character | is appended to the string to make an outer brace to an inner one.

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

```

520     \HyPsd@ProtectSpaces#1%
521     \let\HyPsd@String\@empty
522     \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
523     \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  $\backslash\text{HyPsd@CheckCatcodes}$  the command  $\backslash\text{HyPsd@RemoveMask}$  is reused to remove the group protection character |. This character is needed to ensure that the string at least consists of one token if  $\backslash\text{HyPsd@CheckCatcodes}$  is called.

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

```

524     \let\HyPsd@SPACEOPTI\relax
525     {%
526         \let\HyPsd@String\@empty
527         \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
528         \global\let#1\HyPsd@String
529     }%
530     \expandafter\HyPsd@RemoveMask\expandafter
531     |\expandafter\@empty#1\HyPsd@End#1%

```

$\backslash\text{HyPsd@CheckCatcodes}$  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.

```

532     \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
533     \let\HyPsd@String\@empty
534     \expandafter\HyPsd@GlyphProcess#1\relax\@empty
535     \global\let#1\HyPsd@String

```

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

```
536 \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.1df` can produce an additional space before `\guillemotright`, because `\lastskip` and `\unskip` do not work. Therefore it is removed here.

```
537 \ifHy@unicode
538 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
539 \HyPsd@SPACEOPTI#1%
540 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
541 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
542 {\HyPsd@SPACEOPTI\80\273}\#1%
543 \else
544 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
545 \expandafter\HyPsd@Subst\expandafter{%
546 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
547 \string\273}\HyPsd@SPACEOPTI\273}\#1%
548 \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.

```
549 \ifHy@unicode
550 \HyPsd@StringSubst{\}){\80\051}\#1%
551 \HyPsd@Subst){\80\051}\#1%
552 \let\HyPsd@empty\relax
553 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
554 {\HyPsd@empty\80\051}\#1%
555 \else
556 \HyPsd@StringSubst{\}){\051}\#1%
557 \HyPsd@Subst){\051}\#1%
558 \let\HyPsd@empty\relax
559 \HyPsd@StringSubst{\051}\HyPsd@empty\string\}){\#1%
560 \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`.

```

561     \expandafter\HyPsd@Subst\expandafter{\}\HyPsd@empty#1%
562     \@ifundefined{xspace}{%
563     }{%
564         \let\HyPsd@xspace\relax
565         \expandafter\HyPsd@Subst\expandafter
566         {\HyPsd@XSPACE}\HyPsd@xspace#1%
567         \let\HyPsd@xspace\HyPsd@doxspace
568     }%
569     \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.

```

570 %     \HyPsd@Subst{---}\textemdash#1%
571 %     \HyPsd@Subst{--}\textendash#1%
572 %     \HyPsd@Subst{fi}\textfi#1%
573 %     \HyPsd@Subst{fl}\textfl#1%
574     \HyPsd@Subst{!'}\textexclamdown#1%
575     \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

576     \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.

```

577     \ifHy@unicode
578         \HyPsd@StringSubst{\textparenleft#1%
579         \HyPsd@Subst(\textparenleft#1%
580     \else
581         \HyPsd@StringSubst({\0050}#1%
582         \HyPsd@Subst({\0050}#1%
583         \HyPsd@StringSubst{\0050}{\string\()}#1%
584     \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.

```

585     \ifHy@unicode
586         \edef\HyPsd@SPACEOPTI{\80\040}%
587     \else
588         \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
589     \fi
590     \xdef#1{#1\@empty}%
591 \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.

```
592 \endgroup
593 \begingroup
594 \ifHy@unicode
595 \HyPsd@ConvertToUnicode#1%
```

**Try conversion back to PDFDocEncoding.**

```
596 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
597 \@ifundefined{StringEncodingConvertTest}{%
598 }{%
599 \EdefUnescapeString\HyPsd@temp#1%
600 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
601 {utf16be}{pdfdoc}{%
602 \EdefEscapeString\HyPsd@temp\HyPsd@temp
603 \global\let#1\HyPsd@temp
604 \Hy@unicodedefalse
605 }{}%
606 }%
607 \fi
608 \fi
```

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

```
609 \pdfstringdefPostHook#1%
610 \endgroup
611 }
```

\Hy@pdfstringdef

```
612 \def\Hy@pdfstringdef#1#2{%
613 \pdfstringdef\Hy@gtemp{#2}%
614 \let#1\Hy@gtemp
615 }
```

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

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

```
616 \@ifundefined{T@PD1}{\input{pd1enc.def}}{}
617 \DeclareFontFamily{PD1}{pdf}{}
618 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
619 \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`.

```

620 \def\HyPsd@InitUnicode{%
621   \@ifundefined{T@PU}{\input{puenc.def}}{}%
622   \DeclareFontFamily{PU}{pdf}{}%
623   \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
624   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
625   \let\HyPsd@InitUnicode\relax
626 }

```

## 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.

```

627 \newcommand*{\texorpdfstring}{%
628   \ifHy@pdfstring
629     \expandafter\@secondoftwo
630   \else
631     \expandafter\@firstoftwo
632   \fi
633 }

```

### 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`.

```

634 \@ifundefined{pdfstringdefPreHook}{%
635   \let\pdfstringdefPreHook\@empty
636 }{}
637 \@ifundefined{pdfstringdefPostHook}{%
638   \let\pdfstringdefPostHook\@gobble
639 }{}

```

`\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`.

```

640 \def\pdfstringdefDisableCommands{%
641   \begingroup
642     \makeatletter

```

```

643 \HyPsd@DisableCommands
644 }

```

\HyPsd@DisableCommands

```

645 \long\def\HyPsd@DisableCommands#1{%
646   \toks0=\expandafter{\pdfstringdefPreHook}%
647   \toks1={#1}%
648   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
649 \endgroup
650 }

```

\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.

```

651 \def\pdfstringdefWarn#1{%
652   \expandafter\noexpand\csname<-\string#1\endcsname
653 }

```

## 6.5 Help macros for expansion

### 6.5.1 Babel languages

```

654 \newif\ifHy@next

```

Nothing to do for english.

```

655 \@ifundefined{danish@sh@"@sel}{-}{-}%
656 \def\HyPsd@babel@danish{%
657   \declare@shorthand{danish}{-}{-}%
658   \declare@shorthand{danish}{-}{-}%
659 }%
660 }
661 \@ifundefined{dutch@sh@"@sel}{-}{-}%
662 \def\HyPsd@babel@dutch{%
663   \declare@shorthand{dutch}{-}{-}%
664   \declare@shorthand{dutch}{-}{-}%
665 }%
666 }
667 \@ifundefined{finnish@sh@"@sel}{-}{-}%
668 \def\HyPsd@babel@finnish{%
669   \declare@shorthand{finnish}{-}{-}%
670 }%
671 }
672 \@ifundefined{french@sh@:@sel}{-}{-}%
673 \def\HyPsd@babel@frenchb{%
674   \def\guill@spacing{ }%
675 }%
676 }
677 \@ifundefined{german@sh@"@sel}{-}{-}%
678 \def\HyPsd@babel@german{%
679   \declare@shorthand{german}{f}{f}%
680   \declare@shorthand{german}{-}{-}%
681   \declare@shorthand{german}{-}{-}%

```

```

682 }%
683 }
684 \@ifundefined{macedonian@sh@"@sel}{-}{%
685   \def\HyPsd@babel@macedonian{%
686     \declare@shorthand{macedonian}{"}{-}%
687     \declare@shorthand{macedonian}{~}{-}%
688   }%
689 }
690 \@ifundefined{ngerman@sh@"@sel}{-}{%
691   \def\HyPsd@babel@ngerman{%
692     \declare@shorthand{ngerman}{"}{-}%
693     \declare@shorthand{ngerman}{~}{-}%
694   }%
695 }
696 \@ifundefined{portuges@sh@"@sel}{-}{%
697   \def\HyPsd@babel@portuges{%
698     \declare@shorthand{portuges}{"}{-}%
699   }%
700 }
701 \@ifundefined{russian@sh@"@sel}{-}{%
702   \def\HyPsd@babel@russian{%
703     \declare@shorthand{russian}{"}{-}%
704     \declare@shorthand{russian}{~}{-}%
705   }%
706 }
707 \@ifundefined{slovene@sh@"@sel}{-}{%
708   \def\HyPsd@babel@slovene{%
709     \declare@shorthand{slovene}{"}{-}%
710   }%
711 }

```

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

```

712 \@ifundefined{spanish@sh@>@sel}{-}{%
713   \def\HyPsd@babel@spanish{%
714     \declare@shorthand{spanish}{<<}{\guillemotleft}%
715     \declare@shorthand{spanish}{>>}{\guillemotright}%
716     \declare@shorthand{spanish}{=}{-}%
717     \declare@shorthand{spanish}{~}{-}%
718     \declare@shorthand{spanish}{!}{\textexclamdown}%
719     \declare@shorthand{spanish}{?}{\textquestiondown}%
720   }%
721 }
722 \@ifundefined{swedish@sh@"@sel}{-}{%
723   \def\HyPsd@babel@swedish{%
724     \declare@shorthand{swedish}{"}{-}%
725     \declare@shorthand{swedish}{~}{-}%
726   }%
727 }
728 \@ifundefined{ukrainian@sh@"@sel}{-}{%
729   \def\HyPsd@babel@ukrainian{%
730     \declare@shorthand{ukrainian}{"}{-}%
731     \declare@shorthand{ukrainian}{~}{-}%
732   }%
733 }
734 \@ifundefined{usorbian@sh@"@sel}{-}{%
735   \def\HyPsd@babel@usorbian{%
736     \declare@shorthand{usorbian}{f}{f}%
737     \declare@shorthand{usorbian}{"}{-}%

```

```

738 }%
739 }
740 \@ifundefined{greek@sh@\string~@sel}{%
741   \let\HyPsd@GreekPatch\@empty
742 }{%
743   \def\HyPsd@GreekPatch{%
744     \let\greeknumeral\HyPsd@greeknumeral
745     \let\Greeknumeral\HyPsd@Greeknumeral
746   }%
747 }
748 \def\HyPsd@greeknumeral#1{%
749   \HyPsd@GreekNum\@firstoftwo{#1}%
750 }
751 \def\HyPsd@Greeknumeral#1{%
752   \HyPsd@GreekNum\@secondoftwo{#1}%
753 }
754 \def\HyPsd@GreekNum#1#2{%
755   \ifHy@unicode
756     \ifnum#2<\@ne
757       \@arabic{#2}%
758     \else
759       \ifnum#2<1000000 %
760         \HyPsd@@GreekNum#1{#2}%
761       \else
762         \@arabic{#2}%
763       \fi
764     \fi
765   \else
766     \@arabic{#2}%
767   \fi
768 }
769 \def\HyPsd@@GreekNum#1#2{%
770   \ifnum#2<\@m
771     \ifnum#2<10 %
772       \expandafter\HyPsd@GreekNumI
773       \expandafter\@gobble\expandafter#1\number#2%
774     \else
775       \ifnum#2<100 %
776         \expandafter\HyPsd@GreekNumII
777         \expandafter\@gobble\expandafter#1\number#2%
778       \else
779         \expandafter\HyPsd@GreekNumIII
780         \expandafter\@gobble\expandafter#1\number#2%
781       \fi
782     \fi
783     \ifnum#2>\z@
784       \textnumeralsigngreek
785     \fi
786   \else
787     \ifnum#2<\@M
788       \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
789     \else
790       \ifnum#2<100000 %
791         \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
792       \else
793         \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
794       \fi

```

```

795     \fi
796   \fi
797 }
798 \def\HyPsd@GreeNumI#1#2#3{%
799   #1{%
800     \ifnum#3>\z@
801       \textnumeralsignlowergreek
802     \fi
803   }%
804   \expandafter#2%
805   \ifcase#3 %
806     {}{}%
807   \or\textalpha\textAlpha
808   \or\textbeta\textBeta
809   \or\textgamma\textGamma
810   \or\textdelta\textDelta
811   \or\textepsilon\textEpsilon
812   \or\textstigmagreek\textStigmagreek
813   \or\textzeta\textZeta
814   \or\texteta\textEta
815   \or\texttheta\textTheta
816   \else
817     {}{}%
818   \fi
819 }
820 \def\HyPsd@GreeNumII#1#2#3#4{%
821   #1{%
822     \ifnum#3>\z@
823       \textnumeralsignlowergreek
824     \fi
825   }%
826   \expandafter#2%
827   \ifcase#3 %
828     {}{}%
829   \or\textiota\textIota
830   \or\textkappa\textKappa
831   \or\textlambda\textLambda
832   \or\textmu\textMu
833   \or\textnu\textNu
834   \or\textxi\textXi
835   \or\textomicron\textOmicron
836   \or\textpi\textPi
837   \or\textkoppagreek\textKoppagreek
838   \else
839     {}{}%
840   \fi
841   \HyPsd@GreeNumI#1#2#4%
842 }
843 \def\HyPsd@GreeNumIII#1#2#3#4#5{%
844   #1{%
845     \ifnum#3>\z@
846       \textnumeralsignlowergreek
847     \fi
848   }%
849   \expandafter#2%
850   \ifcase#3 %
851     {}{}%

```

```

852 \or\textrho\textRho
853 \or\textsigma\textSigma
854 \or\texttau\textTau
855 \or\textupsilon\textUpsilon
856 \or\textphi\textPhi
857 \or\textchi\textChi
858 \or\textpsi\textPsi
859 \or\textomega\textOmega
860 \or\textsampgreek\textSampgreek
861 \else
862   {}{}%
863 \fi
864 \HyPsd@GreekNumII#1#2#4#5%
865 }
866 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
867   \HyPsd@GreekNumI\@firstofone#1#2%
868   \HyPsd@@GreekNum#1{#3#4#5}%
869 }
870 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
871   \HyPsd@GreekNumII\@firstofone#1#2#3%
872   \HyPsd@@GreekNum#1{#4#5#6}%
873 }
874 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
875   \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
876   \HyPsd@@GreekNum#1{#5#6#7}%
877 }

```

## 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 ( $\geq 0x40$ ).

```

878 \begingroup
879 \catcode"7F=\active
880 \toks@{%
881   \let\CJK@ignorespaces\empty
882   \def\CJK@char#1{\@gobbletwo}%
883   \let\CJK@charx\@gobblefour
884   \let\CJK@punctchar\@gobblefour
885   \def\CJK@punctcharx#1{\@gobblefour}%
886   \catcode"7F=\active
887   \def^^7f#1^^7f#2^^7f{%
888     \string #1\HyPsd@DecimalToOctal{#2}%
889   }%
890   % ... ?
891   \ifHy@unicode
892     \def\Hy@cjkpu{\80}%
893   \else
894     \let\Hy@cjkpu\@empty
895   \fi
896   \HyPsd@CJKActiveChars

```

```

897 }%
898 \count@=127 %
899 \@whilenum\count@<255 \do{%
900   \advance\count@ by 1 %
901   \lccode'\~=\count@
902   \lowercase{%
903     \toks@\expandafter{\the\toks@ ~}%
904   }%
905 }%
906 \toks@\expandafter{\the\toks@ !}%
907 \xdef\HyPsd@CJKhook{\the\toks@}%
908 \endgroup

```

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

```

909 \def\HyPsd@CJKActiveChars#1{%
910   \ifx#1!%
911     \let\HyPsd@CJKActiveChars\relax
912   \else
913     \edef#1{\noexpand\Hy@cjkpu\string#1}%
914   \fi
915   \HyPsd@CJKActiveChars
916 }

```

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

```

917 \def\HyPsd@DecimalToOctal#1{%
918   \ifcase #1 %
919     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
920     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
921     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
922     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
923     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
924     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
925     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
926     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
927     \or @\or A\or B\or C\or D\or E\or F\or G%
928     \or H\or I\or J\or K\or L\or M\or N\or O%
929     \or P\or Q\or R\or S\or T\or U\or V\or W%
930     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
931     \or \140\or a\or b\or c\or d\or e\or f\or g%
932     \or h\or i\or j\or k\or l\or m\or n\or o%
933     \or p\or q\or r\or s\or t\or u\or v\or w%
934     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
935     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
936     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
937     \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
938     \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
939     \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
940     \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
941     \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
942     \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
943     \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
944     \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
945     \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
946     \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
947     \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
948     \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%

```



```

949 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
950 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
951 \fi
952 }

```

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

953 \def\HyPsd@inmathwarn#1#2{%
954   \ifx#2\expandafter
955     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
956       \HyPsd@GLYPHERR
957       \expandafter\@gobble\string#1%
958     >%
959     \expandafter\expandafter\expandafter\HyPsd@EndWithElse
960   \else
961     \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
962   \fi

```

```

963 \else
964   \expandafter#2%
965 \fi
966 }
967 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
968 \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

```

969 \def\HyPsd@add@accent#1#2{%
970   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
971   #2%
972 }%

```

#### 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 caught by undelimited arguments.
- And they work in number, dimen, and skip assignments.

These properties are used in \HyPsd@CheckCatcodes.

```

973 \def\HyPsd@LetUnexpandableSpace#1{%
974   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
975 }

```

\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.

```

976 \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.

```

977 \edef\HyPsd@XSPACE{\string#\string X}
978 \edef\HyPsd@ITALCORR{\string#\string I}
979 \edef\HyPsd@GLYPHERR{\string#\string G}

```

#### 6.5.7 \hspace fix

\HyPsd@hspace

```

980 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}

```

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

```

981 \def\HyPsd@@hspace#1*#2\END{%
982   \ifx\#2\%
983     \HyPsd@hspacetest{#1}%

```

```

984 \else
985   \expandafter\HyPsd@hspacetest
986 \fi
987 }

```

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

```

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

```

### 6.5.8 Fix for AMS classes

```

989 \@ifundefined{tocsection}{%
990   \let\HyPSD@AMSclassfix\relax
991 }{%
992   \def\HyPSD@AMSclassfix{%
993     \let\tocpart\HyPSD@tocsection
994     \let\tocchapter\HyPSD@tocsection
995     \let\tocappendix\HyPSD@tocsection
996     \let\tocsection\HyPSD@tocsection
997     \let\tocsubsection\HyPSD@tocsection
998     \let\tocsubsubsection\HyPSD@tocsection
999     \let\tocparagraph\HyPSD@tocsection
1000   }%
1001   \def\HyPSD@tocsection#1#2#3{%
1002     \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1003     #3%
1004   }%
1005 }

```

### 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.

```

1006 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%

```

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

```

1007 \def\HyPsd@@ref#1*#2\END{%
1008   \ifx\\#2\\%
1009     \HyPsd@@@ref{#1}%
1010   \else
1011     \expandafter\HyPsd@@@ref
1012   \fi
1013 }%

```

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

```

1014 \def\HyPsd@@@ref#1{%
1015   \expandafter\ifx\csname r@#1\endcsname\relax
1016     ??%
1017   \else
1018     \expandafter\expandafter\expandafter
1019     \@car\csname r@#1\endcsname\@nil
1020   \fi
1021 }

```

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

```

1022 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

```

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

```
1023 \def\HyPsd@@pageref#1*#2\END{%
1024   \ifx\#2\%
1025     \HyPsd@@pageref{#1}%
1026   \else
1027     \expandafter\HyPsd@@pageref
1028   \fi
1029 }
```

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

```
1030 \def\HyPsd@@@pageref#1{%
1031   \expandafter\ifx\csname r@#1\endcsname\relax
1032     ??%
1033   \else
1034     \expandafter\expandafter\expandafter\expandafter
1035     \expandafter\expandafter\expandafter\@car
1036     \expandafter\expandafter\expandafter\@gobble
1037     \csname r@#1\endcsname\@nil
1038   \fi
1039 }
```

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

```
1040 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}
```

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

```
1041 \def\HyPsd@@autoref#1*#2\END{%
1042   \ifx\#2\%
1043     \HyPsd@@autoref{#1}%
1044   \else
1045     \expandafter\HyPsd@@autoref
1046   \fi
1047 }
```

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

```
1048 \def\HyPsd@@@autoref#1{%
1049   \expandafter\ifx\csname r@#1\endcsname\relax
1050     ??%
1051   \else
1052     \expandafter\expandafter\expandafter\HyPsd@autorefname
1053     \csname r@#1\endcsname{}{}{}{}@nil
1054     \expandafter\expandafter\expandafter
1055     \@car\csname r@#1\endcsname\@nil
1056   \fi
1057 }
```

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

```
1058 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1059   \ifx\#4\%
1060   \else
1061     \HyPsd@@autorefname#4.\@nil
1062   \fi
1063 }
```

`\HyPsd@@autorefname`

```

1064 \def\HyPsd@autorefname#1.#2\@nil{%
1065   \@ifundefined{#1autorefname}{%
1066     \@ifundefined{#1name}{%
1067       }{%
1068         \csname#1name\endcsname\space
1069       }%
1070     }{%
1071       \csname#1autorefname\endcsname\space
1072     }%
1073 }

```

### 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
1074 \begingroup
1075   \def\x#1#2{%
1076     \endgroup
1077     \let#1\def
1078     \def\HyPsd@DefCommand##1##2##{%
1079       #1%
1080       \expandafter\noexpand
1081         \csname\expandafter@gobble\string##1\@empty\endcsname
1082       \@gobble
1083     }%
1084     \let#2\let
1085     \def\HyPsd@LetCommand##1{%
1086       \expandafter\ifx\csname##1\expandafter\endcsname
1087         \csname iftrue\endcsname

```

```

1088     \pdfstringdefWarn\let
1089     \expandafter\@gobble
1090   \else
1091     \expandafter\ifx\csname##1\expandafter\endcsname
1092       \csname iffalse\endcsname
1093     \pdfstringdefWarn\let
1094     \expandafter\expandafter\expandafter\@gobble
1095   \else
1096     #2%
1097     \expandafter\noexpand
1098     \csname##1\expandafter\expandafter\expandafter\endcsname
1099   \fi
1100 \fi
1101 }%
1102 }%
1103 \expandafter\x\csname <def>-command\expandafter\endcsname
1104     \csname <let>-command\endcsname
1105 \def\HyPsd@LetCommand#1{%
1106   \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1107   \expandafter\expandafter\expandafter{%
1108     \expandafter\@gobble\string#1\@empty
1109   }%
1110 }

```

### 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.

```

1111 \def\HyPsd@ifnextchar{%
1112   \pdfstringdefWarn\@ifnextchar
1113   \expandafter\@gobbletwo\@gobble
1114 }

```

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

```

1115 \def\HyPsd@new@ifnextchar{%
1116   \pdfstringdefWarn\new@ifnextchar
1117   \expandafter\@gobbletwo\@gobble
1118 }

```

### 6.5.12 \@protected@testopt@ifnextchar

`\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`.

```

1119 \def\HyPsd@protected@testopt#1{%
1120   \pdfstringdefWarn#1%
1121   \@gobbletwo
1122 }

```

## 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:

```
1123 \def\HyPsd@Warning#1{%
1124   \begingroup
1125     \def\space{ }%
1126     \Hy@Warning{#1}%
1127   \endgroup
1128 }
```

### 6.6.2 Protecting spaces

```
1129 \RequirePackage{etexcmds}[2007/09/09]
1130 \ifetex@unexpanded
1131   \expandafter\@secondoftwo
1132 \else
1133   \expandafter\@firstoftwo
1134 \fi
1135 {%
```

`\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`.

```
1136   \def\HyPsd@ProtectSpaces#1{%
1137     \iftrue
1138       \expandafter\HyPsd@@ProtectSpacesFi
1139       \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1140     \fi
1141   }%
```

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

```
1142   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1143     \fi
1144     \ifx\scrollmode#2\scrollmode
1145       \HyPsd@RemoveMask#1\HyPsd@End#3%
1146     \else
1147       \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1148       \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1149     \fi
1150   }%
```

### 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.

```
1151   \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1152     \toks@\expandafter{#1}%
1153     \xdef#2{\the\toks@}%
1154   }%
1155 }{%
1156   \let\HyPsd@fi\fi
1157   \def\HyPsd@ProtectSpaces#1{%
```

```

1158 \xdef#1{%
1159 \iftrue
1160 \expandafter\HyPsd@@ProtectSpacesFi
1161 \expandafter\expandafter\@empty#1| %
1162 \HyPsd@fi
1163 }%
1164 \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1165 }%
1166 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1167 \fi
1168 \etex@unexpanded{#1}%
1169 \ifx\scrollmode#2\scrollmode
1170 \else
1171 \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1172 \HyPsd@fi
1173 }%
1174 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1175 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1176 }%
1177 }

```

### 6.6.3 Remove grouping braces

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

```

1178 \def\HyPsd@RemoveBraces#1{%
1179 \ifx\scrollmode#1\scrollmode
1180 \else
1181 \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1182 \fi
1183 }

```

`\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`.

```

1184 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1185 \fi
1186 \def\Hy@temp@A{#1#2}%
1187 \def\Hy@temp@B{#3}%
1188 \ifx\Hy@temp@A\Hy@temp@B
1189 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1190 \HyPsd@String#1%
1191 }%
1192 \ifx\scrollmode#2\scrollmode
1193 \else
1194 \Hy@ReturnAfterFiFiEnd{%
1195 \HyPsd@RemoveBraces{#2}%
1196 }%
1197 \fi
1198 \else
1199 \def\Hy@temp@A{#1}%

```



```

1200 \HyPsd@AppendItalcorr\HyPsd@String
1201 \ifx\Hy@temp@A\@empty
1202 \Hy@ReturnAfterElseFiFiEnd{%
1203 \HyPsd@RemoveBraces{#2}%
1204 }%
1205 \else
1206 \HyPsd@ProtectSpaces\Hy@temp@A
1207 \HyPsd@AppendItalcorr\Hy@temp@A
1208 \Hy@ReturnAfterFiFiEnd{%
1209 \expandafter\HyPsd@RemoveBraces\expandafter
1210 {\Hy@temp@A#2}%
1211 }%
1212 \fi
1213 \fi
1214 \Hy@ReturnEnd
1215 }

```

\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.

```

1216 \def\HyPsd@AppendItalcorr#1{%
1217 \expandafter\HyPsd@@AppendItalcorr\expandafter{/}\#1%
1218 }
1219 \def\HyPsd@@AppendItalcorr#1#2{%
1220 \expandafter\def\expandafter#2\expandafter{#2#1}%
1221 }

```

## 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).

```

1222 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1223 \global\let\HyPsd@Rest\relax
1224 \ifcat\relax\noexpand#1\relax
1225 \ifx#1\protect
1226 \else
1227 \ifx#1\penalty
1228 \setbox\z@=\hbox{%
1229 \afterassignment\HyPsd@AfterCountRemove
1230 \count@=#2\HyPsd@End
1231 }%
1232 \else
1233 \ifx#1\kern
1234 \setbox\z@=\hbox{%
1235 \afterassignment\HyPsd@AfterDimenRemove
1236 \dimen@=#2\HyPsd@End
1237 }%
1238 \else

```

```

1239         \ifx#1\hskip
1240         \setbox\z@=\hbox{%
1241         \afterassignment\HyPsd@AfterSkipRemove
1242         \skip@=#2\HyPsd@End
1243         }%
1244         \else
1245         \HyPsd@CatcodeWarning{#1}%
1246         \fi
1247     \fi
1248 \fi
1249 \fi
1250 \else
1251     \ifcat#1A% letter
1252     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1253     \HyPsd@String#1%
1254     }%
1255 \else
1256     \ifcat#1 % SPACE
1257     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1258     \HyPsd@String\HyPsd@SPACEOPTI
1259     }%
1260 \else
1261     \ifcat$#1%
1262     \HyPsd@CatcodeWarning{math shift}%
1263 \else
1264     \ifcat&#1%
1265     \HyPsd@CatcodeWarning{alignment tab}%
1266 \else
1267     \ifcat^#1%
1268     \HyPsd@CatcodeWarning{superscript}%
1269 \else
1270     \ifcat_#1%
1271     \HyPsd@CatcodeWarning{subscript}%
1272 \else
1273     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1274     \HyPsd@String#1%
1275     }%
1276     \fi
1277 \fi
1278 \fi
1279 \fi
1280 \fi
1281 \fi
1282 \fi
1283 \ifx\HyPsd@Rest\relax
1284     \ifx\scrollmode#2\scrollmode
1285     \else
1286     \Hy@ReturnAfterFiFiEnd{%
1287     \HyPsd@CheckCatcodes#2\HyPsd@End
1288     }%
1289     \fi
1290 \else
1291     \ifx\HyPsd@Rest\@empty
1292     \else
1293     \Hy@ReturnAfterFiFiEnd{%
1294     \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1295     }%

```

```

1296     \fi
1297   \fi
1298   \Hy@ReturnEnd
1299 }

```

### Remove counts, dimens, skips.

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

```

1300 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1301   \gdef\HyPsd@Rest{#1}%
1302 }

```

`\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.

```

1303 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1304   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1305     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1306     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1307   \else
1308     \ifdim\dimen@=\z@
1309     \else
1310       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1311     \fi
1312     \gdef\HyPsd@Rest{#1}%
1313   \fi
1314 }

```

`\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).

```

1315 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1316   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1317     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1318     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1319   \else
1320     \ifdim\skip@=\z@
1321     \else
1322       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1323     \fi
1324     \gdef\HyPsd@Rest{#1}%
1325   \fi
1326 }

```

### Catcode warnings.

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

```

1327 \def\HyPsd@CatcodeWarning#1{%
1328   \HyPsd@Warning{%
1329     Token not allowed in a PDF string (%
1330     \ifHy@unicode
1331       Unicode%
1332     \else
1333       PDFDocEncoding%
1334     \fi
1335     ),%

```

```

1336 \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1337 }%
1338 }
1339 \begingroup
1340 \catcode'\|=0 %
1341 \catcode'\|=12 %
1342 |gdef|HyPsd@RemoveCmdPrefix#1{%
1343 |expandafter|HyPsd@@RemoveCmdPrefix
1344 |string#1|@empty\<>-|@empty|@empty
1345 }%
1346 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1347 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

1348 \def\HyPsd@RemoveSpaceWarning#1{%
1349 \HyPsd@Warning{%
1350 Token not allowed in a PDFDocEncoded string:%
1351 \MessageBreak #1\MessageBreak
1352 removed%
1353 }%
1354 }

```

\HyPsd@ReplaceSpaceWarning

```

1355 \def\HyPsd@ReplaceSpaceWarning#1{%
1356 \HyPsd@Warning{%
1357 Token not allowed in a PDFDocEncoded string:%
1358 \MessageBreak #1\MessageBreak
1359 replaced by space%
1360 }%
1361 }

```

### 6.6.5 Check for wrong glyphs

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

```

1362 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1363 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1364 \HyPsd@String#1%
1365 }%
1366 \ifx\|#2\%
1367 \else
1368 \Hy@ReturnAfterFi{%
1369 \HyPsd@GlyphProcessWarning#2\@empty
1370 }%
1371 \fi
1372 }
1373 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1374 \HyPsd@Warning{%
1375 Glyph not defined in %
1376 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1377 removing '\@backslashchar#1'%
1378 }%
1379 \HyPsd@GlyphProcess#2\@empty
1380 }

```

## Spaces.

`\HyPsd@spaceopti` In the string the spaces are represented by `\HyPsd@spaceopti` tokens. Within an `\edef` it prints itself as a simple space and looks for its next argument. If another space follows, so it replaces the next `\HyPsd@spaceopti` by an protected space `\040`.

```
1381 \def\HyPsd@spaceopti#1{ % first space
1382   \ifx\HyPsd@spaceopti#1%
1383     \040%
1384   \else
1385     #1%
1386   \fi
1387 }%
```

### 6.6.6 Replacing tokens

`\HyPsd@Subst` To save tokens `\HyPsd@StringSubst` is an wrapper for the command `\HyPsd@Subst` that does all the work: In string stored in command #3 it replaces the tokens #1 with #2.  
#1 Exact the tokens that should be replaced.  
#2 The replacement (don't need to be expanded).  
#3 Command with the string.

```
1388 \def\HyPsd@Subst#1#2#3{%
1389   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1390     \fi
1391     ##1%
1392     \ifx\scrollmode##2\scrollmode
1393     \else
1394       #2%
1395       \HyPsd@@ReplaceFi##2\END
1396     \fi
1397   }%
1398   \xdef#3{%
1399     \iftrue
1400       \expandafter\HyPsd@@ReplaceFi#3#1\END
1401     \fi
1402   }%
1403 }
```

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

```
1404 \def\HyPsd@StringSubst#1{%
1405   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1406 }
```

### 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.

```
1407 \def\HyPsd@doxspace#1{%
1408   \ifx#1\relax\else
1409     \ifx#1.\else
1410       \ifx#1:\else
1411         \ifx#1,\else
1412           \ifx#1;\else
1413             \ifx#1!\else
1414               \ifx#1?\else
```

```

1415         \ifx#1/\else
1416         \ifx#1-\else
1417         \ifx#1'\else
1418         \HyPsd@SPACEOPTI
1419         \fi
1420         \fi
1421         \fi
1422         \fi
1423         \fi
1424         \fi
1425         \fi
1426         \fi
1427         \fi
1428         \fi
1429         #1%
1430 }%

```

### 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.

```

1431 \begingroup
1432 \catcode'\|=0 %
1433 \catcode'\|=12 %

```

\HyPsd@ConvertToUnicode

```

1434 |gdef|HyPsd@ConvertToUnicode#1{%
1435 |xdef#1{%
1436 |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1437 }%
1438 |ifx#1|@empty
1439 |else
1440 |xdef#1{%
1441 \376\377%
1442 #1%
1443 }%
1444 |fi
1445 }%

```

\HyPsd@DoConvert

```

1446 |gdef|HyPsd@DoConvert#1{%
1447 |ifx#1|@empty
1448 |else
1449 |Hy@ReturnAfterFi{%
1450 |ifx#1\|%
1451 \|%
1452 |expandafter|HyPsd@DoEscape
1453 |else
1454 \000#1%
1455 |expandafter|HyPsd@DoConvert
1456 |fi
1457 }%
1458 |fi
1459 }%

```

\HyPsd@DoEscape

```

1460 |gdef|HyPsd@DoEscape#1{%
1461   |ifx#19%
1462   |expandafter|HyPsd@GetTwoBytes
1463   |else
1464   |Hy@ReturnAfterFi{%
1465     |ifx#18%
1466     00%
1467     |expandafter|HyPsd@GetTwoBytes
1468     |else
1469     #1%
1470     |expandafter|HyPsd@GetOneByte
1471   |fi
1472   }%
1473 |fi
1474 }%

```

\HyPsd@GetTwoBytes

```

1475 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1476   #1\#2#3#4%
1477   |HyPsd@DoConvert
1478   }%

```

\HyPsd@GetOneByte

```

1479 |gdef|HyPsd@GetOneByte#1#2{%
1480   #1#2%
1481   |HyPsd@DoConvert
1482   }%
1483 |endgroup

```

\HyPsd@@GetNextTwoTokens

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

```

1484 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1485   \xdef#4{#4#1#2}%
1486   \HyPsd@@ConvertToUnicode#3\END#4%
1487 }

```

### 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`

```

1488 \begingroup\expandafter\expandafter\expandafter\endgroup
1489 \expandafter\ifx\csname numexpr\endcsname\relax
1490   \let\HyPsd@UTFviii\relax
1491 \else
1492   \def\HyPsd@UTFviii{%
1493     \let\UTFviii@two@octets\HyPsd@UTFviii@two
1494     \let\UTFviii@three@octets\HyPsd@UTFviii@three

```

```

1495 \let\unichar\HyPsd@unichar
1496 }%

```

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.

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

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

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

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

$$(5)$$

```

1497 \def\HyPsd@UTFviii@two#1#2{%
1498 \expandafter\HyPsd@UTFviii@two
1499 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1500 \number'#1\expandafter|%
1501 \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|%
1502 \number'#2 \@nil
1503 }%
1504 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
1505 \expandafter\8%
1506 \number\numexpr #1-48\expandafter\relax
1507 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1508 \number\numexpr #3-8*%
1509 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1510 \number\numexpr #4-8*#3\relax
1511 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

1512 \def\HyPsd@UTFviii@three#1#2#3{%
1513 \expandafter\HyPsd@UTFviii@three
1514 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1515 \number'#1\expandafter|%
1516 \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter|%
1517 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|%
1518 \number'#2\expandafter|%
1519 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|%
1520 \number'#3 \@nil
1521 }%
1522 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1523 \expandafter\9%
1524 \number\numexpr #1-56\expandafter\relax
1525 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1526 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax

```



```

1527 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1528 \number\numexpr #6-16\expandafter\relax
1529 \number\numexpr #7-8*#6\relax
1530 }%

```

Four octet form: 11110aab (A), 10bccdd (B), 10deeeff (C), and 10ggghhh (D). The result are two surrogate characters 110010aabbccdd and 11001eeeffggghh, or as octal numbers \931a\bcd and \931e\fgh. The conversion equations:

$$a := A/2 - 120 \quad (13)$$

$$b := (isodd(A)?2:0) + (B/32 - 4) \quad (14)$$

$$c := (B - 32 * (B/32))/4 \quad (15)$$

$$d := 2 * (B - 4 * (B/4)) + (C/32 - 4) \quad (16)$$

$$e := (C - 32 * (C/32))/4 \quad (17)$$

$$f := C - 4 * C/4 \quad (18)$$

$$g := D/8 - 16 \quad (19)$$

$$h := D - 8 * (D/8) \quad (20)$$

$$(21)$$

```

1531 \def\HyPsd@UTFviii@four#1{%
1532 \expandafter\HyPsd@UTFviii@@four\number'#1|}%
1533 }%
1534 \def\HyPsd@UTFviii@@four#1|#2|#3|#4{%
1535 \expandafter\HyPsd@UTFviii@@@four\number#1\expandafter|}%
1536 \number'#2\expandafter|}%
1537 \number\dimexpr.03125\dimexpr'#2sp\expandafter|}%
1538 \number'#3\expandafter|}%
1539 \number\dimexpr.03125\dimexpr'#3sp\expandafter|}%
1540 \number'#4\expandafter|}%
1541 \number\dimexpr.125\dimexpr'#4|}%
1542 }%
1543 \def\HyPsd@UTFviii@@@four#1|#2|#3|#4|#5|#6|#7|{%
1544 \931%
1545 \number\numexpr\dimexpr.5\dimexpr#1sp\relax\relax -120\relax
1546 \csname\number\numexpr\ifodd#1 2\else 0\fi +#3-4\relax\endcsname
1547 \number\dimexpr.25\dimexpr #2sp - 32\dimexpr#3sp\relax\relax\relax
1548 % ...
1549 }%

```

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

```

1550 \def\HyPsd@unichar#1{%
1551 \ifHy@unicode
1552 \ifnum#1>"10FFFF %
1553 \HyPsd@UnicodeReplacementCharacter % illegal
1554 \else
1555 \ifnum#1>"FFFF %

```

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

```

1556 \expandafter\HyPsd@unichar\expandafter{%
1557 \number\numexpr 55296+%
1558 \dimexpr.0009765625\dimexpr\number#1sp-\p@
1559 \relax\relax\relax
1560 }%

```

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

```

1561         \expandafter\HyPsd@unichar\expandafter{%
1562             \number\numexpr#1-9216%
1563             -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1564             \relax\relax\relax
1565     }%
1566     \else
1567         \ifnum#1>"7FF %
1568             \9%
1569             \expandafter\HyPsd@unichar@first@byte\expandafter{%
1570                 \number
1571                 \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1572             }%
1573         \else
1574             \8%
1575             \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
1576         \fi
1577         \expandafter\HyPsd@unichar@second@byte\expandafter{%
1578             \number
1579             \numexpr#1-256*\number
1580             \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
1581         }%
1582     \fi
1583 \fi
1584 \else
1585     .% unsupported (Unicode -> PDF Doc Encoding)
1586 \fi
1587 }%
1588 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
1589 \def\HyPsd@unichar@first@byte#1{%
1590     \number\dimexpr.015625\dimexpr#1sp\relax\relax
1591     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1592         \number
1593         \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1594         \relax\relax\relax
1595     }%
1596 }%
1597 \def\HyPsd@unichar@second@byte#1{%
1598     \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
1599     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1600         \number
1601         \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1602         \relax\relax\relax
1603     }%
1604 }%
1605 \def\HyPsd@unichar@octtwo#1{%
1606     \number\dimexpr.125\dimexpr#1sp\relax\relax
1607     \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
1608     \relax\relax\relax
1609 }%
1610 \fi

```

## 7 Support of other packages

### 7.1 Class memoir

```

1611 \@ifclassloaded{memoir}{%

```

```

1612 \AtEndOfPackage{\RequirePackage{memhfixc}}%
1613 }{}

```

## 7.2 Package subfigure

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

```

1614 \ifpackageloaded{subfigure}{%
1615 \ifundefined{sub@label}{%
1616 \Hy@hypertexnamesfalse
1617 }{%
1618 \renewcommand*{\sub@label}[1]{%
1619 \@bsphack
1620 \subfig@oldlabel{#1}%
1621 \if@files@
1622 \begin@group
1623 \edef\@currentlabstr{%
1624 \expandafter\strip@prefix\meaning\@currentlabelname
1625 }%
1626 \protected@write\@auxout{}{%
1627 \string\newlabel{sub@#1}{%
1628 {\@nameuse{@@thesub\@capttype}}%
1629 {\thepage}%
1630 {%
1631 \expandafter\strip@period\@currentlabstr
1632 \relax.\relax\@@@%
1633 }%
1634 {\@currentHref}%
1635 }%
1636 }%
1637 }%
1638 \endgroup
1639 \fi
1640 \@esphack
1641 }%
1642 \ifpackage@later{subfigure}{2002/03/26}{%
1643 \providecommand*\toclevel@subfigure{1}%
1644 \providecommand*\toclevel@subtable{1}%
1645 }%
1646 }%
1647 }{}

```

## 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:

```

1648 \ifundefined{XR@addURL}{%
1649 }{%

```

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.

```

1650 \def\XR@addURL#1{\XR@dURL#1{}{}{}{}\\}%
1651 \def\XR@dURL#1#2#3#4#5\\{%
1652 {#1}{#2}%
1653 \if!#4!%
1654 \else
1655 {#3}{#4}{\XR@URL}%
1656 \fi

```

```

1657 }%
1658 }

1659 \def\Hy@true{true}
1660 \def\Hy@false{false}

    Providing dummy definitions.

1661 \let\literalps@out\@gobble
1662 \newcommand\pdfbookmark[3] [] {}
1663 \let\Acrobatmenu\@gobble
1664 \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

```

1665 \let\HyperRaiseLinkHook\@empty
1666 \def\HyperRaiseLinkDefault{\baselineskip}

```

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

```

1667 \def\Hy@raisedlink#1{%
1668   \ifvmode
1669     #1%
1670   \else
1671     \penalty\@M
1672     \smash{%
1673       \begingroup
1674         \let\HyperRaiseLinkLength\@tempdima
1675         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1676         \HyperRaiseLinkHook
1677       \expandafter\endgroup
1678       \expandafter\raise\the\HyperRaiseLinkLength\hbox{#1}%
1679     }%
1680   \fi
1681 }

```

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

```

1682 \def\Hy@SaveLastskip{%
1683   \let\Hy@RestoreLastskip\relax
1684   \ifvmode
1685     \ifdim\lastskip=\z@
1686       \let\Hy@RestoreLastskip\nobreak
1687     \else
1688       \begingroup
1689         \skip@=-\lastskip
1690       \edef\x{%
1691         \endgroup

```

```

1692         \def\noexpand\Hy@RestoreLastskip{%
1693             \noexpand\ifvmode
1694             \noexpand\nobreak
1695             \vskip\the\skip@
1696             \vskip\the\lastskip\relax
1697         \noexpand\fi
1698     }%
1699 }%
1700 \x
1701 \fi
1702 \else
1703     \ifhmode
1704         \ifdim\lastskip=\z@
1705             \let\Hy@RestoreLastskip\nobreak
1706         \else
1707             \begingroup
1708             \skip@=-\lastskip
1709             \edef\x{%
1710                 \endgroup
1711                 \def\noexpand\Hy@RestoreLastskip{%
1712                     \noexpand\ifhmode
1713                     \noexpand\nobreak
1714                     \hskip\the\skip@
1715                     \hskip\the\lastskip\relax
1716                 \noexpand\fi
1717             }%
1718         }%
1719     \x
1720 \fi
1721 \fi
1722 \fi
1723 }%

```

## 9 Options

### 9.1 Help macros

\Hy@boolkey

```

1724 \def\Hy@boolkey{\@dblarg\Hy@@boolkey}
1725 \def\Hy@@boolkey[#1]#2#3{%
1726     \lowercase{\def\Hy@tempa{#3}}%
1727     \ifx\Hy@tempa\@empty
1728         \let\Hy@tempa\Hy@true
1729     \fi
1730     \ifx\Hy@tempa\Hy@true
1731     \else
1732         \ifx\Hy@tempa\Hy@false
1733         \else
1734             \let\Hy@tempa\relax
1735         \fi
1736     \fi
1737     \ifx\Hy@tempa\relax
1738         \Hy@WarnOptionValue{#3}{#1}{'true' or 'false'}%
1739     \else
1740         \Hy@Info{Option '#1' set '\Hy@tempa'}%
1741         \csname Hy@#2\Hy@tempa\endcsname

```

```

1742 \fi
1743 }

```

\Hy@WarnOptionValue

```

1744 \def\Hy@WarnOptionValue#1#2#3{%
1745   \Hy@Warning{%
1746     Unexpected value ‘#1’\MessageBreak
1747     of option ‘#2’ instead of\MessageBreak
1748     #3%
1749   }%
1750 }

```

\Hy@DisableOption

```

1751 \def\Hy@DisableOption#1{%
1752   \@ifundefined{KV@Hyp@#1@default}{%
1753     \define@key{Hyp}{#1}%
1754   }{%
1755     \define@key{Hyp}{#1}[]%
1756   }%
1757   {\Hy@WarnOptionDisabled{#1}}%
1758 }

```

\Hy@WarnOptionDisabled

```

1759 \def\Hy@WarnOptionDisabled#1{%
1760   \Hy@Warning{%
1761     Option ‘#1’ has already been used,\MessageBreak
1762     setting the option has no effect%
1763   }%
1764 }

```

\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.

```

1765 \def\Hy@CheckOptionValue#1#2#3{%
1766   \begingroup
1767   \edef\x{#1}%
1768   \@onelevel@sanitize\x
1769   \let\y=y%
1770   \def\do##1##2{%
1771     \def\z{##1}%
1772     \@onelevel@sanitize\z
1773     \ifx\x\z
1774       \let\y=n%
1775       \let\do\@gobbletwo
1776     \fi
1777   }%
1778   #3%
1779   \ifx\y y%
1780     \def\do##1##2{%
1781       * ‘##1’%
1782       \ifx\##2\\\else\space(##2)\fi
1783     \MessageBreak
1784   }%
1785   \Hy@Warning{%
1786     Values of option ‘#2’:\MessageBreak
1787     #3%
1788     * An empty value disables the option.\MessageBreak
1789     Unknown value ‘\x’%

```

```

1790     }%
1791     \fi
1792 \endgroup
1793 }

\Hy@DefNameKey #1: option name
#2: \do list with known values, first argument of \do is value, second argument is a
comment.
1794 \def\Hy@DefNameKey#1{%
1795   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
1796 }

\Hy@@DefNameKey #1: macro for value storage
#2: option name
#3: \do list with known values.
1797 \def\Hy@@DefNameKey#1#2#3{%
1798   \define@key{Hyp}{#2}{%
1799     \edef#1{##1}%
1800     \ifx#1\@empty
1801       \else
1802         \Hy@CheckOptionValue{##1}{#2}{#3}%
1803       \fi
1804   }%
1805   \let#1\@empty
1806 }

\Hy@UseNameKey
1807 \def\Hy@UseNameKey#1#2{%
1808   \ifx#2\@empty
1809     \else
1810       /#1/#2%
1811     \fi
1812 }

```

## 9.2 Defining the options

```

1813 \define@key{Hyp}{implicit}[true]{%
1814   \Hy@boolkey{implicit}{#1}%
1815 }
1816 \define@key{Hyp}{draft}[true]{%
1817   \Hy@boolkey{draft}{#1}%
1818 }
1819 \define@key{Hyp}{final}[true]{%
1820   \Hy@boolkey{final}{#1}%
1821 }
1822 \let\KV@Hyp@nolinks\KV@Hyp@draft
1823 \define@key{Hyp}{a4paper}[true]{%
1824   \def\special@paper{210mm,297mm}%
1825   \def\Hy@pageheight{842}%
1826 }
1827 \define@key{Hyp}{a5paper}[true]{%
1828   \def\special@paper{148mm,210mm}%
1829   \def\Hy@pageheight{595}%
1830 }
1831 \define@key{Hyp}{b5paper}[true]{%
1832   \def\special@paper{176mm,250mm}%

```

```

1833 \def\Hy@pageheight{709}%
1834 }
1835 \define@key{Hyp}{letterpaper}[true]{%
1836 \def\special@paper{8.5in,11in}%
1837 \def\Hy@pageheight{792}%
1838 }
1839 \define@key{Hyp}{legalpaper}[true]{%
1840 \def\special@paper{8.5in,14in}%
1841 \def\Hy@pageheight{1008}%
1842 }
1843 \define@key{Hyp}{executivepaper}[true]{%
1844 \def\special@paper{7.25in,10.5in}%
1845 \def\Hy@pageheight{720}%
1846 }
1847 \define@key{Hyp}{setpagesize}[true]{%
1848 \Hy@boolkey{setpagesize}{#1}%
1849 }
1850 \define@key{Hyp}{debug}[true]{%
1851 \Hy@boolkey[debug]{verbose}{#1}%
1852 }
1853 \define@key{Hyp}{linktopage}[true]{%
1854 \Hy@boolkey{linktopage}{#1}%
1855 }
1856 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1857 \def\XR@ext{dvi}
1858 \define@key{Hyp}{verbose}[true]{%
1859 \Hy@boolkey{verbose}{#1}%
1860 }
1861 \define@key{Hyp}{typexml}[true]{%
1862 \Hy@boolkey{typexml}{#1}%
1863 }

```

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.

```

1864 \define@key{Hyp}{raiselinks}[true]{%
1865 \Hy@boolkey{raiselinks}{#1}%
1866 }

```

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

```

1867 \define@key{Hyp}{breaklinks}[true]{%
1868 \Hy@boolkey{breaklinks}{#1}%
1869 }

```

Determines whether an automatic anchor is put on each page

```

1870 \define@key{Hyp}{pageanchor}[true]{%
1871 \Hy@boolkey{pageanchor}{#1}%
1872 }

```

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.

```

1873 \define@key{Hyp}{plainpages}[true]{%
1874 \Hy@boolkey{plainpages}{#1}%
1875 }

```

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

```

1876 \define@key{Hyp}{naturalnames}[true]{%
1877 \Hy@boolkey{naturalnames}{#1}%

```



1878 }

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

```
1879 \define@key{Hyp}{hypertexnames}[true]{%
1880   \Hy@boolkey{hypertexnames}{#1}%
1881 }
```

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

```
1882 \define@key{Hyp}{nesting}[true]{%
1883   \Hy@boolkey{nesting}{#1}%
1884 }

1885 \define@key{Hyp}{unicode}[true]{%
1886   \Hy@boolkey{unicode}{#1}%
1887   \ifHy@unicode
1888     \def\HyPsd@pdfencoding{unicode}%
1889   \else
1890     \def\HyPsd@pdfencoding{pdfdoc}%
1891   \fi
1892   \HyPsd@LoadUnicode
1893 }

1894 \def\HyPsd@LoadUnicode{%
1895   \@ifundefined{T@PU}{\input{puenc.def}}{}%
1896   \DeclareFontFamily{PU}{pdf}{}%
1897   \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
1898   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
1899   \global\let\HyPsd@LoadUnicode\relax
1900 }

1901 \AtBeginDocument{%
1902   \ifx\HyPsd@LoadUnicode\relax
1903   \else
1904     \def\HyPsd@LoadUnicode{%
1905       \PackageError{hyperref}{%
1906         Unicode support for bookmarks is not available.\MessageBreak
1907         Activate unicode support by using one of the options\MessageBreak
1908         'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
1909         in the preamble%
1910       }@ehc
1911       \global\let\HyPsd@LoadUnicode\relax
1912       \global\Hy@unicodetrue
1913       \global\let\Hy@unicodetrue\Hy@unicodetrue
1914     }%
1915   \fi
1916 }

1917 \define@key{Hyp}{pdfencoding}{%
1918   \edef\HyPsd@temp{#1}%
1919   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
1920     \let\HyPsd@pdfencoding\HyPsd@temp
1921     \Hy@unicodetrue
1922   \else
1923     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
1924       \z@
1925     \else
1926       \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
1927         \z@
1928       \else
1929         \ne
1930       \fi
```

```

1931         \fi
1932     \let\HyPsd@pdfencoding\HyPsd@temp
1933     \hypersetup{unicode}%
1934     \ifHy@unicode
1935         \def\HyPsd@pdfencoding{#1}%
1936         \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
1937             \HyPsd@LoadStringEnc
1938         \fi
1939     \else
1940         \Hy@Warning{Cannot switch to unicode bookmarks}%
1941         \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
1942     \fi
1943 \else
1944     \@onelevel@sanitize\HyPsd@temp
1945     \Hy@Warning{%
1946         Values of option 'pdfencoding':\MessageBreak
1947         'pdfdoc', 'unicode', 'auto'.\MessageBreak
1948         Ignoring unknown value '\HyPsd@temp'%
1949     }%
1950 \fi
1951 \fi
1952 }
1953 \def\HyPsd@pdfencoding@auto{auto}
1954 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
1955 \def\HyPsd@pdfencoding@unicode{unicode}
1956 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
1957 \def\HyPsd@LoadStringEnc{%
1958     \RequirePackage{stringenc}[2007/06/14]%
1959     \let\HyPsd@LoadStringEnc\relax
1960 }
1961 \AtBeginDocument{%
1962     \@ifpackageloaded{stringenc}{%
1963         \let\HyPsd@LoadStringEnc\relax
1964     }{%
1965         \def\HyPsd@LoadStringEnc{%
1966             \Hy@WarningNoLine{%
1967                 Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak
1968                 in the preamble or load the package there%
1969             }%
1970         }%
1971     }%
1972 }
1973 \newif\ifHy@setpdfversion
1974 \define@key{Hyp}{pdfversion}{%
1975     \@ifundefined{Hy@pdfversion@#1}{%
1976         \PackageWarning{hyperref}{%
1977             Unsupported PDF version '#1'.\MessageBreak
1978             Valid values: 1.2 until 1.7%
1979         }%
1980     }{%
1981         \Hy@setpdfversiontrue
1982         \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
1983     }%
1984 }
1985 \@namedef{Hy@pdfversion@1.2}{2}%
1986 \@namedef{Hy@pdfversion@1.3}{3}%
1987 \@namedef{Hy@pdfversion@1.4}{4}%

```

```

1988 \@namedef{Hy@pdfversion@1.5}{5}%
1989 \@namedef{Hy@pdfversion@1.6}{6}%
1990 \@namedef{Hy@pdfversion@1.7}{7}%
1991 \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

1992 \define@key{Hyp}{hyperref}[true]{%
1993 \define@key{Hyp}{tex4ht}[true]{%
1994 \def\XR@ext{html}%
1995 \Hy@texhttrue
1996 \def\Hy@raisedlink{}%
1997 \setkeys{Hyp}{colorlinks=true}%
1998 \def\BeforeTeXIVht{\usepackage{color}}%
1999 \def\Hy@driver{htex4ht}%
2000 \def\MaybeStopEarly{%
2001 \typeout{Hyperref stopped early}%
2002 \AfterBeginDocument{%
2003 \PDF@FinishDoc
2004 \gdef\PDF@FinishDoc{}%
2005 }%
2006 \endinput
2007 }%
2008 }
2009 \define@key{Hyp}{pdftex}[true]{%
2010 \def\Hy@driver{hpdftex}%
2011 \def\XR@ext{pdf}%
2012 \PassOptionsToPackage{pdftex}{color}%
2013 \Hy@breaklinkstrue
2014 }
2015 \define@key{Hyp}{dvi pdf}[true]{%
2016 \Hy@WarningNoLine{%
2017 Option ‘dvi pdf’ is deprecated.\MessageBreak
2018 See the user manual for available driver options%
2019 }%
2020 }
2021 \define@key{Hyp}{native pdf}[true]{%
2022 \def\Hy@driver{hdvips}%
2023 \def\Hy@raisedlink{}%
2024 \def\XR@ext{pdf}%
2025 }
2026 \define@key{Hyp}{dvi pdf m}[true]{%
2027 \def\Hy@driver{hdvipdfm}%
2028 \def\XR@ext{pdf}%
2029 \Hy@breaklinkstrue
2030 }
2031 \define@key{Hyp}{dvi pdf m x}[true]{%
2032 \def\Hy@driver{hdvipdfm}%
2033 \def\XR@ext{pdf}%
2034 \Hy@breaklinkstrue
2035 }
2036 \define@key{Hyp}{dvi pdf m x-outline-open}[true]{%
2037 \expandafter\ifx\csname if#1\expandafter\endcsname
2038 \csname iftrue\endcsname
2039 \chardef\SpecialDvipdfmxOutlineOpen@ne
2040 \else
2041 \chardef\SpecialDvipdfmxOutlineOpen@z@

```

```

2042 \fi
2043 }
2044 \define@key{Hyp}{xetex}[true]{%
2045   \def\Hy@driver{hdvipdfm}%
2046   \def\XR@ext{pdf}%
2047   \Hy@breaklinkstrue
2048 }
2049 \define@key{Hyp}{pdfmark}[true]{%
2050   \def\Hy@driver{hdvips}%
2051   \def\Hy@raisedlink{}%
2052   \def\XR@ext{pdf}%
2053 }
2054 \define@key{Hyp}{dvips}[true]{%
2055   \def\Hy@driver{hdvips}%
2056   \def\Hy@raisedlink{}%
2057   \def\XR@ext{pdf}%
2058 }
2059 \define@key{Hyp}{hypertex}[true]{%
2060   \def\Hy@driver{hypertex}%
2061 }
2062 \let\Hy@MaybeStopNow\relax
2063 \define@key{Hyp}{vtex}[true]{%
2064   \begingroup\expandafter\expandafter\expandafter\endgroup
2065   \expandafter\ifx\csname OpMode\endcsname\relax
2066     \latex@error{Non-VTeX processor}{}%
2067     \global\let\Hy@MaybeStopNow\endinput
2068     \endinput
2069   \else
2070     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2071       \def\XR@ext{pdf}%
2072       \def\Hy@driver{hvtex}%
2073     \else
2074       \ifnum\OpMode=10\relax
2075         \def\XR@ext{htm}%
2076         \def\Hy@driver{hvtexhtm}%
2077         \def\MaybeStopEarly{%
2078           \typeout{Hyperref stopped early}%
2079           \AfterBeginDocument{%
2080             \PDF@FinishDoc
2081             \gdef\PDF@FinishDoc{}%
2082           }%
2083         \endinput
2084       }%
2085     \else
2086       \latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2087       \global\let\Hy@MaybeStopNow\endinput
2088       \endinput
2089     \fi
2090   \fi
2091 \fi
2092 }
2093 \define@key{Hyp}{vtexpdfmark}[true]{%
2094   \begingroup\expandafter\expandafter\expandafter\endgroup
2095   \expandafter\ifx\csname OpMode\endcsname\relax
2096     \latex@error{Non-VTeX processor}{}%
2097     \let\Hy@MaybeStopNow\endinput
2098   \endinput

```

```

2099 \else
2100   \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2101   \def\XR@ext{pdf}%
2102   \def\Hy@driver{hvtexmrk}%
2103   \def\Hy@raisedlink{}%
2104   \else
2105   \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2106   \let\Hy@MaybeStopNow\endinput
2107   \endinput
2108   \fi
2109 \fi
2110 }
2111 \define@key{Hyp}{dviwindo}[true]{%
2112   \def\Hy@driver{hdvwind}%
2113   \setkeys{Hyp}{colorlinks}%
2114   \PassOptionsToPackage{dviwindo}{color}%
2115 }
2116 \define@key{Hyp}{dvipsone}[true]{%
2117   \def\XR@ext{pdf}%
2118   \def\Hy@driver{hdvipson}%
2119   \def\Hy@raisedlink{}%
2120 }
2121 \define@key{Hyp}{textures}[true]{%
2122   \def\XR@ext{pdf}%
2123   \def\Hy@driver{htexture}%
2124 }
2125 \define@key{Hyp}{latex2html}[true]{%
2126   \AtBeginDocument{\@@latextohtmlX}%
2127 }

```

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

```

2128 \define@key{Hyp}{ps2pdf}[true]{%
2129   \def\Hy@driver{hdvips}%
2130   \def\Hy@raisedlink{}%
2131   \providecommand*\@pdfborder{0 0 1}%
2132 }

```

## 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.

```

2133 \define@key{Hyp}{hyperfigures}[true]{%
2134   \Hy@boolkey{hyperfigures}{figures}{#1}%
2135 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

2136 \define@key{Hyp}{hyperfootnotes}[true]{%
2137   \Hy@boolkey{hyperfootnotes}{#1}%
2138 }

```

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

```

2139 \def\back@none{none}
2140 \def\back@section{section}
2141 \def\back@page{page}
2142 \def\back@slide{slide}
2143 \define@key{Hyp}{backref}[section]{%
2144   \lowercase{\def\Hy@tempa{#1}}%
2145   \ifx\Hy@tempa\@empty

```

```

2146 \let\Hy@tempa\back@section
2147 \fi
2148 \ifx\Hy@tempa\Hy@false
2149 \let\Hy@tempa\back@none
2150 \fi
2151 \ifx\Hy@tempa\back@slide
2152 \let\Hy@tempa\back@section
2153 \fi
2154 \ifx\Hy@tempa\back@page
2155 \PassOptionsToPackage{hyperpageref}{backref}%
2156 \Hy@backreftrue
2157 \else
2158 \ifx\Hy@tempa\back@section
2159 \PassOptionsToPackage{hyperref}{backref}%
2160 \Hy@backreftrue
2161 \else
2162 \ifx\Hy@tempa\back@none
2163 \Hy@backreffalse
2164 \else
2165 \Hy@WarnOptionValue{#1}{backref}{%
2166 'section', 'slide', 'page', 'none', \MessageBreak
2167 or 'false'}%
2168 \fi
2169 \fi
2170 \fi
2171 }
2172 \define@key{Hyp}{pagebackref}[true]{%
2173 \lowercase{\def\Hy@tempa{#1}}%
2174 \ifx\Hy@tempa\@empty
2175 \let\Hy@tempa\Hy@true
2176 \fi
2177 \ifx\Hy@tempa\Hy@true
2178 \PassOptionsToPackage{hyperpageref}{backref}%
2179 \Hy@backreftrue
2180 \else
2181 \ifx\Hy@tempa\Hy@false
2182 \Hy@backreffalse
2183 \else
2184 \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
2185 \fi
2186 \fi
2187 }

```

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

```

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

```

Configuration of encap char.

```

2191 \define@key{Hyp}{encap}[\l]{%
2192 \def\HyInd@EncapChar{#1}%
2193 }

```

## 12 Language options

The \autoref feature depends on the language.

```

2194 \def\HyLang@afrikaans{%
2195   \def\equationautorefname{Vergelyking}%
2196   \def\footnoteautorefname{Voetnota}%
2197   \def\itemautorefname{Item}%
2198   \def\figureautorefname{Figuur}%
2199   \def\tableautorefname{Tabel}%
2200   \def\partautorefname{Deel}%
2201   \def\appendixautorefname{Bylae}%
2202   \def\chapterautorefname{Hoofstuk}%
2203   \def\sectionautorefname{Afdeling}%
2204   \def\subsectionautorefname{Subafdeling}%
2205   \def\subsubsectionautorefname{Subsubafdeling}%
2206   \def\paragraphautorefname{Paragraaf}%
2207   \def\subparagraphautorefname{Subparagraaf}%
2208   \def\FancyVerbLineautorefname{Lyn}%
2209   \def\theoremautorefname{Teorema}%
2210   \def\pageautorefname{Bladsy}%
2211 }
2212 \def\HyLang@english{%
2213   \def\equationautorefname{Equation}%
2214   \def\footnoteautorefname{footnote}%
2215   \def\itemautorefname{item}%
2216   \def\figureautorefname{Figure}%
2217   \def\tableautorefname{Table}%
2218   \def\partautorefname{Part}%
2219   \def\appendixautorefname{Appendix}%
2220   \def\chapterautorefname{chapter}%
2221   \def\sectionautorefname{section}%
2222   \def\subsectionautorefname{subsection}%
2223   \def\subsubsectionautorefname{subsubsection}%
2224   \def\paragraphautorefname{paragraph}%
2225   \def\subparagraphautorefname{subparagraph}%
2226   \def\FancyVerbLineautorefname{line}%
2227   \def\theoremautorefname{Theorem}%
2228   \def\pageautorefname{page}%
2229 }
2230 \def\HyLang@french{%
2231   \def\equationautorefname{\`Equation}%
2232   \def\footnoteautorefname{note}%
2233   \def\itemautorefname{item}%
2234   \def\figureautorefname{Figure}%
2235   \def\tableautorefname{Tableau}%
2236   \def\partautorefname{Partie}%
2237   \def\appendixautorefname{Appendice}%
2238   \def\chapterautorefname{chapitre}%
2239   \def\sectionautorefname{section}%
2240   \def\subsectionautorefname{sous-section}%
2241   \def\subsubsectionautorefname{sous-sous-section}%
2242   \def\paragraphautorefname{paragraphe}%
2243   \def\subparagraphautorefname{sous-paragraphe}%
2244   \def\FancyVerbLineautorefname{ligne}%
2245   \def\theoremautorefname{Th\'eor\`eme}%
2246   \def\pageautorefname{page}%
2247 }
2248 \def\HyLang@german{%
2249   \def\equationautorefname{Gleichung}%
2250   \def\footnoteautorefname{Fu\ss note}%

```

```

2251 \def\itemautorefname{Punkt}%
2252 \def\figureautorefname{Abbildung}%
2253 \def\tableautorefname{Tabelle}%
2254 \def\partautorefname{Teil}%
2255 \def\appendixautorefname{Anhang}%
2256 \def\chapterautorefname{Kapitel}%
2257 \def\sectionautorefname{Abschnitt}%
2258 \def\subsectionautorefname{Unterabschnitt}%
2259 \def\subsubsectionautorefname{Unterunterabschnitt}%
2260 \def\paragraphautorefname{Absatz}%
2261 \def\subparagraphautorefname{Unterabsatz}%
2262 \def\FancyVerbLineautorefname{Zeile}%
2263 \def\theoremautorefname{Theorem}%
2264 \def\pageautorefname{Seite}%
2265 }
2266 \def\HyLang@italian{%
2267 \def\equationautorefname{Equazione}%
2268 \def\footnoteautorefname{nota}%
2269 \def\itemautorefname{punto}%
2270 \def\figureautorefname{Figura}%
2271 \def\tableautorefname{Tabella}%
2272 \def\partautorefname{Parte}%
2273 \def\appendixautorefname{Appendice}%
2274 \def\chapterautorefname{Capitolo}%
2275 \def\sectionautorefname{sezione}%
2276 \def\subsectionautorefname{sottosezione}%
2277 \def\subsubsectionautorefname{sottosottosezione}%
2278 \def\paragraphautorefname{paragrafo}%
2279 \def\subparagraphautorefname{sottoparagrafo}%
2280 \def\FancyVerbLineautorefname{linea}%
2281 \def\theoremautorefname{Teorema}%
2282 \def\pageautorefname{Pag.\@}%
2283 }
2284 \def\HyLang@magyar{%
2285 \def\equationautorefname{Egyenlet}%
2286 \def\footnoteautorefname{1\ 'abjegyzet}%
2287 \def\itemautorefname{Elem}%
2288 \def\figureautorefname{\ 'Abra}%
2289 \def\tableautorefname{T\ 'abl\ 'azat}%
2290 \def\partautorefname{R\ 'esz}%
2291 \def\appendixautorefname{F\ "uggel\ 'ek}%
2292 \def\chapterautorefname{fejezet}%
2293 \def\sectionautorefname{szakasz}%
2294 \def\subsectionautorefname{alszakasz}%
2295 \def\subsubsectionautorefname{alalszakasz}%
2296 \def\paragraphautorefname{bekezd\ 'es}%
2297 \def\subparagraphautorefname{albekezd\ 'es}%
2298 \def\FancyVerbLineautorefname{sor}%
2299 \def\theoremautorefname{T\ 'etel}%
2300 \def\pageautorefname{oldal}%
2301 }
2302 \def\HyLang@portuges{%
2303 \def\equationautorefname{Equa\c c\~ao}%
2304 \def\footnoteautorefname{Nota de rodap\ 'e}%
2305 \def\itemautorefname{Item}%
2306 \def\figureautorefname{Figura}%
2307 \def\tableautorefname{Tabela}%

```



```

2308 \def\partautorefname{Parte}%
2309 \def\appendixautorefname{Ap\`endice}%
2310 \def\chapterautorefname{Cap\`itulo}%
2311 \def\sectionautorefname{Se\c c\~ao}%
2312 \def\subsectionautorefname{Subse\c c\~ao}%
2313 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
2314 \def\paragraphautorefname{par\`agrafo}%
2315 \def\subparagraphautorefname{subpar\`agrafo}%
2316 \def\FancyVerbLineautorefname{linha}%
2317 \def\theoremautorefname{Teorema}%
2318 \def\pageautorefname{P\`agina}%
2319 }
2320 \def\HyLang@russian{%
2321 \def\equationautorefname{%
2322 \cyr\cyrv\cyrry\cyrr\cyra\cyrrzh\cyre\cyrn\cyri\cyre
2323 }%
2324 \def\footnoteautorefname{%
2325 \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrm.%
2326 }%
2327 \def\itemautorefname{\cyr\cyrp.}%
2328 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
2329 \def\tableautorefname{\cyr\cyrt\cyra\cyrb\cyrl.}%
2330 \def\partautorefname{\cyr\cyrch.}%
2331 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
2332 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
2333 \def\sectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
2334 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
2335 \def\subsubsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
2336 \def\paragraphautorefname{\cyr\cyrp.}%
2337 \def\subparagraphautorefname{\cyr\cyrp.}%
2338 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
2339 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
2340 \def\pageautorefname{\cyr\cyrs.}%
2341 }
2342 \def\HyLang@spanish{%
2343 \def\equationautorefname{Ecuaci\`on}%
2344 \def\footnoteautorefname{Nota a pie de p\`agina}%
2345 \def\itemautorefname{Elemento}%
2346 \def\figureautorefname{Figura}%
2347 \def\tableautorefname{Tabla}%
2348 \def\partautorefname{Parte}%
2349 \def\appendixautorefname{Ap\`endice}%
2350 \def\chapterautorefname{Cap\`itulo}%
2351 \def\sectionautorefname{Secci\`on}%
2352 \def\subsectionautorefname{Subsecci\`on}%
2353 \def\subsubsectionautorefname{Subsubsecci\`on}%
2354 \def\paragraphautorefname{P\`arrafo}%
2355 \def\subparagraphautorefname{Subp\`arrafo}%
2356 \def\FancyVerbLineautorefname{L\`inea}%
2357 \def\theoremautorefname{Teorema}%
2358 \def\pageautorefname{P\`agina}%
2359 }
2360 \def\HyLang@vietnamese{%
2361 \def\equationautorefname{Ph\`uhorn{\}ohorn}{ng tr\`inh}%
2362 \def\footnoteautorefname{Ch\`u th\`ich}%
2363 \def\itemautorefname{m\`d\`u\`c}%
2364 \def\figureautorefname{H\`inh}%

```

```

2365 \def\tableautorefname{B\h{a}ng}%
2366 \def\partautorefname{Ph\‘\acircumflex{}n}%
2367 \def\appendixautorefname{Ph\d{u} 1\d{u}c}%
2368 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
2369 \def\sectionautorefname{m\d{u}c}%
2370 \def\subsectionautorefname{m\d{u}c}%
2371 \def\subsubsectionautorefname{m\d{u}c}%
2372 \def\paragraphautorefname{dj{}o\d{a}n}%
2373 \def\subparagraphautorefname{dj{}o\d{a}n}%
2374 \def\FancyVerbLineautorefname{d\‘ong}%
2375 \def\theoremautorefname{DJ{}\d{i}nh 1\‘y}%
2376 \def\pageautorefname{Trang}%
2377 }

```

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

```

2378 \def\HyLang@addto#1#2{%
2379   #2%
2380   \@temptokena{#2}%
2381   \ifx#1\relax
2382     \let#1\@empty
2383   \fi
2384   \ifx#1\undefined
2385     \edef#1{\the\@temptokena}%
2386   \else
2387     \toks@\expandafter{#1}%
2388     \edef#1{\the\toks@\the\@temptokena}%
2389   \fi
2390   \@temptokena{}\toks@\@temptokena
2391 }

2392 \def\HyLang@DeclareLang#1#2{%
2393   \begingroup
2394     \edef\x##1##2{%
2395       \noexpand\ifx##2\relax
2396         \errmessage{No definitions for language #2’ found!}%
2397       \noexpand\fi
2398     \endgroup
2399     \noexpand\define@key{Hyp}{#1}[]{%
2400       \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
2401     }%
2402   }%
2403   \expandafter\x\csname extras#1\expandafter\endcsname
2404     \csname HyLang@#2\endcsname
2405 }

2406 \HyLang@DeclareLang{english}{english}
2407 \HyLang@DeclareLang{UKenglish}{english}
2408 \HyLang@DeclareLang{british}{english}
2409 \HyLang@DeclareLang{USenglish}{english}
2410 \HyLang@DeclareLang{american}{english}
2411 \HyLang@DeclareLang{german}{german}
2412 \HyLang@DeclareLang{austrian}{german}
2413 \HyLang@DeclareLang{ngerman}{german}
2414 \HyLang@DeclareLang{naustrian}{german}
2415 \HyLang@DeclareLang{russian}{russian}
2416 \HyLang@DeclareLang{brazil}{portuges}
2417 \HyLang@DeclareLang{brazilian}{portuges}
2418 \HyLang@DeclareLang{portuguese}{portuges}

```

```

2419 \HyLang@DeclareLang{spanish}{spanish}
2420 \HyLang@DeclareLang{afrikaans}{afrikaans}
2421 \HyLang@DeclareLang{french}{french}
2422 \HyLang@DeclareLang{frenchb}{french}
2423 \HyLang@DeclareLang{français}{french}
2424 \HyLang@DeclareLang{acadian}{french}
2425 \HyLang@DeclareLang{canadien}{french}
2426 \HyLang@DeclareLang{italian}{italian}
2427 \HyLang@DeclareLang{magyar}{magyar}
2428 \HyLang@DeclareLang{hungarian}{magyar}

```

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

```

2429 \define@key{Hyp}{vietnamese}[]{}%
2430 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
2431 \AtEndOfPackage{%
2432   \ifundefined{T@PU}{}{}%
2433   \input{puvnenc.def}%
2434 }%
2435 }%
2436 }
2437 \define@key{Hyp}{vietnam}[]{}%
2438 \HyLang@addto\extravietnam\HyLang@vietnamese
2439 \AtEndOfPackage{%
2440   \ifundefined{T@PU}{}{}%
2441   \input{puvnenc.def}%
2442 }%
2443 }%
2444 }

```

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

```

2445 \define@key{Hyp}{arabic}[]{}%
2446 \AtEndOfPackage{%
2447   \ifundefined{T@PU}{}{}%
2448   \input{puarenc.def}%
2449 }%
2450 }%
2451 }

```

## 13 Options to change appearance of links

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

```

2452 \define@key{Hyp}{colorlinks}[true]{}%
2453 \Hy@boolkey{colorlinks}{#1}%
2454 \ifHy@colorlinks
2455   \def\@pdfborder{0 0 0}%
2456   \let\@pdfborderstyle\@empty
2457 \fi
2458 }
2459 \define@key{Hyp}{frenchlinks}[true]{}%
2460 \Hy@boolkey{frenchlinks}{#1}%
2461 }

```

## 14 Bookmarking

```

2462 \define@key{Hyp}{bookmarks}[true]{}%
2463 \Hy@boolkey{bookmarks}{#1}%

```

```

2464 }
2465 \define@key{Hyp}{bookmarksopen}[true]{%
2466   \Hy@boolkey{bookmarksopen}{#1}%
2467 }

```

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.

```

2468 \let\Hy@bookmarksdepth\c@tocdepth
2469 \define@key{Hyp}{bookmarksdepth}[]{%
2470   \begingroup
2471     \edef\x{#1}%
2472     \ifx\x\empty
2473       \global\let\Hy@bookmarksdepth\c@tocdepth
2474     \else
2475       \@ifundefined{toclevel@\x}{%
2476         \@onelevel@sanitize\x
2477         \edef\y{\expandafter\@car\x\@nil}%
2478         \ifcase 0\expandafter\ifx\y-1\fi
2479           \expandafter\ifnum\expandafter'\y>47 %
2480             \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
2481           \Hy@Warning{Unknown document division name (\x)}%
2482         \else
2483           \setbox\z@=\hbox{%
2484             \count@=\x
2485             \xdef\Hy@bookmarksdepth{\the\count@}%
2486           }%
2487         \fi
2488       }{%
2489         \setbox\z@=\hbox{%
2490           \count@=\csname toclevel@\x\endcsname
2491           \xdef\Hy@bookmarksdepth{\the\count@}%
2492         }%
2493       }%
2494     \fi
2495   \endgroup
2496 }

```

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

```

2497 \define@key{Hyp}{bookmarksopenlevel}{%
2498   \def\@bookmarksopenlevel{#1}%
2499 }
2500 \def\@bookmarksopenlevel{\maxdimen}
2501 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
2502 \define@key{Hyp}{bookmarkstype}{%
2503   \def\Hy@bookmarkstype{#1}%
2504 }
2505 \def\Hy@bookmarkstype{toc}

```

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

```

2506 \define@key{Hyp}{bookmarksnumbered}[true]{%
2507   \Hy@boolkey{bookmarksnumbered}{#1}%
2508 }

Option CJKbookmarks enables the patch for CJK bookmarks.

2509 \define@key{Hyp}{CJKbookmarks}[true]{%
2510   \Hy@boolkey{CJKbookmarks}{#1}%
2511 }

2512 \def\Hy@temp#1{%
2513   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
2514 }
2515 \def\Hy@@temp#1#2#3{%
2516   \define@key{Hyp}{#2color}{%
2517     \HyColor@HyperrefColor{##1}#1%
2518   }%
2519   \def#1{#3}%
2520 }
2521 \Hy@temp{link}{red}
2522 \Hy@temp{anchor}{black}
2523 \Hy@temp{cite}{green}
2524 \Hy@temp{file}{cyan}
2525 \Hy@temp{url}{magenta}
2526 \Hy@temp{menu}{red}
2527 \Hy@temp{run}{\@filecolor}
2528 \define@key{Hyp}{pagecolor}{%
2529   \Hy@WarningPageColor
2530 }
2531 \def\Hy@WarningPageColor{%
2532   \Hy@WarningNoLine{Option 'pagecolor' is not available anymore}%
2533   \global\let\Hy@WarningPageColor\relax
2534 }

2535 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2536 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2537 \let\@baseurl\@empty
2538 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2539 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2540 \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.

```

2541 \let\@pdfpagetransition\relax
2542 \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.

```

2543 \let\@pdfpageduration\relax
2544 \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.

```

2545 \newif\ifHy@useHidKey
2546 \Hy@useHidKeyfalse
2547 \define@key{Hyp}{pdfpagehidden}[true]{%
2548   \Hy@boolkey{pdfpagehidden}{#1}%
2549   \ifHy@pdfpagehidden
2550     \global\Hy@useHidKeytrue
2551   \fi
2552 }

```

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).

```

2553 \def\Hy@ColorList{cite,file,link,menu,run,url}
2554 \@for\Hy@temp:=\Hy@ColorList\do{%
2555   \edef\Hy@temp{%
2556     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2557       \noexpand\HyColor@HyperrefBorderColor
2558       {##1}%
2559       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
2560       {hyperref}%
2561       {\Hy@temp bordercolor}%
2562     }%
2563   }%
2564   \Hy@temp
2565 }
2566 \define@key{Hyp}{pagebordercolor}{%
2567   \Hy@WarningPageBorderColor
2568 }
2569 \def\Hy@WarningPageBorderColor{%
2570   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
2571   \global\let\Hy@WarningPageBorderColor\relax
2572 }
2573 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2574 \Hy@DefNameKey{pdfhighlight}{%
2575   \do{/I}{Invert}%
2576   \do{/N}{None}%
2577   \do{/O}{Outline}%
2578   \do{/P}{Push}%
2579 }
2580 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2581 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2582 \def\Hy@setpdfborder{%
2583   \ifx\@pdfborder\@empty
2584     \else
2585       /Border[\@pdfborder]%
2586     \fi
2587     \ifx\@pdfborderstyle\@empty
2588       \else
2589         /BS<<\@pdfborderstyle>>%
2590       \fi
2591 }
2592 \Hy@DefNameKey{pdfpagemode}{%
2593   \do{UseNone}{}%

```

```

2594 \do{UseOutlines}{}%
2595 \do{UseThumbs}{}%
2596 \do{FullScreen}{}%
2597 \do{UseOC}{PDF 1.5}%
2598 \do{UseAttachments}{PDF 1.6}%
2599 }
2600 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2601 \do{UseNone}{}%
2602 \do{UseOutlines}{}%
2603 \do{UseThumbs}{}%
2604 \do{FullScreen}{}%
2605 \do{UseOC}{PDF 1.5}%
2606 \do{UseAttachments}{PDF 1.6}%
2607 }
2608 \Hy@DefNameKey{pdfdirection}{%
2609 \do{L2R}{Left to right}%
2610 \do{R2L}{Right to left}%
2611 }
2612 \Hy@DefNameKey{pdfviewarea}{%
2613 \do{MediaBox}{}%
2614 \do{CropBox}{}%
2615 \do{BleedBox}{}%
2616 \do{TrimBox}{}%
2617 \do{ArtBox}{}%
2618 }
2619 \Hy@DefNameKey{pdfviewclip}{%
2620 \do{MediaBox}{}%
2621 \do{CropBox}{}%
2622 \do{BleedBox}{}%
2623 \do{TrimBox}{}%
2624 \do{ArtBox}{}%
2625 }
2626 \Hy@DefNameKey{pdfprintarea}{%
2627 \do{MediaBox}{}%
2628 \do{CropBox}{}%
2629 \do{BleedBox}{}%
2630 \do{TrimBox}{}%
2631 \do{ArtBox}{}%
2632 }
2633 \Hy@DefNameKey{pdfprintclip}{%
2634 \do{MediaBox}{}%
2635 \do{CropBox}{}%
2636 \do{BleedBox}{}%
2637 \do{TrimBox}{}%
2638 \do{ArtBox}{}%
2639 }
2640 \Hy@DefNameKey{pdfprintscaling}{%
2641 \do{AppDefault}{}%
2642 \do{None}{}%
2643 }
2644 \Hy@DefNameKey{pdfduplex}{%
2645 \do{Simplex}{}%
2646 \do{DuplexFlipShortEdge}{}%
2647 \do{DuplexFlipLongEdge}{}%
2648 }
2649 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
2650 \do{true}{}%

```

```

2651 \do{false}{}%
2652 }
2653 \define@key{Hyp}{pdfprintpagerange}{%
2654 \def\@pdfprintpagerange{#1}%
2655 }
2656 \Hy@DefNameKey{pdfnumcopies}{%
2657 \do{2}{two copies}%
2658 \do{3}{three copies}%
2659 \do{4}{four copies}%
2660 \do{5}{five copies}%
2661 }
2662 \define@key{Hyp}{pdfusetitle}[true]{%
2663 \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2664 }
2665 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2666 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2667 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2668 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2669 \define@key{Hyp}{pdfcreationdate}{\pdfstringdef\@pdfcreationdate{#1}}
2670 \define@key{Hyp}{pdfmoddate}{\pdfstringdef\@pdfmoddate{#1}}
2671 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2672 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2673 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}
2674 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2675 \let\setpdflinkmargin\@gobble
2676 \def\calculate@pdfview#1 #2\{%
2677 \def\@pdfview{#1}%
2678 \ifx\#2\%
2679 \def\@pdfviewparams{ -32768}%
2680 \else
2681 \def\@pdfviewparams{ #2}%
2682 \fi
2683 }
2684 \begingroup\expandafter\expandafter\expandafter\endgroup
2685 \expandafter\ifx\csname numexpr\endcsname\relax
2686 \def\Hy@number#1{%
2687 \expandafter\@firstofone\expandafter{\number#1}%
2688 }%
2689 \else
2690 \def\Hy@number#1{%
2691 \the\numexpr#1\relax
2692 }%
2693 \fi
2694 \define@key{Hyp}{pdfstartpage}{%
2695 \ifx\#1\%
2696 \def\@pdfstartpage{}%
2697 \else
2698 \edef\@pdfstartpage{\Hy@number{#1}}%
2699 \fi
2700 }%
2701 \define@key{Hyp}{pdfstartview}{%
2702 \ifx\#1\%
2703 \def\@pdfstartview{}%
2704 \else
2705 \hypercalcbpdef\@pdfstartview{ /#1 }%
2706 \fi
2707 }

```



```

2708 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
2709 \define@key{Hyp}{pdftoolbar}[true]{%
2710   \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2711 }
2712 \define@key{Hyp}{pdfmenubar}[true]{%
2713   \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2714 }
2715 \define@key{Hyp}{pdfwindowui}[true]{%
2716   \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2717 }
2718 \define@key{Hyp}{pdffitwindow}[true]{%
2719   \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2720 }
2721 \define@key{Hyp}{pdfcenterwindow}[true]{%
2722   \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2723 }
2724 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2725   \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2726 }
2727 \define@key{Hyp}{pdfnewwindow}[true]{%
2728   \def\Hy@temp{#1}%
2729   \ifx\Hy@temp\@empty
2730     \Hy@newwindowsetfalse
2731   \else
2732     \Hy@newwindowsettrue
2733     \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2734   \fi
2735 }
2736 \def\Hy@SetNewWindow{%
2737   \ifHy@newwindowset
2738     /NewWindow %
2739     \ifHy@newwindow true\else false\fi
2740   \fi
2741 }
2742 \Hy@DefNameKey{pdfpagelayout}{%
2743   \do{SinglePage}{}%
2744   \do{OneColumn}{}%
2745   \do{TwoColumnLeft}{}%
2746   \do{TwoColumnRight}{}%
2747   \do{TwoPageLeft}{PDF 1.5}%
2748   \do{TwoPageRight}{PDF 1.5}%
2749 }
2750 \define@key{Hyp}{pdflang}{%
2751   \def\@pdflang{#1}%
2752 }
2753 \define@key{Hyp}{pdfpagelabels}[true]{%
2754   \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2755 }
2756 \define@key{Hyp}{pdfescapeform}[true]{%
2757   \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2758 }

```

Default values:

```

2759 \def\@linkbordercolor{1 0 0}
2760 \def\@urlbordercolor{0 1 1}
2761 \def\@menubordercolor{1 0 0}
2762 \def\@filebordercolor{0 .5 .5}
2763 \def\@runbordercolor{0 .7 .7}

```

```

2764 \def\@citebordercolor{0 1 0}
2765 \def\pdfhighlight{/I}
2766 \def\pdftitle{}
2767 \def\pdfauthor{}
2768 \let\pdfproducer\relax
2769 \def\pdfcreator{LaTeX with hyperref package}
2770 \def\pdfcreationdate{}
2771 \def\pdfmoddate{}
2772 \def\pdfsubject{}
2773 \def\pdfkeywords{}
2774 \def\pdfpagescrop{}
2775 \def\pdfstartview{ /Fit }
2776 \def\pdfstartpage{1}
2777 \def\pdfprintpagerange{}
2778 \def\pdflang{}
2779 \let\PDF@SetupDoc\@empty
2780 \let\PDF@FinishDoc\@empty
2781 \let\phantomsection\@empty
2782 \let\special@paper\@empty
2783 \ifundefined{stockwidth}{%
2784   \ifdim\paperwidth>\z@
2785     \ifdim\paperheight>\z@
2786       \edef\special@paper{\the\paperwidth,\the\paperheight}%
2787     \fi
2788   \fi
2789 }{%
2790   \ifdim\stockwidth>\z@
2791     \ifdim\stockheight>\z@
2792       \edef\special@paper{\the\stockwidth,\the\stockheight}%
2793     \fi
2794   \fi
2795 }
2796 \begingroup
2797 \edef\x{\ifundefined{stockheight}\paperheight\stockheight}%
2798 \dimen@=\x\relax
2799 \ifdim\dimen@>\z@
2800 \else
2801   \dimen@=11in\relax
2802   \Hy@WarningNoLine{%
2803     Height of page (\expandafter\string\x) %
2804     is invalid (\the\x),\MessageBreak
2805     using 11in%
2806   }%
2807 \fi
2808 \dimen@=0.99626401\dimen@
2809 \xdef\Hy@pageheight{\strip@pt\dimen@}%
2810 \endgroup
2811 \def\HyInd@EncapChar{\|}
2812 \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.

```

2813 \let\hyper@normalise\ExecuteOptions
2814 \let\ExecuteOptions\hypersetup
2815 \Hy@RestoreCatcodes
2816 \InputIfFileExists{hyperref.cfg}{-}{-}

```

```

2817 \Hy@SetCatcodes
2818 \let\ExecuteOptions\hyper@normalise
2819 \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`.

```

2820 \RequirePackage{kvoptions}[2006/08/17]

```

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

```

2821 \@ifpackageloaded{tex4ht}{%
2822   \@ifpackagewith{hyperref}{tex4ht}{}{%
2823     \PassOptionsToPackage{tex4ht}{hyperref}%
2824   }%
2825 }{}

```

```

2826 \let\ReadBookmarks\relax
2827 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2828 \AtBeginDocument{%
2829   \ifHy@draft
2830     \let\hyper@@anchor\@gobble
2831     \gdef\hyper@link#1#2#3{#3}%
2832     \let\hyper@anchorstart\@gobble
2833     \let\hyper@anchorend\@empty
2834     \let\hyper@linkstart\@gobbletwo
2835     \let\hyper@linkend\@empty
2836     \def\hyper@linkurl#1#2{#1}%
2837     \def\hyper@linkfile#1#2#3{#1}%
2838     \def\hyper@link@{#1}#2#3{}%
2839     \def\Acrobatmenu#1#2{#2}%
2840     \let\PDF@SetupDoc\@empty
2841     \let\PDF@FinishDoc\@empty
2842     \let\@fifthoffive\@secondoftwo
2843     \let\@secondoffive\@secondoftwo
2844     \let\ReadBookmarks\relax
2845     \let\WriteBookmarks\relax
2846     \Hy@WarningNoLine{ draft mode on}%
2847   \fi
2848   \Hy@DisableOption{draft}%
2849   \Hy@DisableOption{nolinks}%
2850   \Hy@DisableOption{final}%
2851 }
2852 \Hy@DisableOption{pdfversion}%

```

## 15.1 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.

```

2853 \Hy@nextfalse
2854 \@ifundefined{spanish@sh@"@sel}{}{\Hy@nexttrue}
2855 \@ifundefined{galician@sh@"@sel}{}{\Hy@nexttrue}
2856 \@ifundefined{estonian@sh@"@sel}{}{\Hy@nexttrue}
2857 \ifHy@next
2858   \let\texttilde\~%
2859 \fi

```

```

2860 \ifHy@figures
2861   \Hy@Info{Hyper figures ON}%
2862 \else
2863   \Hy@Info{Hyper figures OFF}%
2864 \fi
2865 \ifHy@nesting
2866   \Hy@Info{Link nesting ON}%
2867 \else
2868   \Hy@Info{Link nesting OFF}%
2869 \fi
2870 \ifHy@hyperindex
2871   \Hy@Info{Hyper index ON}%
2872 \else
2873   \Hy@Info{Hyper index OFF}%
2874 \fi
2875 \ifHy@plainpages
2876   \Hy@Info{Plain pages ON}%
2877 \else
2878   \Hy@Info{Plain pages OFF}%
2879 \fi
2880 \ifHy@backref
2881   \Hy@Info{Backreferencing ON}%
2882 \else
2883   \Hy@Info{Backreferencing OFF}%
2884 \fi
2885 \ifHy@typexml
2886   \AtEndOfPackage{%
2887     \RequirePackage{color}%
2888     \RequirePackage{nameref}%
2889   }%
2890 \fi
2891 \Hy@DisableOption{typexml}
2892 \ifHy@implicit
2893   \typeout{Implicit mode ON; LaTeX internals redefined}%
2894 \else
2895   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
2896   \def\MaybeStopEarly{%
2897     \typeout{Hyperref stopped early}%
2898     \AfterBeginDocument{%
2899       \PDF@FinishDoc
2900       \gdef\PDF@FinishDoc{}}%
2901   }%
2902   \endinput
2903 }%
2904 \AtBeginDocument{%
2905   \let\autoref\ref
2906   \let\autopageref\pageref
2907   \ifx\@pdfpagemode\@empty
2908     \gdef\@pdfpagemode{UseNone}%
2909   \fi
2910   \global\Hy@backreffalse
2911 }%
2912 \AtEndOfPackage{%
2913   \global\let\ReadBookmarks\relax
2914   \global\let\WriteBookmarks\relax
2915 }%
2916 \fi

```

```
2917 \Hy@DisableOption{implicit}
```

### 15.1.1 Driver loading

```
2918 \AtEndOfPackage{%
2919   \@ifpackageloaded{tex4ht}{%
2920     \def\Hy@driver{htex4ht}%
2921     \Hy@texhttrue
2922   }{%
2923     \ifx\Hy@driver\@empty
2924       \providecommand*{\Hy@defaultdriver}{hypertex}%
2925       \begingroup\expandafter\expandafter\expandafter\endgroup
2926       \expandafter\ifx\csname pdfoutput\endcsname\relax
2927         \begingroup\expandafter\expandafter\expandafter\endgroup
2928         \expandafter\ifx\csname OpMode\endcsname\relax
2929           \begingroup\expandafter\expandafter\expandafter\endgroup
2930           \expandafter\ifx\csname XeTeXversion\endcsname\relax
2931             \let\Hy@driver\Hy@defaultdriver
2932           \else
2933             \def\Hy@driver{hdvipdfm}%
2934           \fi
2935         \else
2936           \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2937             \def\Hy@driver{hvtex}%
2938             \def\XR@ext{pdf}%
2939           \else
2940             \ifnum\OpMode=10\relax
2941               \def\XR@ext{htm}%
2942               \def\Hy@driver{hvtexhtm}%
2943               \def\MaybeStopEarly{%
2944                 \typeout{Hyperref stopped early}%
2945                 \AfterBeginDocument{%
2946                   \PDF@FinishDoc
2947                   \gdef\PDF@FinishDoc{}}%
2948               }%
2949               \endinput
2950             }%
2951           \else
2952             \let\Hy@driver\Hy@defaultdriver
2953           \fi
2954         \fi
2955       \fi
2956     \else
2957       \ifnum\pdfoutput<1 %
2958         \let\Hy@driver\Hy@defaultdriver
2959       \else
2960         \def\Hy@driver{hpdftex}%
2961         \def\XR@ext{pdf}%
2962         \PassOptionsToPackage{pdftex}{color}%
2963         \Hy@breaklinkstrue
2964       \fi
2965     \fi
2966     \ifx\Hy@driver\Hy@defaultdriver
2967       \def\Hy@temp{hdvips}%
2968       \ifx\Hy@temp\Hy@driver
2969         \def\Hy@raisedlink{}%
2970       \def\XR@ext{pdf}%

```

```

2971 \fi
2972 \def\Hy@temp{hdvipdfm}%
2973 \ifx\Hy@temp\Hy@driver
2974 \def\XR@ext{pdf}%
2975 \Hy@breaklinkstrue
2976 \fi
2977 \def\Hy@temp{hdviwind}%
2978 \ifx\Hy@temp\Hy@driver
2979 \setkeys{Hyp}{colorlinks}%
2980 \PassOptionsToPackage{dviwindo}{color}%
2981 \fi
2982 \def\Hy@temp{hdvipson}%
2983 \ifx\Hy@temp\Hy@driver
2984 \def\XR@ext{pdf}%
2985 \def\Hy@raisedlink{}%
2986 \fi
2987 \def\Hy@temp{textures}%
2988 \ifx\Hy@temp\Hy@driver
2989 \def\XR@ext{pdf}%
2990 \fi
2991 \fi
2992 \typeout{*hyperref using default driver \Hy@driver*}%
2993 \else
2994 \typeout{*hyperref using driver \Hy@driver*}%
2995 \fi
2996 \input{\Hy@driver.def}%
2997 \let\@unprocessedoptions\relax
2998 \Hy@RestoreCatcodes
2999 }
3000 \newif\ifHy@DvipdfmxOutlineOpen
3001 \begingroup\expandafter\expandafter\expandafter\endgroup
3002 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
3003 \else
3004 \ifnum\SpecialDvipdfmxOutlineOpen>\z@
3005 \Hy@DvipdfmxOutlineOpentruue
3006 \fi
3007 \fi
3008 \Hy@DisableOption{tex4ht}
3009 \Hy@DisableOption{pdftex}
3010 \Hy@DisableOption{dvipdf}
3011 \Hy@DisableOption{nativepdf}
3012 \Hy@DisableOption{dvipdfm}
3013 \Hy@DisableOption{dvipdfmx}
3014 \Hy@DisableOption{dvipdfmx-outline-open}
3015 \Hy@DisableOption{pdfmark}
3016 \Hy@DisableOption{dvips}
3017 \Hy@DisableOption{hypertex}
3018 \Hy@DisableOption{vtex}
3019 \Hy@DisableOption{vtexpdfmark}
3020 \Hy@DisableOption{dviwindo}
3021 \Hy@DisableOption{dvipsone}
3022 \Hy@DisableOption{textures}
3023 \Hy@DisableOption{latex2html}
3024 \Hy@DisableOption{ps2pdf}
3025 \Hy@DisableOption{xetex}

```

### 15.1.2 Bookmarks

```

3026 \def\WriteBookmarks{0}
3027 \def\@bookmarkopenstatus#1{%
3028   \ifHy@bookmarksopen

```

The purpose of the \@firstofone-number-space-construct is that no \relax will be inserted by T<sub>E</sub>X before the \else:

```

3029   \ifnum#1<\expandafter\@firstofone\expandafter
3030     {\number\@bookmarksopenlevel} % explicit space
3031   \else
3032     -%
3033   \fi
3034 \else
3035   -%
3036 \fi
3037 }
3038 \ifHy@bookmarks
3039   \Hy@Info{Bookmarks ON}%
3040   \ifx\@pdfpagemode\@empty
3041     \def\@pdfpagemode{UseOutlines}%
3042   \fi
3043 \else
3044   \def\@bookmarkopenstatus#1{%
3045     \Hy@Info{Bookmarks OFF}%
3046     \AtEndOfPackage{%
3047       \global\let\ReadBookmarks\relax
3048       \global\let\WriteBookmarks\relax
3049     }%
3050     \ifx\@pdfpagemode\@empty
3051       \def\@pdfpagemode{UseNone}%
3052     \fi
3053 \fi
3054 \Hy@DisableOption{bookmarks}

```

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

```

3055 \AtBeginDocument{%
3056   \ifHy@colorlinks
3057     \ifHy@typexml
3058     \else
3059       \RequirePackage{color}%
3060     \fi
3061     \def\Hy@colorlink#1{%
3062       \begingroup
3063         \HyColor@UseColor#1%
3064       }%
3065     \def\Hy@endcolorlink{\endgroup}%
3066     \Hy@Info{Link coloring ON}%
3067   \else
3068     \ifHy@frenchlinks
3069       \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
3070       \def\Hy@endcolorlink{\endgroup}%
3071       \Hy@Info{French linking ON}%
3072     \else

```

for grouping consistency:

```

3073       \def\Hy@colorlink#1{\begingroup}%
3074       \def\Hy@endcolorlink{\endgroup}%
3075       \Hy@Info{Link coloring OFF}%
3076     \fi

```

```

3077 \fi
3078 \Hy@DisableOption{colorlinks}%
3079 \Hy@DisableOption{frenchlinks}%
3080 \ifHy@texht
3081   \long\def\@firstoffive#1#2#3#4#5{#1}%
3082   \long\def\@secondoffive#1#2#3#4#5{#2}%
3083   \long\def\@thirdoffive#1#2#3#4#5{#3}%
3084   \long\def\@fourthoffive#1#2#3#4#5{#4}%
3085   \long\def\@fifthoffive#1#2#3#4#5{#5}%
3086   \providecommand*\@safe@activestruet{}%
3087   \providecommand*\@safe@activesfalse{}%
3088   \def\T@ref#1{%
3089     \Hy@safe@activestruet
3090     \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
3091     \Hy@safe@activesfalse
3092   }%
3093   \def\T@pageref#1{%
3094     \Hy@safe@activestruet
3095     \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
3096     \Hy@safe@activesfalse
3097   }%
3098 \else
3099   \ifHy@typexml\else\RequirePackage{nameref}\fi
3100 \fi
3101 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
3102 \DeclareRobustCommand\pageref{%
3103   \@ifstar\@pagerefstar\T@pageref
3104 }%
3105 }
3106 \AfterBeginDocument{%
3107   \ifHy@texht
3108   \else
3109     \ReadBookmarks
3110   \fi
3111 }
3112 \ifHy@backref
3113   \RequirePackage{backref}%
3114 \else
3115   \let\Hy@backout\@gobble
3116 \fi
3117 \Hy@DisableOption{backref}
3118 \Hy@DisableOption{pagebackref}
3119 \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.

```

3120 \begingroup
3121   \endlinechar=-1 %
3122   \catcode'\^A=14 %
3123   \catcode'\^M\active

```



```

3124 \catcode'\% \active
3125 \catcode'\# \active
3126 \catcode'\_ \active
3127 \catcode'\$ \active
3128 \gdef\hyper@normalise{^^A
3129   \begingroup
3130   \catcode'\^^M \active
3131   \def^^M{ }^^A
3132   \catcode'\% \active
3133   \let%\@percentchar
3134   \let%\_@percentchar
3135   \catcode'\# \active
3136   \def#{\hyper@hash}^^A
3137   \def\#{\hyper@hash}^^A
3138   \@makeother\&^^A
3139   \edef\textunderscore{\string_}^^A
3140   \let\_ \textunderscore
3141   \catcode'\_ \active
3142   \let\_ \textunderscore
3143   \let~\hyper@tilde
3144   \let~\hyper@tilde
3145   \let\textasciitilde\hyper@tilde
3146   \let\\\@backslashchar
3147   \edef$\string$}^^A
3148   \Hy@safe@activetrue
3149   \hyper@n@rmalise
3150 }^^A
3151 \catcode'\#=6 ^^A
3152 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
3153 \gdef\hyper@n@rmalise#1#2{^^A
3154   \def\Hy@tempa{#2}^^A
3155   \ifx\Hy@tempa\Hy@ActiveCarriageReturn
3156     \Hy@ReturnAfterElseFi{^^A
3157       \hyper@@normalise{#1}^^A
3158     }^^A
3159   \else
3160     \Hy@ReturnAfterFi{^^A
3161       \hyper@@normalise{#1}{#2}^^A
3162     }^^A
3163   \fi
3164 }^^A
3165 \gdef\hyper@@normalise#1#2{^^A
3166   \edef\Hy@tempa{^^A
3167     \endgroup
3168     \noexpand#1{\Hy@RemovePercentCr#2%\^^M\@nil}^^A
3169   }^^A
3170   \Hy@tempa
3171 }^^A
3172 \gdef\Hy@RemovePercentCr#1%\^^M#2\@nil{^^A
3173   #1^^A
3174   \ifx\limits#2\limits
3175   \else
3176     \Hy@ReturnAfterFi{^^A
3177       \Hy@RemovePercentCr #2\@nil
3178     }^^A
3179   \fi
3180 }^^A

```

```

3181 \endgroup
3182 \providecommand*\hyper@chars{%
3183   \let\#\hyper@hash
3184   \let%\@percentchar
3185   \Hy@safe@activetrue
3186 }

3187 \def\hyperlink#1#2{%
3188   \hyper@@link{#1}{#2}%
3189 }

3190 \DeclareRobustCommand*\href{%
3191   \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
3192 }
3193 \def\Hy@href#1{%
3194   \hyper@normalise\href@
3195 }
3196 \begingroup
3197   \catcode'\$=6 %
3198   \catcode'\#=12 %
3199   \gdef\href@#1{\expandafter\href@split$1##\}%
3200   \gdef\href@split$1#$2#$3\{%
3201     \hyper@@link{$1}{$2}%
3202   }%
3203 \endgroup

```

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

```

3204 \RequirePackage{url}
3205 \let\HyOrg@url\url
3206 \def\Hurl{\begingroup \Url}
3207 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
3208 \def\nolinkurl@#1{\Hurl{#1}}
3209 \DeclareRobustCommand*\url{\hyper@normalise\url@}
3210 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

3211 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
3212 \providecommand\hyper@image[2]{#2}

3213 \def\hypertarget#1#2{%
3214   \ifHy@nesting
3215     \hyper@@anchor{#1}{#2}%
3216   \else
3217     \hyper@@anchor{#1}{\relax}#2%
3218   \fi
3219 }

```

`\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.

```

3220 \DeclareRobustCommand*\hyperref{%
3221   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
3222 }
3223 \def\Hy@babelnormalise#1[#2]{%
3224   \begingroup
3225     \Hy@safe@activetrue
3226     \edef\Hy@tempa{%
3227       \endgroup

```

```

3228 \noexpand#1[#2]}%
3229 }%
3230 \Hy@tempa
3231 }
3232 \def\@hyperref{\hyper@normalise\@hyperref}
3233 \def\@hyperref#1#2#3{%
3234 \edef\ref@one{\ifx\#2\\\else#2.\fi#3}%
3235 \expandafter\tryhyper@link\ref@one\\\#1}%
3236 }
3237 \def\tryhyper@link#1\#2{%
3238 \hyper@@link{#2}-{#1}%
3239 }
3240 \def\hyperdef{\@ifnextchar[{\label@hyperdef}{\hyperdef}}
3241 \def\@hyperdef#1#2#3{%, category, name, text
3242 \ifHy@nesting
3243 \hyper@@anchor{#1.#2}-{#3}%
3244 \else
3245 \hyper@@anchor{#1.#2}{\relax}#3%
3246 \fi
3247 }

```

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

```

3248 \def\label@hyperref[#1]{%
3249   \expandafter\label@@hyperref\curname r@#1\endcsname{#1}%
3250 }%
3251 \def\label@@hyperref#1#2#3{%
3252   \ifx#1\relax
3253     \protect\G@refundefinedtrue
3254     \@latex@warning{%
3255       Hyper reference ‘#2’ on page \thepage \space undefined%
3256     }%
3257     \hyper@@link{}{??}{#3}%
3258   \else
3259     \hyper@@link{\expandafter\@fifthoffive#1}%
3260       {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
3261   \fi
3262 }
3263 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
3264                                     % anchor text
3265   \@bsphack
3266   \if@filesw
3267     \protected@write\@auxout{%
3268       {\string\newlabel{#1}{\{-\}\}\@##2.#3}}%
3269   \fi
3270   \@esphack
3271   \ifHy@nesting
3272     \hyper@@anchor{#2.#3}{#4}%
3273   \else
3274     \hyper@@anchor{#2.#3}{\relax}#4%
3275   \fi
3276 }

```

## 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.

```
3277 \def\hyper@link{\let\Hy@reserved@a\relax
3278   \@ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
3279 }
3280 \def\hyper@link@[#1]#2#3#4{%
3281   \begingroup
3282     \protected@edef\Hy@tempa{#2}%
3283     \Hy@safe@activestrue
3284     \edef\x{#3}%
3285     \ifx\Hy@tempa\@empty
3286       \toks0{\hyper@link{#1}}%
3287     \else
3288       \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
3289     \fi
3290     \toks2{#4}%
3291     \edef\Hy@tempa{\the\toks2}%
3292     \edef\x{\endgroup
3293       \ifx\Hy@tempa\@empty
3294         \noexpand\Hy@Warning{Suppressing empty link}%
3295       \else
3296         \the\toks0 {\x}{\the\toks2}}%
3297     \fi
3298   }%
3299   \x
3300 }
```

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.

```
3301 \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.

```
3302   \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
3303 }
```

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

```
3304 \def\@pdftempwordfile{file}%
3305 \def\@pdftempwordrun{run}%
3306 \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:

```

3307 \ifx\#6\%
3308 \expandafter\@hyper@linkfile file:#7\#{3}{#2}%
3309 \else
3310 \ifx\#4\%
3311 \expandafter\@hyper@linkfile file:#7\#{3}{#2}%
3312 \else

```

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

```

3313 \def\@pdftempa{#4}%
3314 \ifx\@pdftempa\@pdftempwordfile
3315 \expandafter\@hyper@linkfile#7\#{3}{#2}%
3316 \else

```

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

```

3317 \ifx\@pdftempa\@pdftempwordrun
3318 \expandafter\@hyper@launch#7\#{3}{#2}%
3319 \else

```

otherwise its a URL

```

3320 \hyper@linkurl{#3}{#7\ifx\#2\else\hyper@hash#2\fi}%
3321 \fi
3322 \fi
3323 \fi
3324 \fi
3325 }

```

By default, turn run: into file:

```

3326 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
3327 \hyper@linkurl{#2}{%
3328 \Hy@linkfileprefix
3329 #1%
3330 \ifx\#3\%
3331 \else
3332 \hyper@hash
3333 #3%
3334 \fi
3335 }%
3336 }

```

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

```

3337 \def\@hyper@linkfile file:#1\#2#3{%
3338 %file url,link string, name
3339 \filename@parse{#1}%
3340 \ifx\filename@ext\relax
3341 \edef\filename@ext{\XR@ext}%
3342 \fi
3343 \def\use@file{\filename@area\filename@base.\filename@ext}%
3344 \ifx\filename@ext\XR@ext
3345 \hyper@linkfile{#2}{\use@file}{#3}%
3346 \else
3347 \ifx\@baseurl\@empty
3348 \hyper@linkurl{#2}{%
3349 \Hy@linkfileprefix\use@file\ifx\#3\else\hyper@hash#3\fi
3350 }%

```

```

3351 \else
3352 \hyper@linkurl{#2}{\use@file\ifx\\#3\\else\hyper@hash#3\fi}%
3353 \fi
3354 \fi
3355 }

```

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.

```

3356 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
3357 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
3358 \ifx\\#1\\%
3359 #2\Hy@WarningNoLine{empty link? #1: #2#3}%
3360 \else
3361 \def\anchor@spot{#2#3}%
3362 \let\put@me@back\@empty
3363 \ifx\relax#2\relax
3364 \else
3365 \ifHy@nesting
3366 \else
3367 \ifcat a\noexpand#2\relax
3368 \else
3369 \ifcat 0\noexpand#2 \relax
3370 \else
3371 % \typeout{Anchor start is not alphanumeric %
3372 % on input line\the\inputlineno%
3373 % }%
3374 \let\anchor@spot\@empty
3375 \def\put@me@back{#2#3}%
3376 \fi
3377 \fi
3378 \fi
3379 \fi
3380 \ifHy@activeanchor
3381 \anchor@spot
3382 \else
3383 \hyper@anchor{#1}%
3384 \fi
3385 \expandafter\put@me@back
3386 \fi
3387 \let\anchor@spot\@empty
3388 }

```

## 18 Compatibility with the *LaTeX2html* 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.

```

3389 \let\htmladding\hyperimage

```

```

3390 \def\htmladdnormallink#1#2{\href{#2}{#1}}
3391 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
3392 \def\htmlref#1#2{% anchor text, label
3393   \label@hyperref[{#2}]{#1}%
3394 }

```

This is really too much. The  $\text{\LaTeX}$ html 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.

```

3395 \def\@@latextohtmlX{%
3396   \let\hhyperref\hyperref
3397   \def\hyperref##1##2##3##4{% anchor text for HTML
3398     % text to print before label in print
3399     % label
3400     % post-label text in print
3401     ##2\ref{##4}##3%
3402   }%
3403 }

```

## 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.

```

3404 \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
3405 \def\HyField@NewFlag#1#2{%
3406   \lowercase{\HyField@NewOption{#2}}%
3407   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3408 }

```

```

\HyField@NewFlagOnly
3409 \def\HyField@NewFlagOnly#1#2{%
3410   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3411 }

```

```

\HyField@NewOption #1: option name
3412 \def\HyField@NewOption#1{%
3413   \expandafter\newif\csname ifFld@#1\endcsname
3414   \define@key{Field}{#1}[true]{%
3415     \lowercase{\Field@boolkey{##1}}{#1}%
3416   }%
3417 }

```

\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

```
3418 \def\HyField@NewBitsetFlag#1#2#3#4{%
3419   \begingroup
3420     \count@=#4\relax
3421     \advance\count@\m@ne
3422     \def\x##1{%
3423       \endgroup
3424       \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
3425       \expandafter\ifx\csname HyField@#3@#1\endcsname\relax
3426         \expandafter\edef\csname HyField@#3@#1\endcsname{%
3427           (\number#4) #2%
3428         }%
3429       \else
3430         \expandafter\edef\csname HyField@#3@#1\endcsname{%
3431           \csname HyField@#3@#1\endcsname
3432           /#2%
3433         }%
3434       \fi
3435     }%
3436   \expandafter\x\expandafter{\the\count@}%
3437 }
```

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

```
3438 \def\HyField@UseFlag#1#2{%
3439   \lowercase{\HyField@@UseFlag{#2}}{#1}%
3440 }
```

\HyField@@UseFlag

```
3441 \def\HyField@@UseFlag#1#2{%
3442   \bitsetSetValue{HyField@#2}{%
3443     \csname HyField@#2@#1\endcsname
3444   }{%
3445     \csname ifFld@#1\endcsname 1\else 0\fi
3446   }%
3447 }
```

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

```
3448 \def\HyField@SetFlag#1#2{%
3449   \lowercase{\HyField@@SetFlag{#2}}{#1}%
3450 }
```

\HyField@@SetFlag

```
3451 \def\HyField@@SetFlag#1#2{%
3452   \bitsetSetValue{HyField@#2}{%
3453     \csname HyField@#2@#1\endcsname
3454   }{1}%
3455 }
```

\HyField@PrintFlags

```
3456 \def\HyField@PrintFlags#1#2{%
3457   \ifHy@verbose
3458     \begingroup
```



```

3459 \let\Hy@temp\@empty
3460 \let\MessageBreak\relax
3461 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
3462 \bitsetGetSetBitList{HyField@#1}\do{%
3463   \edef\Hy@temp{%
3464     \Hy@temp
3465     \csname HyField@#1\x\endcsname\MessageBreak
3466   }%
3467 }%
3468 \edef\x{\endgroup
3469   \noexpand\Hy@Info{%
3470     Field flags: %
3471     \expandafter\ifx\@car#1\@nil S\else/\fi
3472     #1 %
3473     \bitsetGetDec{HyField@#1} %
3474     (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
3475     \Hy@temp
3476     for #2%
3477   }%
3478 } \x
3479 \fi
3480 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

3481 \HyField@NewFlag{Ff}{ReadOnly}{1}
3482 \HyField@NewFlag{Ff}{Required}{2}
3483 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

3484 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
3485 \HyField@NewFlag{Ff}{Radio}{16}
3486 \HyField@NewFlag{Ff}{Pushbutton}{17}
3487 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

3488 \HyField@NewFlag{Ff}{Multiline}{13}
3489 \HyField@NewFlag{Ff}{Password}{14}
3490 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
3491 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3492 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
3493 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
3494 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

3495 \HyField@NewFlag{Ff}{Combo}{18}
3496 \HyField@NewFlag{Ff}{Edit}{19}
3497 \HyField@NewFlag{Ff}{Sort}{20}
3498 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
3499 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3500 \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.

```

3501 \newif\iffld@popdown
3502 \define@key{Field}{popdown}[true]{%

```

```

3503 \lowercase{\Field@boolkey{#1}}{popdown}%
3504 }

```

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.

```

3505 \HyField@NewFlag{F}{Invisible}{1}
3506 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
3507 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
3508 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
3509 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
3510 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
3511 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
3512 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
3513 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

```

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

```

3514 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
3515 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
3516 \HyField@NewFlag{Submit}{GetMethod}{4}
3517 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
3518 \HyField@NewFlagOnly{Submit}{XFDF}{6}
3519 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
3520 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
3521 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
3522 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
3523 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
3524 \HyField@NewFlag{Submit}{ExclFKey}{12}
3525 \HyField@NewFlag{Submit}{EmbedForm}{14}

3526 \define@key{Field}{export}{%
3527   \lowercase{\def\Hy@temp{#1}}%
3528   \@ifundefined{Fld@export@Hy@temp}{%
3529     \@onelevel@sanitize\Hy@temp
3530     \PackageError{hyperref}{%
3531       Unknown export format '\Hy@temp'.\MessageBreak
3532       Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
3533     }\@ehc
3534   }{%
3535     \let\Fld@export\Hy@temp
3536   }%
3537 }

3538 \def\Fld@export{fdf}
3539 \@namedef{Fld@export@fdf}{0}%
3540 \@namedef{Fld@export@html}{1}%
3541 \@namedef{Fld@export@xfdf}{2}%
3542 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

3543 \def\HyField@FlagsSubmit{%
3544   \bitsetReset{HyField@Submit}%
3545   \ifcase\@nameuse{Fld@export@Fld@export} %
3546     % FDF
3547     \HyField@UseFlag{Submit}{IncludeNoValueFields}%

```

```

3548 \HyField@UseFlag{Submit}{SubmitCoordinates}%
3549 \HyField@UseFlag{Submit}{IncludeAppendSaves}%
3550 \HyField@UseFlag{Submit}{IncludeAnnotations}%
3551 \HyField@UseFlag{Submit}{CanonicalFormat}%
3552 \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
3553 \HyField@UseFlag{Submit}{ExclFKey}%
3554 \HyField@UseFlag{Submit}{EmbedForm}%
3555 \or % HTML
3556 \HyField@SetFlag{Submit}{ExportFormat}%
3557 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3558 \HyField@UseFlag{Submit}{GetMethod}%
3559 \HyField@UseFlag{Submit}{SubmitCoordinates}%
3560 \HyField@UseFlag{Submit}{CanonicalFormat}%
3561 \or % XFDF
3562 \HyField@SetFlag{Submit}{XFDF}%
3563 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3564 \HyField@UseFlag{Submit}{SubmitCoordinates}%
3565 \HyField@UseFlag{Submit}{CanonicalFormat}%
3566 \or % PDF
3567 \HyField@SetFlag{Submit}{SubmitPDF}%
3568 \HyField@UseFlag{Submit}{GetMethod}%
3569 \fi
3570 \HyField@PrintFlags{Submit}{submit button field}%
3571 \bitsetIsEmpty{HyField@Submit}{%
3572 \def\Fld@submitflags{%
3573 }{%
3574 \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
3575 }%
3576 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

3577 \def\HyField@FlagsAnnot#1{%
3578 \bitsetReset{HyField@F}%
3579 \HyField@UseFlag{F}{Invisible}%
3580 \HyField@UseFlag{F}{Hidden}%
3581 \HyField@UseFlag{F}{Print}%
3582 \HyField@UseFlag{F}{NoZoom}%
3583 \HyField@UseFlag{F}{NoRotate}%
3584 \HyField@UseFlag{F}{NoView}%
3585 \HyField@UseFlag{F}{Locked}%
3586 \HyField@UseFlag{F}{ToggleNoView}%
3587 \HyField@UseFlag{F}{LockedContents}%
3588 \HyField@PrintFlags{F}{#1}%
3589 \bitsetIsEmpty{HyField@F}{%
3590 \def\Fld@annotflags{%
3591 }{%
3592 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
3593 }%
3594 }

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

3595 \def\HyField@FlagsPushButton{%

```

```

3596 \HyField@FlagsAnnot{push button field}%
3597 \bitsetReset{HyField@Ff}%
3598 \HyField@UseFlag{Ff}{ReadOnly}%
3599 \HyField@UseFlag{Ff}{Required}%
3600 \HyField@UseFlag{Ff}{NoExport}%
3601 \HyField@SetFlag{Ff}{Pushbutton}%
3602 \HyField@PrintFlags{Ff}{push button field}%
3603 \bitsetIsEmpty{HyField@Ff}{%
3604     \def\Fld@flags{%
3605 }{%
3606     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3607 }%
3608 }

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

3609 \def\HyField@FlagsCheckBox{%
3610 \HyField@FlagsAnnot{check box field}%
3611 \bitsetReset{HyField@Ff}%
3612 \HyField@UseFlag{Ff}{ReadOnly}%
3613 \HyField@UseFlag{Ff}{Required}%
3614 \HyField@UseFlag{Ff}{NoExport}%
3615 \HyField@PrintFlags{Ff}{check box field}%
3616 \bitsetIsEmpty{HyField@Ff}{%
3617     \def\Fld@flags{%
3618 }{%
3619     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3620 }%
3621 }

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

3622 \def\HyField@FlagsRadioButton{%
3623 \HyField@FlagsAnnot{radio button field}%
3624 \bitsetReset{HyField@Ff}%
3625 \HyField@UseFlag{Ff}{ReadOnly}%
3626 \HyField@UseFlag{Ff}{Required}%
3627 \HyField@UseFlag{Ff}{NoExport}%
3628 \HyField@UseFlag{Ff}{NoToggleToOff}%
3629 \HyField@SetFlag{Ff}{Radio}%
3630 \HyField@UseFlag{Ff}{RadiosInUnison}%
3631 \HyField@PrintFlags{Ff}{radio button field}%
3632 \bitsetIsEmpty{HyField@Ff}{%
3633     \def\Fld@flags{%
3634 }{%
3635     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3636 }%
3637 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

3638 \def\HyField@FlagsText{%
3639 \HyField@FlagsAnnot{text field}%

```

```

3640 \bitsetReset{HyField@Ff}%
3641 \HyField@UseFlag{Ff}{ReadOnly}%
3642 \HyField@UseFlag{Ff}{Required}%
3643 \HyField@UseFlag{Ff}{NoExport}%
3644 \HyField@UseFlag{Ff}{Multiline}%
3645 \HyField@UseFlag{Ff}{Password}%
3646 \HyField@UseFlag{Ff}{FileSelect}%
3647 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
3648 \HyField@UseFlag{Ff}{DoNotScroll}%
3649 \ifFld@comb
3650 \ifcase0\ifFld@multiline
3651 \else\ifFld@password
3652 \else\ifFld@fileselect
3653 \else 1\fi\fi\fi\relax
3654 \PackageError{hyperref}{%
3655 Field option 'comb' cannot used together with\MessageBreak
3656 'multiline', 'password', or 'fileselect'%
3657 }\@ehc
3658 \else
3659 \HyField@UseFlag{Ff}{Comb}%
3660 \fi
3661 \fi
3662 \HyField@UseFlag{Ff}{RichText}%
3663 \HyField@PrintFlags{Ff}{text field}%
3664 \bitsetIsEmpty{HyField@Ff}{%
3665 \def\Fld@flags{}}%
3666 }{%
3667 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3668 }%
3669 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

3670 \def\HyField@FlagsChoice{%
3671 \HyField@FlagsAnnot{choice field}%
3672 \bitsetReset{HyField@Ff}%
3673 \HyField@UseFlag{Ff}{ReadOnly}%
3674 \HyField@UseFlag{Ff}{Required}%
3675 \HyField@UseFlag{Ff}{NoExport}%
3676 \HyField@UseFlag{Ff}{Combo}%
3677 \ifFld@combo
3678 \HyField@UseFlag{Ff}{Edit}%
3679 \fi
3680 \HyField@UseFlag{Ff}{Sort}%
3681 \HyField@UseFlag{Ff}{MultiSelect}%
3682 \ifFld@combo
3683 \ifFld@edit
3684 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
3685 \fi
3686 \fi
3687 \HyField@UseFlag{Ff}{CommitOnSelChange}%
3688 \HyField@PrintFlags{Ff}{choice field}%
3689 \bitsetIsEmpty{HyField@Ff}{%
3690 \def\Fld@flags{}}%
3691 }{%
3692 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%

```

```

3693 }%
3694 }

```

## 19.2 Choice field

```

3695 \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`.

```

3696 \def\HyField@PDFChoices#1{%
3697   \begingroup
3698   \gdef\Fld@choices{}%
3699   \def\HyTmp@optlist{}%
3700   \let\HyTmp@optitem\relax
3701   \count@=0 %
3702   \kv@parse{#1}{%
3703     \Hy@pdfstringdef\kv@key\kv@key
3704     \ifx\kv@value\relax
3705       \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
3706         \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
3707       \else
3708         \xdef\Fld@choices{\Fld@choices(\kv@key)}%
3709       \fi
3710     \else
3711       \Hy@pdfstringdef\kv@value\kv@value
3712       \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@value)]}%
3713     \fi
3714   \edef\HyTmp@optlist{%
3715     \HyTmp@optlist
3716     \HyTmp@optitem{\the\count@}{\kv@key}0%
3717   }%
3718   \advance\count@ by 1 %
3719   \@gobbletwo
3720 }%
3721 \xdef\Fld@choices{/Opt[\Fld@choices]}%
3722 \ifFld@multiselect
3723   \HyField@@PDFChoices{DV}\Fld@default
3724   \HyField@@PDFChoices{V}\Fld@value
3725 \else
3726   \ifx\Fld@default\relax
3727   \else
3728     \pdfstringdef\Hy@gtemp\Fld@default
3729     \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
3730   \fi
3731   \ifx\Fld@value\relax
3732   \else
3733     \pdfstringdef\Hy@gtemp\Fld@value
3734     \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
3735   \fi
3736 \fi
3737 \endgroup
3738 }

```

`\HyField@@PDFChoices`

```

3739 \def\HyField@@PDFChoices#1#2{%
3740   \ifx#2\relax

```

```

3741 \else
3742   \count@=0 %
3743   \def\HyTmp@optitem##1##2##3{%
3744     \def\HyTmp@key{##2}%
3745     \ifx\HyTmp@key\Hy@gtemp
3746       \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
3747         \HyTmp@optlist
3748         \HyTmp@optitem{##1}-{##2}1%
3749       }%
3750       \let\HyTmp@found=Y%
3751     \else
3752       \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
3753         \HyTmp@optlist
3754         \HyTmp@optitem{##1}-{##2}##3%
3755       }%
3756     \fi
3757   }%
3758   \expandafter\comma@parse\expandafter{##2}{%
3759     \pdfstringdef\Hy@gtemp\comma@entry
3760     \let\HyTmp@found=N %
3761     \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
3762     \HyTmp@optlist
3763     \ifx\HyTmp@found Y%
3764       \advance\count@ by 1 %
3765     \else
3766       \@onelevel@sanitize\comma@entry
3767       \PackageWarning{hyperref}{%
3768         \string\ChoiceBox: Ignoring value '\comma@entry',%
3769         \MessageBreak
3770         it cannot be found in the choices%
3771       }%
3772     \fi
3773     \@gobble
3774   }%
3775   \def\HyTmp@optitem##1##2##3{%
3776     \ifnum##3=1 %
3777       (##2)%
3778     \fi
3779   }%
3780   \ifcase\count@
3781   \or
3782     \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
3783   \else
3784     \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
3785     \ifx#1V%
3786       \def\HyTmp@optitem##1##2##3{%
3787         \ifnum##3=1 %
3788           \@firstofone{ ##1}%
3789         \fi
3790       }%
3791       \edef\HyTmp@optlist{\HyTmp@optlist}%
3792       \xdef\Fld@choices{%
3793         \Fld@choices
3794         /I[\expandafter\@firstofone\HyTmp@optlist]%
3795       }%
3796     \fi
3797   \fi

```

```

3798 \fi
3799 }

```

## 19.3 Forms

\HyField@SetKeys

```

3800 \def\HyField@SetKeys{%
3801   \setkeys{Field}%
3802 }

3803 \newif\ifFld@checked
3804 \newif\ifFld@disabled
3805 \Fld@checkedfalse
3806 \Fld@disabledfalse
3807 \newcount\Fld@menulength
3808 \newdimen\Fld@Width
3809 \newdimen\Fld@charsize
3810 \Fld@charsize=10\p@
3811 \def\Fld@maxlen{0}
3812 \def\Fld@align{0}
3813 \def\Fld@color{0 0 0 rg}
3814 \def\Fld@bcolor{1 1 1}
3815 \def\Fld@bordercolor{1 0 0}
3816 \def\Fld@bordersep{1\p@}
3817 \def\Fld@borderwidth{1}
3818 \def\Fld@borderstyle{S}
3819 \def\Fld@cbsymbol{4}
3820 \def\Fld@rotation{0}
3821 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
3822 \def\endForm{\@endForm}
3823 \newif\ifForm@html
3824 \Form@htmlfalse
3825 \def\Form@boolkey#1#2{%
3826   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
3827 }
3828 \define@key{Form}{action}{%
3829   \hyper@normalise\Hy@DefFormAction{#1}%
3830 }
3831 \def\Hy@DefFormAction{\def\Fld@action}
3832 \def\enc@html{html}
3833 \define@key{Form}{encoding}{%
3834   \def\Hy@tempa{#1}%
3835   \ifx\Hy@tempa\enc@html
3836     \Form@htmltrue
3837     \def\Fld@export{html}%
3838   \else
3839     \typeout{hyperref: form 'encoding' key set to #1 %
3840     -- unknown type%
3841   }%
3842   \Form@htmlfalse
3843 \fi
3844 }
3845 \define@key{Form}{method}{%
3846   \lowercase{\def\Hy@temp{#1}}%
3847   \@ifundefined{Form@method@\Hy@temp}{%
3848     \@onelevel@sanitize\Hy@temp
3849     \PackageError{hyperref}{%

```



```

3850         Unknown method '\Hy@temp'.\MessageBreak
3851         Known values are 'post' and 'get'%
3852     }\@ehc
3853 }{%
3854     \let\Form@method\Hy@temp
3855     \ifcase\@nameuse{Form@method@\Hy@temp} %
3856         \Fld@getmethodfalse
3857     \else
3858         \Fld@getmethodtrue
3859     \fi
3860 }%
3861 }
3862 \def\Form@method{}
3863 \@namedef{Form@method@post}{0}
3864 \@namedef{Form@method@get}{1}
3865 \def\Fld@boolkey#1#2{%
3866     \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
3867 }
3868 \newtoks\Fld@toks
3869 \Fld@toks={ }%
3870 \def\Fld@addtoks#1#2{%
3871     \edef\@processme{\Fld@toks{\the\Fld@toks\space #1="#2"}}%
3872     \@processme
3873 }
3874 \def\Fld@checkequals#1=#2=#3\\{%
3875     \def\@currDisplay{#1}%
3876     \ifx\#2\\%
3877         \def\@currValue{#1}%
3878     \else
3879         \def\@currValue{#2}%
3880     \fi
3881 }
3882 \define@key{Field}{loc}{%
3883     \def\Fld@loc{#1}%
3884 }
3885 \define@key{Field}{checked}[true]{%
3886     \lowercase{\Fld@boolkey{#1}}{checked}%
3887 }
3888 \define@key{Field}{disabled}[true]{%
3889     \lowercase{\Fld@boolkey{#1}}{disabled}%
3890 }
3891 \define@key{Field}{accesskey}{%
3892     \Fld@addtoks{accesskey}{#1}%
3893 }
3894 \define@key{Field}{tabkey}{%
3895     \Fld@addtoks{tabkey}{#1}%
3896 }
3897 \define@key{Field}{name}{%
3898     \def\Fld@name{#1}%
3899 }
3900 \define@key{Field}{width}{%
3901     \def\Fld@width{#1}%
3902     \Fld@Width#1\setbox0=\hbox{m}%
3903 }
3904 \define@key{Field}{maxlen}{%
3905     \def\Fld@maxlen{#1}%
3906 }

```

```

3907 \define@key{Field}{menulength}{%
3908   \Fld@menulength=#1\relax
3909 }
3910 \define@key{Field}{height}{%
3911   \def\Fld@height{#1}%
3912 }
3913 \define@key{Field}{charsize}{%
3914   \Fld@charsize=#1%
3915 }
3916 \define@key{Field}{borderwidth}{%
3917   \def\Fld@borderwidth{#1}%
3918 }
3919 \define@key{Field}{borderstyle}{%
3920   \def\Fld@borderstyle{#1}%
3921 }
3922 \define@key{Field}{bordersep}{%
3923   \def\Fld@bordersep{#1}%
3924 }
3925 \define@key{Field}{default}{%
3926   \def\Fld@default{#1}%
3927 }
3928 \define@key{Field}{align}{%
3929   \def\Fld@align{#1}%
3930 }
3931 \define@key{Field}{value}{%
3932   \def\Fld@value{#1}%
3933 }
3934 \define@key{Field}{checkboxsymbol}{%
3935   \def\Fld@cbsymbol{#1}%
3936 }
3937 \define@key{Field}{rotation}{%
3938   \def\Fld@rotation{#1}%
3939 }
3940 \define@key{Field}{backgroundcolor}{%
3941   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
3942 }
3943 \define@key{Field}{bordercolor}{%
3944   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
3945 }
3946 \define@key{Field}{color}{%
3947   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
3948 }
3949 \def\Fld@format@code{}
3950 \def\Fld@validate@code{}
3951 \def\Fld@calculate@code{}
3952 \def\Fld@keystroke@code{}
3953 \def\Fld@onfocus@code{}
3954 \def\Fld@onblur@code{}
3955 \def\Fld@onmousedown@code{}
3956 \def\Fld@onmouseup@code{}
3957 \def\Fld@onenter@code{}
3958 \def\Fld@onexit@code{}
3959 \define@key{Field}{keystroke}{%
3960   \def\Fld@keystroke@code{#1}%
3961 }
3962 \define@key{Field}{format}{%

```

```

3963 \def\Fld@format@code{#1}%
3964 }
3965 \define@key{Field}{validate}{%
3966 \def\Fld@validate@code{#1}%
3967 }
3968 \define@key{Field}{calculate}{%
3969 \def\Fld@calculate@code{#1}%
3970 }
3971 \define@key{Field}{onfocus}{%
3972 \def\Fld@onfocus@code{#1}%
3973 }
3974 \define@key{Field}{onblur}{%
3975 \def\Fld@onblur@code{#1}%
3976 }
3977 \define@key{Field}{onenter}{%
3978 \def\Fld@onenter@code{#1}%
3979 }
3980 \define@key{Field}{onexit}{%
3981 \def\Fld@onexit@code{#1}%
3982 }
3983 \define@key{Field}{onselect}{%
3984 \Field@addtoks{onselect}{#1}%
3985 }
3986 \define@key{Field}{onchange}{%
3987 \Field@addtoks{onchange}{#1}%
3988 }
3989 \define@key{Field}{onclick}{%
3990 \def\Fld@onclick{#1}%
3991 \Field@addtoks{onclick}{#1}%
3992 }
3993 \define@key{Field}{ondblclick}{%
3994 \Field@addtoks{ondblclick}{#1}%
3995 }
3996 \define@key{Field}{onmousedown}{%
3997 \Field@addtoks{onmousedown}{#1}%
3998 }
3999 \define@key{Field}{onmouseup}{%
4000 \Field@addtoks{onmouseup}{#1}%
4001 }
4002 \define@key{Field}{onmouseover}{%
4003 \Field@addtoks{onmouseover}{#1}%
4004 }
4005 \define@key{Field}{onmousemove}{%
4006 \Field@addtoks{onmousemove}{#1}%
4007 }
4008 \define@key{Field}{onmouseout}{%
4009 \Field@addtoks{onmouseout}{#1}%
4010 }
4011 \define@key{Field}{onkeypress}{%
4012 \Field@addtoks{onkeypress}{#1}%
4013 }
4014 \define@key{Field}{onkeydown}{%
4015 \Field@addtoks{onkeydown}{#1}%
4016 }
4017 \define@key{Field}{onkeyup}{%
4018 \Field@addtoks{onkeyup}{#1}%
4019 }

```

```

4020 %
4021 \DeclareRobustCommand\TextField{%
4022   \@ifnextchar[{\@TextField}{\@TextField[]}%
4023 }
4024 \DeclareRobustCommand\ChoiceMenu{%
4025   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
4026 }
4027 \DeclareRobustCommand\CheckBox{%
4028   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
4029 }
4030 \DeclareRobustCommand\PushButton{%
4031   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
4032 }
4033 \DeclareRobustCommand\Gauge{%
4034   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
4035 }
4036 \DeclareRobustCommand\Submit{%
4037   \@ifnextchar[{\@Submit}{\@Submit[]}%
4038 }
4039 \DeclareRobustCommand\Reset{%
4040   \@ifnextchar[{\@Reset}{\@Reset[]}%
4041 }
4042 \def\LayoutTextField#1#2{% label, field
4043   #1 #2%
4044 }
4045 \def\LayoutChoiceField#1#2{% label, field
4046   #1 #2%
4047 }
4048 \def\LayoutCheckField#1#2{% label, field
4049   #1 #2%
4050 }
4051 \def\LayoutPushButtonField#1{% button
4052   #1%
4053 }
4054 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4055 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4056 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4057 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4058 \def\MakeButtonField#1{%
4059   \sbox0{%
4060     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
4061   }%
4062   \@tempdima\ht0 %
4063   \advance\@tempdima by \Fld@borderwidth bp %
4064   \advance\@tempdima by \Fld@borderwidth bp %
4065   \ht0\@tempdima
4066   \@tempdima\dp0 %
4067   \advance\@tempdima by \Fld@borderwidth bp %
4068   \advance\@tempdima by \Fld@borderwidth bp %
4069   \dp0\@tempdima
4070   \box0\relax
4071 }
4072 \def\DefaultHeightofSubmit{14pt}
4073 \def\DefaultWidthofSubmit{2cm}
4074 \def\DefaultHeightofReset{14pt}
4075 \def\DefaultWidthofReset{2cm}
4076 \def\DefaultHeightofCheckBox{\baselineskip}

```

```

4077 \def\DefaultWidthofCheckBox{\baselineskip}
4078 \def\DefaultHeightofChoiceMenu{\baselineskip}
4079 \def\DefaultWidthofChoiceMenu{\baselineskip}
4080 \def\DefaultHeightofText{\baselineskip}
4081 \def\DefaultHeightofTextMultiline{4\baselineskip}
4082 \def\DefaultWidthofText{3cm}
4083 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
4084 \def\DefaultOptionsofReset{print,name=Reset,noexport}
4085 \def\DefaultOptionsofPushButton{print}
4086 \def\DefaultOptionsofCheckBox{print}
4087 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

4088 \def\DefaultOptionsofListBox{print}
4089 \def\DefaultOptionsofComboBox{print,edit,sort}
4090 \def\DefaultOptionsofPopdownBox{print}
4091 \def\DefaultOptionsofRadio{print,notoggletooft}

```

## 20 Setup

```

4092 \ifHy@figures
4093   \Hy@Info{Hyper figures ON}%
4094 \else
4095   \Hy@Info{Hyper figures OFF}%
4096 \fi
4097 \ifHy@nesting
4098   \Hy@Info{Link nesting ON}%
4099 \else
4100   \Hy@Info{Link nesting OFF}%
4101 \fi
4102 \ifHy@hyperindex
4103   \Hy@Info{Hyper index ON}%
4104 \else
4105   \Hy@Info{Hyper index OFF}%
4106 \fi
4107 \ifHy@backref
4108   \Hy@Info{backreferencing ON}%
4109 \else
4110   \Hy@Info{backreferencing OFF}%
4111 \fi
4112 \ifHy@colorlinks
4113   \Hy@Info{Link coloring ON}%
4114 \else
4115   \Hy@Info{Link coloring OFF}%
4116 \fi

```

## 21 Low-level utility macros

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

```

4117 \edef\hyper@hash{\string#}
4118 \edef\hyper@tilde{\string~}
4119 \edef\hyper@quote{\string"}
4120 \let\@currentHref\@empty
4121 \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.

```

4122 \AfterBeginDocument{%
4123   \Hy@pdfstringtrue
4124   \PDF@SetupDoc
4125   \let\PDF@SetupDoc\@empty
4126   \Hy@DisableOption{pdfpagescrop}%
4127   \Hy@DisableOption{pdfpagemode}%
4128   \Hy@DisableOption{pdfnonfullscreenpagemode}%
4129   \Hy@DisableOption{pdfdirection}%
4130   \Hy@DisableOption{pdfviewarea}%
4131   \Hy@DisableOption{pdfviewclip}%
4132   \Hy@DisableOption{pdfprintarea}%
4133   \Hy@DisableOption{pdfprintclip}%
4134   \Hy@DisableOption{pdfprintscaling}%
4135   \Hy@DisableOption{pdfduplex}%
4136   \Hy@DisableOption{pdfpicktraybypdfsize}%
4137   \Hy@DisableOption{pdfprintpagerange}%
4138   \Hy@DisableOption{pdfnumcopies}%
4139   \Hy@DisableOption{pdfstartview}%
4140   \Hy@DisableOption{pdfstartpage}%
4141   \Hy@DisableOption{pdftoolbar}%
4142   \Hy@DisableOption{pdfmenubar}%
4143   \Hy@DisableOption{pdfwindowui}%
4144   \Hy@DisableOption{pdffitwindow}%
4145   \Hy@DisableOption{pdfcenterwindow}%
4146   \Hy@DisableOption{pdfdisplaydoctitle}%
4147   \Hy@DisableOption{pdfpagelayout}%
4148   \Hy@DisableOption{pdflang}%
4149   \Hy@DisableOption{baseurl}%
4150   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
4151   \Hy@pdfstringfalse
4152 }

```

## 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.

```

4153 \def\NoHyper{%
4154   \def\hyper@link@{##1}##2##3##4{##4}%
4155   \def\hyper@@anchor##1{%
4156     \global\let\hyper@livelink\hyper@link
4157     \gdef\hyper@link##1##2##3{##3}%
4158     \def\hyper@anchorstart##1{%
4159       \let\hyper@anchorend\@empty
4160       \def\hyper@linkstart##1##2{%
4161         \let\hyper@linkend\@empty
4162         \def\hyper@linkurl##1##2{##1}%
4163         \def\hyper@linkfile##1##2##3{##1}%
4164         \def\hyper@link@{##1}##2##3{%
4165           \let\Hy@backout\@gobble
4166         }
4167       \def\stop@hyper{%
4168         \def\hyper@link@{##1}##2##3##4{##4}%
4169         \let\Hy@backout\@gobble
4170         \def\hyper@@anchor##1{%

```

```

4171 \def\hyper@link##1##2##3{##3}%
4172 \def\hyper@anchorstart##1{}%
4173 \let\hyper@anchorend\@empty
4174 \def\hyper@linkstart##1##2{}%
4175 \let\hyper@linkend\@empty
4176 \def\hyper@linkurl##1##2{##1}%
4177 \def\hyper@linkfile##1##2##3{##1}%
4178 \def\hyper@link@[##1]##2##3{}%
4179 }
4180 \def\endNoHyper{%
4181 \global\let\hyper@link\hyper@livelink
4182 }
4183 \</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:

```

4184 \<*nohyperref>
4185 \let\hyper@@anchor\@gobble
4186 \def\hyper@link#1#2#3{#3}%
4187 \let\hyper@anchorstart\@gobble
4188 \let\hyper@anchorend\@empty
4189 \let\hyper@linkstart\@gobbletwo
4190 \let\hyper@linkend\@empty
4191 \def\hyper@linkurl#1#2{#1}%
4192 \def\hyper@linkfile#1#2#3{#1}%
4193 \def\hyper@link@[#1]#2#3{}%
4194 \let\PDF@SetupDoc\@empty
4195 \let\PDF@FinishDoc\@empty

```

Some top-level commands:

```

4196 \let\Acrobatmenu\@gobble
4197 \let\pdfstringdefDisableCommands\@gobbletwo
4198 \let\texorpdfstring\@firstoftwo
4199 \let\pdfbookmark\@undefined
4200 \newcommand\pdfbookmark[3][]{ }
4201 \let\phantomsection\@empty
4202 \let\hypersetup\@gobble
4203 \let\hyperbaseurl\@gobble
4204 \let\href\@gobble
4205 \let\hyperdef\@gobbletwo
4206 \let\hyperlink\@gobble
4207 \let\hypertarget\@gobble
4208 \def\hyperref{%
4209 \@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
4210 }
4211 \long\def\@gobbleopt[#1]{ }
4212 \let\hyperpage\@empty
4213 \</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}`

```
4214 \<package>
4215 \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.

```
4216 \if@filesw
4217 \ifHy@typexml
4218 \immediate\closeout\@mainaux
4219 \immediate\openout\@mainaux\jobname.aux\relax
4220 \immediate\write\@auxout{<relaxxml>\relax}%
4221 \fi
4222 \immediate\write\@auxout{%
4223 \string\ifx\string\hyper@anchor\string\@undefined^^J%
4224 \global\let\string\oldcontentsline\string\contentsline^^J%
4225 \gdef\string\contentsline%
4226 \string#1\string#2\string#3\string#4{%
4227 \string\oldcontentsline%
4228 {\string#1}{\string#2}{\string#3}}^^J%
4229 \global\let\string\oldnewlabel\string\newlabel^^J%
4230 \gdef\string\newlabel\string#1\string#2{%
4231 \string\newlabelxx{\string#1}\string#2^^J%
4232 \gdef\string\newlabelxx%
4233 \string#1\string#2\string#3\string#4\string#5\string#6{%
4234 \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.

```
4235 \string\AtEndDocument{%
4236 \let\string\contentsline\string\oldcontentsline^^J%
4237 \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.

```
4238 \string\else^^J%
4239 \global\let\string\hyper@last\relax^^J%
4240 \string\fi^^J%
4241 }%
4242 \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.

```
4243 \ifx\hyper@last\@undefined
4244 \def\@starttoc#1{%
4245 \begingroup
4246 \makeatletter
4247 \IfFileExists{\jobname.#1}{%
4248 \Hy@WarningNoLine{%
4249 old #1 file detected, not used; run LaTeX again%
```



```

4250         }%
4251     }{}%
4252     \if@filesw
4253         \expandafter\newwrite\csname tf@#1\endcsname
4254         \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
4255     \fi
4256     \@nobreakfalse
4257 \endgroup
4258 }%
4259 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
4260 \fi
4261 }

```

## 25 Title strings

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

```

4262 \ifHy@usetitle
4263   \let\HyOrg@title\title
4264   \let\HyOrg@author\author
4265   \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
4266   \def\Hy@scanopttitle[#1]{%
4267     \gdef\Hy@title{#1}%
4268     \HyOrg@title[{#1}]%
4269   }%
4270   \def\Hy@scantitle#1{%
4271     \gdef\Hy@title{#1}%
4272     \HyOrg@title{#1}%
4273   }%
4274   \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
4275   \def\Hy@scanoptauthor[#1]{%
4276     \gdef\Hy@author{#1}%
4277     \HyOrg@author[{#1}]%
4278   }%
4279   \def\Hy@scanauthor#1{%
4280     \gdef\Hy@author{#1}%
4281     \HyOrg@author{#1}%
4282   }%

```

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

```

4283 \begingroup
4284   \def\process@me#1\@nil#2{%
4285     \expandafter\let\expandafter\x\csname @#2\endcsname
4286     \edef\y{\expandafter\strip@prefix\meaning\x}%
4287     \def\c##1##2\@nil{%
4288       \ifx\\##1\\%
4289         \else
4290           \expandafter\gdef\csname Hy@#2\endcsname
4291             \expandafter{x}%
4292         \fi
4293       }%
4294       \expandafter\c\y\relax#1\@nil
4295     }%
4296     \expandafter\process@me\string\@latex@\@nil{title}%
4297     \expandafter\process@me\string\@latex@\@nil{author}%

```

```

4298 \endgroup
4299 \fi
4300 \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.

```

4301 \def\Hy@UseMaketitleString#1{%
4302   \@ifundefined{Hy@#1}{}%
4303   \begingroup
4304     \let\Hy@saved@hook\pdfstringdefPreHook
4305     \pdfstringdefDisableCommands{%
4306       \expandafter\let\expandafter\\csname Hy@newline@#1\endcsname
4307       \let\newline\\%
4308     }%
4309     \expandafter\ifx\csname @pdf#1\endcsname\@empty
4310       \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
4311         \csname Hy@#1\endcsname\@empty
4312       }%
4313     \fi
4314     \global\let\pdfstringdefPreHook\Hy@saved@hook
4315   \endgroup
4316 }%
4317 }
4318 \def\Hy@newline@title#1{ #1}
4319 \def\Hy@newline@author#1{, #1}
4320 \def\Hy@UseMaketitleInfos{%
4321   \Hy@UseMaketitleString{title}%
4322   \Hy@UseMaketitleString{author}%
4323 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

4324 \RequirePackage{atbegshi}[2007/09/09]
4325 \def\Hy@EveryPageHook{}
4326 \def\Hy@EveryPageBoxHook{}
4327 \def\Hy@FirstPageHook{}
4328 \AtBeginShipout{%
4329   \Hy@EveryPageHook
4330   \ifx\Hy@EveryPageBoxHook\@empty
4331   \else
4332     \setbox\AtBeginShipoutBox=\vbox{%
4333       \offinterlineskip
4334       \Hy@EveryPageBoxHook
4335       \box\AtBeginShipoutBox

```

```

4336 }%
4337 \fi
4338 }
4339 \AtBeginShipoutFirst{%
4340 \Hy@FirstPageHook
4341 }
4342 \g@addto@macro\Hy@FirstPageHook{%
4343 \PDF@FinishDoc
4344 \gdef\PDF@FinishDoc{}}%
4345 }

```

## 27.1 PDF /PageLabels

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

```

4346 \ifHy@pagelabels
4347 \begingroup\expandafter\expandafter\expandafter\endgroup
4348 \expandafter\ifx\csname thepage\endcsname\relax
4349 \Hy@pagelabelsfalse
4350 \Hy@WarningNoLine{%
4351 Option 'pdfpagelabels' is turned off\MessageBreak
4352 because \string\thepage\space is undefined%
4353 }%
4354 \csname fi\endcsname
4355 \csname iffalse\expandafter\endcsname
4356 \fi

```

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

```

4357 \def\thispdfpagelabel#1{%
4358 \gdef\HyPL@thisLabel{#1}%
4359 }%
4360 \global\let\HyPL@thisLabel\relax

```

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

```

4361 \def\HyPL@Labels{}%

```

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

```

4362 \newcount\Hy@abspage
4363 \Hy@abspage=0 %

```

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

```

4364 \def\HyPL@LastType{init}%
4365 \def\HyPL@LastNumber{0}%
4366 \def\HyPL@LastPrefix{}%

```

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

```

4367 \def\HyPL@arabic{D}%
4368 \def\HyPL@Roman{R}%
4369 \def\HyPL@roman{r}%
4370 \def\HyPL@Alph{A}%
4371 \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.

```

4372 \def\HyPL@EveryPage{%
4373 \begingroup
4374 \ifx\HyPL@thisLabel\relax

```

```

4375     \let\HyPL@page\thepage
4376   \else
4377     \let\HyPL@page\HyPL@thisLabel
4378     \global\let\HyPL@thisLabel\relax
4379   \fi
4380   \let\HyPL@Type\relax
4381   \ifnum\the\c@page>0 %
4382     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
4383   \fi
4384   \let\Hy@temp Y%
4385   \ifx\HyPL@Type\HyPL@LastType
4386   \else
4387     \let\Hy@temp N%
4388   \fi
4389   \ifx\HyPL@Type\relax
4390     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
4391   \else
4392     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
4393   \fi
4394   \ifx\HyPL@Prefix\HyPL@LastPrefix
4395   \else
4396     \let\Hy@temp N%
4397   \fi
4398   \if Y\Hy@temp
4399     \advance\c@page by -1 %
4400     \ifnum\HyPL@LastNumber=\the\c@page\relax
4401     \else
4402       \let\Hy@temp N%
4403     \fi
4404     \Hy@StepCount\c@page
4405   \fi
4406   \if N\Hy@temp
4407     \ifx\HyPL@Type\relax
4408       \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
4409     \else
4410       \HyPL@StorePageLabel{%
4411         \ifx\HyPL@Prefix\@empty
4412         \else
4413           /P(\HyPL@Prefix)%
4414         \fi
4415         /S/\csname HyPL\HyPL@Type\endcsname
4416         \ifnum\the\c@page=1 %
4417         \else
4418           \space/St \the\c@page
4419         \fi
4420       }%
4421     \fi
4422   \fi
4423   \xdef\HyPL@LastNumber{\the\c@page}%
4424   \global\let\HyPL@LastType\HyPL@Type
4425   \global\let\HyPL@LastPrefix\HyPL@Prefix
4426 \endgroup
4427 \Hy@GlobalStepCount\Hy@abspage
4428 }%

```

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

```

4429 \def\HyPL@CheckThePage#1\@nil{%

```

```

4430 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
4431 }%

```

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

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

```

4432 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
4433 \def\Hy@tempa{#4}%
4434 \def\Hy@tempb{\csname\endcsname\c@page}%
4435 \ifx\Hy@tempa\Hy@tempb
4436 \expandafter\ifx\csname HyPL#3\endcsname\relax
4437 \else
4438 \def\HyPL@Type{#3}%
4439 \def\HyPL@Prefix{#2}%
4440 \fi
4441 \else
4442 \begingroup
4443 \let\Hy@next\endgroup
4444 \let\HyPL@found\@undefined
4445 \def\arabic{\HyPL@Format{arabic}}%
4446 \def\Roman{\HyPL@Format{Roman}}%
4447 \def\roman{\HyPL@Format{roman}}%
4448 \def\Alph{\HyPL@Format{Alph}}%
4449 \def\alph{\HyPL@Format{alph}}%
4450 \protected@edef\Hy@temp{#1}%
4451 \ifx\HyPL@found\relax
4452 \toks@{\expandafter{\Hy@temp}}%
4453 \edef\Hy@next{\endgroup
4454 \noexpand\HyPL@@CheckThePage\the\toks@
4455 \noexpand\HyPL@found\relax\noexpand\@nil
4456 }%
4457 \fi
4458 \Hy@next
4459 \fi
4460 }%

```

`\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`.

```

4461 \def\HyPL@Format#1#2{%
4462 \ifx\HyPL@found\@undefined
4463 \expandafter\ifx\csname c@#2\endcsname\c@page
4464 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
4465 \else
4466 \expandafter\noexpand\csname#1\endcsname{#2}%
4467 \fi
4468 \else
4469 \expandafter\noexpand\csname#1\endcsname{#2}%
4470 \fi
4471 }%

```

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

```

4472 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
4473 \def\Hy@tempa{#3}%
4474 \def\Hy@tempb{\HyPL@found\relax}%

```

```

4475 \ifx\Hy@tempa\Hy@tempb
4476 \def\HyPL@Type{#2}%
4477 \def\HyPL@Prefix{#1}%
4478 \fi
4479 }%

```

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

```

4480 \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`.

```

4481 \def\HyPL@Useless{0<</S/D>>}%
4482 \@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.

```

4483 \def\HyPL@SetPageLabels{%
4484 \onelevel@sanitize\HyPL@Labels
4485 \ifx\HyPL@Labels\@empty
4486 \else
4487 \ifx\HyPL@Labels\HyPL@Useless
4488 \else
4489 \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
4490 \fi
4491 \fi
4492 }%

```

```

4493 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
4494 \fi

```

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

```

4495 \Hy@DisableOption{pdfpagelabels}
4496 </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`

```

4497 <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.

```

4498 <*vTeX>
4499 \edef\Hy@VTeXversion{%
4500 \ifx\VTeXversion\@undefined
4501 \z@
4502 \else
4503 \ifx\VTeXversion\relax
4504 \z@
4505 \else
4506 \VTeXversion
4507 \fi

```

```

4508 \fi
4509 }
4510 \beginingroup
4511 \ifnum\Hy@VTeXversion<660 %
4512 \gdef\Hy@PutCatalog#1{%
4513 \Hy@WarningNoLine{%
4514 VTeX 6.59g or above required for pdfpagelabels%
4515 }%
4516 }%
4517 \else
4518 \gdef\Hy@PutCatalog#1{%
4519 \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
4520 }%
4521 \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
4522 \ifx\#2\%
4523 \else
4524 \immediate\special{!pdfpagelabels #2}%
4525 \fi
4526 }%
4527 \fi
4528 \endgroup
4529 </vtex>

4530 <*pdfTeX | vtex>

```

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

```

4531 \ifHy@pagelabels
4532 \def\HyPL@StorePageLabel#1{%
4533 \toks@{\expandafter{\HyPL@Labels}}%
4534 \xdef\HyPL@Labels{%
4535 \the\toks@
4536 \the\Hy@abspage<<#1>>%
4537 }%
4538 }%

```

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.

```

4539 \@ifclassloaded{revtex4}{%
4540 \g@addto@macro\clear@document{\HyPL@SetPageLabels}%
4541 }{%
4542 \AtEndDocument{\clearpage\HyPL@SetPageLabels}%
4543 }%

4544 \fi
4545 </pdfTeX | vtex>

```

### 27.1.2 pdfmarkbase, dvipdfm

`\Hy@PutCatalog`

```

4546 <dvipdfm>\def\Hy@PutCatalog#1{\@pdfm@mark{docview << #1 >>}}
4547 <*pdfmarkbase>
4548 \def\Hy@PutCatalog#1{%
4549 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
4550 }
4551 </pdfmarkbase>

4552 <*pdfmarkbase | dvipdfm>
4553 \ifHy@pagelabels

```

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

```

4554 \def\HyPL@StorePageLabel#1{%
4555   \if@filesw
4556     \begingroup
4557       \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
4558       \immediate\write\@mainaux{%
4559         \string\HyPL@Entry{\Hy@tempa}%
4560       }%
4561     \endgroup
4562   \fi
4563 }%
```

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.

```

4564 \AfterBeginDocument{%
4565   \if@filesw
4566     \immediate\write\@mainaux{%
4567       \string\providecommand\string*\string\HyPL@Entry[1]{}%
4568     }%
4569   \fi
4570   \ifx\HyPL@Labels\@empty
4571     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
4572   \else
4573     \HyPL@SetPageLabels
4574   \fi
4575   \let\HyPL@Entry\@gobble
4576 }%
```

`\HyPL@Entry`

```

4577 \def\HyPL@Entry#1{%
4578   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
4579     \HyPL@Labels
4580     #1%
4581   }%
4582 }%

4583 \fi
4584 </pdfmarkbase | dvipdfm>
4585 <*package>
4586 \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

```

4587 \def\Hy@CounterExists#1{%
4588   \begingroup\expandafter\expandafter\expandafter\endgroup
4589   \expandafter\ifx\csname c@#1\endcsname\relax
4590     \expandafter\@gobble
4591   \else
4592     \begingroup\expandafter\expandafter\expandafter\endgroup
4593     \expandafter\ifx\csname the#1\endcsname\relax
4594       \expandafter\expandafter\expandafter\@gobble
4595     \else
4596       \expandafter\expandafter\expandafter\@firstofone
4597     \fi
4598   \fi
4599 }
4600 \Hy@CounterExists{section}{%
4601   \newcommand\theHequation{\theHsection.\arabic{equation}}%
4602 }
4603 \Hy@CounterExists{part}{%
4604   \newcommand\theHpart{\arabic{part}}%
4605 }
4606 \@ifundefined{thechapter}{%
4607   \newcommand\theHsection    {\arabic{section}}%
4608   \newcommand\theHfigure     {\arabic{figure}}%
4609   \newcommand\theHtable      {\arabic{table}}%
4610 }{%
4611   \newcommand\theHchapter    {\arabic{chapter}}%
4612   \newcommand\theHfigure     {\theHchapter.\arabic{figure}}%
4613   \newcommand\theHtable      {\theHchapter.\arabic{table}}%
4614   \newcommand\theHsection    {\theHchapter.\arabic{section}}%
4615 }
4616 \newcommand\theHsubsection   {\theHsection.\arabic{subsection}}
4617 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
4618 \newcommand\theHparagraph    {\theHsubsubsection.\arabic{paragraph}}
4619 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
4620 \newcommand\theHtheorem      {\theHsection.\arabic{theorem}}
4621 \newcommand\theHthm          {\theHsection.\arabic{thm}}

4622 \let\H@item\item
4623 \newcounter{Item}
4624 \def\theHItem{\arabic{Item}}
4625 \def\item{%
4626   \@hyper@itemfalse
4627   \if@nmbrlist\@hyper@itemtrue\fi
4628   \H@item
4629 }

4630 \newcommand\theHenumi      {\theHItem}
4631 \newcommand\theHenumii     {\theHItem}
4632 \newcommand\theHenumiii    {\theHItem}
4633 \newcommand\theHenumiv     {\theHItem}
4634 \newcommand\theHHfootnote  {\arabic{Hfootnote}}
4635 \newcommand\theHmpfootnote{\arabic{mpfootnote}}

```

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.

```
4636 \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.

```
4637 \let\H@refstepcounter\refstepcounter
4638 \edef\name@of@eq{equation}%
4639 \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.

```
4640 \newif\if@hyper@item
4641 \newif\if@skiphyperref
4642 \@hyper@itemfalse
4643 \@skiphyperreffalse
4644 \def\refstepcounter#1{%
4645   \ifHy@pdfstring
4646   \else
4647     \H@refstepcounter{#1}%
4648     \edef\This@name{#1}%
4649     \ifx\This@name\name@of@slide
4650     \else
4651       \if@skiphyperref
4652       \else
4653         \if@hyper@item
4654         \stepcounter{Item}%
4655         \hyper@refstepcounter{Item}%
4656       \else
4657         \hyper@refstepcounter{#1}%
4658       \fi
4659     \fi
4660   \fi
4661 \fi
4662 }
```

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.

```
4663 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}
```

`\hyper@refstepcounter`

```
4664 \def\hyper@refstepcounter#1{%
4665   \edef\This@name{#1}%
4666   \ifx\This@name\name@of@eq
4667     \@ifundefined{theHequation}{%
4668       \make@stripped@name{\theequation}%
4669       \let\theHequation\newname
4670     }{}%
4671   \fi
4672   \@ifundefined{theH#1}{%
4673     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
4674   }{}%
4675   \hyper@makecurrent{#1}%
4676   \ifmeasuring@
4677   \else
4678     \Hy@raisedlink{%
4679       \hyper@anchorstart{\@currentHref}\hyper@anchorend
```

```

4680 }%
4681 \fi
4682 }

```

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`.

```

4683 \begingroup\expandafter\expandafter\expandafter\endgroup
4684 \expandafter\ifx\csname chapter\endcsname\relax
4685 \def\Hy@chapterstring{section}%
4686 \else
4687 \def\Hy@chapterstring{chapter}%
4688 \fi
4689 \def\Hy@appendixstring{appendix}
4690 \def\Hy@chapapp{\Hy@chapterstring}
4691 \let\HyOrg@appendix\appendix
4692 \def\appendix{%
4693 \ifundefined{chapter}%
4694 {\gdef\theHsection{\Alph{section}}}%
4695 {\gdef\theHchapter{\Alph{chapter}}}%
4696 \xdef\Hy@chapapp{\Hy@appendixstring}%
4697 \HyOrg@appendix
4698 }

```

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

```

4699 \def\hyper@makecurrent#1{%
4700 \begingroup
4701 \edef\Hy@param{#1}%
4702 \ifx\Hy@param\Hy@chapterstring
4703 \let\Hy@param\Hy@chapapp
4704 \fi
4705 \ifHy@hypertextnames
4706 \let\@number\@firstofone
4707 \ifundefined{latin@Alph}{-}{%
4708 \ifx\@Alph\greek@Alph
4709 \def\@Alph{Alph\@arabic}%
4710 \fi
4711 }%
4712 \ifHy@naturalnames
4713 \let\textlatin\@firstofone
4714 \xdef\@currentHlabel{\csname the#1\endcsname}%
4715 \else
4716 \xdef\@currentHlabel{\csname theH#1\endcsname}%
4717 \fi
4718 \xdef\@currentHref{%
4719 \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
4720 }%
4721 \else
4722 \Hy@GlobalStepCount\Hy@linkcounter
4723 \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
4724 \fi
4725 \endgroup
4726 }

```

```

4727 \@ifpackageloaded{fancyvrb}{%
4728   \def\FV@StepLineNo{%
4729     \FV@SetLineNo
4730     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
4731     \FV@StepLineNo
4732   }%
4733 }{}

```

## 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`

```

4734 \AtBeginDocument{%
4735   \@ifclassloaded{revtex4}{%
4736     \@namedef{ver@lastpage.sty}{1994/06/25}%
4737   }{}%
4738   \@ifpackageloaded{lastpage}{%
4739     \ifHy@pageanchor
4740     \else
4741       \Hy@WarningNoLine{%
4742         The \string\pageref{LastPage} link doesn't work\MessageBreak
4743         with disabled option 'pageanchor'%
4744       }%
4745     \fi
4746     \def\lastpage@putlabel{%
4747       \addtocounter{page}{-1}%
4748       \if@files@
4749         \begin@group
4750           \let\@number\@firstofone
4751           \ifHy@pageanchor
4752             \ifHy@hypertexnames
4753               \ifHy@plainpages
4754                 \def\Hy@temp{\arabic{page}}%
4755               \else
4756                 \Hy@unicodedefalse
4757                 \pdfstringdef\Hy@temp{\thepage}%
4758             \fi
4759           \else
4760             \def\Hy@temp{\the\Hy@pagecounter}%
4761           \fi
4762         \fi
4763         \immediate\write\@auxout{%
4764           \string\newlabel
4765           {LastPage}{\the\thepage}{\thepage}{\thepage}%
4766           \ifHy@pageanchor page.\Hy@temp\fi}{}}%
4767       }%
4768     \end@group
4769   \fi
4770   \addtocounter{page}{1}%
4771 }%

```

```

4772 \@ifclassloaded{revtex4}{%
4773   \begingroup
4774     \toks@{\expandafter{\lastpage@putlabel}}%
4775     \edef\x{\endgroup
4776       \def\noexpand\lastpage@putlabel{%
4777         \noexpand\stepcounter{page}%
4778         \the\toks@
4779         \noexpand\addtocounter{page}\noexpand\m@ne
4780       }%
4781     }%
4782     \x
4783   }{}%
4784 }{}%
4785 }
4786 \</package>
4787 \<*check>
4788 \checkpackage{lastpage}[1994/06/25]
4789 \checkcommand\def\lastpage@putlabel{%
4790   \addtocounter{page}{-1}%
4791   \immediate\write\@auxout{%
4792     \string\newlabel{LastPage}{\the\thepage}}%
4793   }%
4794   \addtocounter{page}{1}%
4795 }
4796 \</check>
4797 \<*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.

```

4798 \def\hypergetref#1{\getrefbykeydefault{#1}{}{??}}
4799 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

### 31 Package titlesec and titletoc support

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

Package titlesec support:

```

4800 \@ifpackageloaded{titlesec}{%
4801   \def\ttl@Hy@steplink#1{%
4802     \Hy@GlobalStepCount\Hy@linkcounter
4803     \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
4804     \def\ttl@Hy@saveanchor{%
4805       \Hy@raisedlink{%
4806         \hyper@anchorstart{\@currentHref}\hyper@anchorend
4807       }%
4808     }%
4809   }%
4810   \def\ttl@Hy@refstepcounter#1{%
4811     \let\ttl@b\Hy@raisedlink
4812     \def\Hy@raisedlink##1{%
4813       \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
4814     }%

```

```

4815 \refstepcounter{#1}%
4816 \let\Hy@raisedlink\ttl@b
4817 }%
4818 {}

```

Package titletoc support:

```

4819 \@ifpackageloaded{titletoc}{%
4820 \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
4821 }{}

```

## 32 Package varioref support

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

```

4822 \def\Hy@varioref@undefined{???}{??}{-}{-}{-}
4823 \@ifpackageloaded{varioref}{%
4824 \def\vref@pagenum#1#2{%
4825 \ifundefined{r@#2}{%
4826 \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
4827 }{}%
4828 \edef#1{\getpagerefnumber{#2}}%
4829 }%
4830 {}

```

## 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

```

4831 \@ifpackageloaded{longtable}{%
4832 \begingroup
4833 \def\y{\LT@array}%
4834 \@ifundefined{scr@LT@array}{-}{\def\y{\scr@LT@array}}%
4835 \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
4836 \expandafter\endgroup
4837 \expandafter\def\y[#1]##2{%
4838 \H@refstepcounter{#1}%
4839 \hyper@makecurrent{table}%
4840 \let\Hy@LT@currentHlabel\@currentHlabel
4841 \let\Hy@LT@currentHref\@currentHref
4842 #2\@sharp####4%
4843 }%
4844 }%
4845 \expandafter\expandafter\expandafter\x\y[#1]{#2}\@nil

```

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

```

4846 \begingroup
4847 \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
4848 \endgroup
4849 \def\LT@start{%
4850 #1%
4851 \let\@currentHlabel\Hy@LT@currentHlabel
4852 \let\@currentHref\Hy@LT@currentHref

```

```

4853      \Hy@raisedlink{%
4854        \hyper@anchorstart{\@currentHref}\hyper@anchorend
4855      }%
4856      \ifvoid\LT@firsthead\copy
4857      #2%
4858    }%
4859  }%
4860  \expandafter\x\LT@start\@nil
4861 }{}

```

## 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.

```

4862 \let\new@refstepcounter\refstepcounter
4863 \let\H@equation\equation
4864 \let\H@endequation\endequation
4865 \ifpackageloaded{amsmath}{%
4866   \long\def\Hy@temp{%
4867     \incr@eqnum
4868     \mathdisplay@push
4869     \st@rredfalse \global\@eqnswtrue
4870     \mathdisplay{equation}%
4871   }%
4872   \ifx\Hy@temp\equation
4873     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
4874       \csname iftrue\endcsname
4875   \else
4876     \long\def\equation{%
4877       \mathdisplay@push
4878       \st@rredfalse \global\@eqnswtrue
4879       \mathdisplay{equation}%
4880       \incr@eqnum
4881     }%
4882   \fi
4883 \fi
4884 }{%
4885 \def\equation{%
4886   \let\refstepcounter\H@refstepcounter
4887   \H@equation
4888   \@ifundefined{theHequation}{%
4889     \make@stripped@name{\theequation}%
4890     \let\theHequation\newname
4891   }{}%
4892   \hyper@makecurrent{equation}%
4893   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
4894   \let\refstepcounter\new@refstepcounter
4895 }%
4896 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
4897 }

```

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.

```

4898 \newif\if@eqnstar
4899 \@eqnstarfalse
4900 \let\H@eqnarray\eqnarray
4901 \let\H@endeqnarray\endeqnarray
4902 \def\eqnarray{%
4903   \let\Hy@reserved@a\relax
4904   \def\@currentHref{}%
4905   \H@eqnarray
4906   \if@eqnstar
4907   \else
4908     \ifx\\ \@currentHref\\%
4909     \else
4910       \@ifundefined{theHequation}{%
4911         \make@stripped@name{\theequation}%
4912         \let\theHequation\newname
4913       }{}%
4914       \hyper@makecurrent{equation}%
4915       \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
4916     \fi
4917   \fi
4918 }
4919 \def\endeqnarray{%
4920   \H@endeqnarray
4921 }

```

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.

```

4922 \@namedef{eqnarray*}{%
4923   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
4924 }
4925 \@namedef{endeqnarray*}{%
4926   \nonumber\endeqnarray\@eqnstarfalse
4927 }

```

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

```

4928 \@ifundefined{subeqnarray}{}{%
4929   \let\H@subeqnarray\subeqnarray
4930   \let\H@endsubeqnarray\endsubeqnarray
4931   \def\subeqnarray{%
4932     \let\Hy@reserved@a\relax
4933     \H@subeqnarray
4934     \@ifundefined{theHequation}{%
4935       \make@stripped@name{\theequation}%
4936       \let\theHequation\newname
4937     }{}%
4938     \hyper@makecurrent{equation}%
4939     \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
4940   }%
4941   \def\endsubeqnarray{%
4942     \H@endsubeqnarray
4943   }%
4944   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
4945 }

```



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

```

4946 \def\make@stripped@name#1{%
4947   \begingroup
4948     \escapechar\m@ne
4949     \global\let\newname\@empty
4950     \protected@edef\Hy@tempa{#1}%
4951     \edef\@tempb{%
4952       \noexpand\@tfor\noexpand\Hy@tempa:=%
4953       \expandafter\strip@prefix\meaning\Hy@tempa
4954     }%
4955     \@tempb\do{%
4956       \if\Hy@tempa\else
4957       \if}\Hy@tempa\else
4958       \xdef\newname{\newname\Hy@tempa}%
4959     \fi
4960   \fi
4961 }%
4962 \endgroup
4963 }

```

Support for amsmath's subequations:

```

4964 \begingroup\expandafter\expandafter\expandafter\endgroup
4965 \expandafter\ifx\csname subequations\endcsname\relax
4966 \else
4967   \let\HyOrg@subequations\subequations
4968   \def\subequations{%
4969     \stepcounter{equation}%
4970     \protected@edef\theHparentequation{%
4971       \@ifundefined{theHequation}\theequation\theHequation
4972     }%
4973     \addtocounter{equation}{-1}%
4974     \HyOrg@subequations
4975     \def\theHequation{\theHparentequation\alph{equation}}%
4976     \ignorespaces
4977   }%
4978 \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.

```

4979 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
4980 \ifHy@hyperfootnotes
4981   \newcounter{Hfootnote}%
4982   \let\H@footnotetext\@footnotetext
4983   \let\H@footnotemark\@footnotemark
4984   \def\@xfootnotenext[#1]{%
4985     \begingroup
4986       \csname c@\@mpfn\endcsname #1\relax
4987       \unrestored@protected\xdef\@thefnmark{\thempfn}%
4988     \endgroup
4989     \ifx\@footnotetext\@mpfootnotetext

```

```

4990     \expandafter\H@@mpfootnotetext
4991     \else
4992     \expandafter\H@@footnotetext
4993     \fi
4994 }%
4995 \def\@xfootnotemark[#1]{%
4996     \begingroup
4997     \c@footnote #1\relax
4998     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
4999     \endgroup
5000     \H@@footnotemark
5001 }%
5002 \let\H@@mpfootnotetext\@mpfootnotetext
5003 \long\def\@mpfootnotetext#1{%
5004     \H@@mpfootnotetext{%
5005         \ifHy@nesting
5006             \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
5007         \else
5008             \Hy@raisedlink{%
5009                 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5010             }#1%
5011         \fi
5012     }%
5013 }%
5014 \long\def\@footnotetext#1{%
5015     \H@@footnotetext{%
5016         \ifHy@nesting
5017             \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
5018         \else
5019             \Hy@raisedlink{%
5020                 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5021             }%
5022             \let\@currentHlabel\Hy@footnote@currentHlabel
5023             \let\@currentHref\Hy@footnote@currentHref
5024             \let\@currentlabelname\@empty
5025             #1%
5026         \fi
5027     }%
5028 }%

```

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.

```

5029 \def\@footnotemark{%
5030     \leavevmode
5031     \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
5032     \stepcounter{Hfootnote}%
5033     \global\let\Hy@saved@currentHlabel\@currentHlabel
5034     \global\let\Hy@saved@currentHref\@currentHref
5035     \hyper@makecurrent{Hfootnote}%
5036     \global\let\Hy@footnote@currentHlabel\@currentHlabel
5037     \global\let\Hy@footnote@currentHref\@currentHref
5038     \global\let\@currentHlabel\Hy@saved@currentHlabel
5039     \global\let\@currentHref\Hy@saved@currentHref
5040     \hyper@linkstart{link}{\Hy@footnote@currentHref}%
5041     \@makefnmark
5042     \hyper@linkend

```

```

5043 \ifhmode\spacefactor\@x@sf\fi
5044 \relax
5045 }%

```

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.

```

5046 \@ifpackageloaded{longtable}{%
5047   \CheckCommand*{\LT@p@ftntext}[1]{%
5048     \edef\@tempa{%
5049       \the\LT@p@ftn
5050       \noexpand\footnotetext[\the\c@footnote]%
5051     }%
5052     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
5053   }%
5054   \long\def\LT@p@ftntext#1{%
5055     \edef\@tempa{%
5056       \the\LT@p@ftn
5057       \begingroup
5058         \noexpand\c@footnote=\the\c@footnote\relax
5059         \noexpand\protected@xdef
5060           \noexpand\@thefnmark{\noexpand\thempfn}%
5061         \noexpand\protected@xdef\noexpand\@thefnmark{%
5062           \noexpand\thempfn
5063         }%
5064         \expandafter\expandafter\expandafter\noexpand
5065         \expandafter\expandafter\expandafter\Hy@LT@footnotetext
5066         \expandafter\expandafter\expandafter{%
5067           \expandafter\Hy@footnote@currentHref\expandafter
5068           }\expandafter{\Hy@footnote@currentHlabel}%
5069       }%
5070       \global\LT@p@ftn\expandafter{%
5071         \@tempa{#1}%
5072       }\endgroup
5073     }%
5074   }%
5075   \long\def\Hy@LT@footnotetext#1#2#3{%
5076     \H@@footnotetext{%
5077       \ifHy@nesting
5078         \hyper@@anchor{#1}{#3}%
5079       \else
5080         \Hy@raisedlink{%
5081           \hyper@@anchor{#1}{\relax}%
5082         }%
5083         \def\@currentHlabel{#2}%
5084         \def\@currentHref{#1}%
5085         \let\@currentlabelname\@empty
5086         #3%
5087       \fi
5088     }%
5089   }%
5090 }-%

```

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.

```

5091 \let\HyOrg@maketitle\maketitle
5092 \def\maketitle{%

```

```

5093 \let\Hy@saved@footnotemark\@footnotemark
5094 \let\Hy@saved@footnotetext\@footnotetext
5095 \let\@footnotemark\H@@footnotemark
5096 \let\@footnotetext\H@@footnotetext
5097 \ifnextchar[\Hy@maketitle@optarg{% ]
5098 \HyOrg@maketitle
5099 \Hy@maketitle@end
5100 }%
5101 }%
5102 \def\Hy@maketitle@optarg[#1]{%
5103 \HyOrg@maketitle[{#1}]%
5104 \Hy@maketitle@end
5105 }%
5106 \def\Hy@maketitle@end{%
5107 \ifx\@footnotemark\H@@footnotemark
5108 \let\@footnotemark\Hy@saved@footnotemark
5109 \fi
5110 \ifx\@footnotetext\H@@footnotetext
5111 \let\@footnotetext\Hy@saved@footnotetext
5112 \fi
5113 }%

```

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

```

5114 \def\realfootnote{%
5115 \ifnextchar[\@xfootnote{%
5116 \stepcounter{\@mpfn}%
5117 \protected@xdef\@thefnmark{\thempfn}%
5118 \H@@footnotemark\H@@footnotetext
5119 }%
5120 }%

5121 \fi
5122 \Hy@DisableOption{hyperfootnotes}

5123 </package>
5124 <*check>
5125 \checklatex
5126 \checkcommand\def\@xfootnotenext[#1]{%
5127 \begingroup
5128 \csname c@\@mpfn\endcsname #1\relax
5129 \unrestored@protected@xdef\@thefnmark{\thempfn}%
5130 \endgroup
5131 \@footnotetext
5132 }
5133 \checkcommand\def\@xfootnotemark[#1]{%
5134 \begingroup
5135 \c@footnote #1\relax
5136 \unrestored@protected@xdef\@thefnmark{\thefnmark}%
5137 \endgroup
5138 \@footnotemark
5139 }
5140 \checkcommand\def\@footnotemark{%
5141 \leavevmode
5142 \ifhmode\edef\@xsf{\the\spacefactor}\nobreak\fi
5143 \@makefnmark
5144 \ifhmode\spacefactor\@xsf\fi
5145 \relax
5146 }

```

```

5147 </check>
5148 <*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.

```

5149 \def\caption{%
5150   \ifx\@captype\@undefined
5151     \latex@error{\noexpand\caption outside float}\@ehd
5152     \expandafter\@gobble
5153   \else
5154     \H@refstepcounter\@captype
5155     \let\Hy@tempa\@caption
5156     \@ifundefined{float@caption}{%
5157       {%
5158         \expandafter\ifx\csname @float@c@\@captype\endcsname
5159           \float@caption
5160         \let\Hy@tempa\Hy@float@caption
5161       \fi
5162     }%
5163     \expandafter\@firstofone
5164   \fi
5165   {\@dblarg{\Hy@tempa\@captype}}%
5166 }
5167 \long\def\@caption#1[#2]#3{%
5168   \expandafter\ifx\csname if@capstart\expandafter\endcsname
5169     \csname iftrue\endcsname
5170     \global\let\@currentHref\hc@currentHref
5171   \else
5172     \hyper@makecurrent{\@captype}%
5173   \fi
5174   \def\@currentlabelname{#2}%
5175   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
5176     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
5177   }%
5178   \begingroup
5179     \@parboxrestore
5180     \if@minipage
5181       \setminipage
5182     \fi
5183     \normalsize
5184     \expandafter\ifx\csname if@capstart\expandafter\endcsname
5185       \csname iftrue\endcsname
5186       \global\@capstartfalse
5187       \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
5188     \else
5189       \@makecaption{\csname fnum@#1\endcsname}{%
5190         \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

5191     \ifHy@nesting
5192       \hyper@@anchor{\@currentHref}{#3}%
5193     \else
5194       \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
5195     \fi

```

```

5196     }%
5197     \fi
5198     \par
5199     \endgroup
5200 }

```

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.

```

5201 \let\Hy@float@caption\@caption
5202 \ifpackageloaded{float}{%
5203   \def\Hy@float@caption{%
5204     \ifx\Hy@float@currentHref\@undefined
5205       \hyper@makecurrent{\@capttype}%
5206       \global\let\Hy@float@currentHref\@currentHref
5207     \else
5208       \let\@currentHref\Hy@float@currentHref
5209     \fi
5210     \float@caption
5211   }%
5212   \let\HyOrg@float@makebox\float@makebox
5213   \renewcommand{\float@makebox}[1]{%
5214     \HyOrg@float@makebox{%
5215       #1\relax
5216       \ifx\Hy@float@currentHref\@undefined
5217       \else
5218         \hyper@@anchor{\Hy@float@currentHref}{\relax}%
5219         \global\let\Hy@float@currentHref\@undefined
5220       \fi
5221     }%
5222   }%
5223 }{}

5224 \</package>
5225 \<*check>
5226 \checklatex[1999/06/01 - 2000/06/01]
5227 \checkcommand\def\caption{%
5228   \ifx\@capttype\@undefined
5229     \@latex@error{\noexpand\caption outside float}\@ehd
5230     \expandafter\@gobble
5231   \else
5232     \refstepcounter{\@capttype}
5233     \expandafter\@firstofone
5234   \fi
5235   {\@dblarg{\@caption\@capttype}}%
5236 }

5237 \checkcommand\long\def\@caption#1[#2]#3{%
5238   \par
5239   \addcontentsline{\csname ext@#1\endcsname}{#1}%
5240     {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
5241   \begingroup
5242     \@parboxrestore
5243     \if@minipage
5244       \@setminipage
5245     \fi
5246     \normalsize
5247     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
5248   \endgroup
5249 }

```

```

5250 </check>
5251 <*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.

```

5252 \def\hyper@natlinkstart#1{%
5253   \Hy@backout{#1}%
5254   \hyper@linkstart{cite}{cite.#1}%
5255   \def\hyper@nat@current{#1}%
5256 }
5257 \def\hyper@natlinkend{%
5258   \hyper@linkend
5259 }
5260 \def\hyper@natlinkbreak#1#2{%
5261   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
5262 }
5263 \def\hyper@natanchorstart#1{%
5264   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
5265 }
5266 \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.

```

5267 \@ifundefined{NAT@parse}{%
5268   \providecommand*\@extra@binfo{}%
5269   \providecommand*\@extra@b@citeb{}%
5270   \def\bibcite#1#2{%
5271     \newl@bel{b}{#1}\@extra@binfo{%
5272       \hyper@link[cite]{cite.#1}\@extra@b@citeb}{#2}%
5273     }%
5274   }%
5275   \gdef\@extra@binfo{}%

```

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

```

5276 \let\Hy@bibcite\bibcite
5277 \begingroup
5278   \@ifundefined{bbl@cite@choice}{%
5279     \g@addto@macro\bbl@cite@choice{%
5280       \let\bibcite\Hy@bibcite
5281     }%
5282   }%
5283 \endgroup

```

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

```

5284 \providecommand*\@BIBLABEL{\@biblabel}%

```

```

5285 \def\@lbibitem[#1]#2{%
5286   \@skiphyperreftrue
5287   \H@item[%
5288     \ifx\Hy@raisedlink\@empty
5289       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
5290       \@BIBLABEL{#1}%
5291       \hyper@anchorend
5292     \else
5293       \Hy@raisedlink{%
5294         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
5295       }%
5296       \@BIBLABEL{#1}%
5297     \fi
5298     \hfill
5299   ]%
5300   \@skiphyperreffalse
5301   \if@filesw
5302     \begingroup
5303       \let\protect\noexpand
5304       \immediate\write\@auxout{%
5305         \string\bibcite{#2}{#1}%
5306       }%
5307     \endgroup
5308   \fi
5309   \ignorespaces
5310 }%

```

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

```

5311 \def\@bibitem#1{%
5312   \@skiphyperreftrue\H@item\@skiphyperreffalse
5313   \Hy@raisedlink{%
5314     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
5315   }%
5316   \if@filesw
5317     \begingroup
5318       \let\protect\noexpand
5319       \immediate\write\@auxout{%
5320         \string\bibcite{#1}{\the\value{\@listctr}}%
5321       }%
5322     \endgroup
5323   \fi
5324   \ignorespaces
5325 }%
5326 }{}

5327 </package>
5328 <*check>
5329 \checklatex
5330 \checkcommand\def\@lbibitem[#1]#2{%
5331   \item[\@biblabel{#1}\hfill]%
5332   \if@filesw
5333     {%
5334       \let\protect\noexpand
5335       \immediate\write\@auxout{%
5336         \string\bibcite{#2}{#1}%
5337       }%
5338     }%

```



```

5339 \fi
5340 \ignorespaces
5341 }
5342 \checkcommand\def\@bibitem#1{%
5343 \item
5344 \if@filesw
5345 \immediate\write\@auxout{%
5346 \string\bibcite{#1}{\the\value{\@listctr}}}%
5347 }%
5348 \fi
5349 \ignorespaces
5350 }
5351 \</check>
5352 \<*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.

```

5353 \@ifclassloaded{revtex}{%
5354 \Hy@Info{*** compatibility with revtex **** }%
5355 \def\revtex@checking#1#2{%
5356 \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
5357 \expandafter\def\csname b@#1\endcsname{#2}%
5358 \@SetMaxRnhefLabel{#1}%
5359 \expandafter\let\csname b@#1\endcsname\T@temp
5360 }%

```

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

```

5361 \@ifundefined{CITE}{\def\CITE{\@cite}}{}%
5362 \providecommand*{\extra@b@citeb}{}%
5363 \def\CITE[#1]#2{%
5364 \let\citea\@empty
5365 \leavevmode
5366 \unskip
5367 $^{\%
5368 \scriptstyle
5369 \CITE{%
5370 \@for\citeb:=#2\do{%
5371 \citea
5372 \def\citea{\penalty\@m\ }%
5373 \edef\citeb{\expandafter\@firstofone\citeb}%
5374 \if@filesw
5375 \immediate\write\@auxout{\string\citation{\citeb}}%
5376 \fi
5377 \@ifundefined{b@\citeb\extra@b@citeb}{}%
5378 \mbox{\reset@font\bfseries ?}%
5379 \G@refundefinedtrue
5380 \latex@warning{%
5381 Citation ‘\citeb’ on page \thepage \space undefined%
5382 }%
5383 }%
5384 {\csname b@\citeb\extra@b@citeb\endcsname}%
5385 }%
5386 }%
5387 }{#1}%
5388 }$%
5389 }%

```

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.

```

5390 \def\@citex[#1]#2{%
5391   \let\@citea\@empty
5392   \@cite{%
5393     \@for\@citeb:=#2\do{%
5394       \@citea
5395       \def\@citea{,\penalty\@m\ }%
5396       \edef\@citeb{\expandafter\@firstofone\@citeb}%
5397       \if@filesw
5398         \immediate\write\@auxout{\string\citation{\@citeb}}%
5399       \fi
5400       \@ifundefined{b@\@citeb\@extra@b@citeb}{%
5401         \mbox{\reset@font\bfseries ?}%
5402         \@latex@warning{%
5403           Citation ‘\@citeb’ on page \thepage \space undefined}%
5404         }%
5405       }{%
5406         \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
5407       }%
5408     }%
5409   }%
5410 }{#1}%
5411 }%
5412 }{}

```

### 37.1 Package harvard

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

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

```

5413 \@ifpackageloaded{harvard}{%
5414   \AtBeginDocument{%
5415     \Hy@Info{*** compatibility with harvard ***}%
5416     \Hy@raiselinksfalse
5417     \def\harvardcite#1#2#3#4{%
5418       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{\cite.#1}{#2}}%
5419       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{\cite.#1}{#3}}%
5420       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{\cite.#1}{#4}}%
5421       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
5422     }%
5423     \def\HAR@citetoaux#1{%
5424       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
5425       \ifHy@backref
5426         \ifx\@empty\@currentlabel
5427         \else
5428           \@bsphack
5429           \if@filesw
5430             \protected@write\@auxout{}{%
5431               \string\writefile{brf}{%
5432                 \string\backcite{#1}{%
5433                   {\thepage}{\@currentlabel}{\@currentHref}}%
5434             }%

```

```

5435         }%
5436     }%
5437     \fi
5438     \@esphack
5439     \fi
5440 \fi
5441 }%
5442 \def\harvarditem{%
5443     \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}}%
5444 }%
5445 \def\@harvarditem[#1]#2#3#4#5\par{%
5446     \item[]%
5447     \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
5448     \if@filesw
5449         \begingroup
5450             \def\protect##1{\string ##1\space}%
5451             \ifthenelse{\equal{#1}{\null}}{%
5452                 {\def\next{{#4}{#2}{#2}{#3}}}%
5453                 {\def\next{{#4}{#2}{#1}{#3}}}%
5454             \immediate\write\@auxout{\string\harvardcite\codeof\next}%
5455         \endgroup
5456     \fi
5457     \protect\hspace*{-\labelwidth}%
5458     \protect\hspace*{-\labelsep}%
5459     \ignorespaces
5460     #5%
5461     \ifHy@backref
5462         \newblock
5463         \backref{\csname br@#4\endcsname}%
5464     \fi
5465     \par
5466 }%

```

\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:

```

5467 \long\def\HAR@checkcitations#1#2#3#4{%
5468     \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
5469     \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
5470         \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
5471         \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
5472             \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
5473             \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
5474                 \else
5475                     \@tempswatrue
5476                 \fi
5477             \else
5478                 \@tempswatrue
5479             \fi
5480         \else
5481             \@tempswatrue
5482         \fi
5483     }%
5484 }%
5485 }{}

```

## 37.2 Package chicago

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

```
5486 \@ifpackageloaded{chicago}{%
```

```
\citeN
```

```
5487 \def\citeN{%
5488   \def\@citesep{--1000}%
5489   \def\@cite##1##2{##1}%
5490   \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}}%
5491   \@citedata@opt
5492 }%
```

```
\shortciteN
```

```
5493 \def\shortciteN{%
5494   \def\@citesep{--1000}%
5495   \def\@cite##1##2{##1}%
5496   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}}%
5497   \@citedata@opt
5498 }%
```

```
\@citedata@opt
```

```
5499 \def\@citedata@opt{%
5500   \let\@cite@opt\@empty
5501   \@ifnextchar [{%
5502     \@tempwattrue
5503     \@citedatax@opt
5504   }{%
5505     \@tempwafalse
5506     \@citedatax[]%
5507   }%
5508 }%
```

```
\@citedatax@opt
```

```
5509 \def\@citedatax@opt[#1]{%
5510   \def\@cite@opt{, #1}%
5511   \@citedatax[{#1}]%
5512 }%
5513 }{-}
```

## 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.

```
5514 \def\Hy@EveryPageAnchor{%
5515   \Hy@DistillerDestFix
5516   \ifHy@pageanchor
5517     \ifHy@hypertextnames
5518     \ifHy@plainpages
5519       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
```

```

5520     \else
5521     \begingroup
5522     \let\@number\@firstofone
5523     \Hy@unicodetrue
5524     \pdfstringdef\@the@H@page{\thepage}%
5525     \endgroup
5526     \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
5527     \fi
5528     \else
5529     \Hy@GlobalStepCount\Hy@pagecounter
5530     \def\Hy@TempPageAnchor{\hyper@@anchor{page.\thethe@H@pagecounter}}%
5531     \fi
5532     \vbox to 0pt{%
5533     \kern\voffset
5534     \kern\topmargin
5535     \kern-1bp\relax
5536     \hbox to 0pt{%
5537     \kern\hoffset
5538     \kern\ifodd\value{page}%
5539     \oddsidemargin
5540     \else
5541     \evensidemargin
5542     \fi
5543     \kern-1bp\relax
5544     \Hy@TempPageAnchor
5545     \hss
5546     }%
5547     \vss
5548     }%
5549     \fi
5550 }
5551 \g@addto@macro\Hy@EveryPageBoxHook{%
5552 \Hy@EveryPageAnchor
5553 }

```

## 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.

```

5554 \begingroup\expandafter\expandafter\expandafter\endgroup
5555 \expandafter\ifx\csname chapter\endcsname\relax
5556 \def\toclevel@part{0}%
5557 \else
5558 \def\toclevel@part{-1}%
5559 \fi
5560 \def\toclevel@chapter{0}
5561 \def\toclevel@section{1}
5562 \def\toclevel@subsection{2}
5563 \def\toclevel@subsubsection{3}
5564 \def\toclevel@paragraph{4}
5565 \def\toclevel@subparagraph{5}
5566 \def\toclevel@figure{0}
5567 \def\toclevel@table{0}
5568 \@ifpackageloaded{listings}{%
5569 \providecommand*\theHlstlisting{\thelstlisting}%

```

```

5570 \providecommand*\toclevel@lstlisting{0}%
5571 }{}
5572 \@ifpackageloaded{listing}{%
5573   \providecommand*\theHlisting{\thelisting}%
5574   \providecommand*\toclevel@listing{0}%
5575 }{}
5576 \def\addcontentsline#1#2#3{% toc extension, type, tag
5577   \begingroup
5578     \let\label\@gobble
5579     \let\textlatin\@firstofone
5580     \ifx\@currentHref\@empty
5581       \Hy@Warning{%
5582         No destination for bookmark of \string\addcontentsline,%
5583         \MessageBreak destination is added%
5584       }%
5585     \phantomsection
5586   \fi
5587   \expandafter\ifx\csname toclevel@#2\endcsname\relax
5588     \begingroup
5589       \def\Hy@tempa{#1}%
5590       \ifx\Hy@tempa\Hy@bookmarkstype
5591         \Hy@WarningNoLine{%
5592           bookmark level for unknown #2 defaults to 0%
5593         }%
5594       \else
5595         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
5596       \fi
5597     \endgroup
5598     \expandafter\gdef\csname toclevel@#2\endcsname{0}%
5599   \fi
5600   \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
5601   \Hy@writebookmark{\csname the#2\endcsname}%
5602     {#3}%
5603     {\@currentHref}%
5604     {\Hy@toclevel}%
5605     {#1}%
5606   \ifHy@verbose
5607     \def\Hy@tempa{#3}%
5608     \@onelevel@sanitize\Hy@tempa
5609     \typeout{pdfTeX: bookmark at \the\inputlineno: %
5610       {\csname the#2\endcsname}%
5611       {\Hy@tempa}%
5612       {\@currentHref}%
5613       {\Hy@toclevel}%
5614       {#1}%
5615     }%
5616   \fi
5617   \addtocontents{#1}{%
5618     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
5619   }%
5620 \endgroup
5621 }
5622 \def\contentsline#1#2#3#4{%
5623   \ifx\#4\%
5624     \csname l@#1\endcsname{#2}{#3}%
5625   \else
5626     \ifHy@linktocpage

```

```

5627     \csname l@#1\endcsname{{#2}}{%
5628         \hyper@linkstart{link}{#4}{#3}\hyper@linkend
5629     }%
5630     \else
5631         \csname l@#1\endcsname{%
5632             \hyper@linkstart{link}{#4}{#2}\hyper@linkend
5633         }{#3}%
5634     \fi
5635 \fi
5636 }

5637 \</package>
5638 \<*check>
5639 \checklatex
5640 \checkcommand\def\addcontentsline#1#2#3{%
5641     \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
5642 }
5643 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
5644 \</check>
5645 \<*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.

```

5646 \let\H@definecounter\@definecounter
5647 \def\@definecounter#1{%
5648     \H@definecounter{#1}%
5649     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
5650 }

```

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.

```

5651 \let\H@newctr\@newctr
5652 \def\@newctr#1[#2]{%
5653     \H@newctr#1[{#2}]%
5654     \expandafter\def\csname theH#1\endcsname{%
5655         \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
5656     }%
5657 }

```

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

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

```

5658 \let\Hmake@df@tag@@\make@df@tag@@
5659 \def\make@df@tag@@#1{%
5660     \Hmake@df@tag@@{#1}%
5661     \Hy@GlobalStepCount\Hy@linkcounter
5662     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5663     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5664 }

```

```

5665 \let\Hmake@df@tag@@@make@df@tag@@@
5666 \def\make@df@tag@@@#1{%
5667   \Hmake@df@tag@@@{#1}%
5668   \Hy@GlobalStepCount\Hy@linkcounter
5669   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5670   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5671 }

```

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

```

5672 \@ifpackagewith{hyperref}{pdfTeX}{%
5673   \let\H@seteqlabel\@seteqlabel
5674   \def\@seteqlabel#1{%
5675     \H@seteqlabel{#1}%
5676     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5677     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5678   }%
5679 }{}

```

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

```

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

```

## 41.1 \@addtoreset and \numberwithin patches

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

```

5680 \let\HyOrg@addtoreset\@addtoreset
5681 \def\@addtoreset#1#2{%
5682   \HyOrg@addtoreset{#1}{#2}%
5683   \expandafter\xdef\csname theH#1\endcsname{%
5684     \expandafter\noexpand
5685     \csname the\@ifundefined{theH#2}{H#2\endcsname
5686     .\noexpand\the\noexpand\value{#1}%
5687   }%
5688 }

```

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

```

5689 </package>
5690 <*check>
5691 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
5692 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
5693   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
5694     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
5695       \@addtoreset{#2}{#3}%
5696       \@xp\xdef\csname the#2\endcsname{%
5697         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
5698       }%
5699     }%
5700 }%

```



```

5701 }%
5702 </check>
5703 <*package>
5704 \ifpackageloaded{amsmath}{%
5705   \ifpackagelater{amsmath}{1999/12/14}{%
5706     \renewcommand*{\numberwithin}[3][\arabic]{%
5707       \ifundefined{c@#2}{\@nocounterr{#2}}{%
5708         \ifundefined{c@#3}{\@nocnterr{#3}}{%
5709           \HyOrg@addtoreset{#2}{#3}%
5710           \exp\xdef\csname the#2\endcsname{%
5711             \exp\@nx\csname the#3\endcsname .\@nx#1{#2}%
5712           }%
5713           \exp\xdef\csname theH#2\endcsname{%
5714             \exp\@nx
5715             \csname the\ifundefined{theH#3}{H#3}\endcsname
5716             .\@nx#1{#2}%
5717           }%
5718         }%
5719       }%
5720     }%
5721   }%
5722   \Hy@WarningNoLine{%
5723     \string\numberwithin\space of package 'amsmath' %
5724     only fixed\MessageBreak
5725     for version 2000/06/06 v2.12 or newer%
5726   }%
5727 }%
5728 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

5729 \ifHy@figures
5730   \let\Hy@Gin@setfile\Gin@setfile
5731   \def\Gin@setfile#1#2#3{%
5732     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
5733   }%
5734 \fi
5735 \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.

```

5736 \ifHy@hyperindex
5737   \def\HyInd@ParenLeft{(%
5738   \def\HyInd@ParenRight{)%

```

```

5739 \Hy@nextfalse
5740 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
5741 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
5742 \begingroup
5743   \lccode'\|=\expandafter'\HyInd@EncapChar\relax
5744 \lowercase{\endgroup
5745   \ifHy@next
5746     \let\HyInd@org@wrindex\@wrindex
5747     \def\@wrindex#1#2{\HyInd@wrindex{#1}#2||\}%
5748     \def\HyInd@wrindex#1#2|#3|#4\{\%
5749       \ifx\|#3\%
5750         \HyInd@org@wrindex{#1}{#2|hyperpage}%
5751       \else
5752         \def\Hy@temp@A{#3}%
5753         \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
5754           \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
5755           \relax
5756           \HyInd@org@wrindex{#1}{#2|#3}%
5757         \else
5758           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
5759         \fi
5760       \fi
5761     }%
5762   \else
5763     \def\@wrindex#1{\@wrindex#1||\}%
5764     \def\@wrindex#1|#2|#3\{\%
5765       \if@filesw
5766         \ifx\|#2\%
5767           \protected@write\@indexfile{}\%
5768             \string\indexentry{#1|hyperpage}{\thepage}%
5769           }%
5770         \else
5771           \def\Hy@temp@A{#2}%
5772           \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
5773             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
5774             \relax
5775             \protected@write\@indexfile{}\%
5776               \string\indexentry{#1|#2}{\thepage}%
5777             }%
5778           \else
5779             \protected@write\@indexfile{}\%
5780               \string\indexentry{#1|#2hyperpage}{\thepage}%
5781             }%
5782           \fi
5783         \fi
5784       \fi
5785     \endgroup
5786     \@esphack
5787   }%
5788 \fi
5789 }%
5790 \fi
5791 \Hy@DisableOption{hyperindex}
5792 \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.

```

5793 \def\hyperpage#1{\@hyperpage#1----\}

```

```

5794 \def\@hyperpage#1--#2--#3\{\%
5795   \ifx\#2\%
5796     \@commahyperpage{#1}%
5797   \else
5798     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
5799   \fi
5800 }
5801 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
5802 \def\@commahyperpage#1, #2,#3\{\%
5803   \ifx\#2\%
5804     \HyInd@pagelink{#1}%
5805   \else
5806     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
5807   \fi
5808 }

```

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

```

5809 \def\HyInd@pagelink#1{%
5810   \begingroup
5811     \toks@={}%
5812     \HyInd@removespaces#1 \@nil
5813   \endgroup
5814 }
5815 \def\HyInd@removespaces#1 #2\@nil{%
5816   \toks@=\expandafter{\the\toks@#1}%
5817   \ifx\#2\%
5818     \edef\x{\the\toks@}%
5819     \ifx\x\@empty
5820     \else
5821       \hyperlink{page.\the\toks@}{\the\toks@}%
5822     \fi
5823   \else
5824     \Hy@ReturnAfterFi{%
5825       \HyInd@removespaces#2\@nil
5826     }%
5827   \fi
5828 }

```

## 44 Compatibility with foiltex

```

5829 \@ifclassloaded{foils}{%
5830   \providecommand*\ext@table{lot}%
5831   \providecommand*\ext@figure{lof}%
5832 }{}

```

## 45 Compatibility with seminar slide package

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

```

5833 \@ifclassloaded{seminar}{%
5834   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}%
5835 }{%
5836   \Hy@seminarslidesfalse
5837 }
5838 \@ifpackageloaded{slidesec}{%

```

```

5839 \newcommand\theHslidesection {\arabic{slidesection}}%
5840 \newcommand\theHslidesubsection{%
5841 \theHslidesection.\arabic{slidesubsection}%
5842 }%
5843 \def\slide@heading[#1]#2{%
5844 \H@refstepcounter{slidesection}%
5845 \@addtoreset{slidesubsection}{slidesection}%
5846 \addtocontents{los}{%
5847 \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
5848 {\@SCTR}{slideheading.\theslidesection}%
5849 }%
5850 \def\Hy@tempa{#2}%
5851 \ifx\Hy@tempa\@empty
5852 \else
5853 {%
5854 \edef\@currentlabel{%
5855 \csname p@slidesection\endcsname\theslidesection
5856 }%
5857 \makeslideheading{#2}%
5858 }%
5859 \fi
5860 \gdef\theslideheading{#1}%
5861 \gdef\theslidesubheading{%
5862 \ifHy@bookmarksnumbered
5863 \def\Hy@slidetitle{\theslidesection\space #1}%
5864 \else
5865 \def\Hy@slidetitle{#1}%
5866 \fi
5867 \ifHy@hypertextnames
5868 \ifHy@naturalnames
5869 \hyper@@anchor{slideheading.\theslidesection}{\relax}%
5870 \Hy@writebookmark
5871 {\theslidesection}%
5872 {\Hy@slidetitle}%
5873 {slideheading.\theslidesection}%
5874 {1}%
5875 {toc}%
5876 \else
5877 \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
5878 \Hy@writebookmark
5879 {\theslidesection}%
5880 {\Hy@slidetitle}%
5881 {slideheading.\theHslidesection}%
5882 {1}%
5883 {toc}%
5884 \fi
5885 \else
5886 \Hy@GlobalStepCount\Hy@linkcounter
5887 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
5888 \Hy@writebookmark
5889 {\theslidesection}%
5890 {\Hy@slidetitle}%
5891 {slideheading.\the\Hy@linkcounter}%
5892 {1}%
5893 {toc}%
5894 \fi
5895 }%

```

```

5896 \def\slide@subheading[#1]#2{%
5897   \H@refstepcounter{slidesubsection}%
5898   \addtocontents{los}{%
5899     \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
5900     {\@SCTR}{slideheading.\theslidesubsection}%
5901   }%
5902   \def\Hy@tempa{#2}%
5903   \ifx\Hy@tempa\@empty
5904   \else
5905     {%
5906       \edef\@currentlabel{%
5907         \csname p@slidesubsection\endcsname\theslidesubsection
5908       }%
5909       \makeslidesubheading{#2}%
5910     }%
5911   \fi
5912   \gdef\theslidesubheading{#1}%
5913   \ifHy@bookmarksnumbered
5914     \def\Hy@slidetitle{\theslidesubsection\space #1}%
5915   \else
5916     \def\Hy@slidetitle{#1}%
5917   \fi
5918   \ifHy@hypertextnames
5919     \ifHy@naturalnames
5920       \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
5921       \Hy@writebookmark
5922         {\theslidesubsection}%
5923         {\Hy@slidetitle}%
5924         {slideheading.\theslidesubsection}%
5925         {2}%
5926         {toc}%
5927     \else
5928       \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
5929       \Hy@writebookmark
5930         {\theslidesubsection}%
5931         {\Hy@slidetitle}%
5932         {slideheading.\theHslidesubsection}%
5933         {2}%
5934         {toc}%
5935     \fi
5936   \else
5937     \Hy@GlobalStepCount\Hy@linkcounter
5938     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
5939     \Hy@writebookmark
5940       {\theslidesubsection}%
5941       {\Hy@slidetitle}%
5942       {slideheading.\the\Hy@linkcounter}%
5943       {1}%
5944       {toc}%
5945   \fi
5946 }%
5947 \providecommand*{\listslidenam}{List of Slides}%
5948 \def\listofslides{%
5949   \section*{%
5950     \listslidenam
5951     \@mkboth{%
5952       \expandafter\MakeUppercase\listslidenam

```

```

5953     }{%
5954     \expandafter\MakeUppercase\listslidenam
5955     }%
5956 }%
5957 \def\l@slide##1##2##3##4{%
5958     \slide@undottedcline{%
5959         \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
5960     }{%}%
5961 }%
5962 \let\l@subslide\l@slide
5963 \@startlos
5964 }%
5965 \def\slide@contents{%
5966     \def\l@slide##1##2##3##4{%
5967         \slide@cline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
5968     }%
5969     \let\l@subslide\@gobblefour
5970     \@startlos
5971 }%
5972 \def\Slide@contents{%
5973     \def\l@slide##1##2##3##4{%
5974         \ifcase\lslide@flag
5975             \message{##1 ** \the\c@slidesection}%
5976             \ifnum##1>\c@slidesection
5977                 \def\lslide@flag{1}%
5978                 {%
5979                     \large
5980                     \slide@cline{%
5981                         \slidenumberline{$\Rightarrow\bullet$}%
5982                         {\hyperlink{##4}{##2}}}%
5983                     }{##3}%
5984                 }%
5985             \else
5986                 {%
5987                     \large
5988                     \slide@cline{%
5989                         \slidenumberline{$\surd\;\bullet$}%
5990                         {\hyperlink{##4}{##2}}}%
5991                     }{##3}%
5992                 }%
5993             \fi
5994         \or
5995             \def\lslide@flag{2}%
5996             {%
5997                 \large
5998                 \slide@cline{%
5999                     \slidenumberline{$\bullet$}%
6000                     {\hyperlink{##4}{##2}}}%
6001                 }{##3}%
6002             }%
6003         \or
6004             {%
6005                 \large
6006                 \slide@cline{%
6007                     \slidenumberline{$\bullet$}%
6008                     {\hyperlink{##4}{##2}}}%
6009                 }{##3}%

```

```

6010     }%
6011     \fi
6012 }%
6013 \def\l@subslide##1##2##3##4{%
6014     \ifnum\l@slide@flag=1 %
6015         \undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
6016     \fi
6017 }%
6018 \def\l@slide@flag{0}%
6019 \@startlos
6020 }%
6021 }{}

```

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.)

```

6022 \ifHy@texht
6023     \expandafter\endinput
6024 \fi
6025 \let\real@setref\@setref
6026 \def\@setref#1#2#3{% csname, extract group, refname
6027     \ifx#1\relax
6028         \protect\G@refundefinedtrue
6029         \nfss@text{\reset@font\bfseries ??}%
6030         \@latex@warning{%
6031             Reference ‘#3’ on page \thepage \space undefined%
6032         }%
6033     \else
6034         \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
6035     \fi
6036 }

```

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

```

6037 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
6038     \begingroup
6039     \toks0={\hyper@@link{#5}{#4}}%
6040     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
6041     \edef\x{\endgroup
6042         \the\toks0 {\the\toks1 }%
6043     }%
6044     \x
6045 }
6046 \def\@pagesetref#1#2#3{% csname, extract macro, ref
6047     \ifx#1\relax
6048         \protect\G@refundefinedtrue
6049         \nfss@text{\reset@font\bfseries ??}%
6050         \@latex@warning{%
6051             Reference ‘#3’ on page \thepage \space undefined%
6052         }%
6053     \else
6054         \protect\hyper@@link
6055         {\expandafter\@fifthoffive#1}%
6056         {page.\expandafter\@secondoffive#1}%
6057         {\expandafter\@secondoffive#1}%
6058     \fi
6059 }
6060 </package>

```

```

6061 <*check>
6062 \checklatex
6063 \checkcommand\def\@setref#1#2#3{%
6064   \ifx#1\relax
6065     \protect\G@refundefinedtrue
6066     \nfss@text{\reset@font\bfseries ??}%
6067     \@latex@warning{%
6068       Reference ‘#3’ on page \thepage\space undefined%
6069     }%
6070   \else
6071     \expandafter#2#1\null
6072   \fi
6073 }
6074 </check>
6075 <*package>

```

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

```

6076 \def\HyRef@StarSetRef#1{%
6077   \begingroup
6078   \Hy@safe@activetrue
6079   \edef\x{#1}%
6080   \@onelevel@sanitize\x
6081   \edef\x{\endgroup
6082     \noexpand\HyRef@@StarSetRef
6083     \expandafter\noexpand\csname r@\x\endcsname{\x}%
6084   }%
6085   \x
6086 }
6087 \def\HyRef@@StarSetRef#1#2#3{%
6088   \ifx#1\@undefined
6089     \let#1\relax
6090   \fi
6091   \real@setref#1#3{#2}%
6092 }
6093 \def\@refstar#1{%
6094   \HyRef@StarSetRef{#1}\@firstoffive
6095 }
6096 \def\@pagerefstar#1{%
6097   \HyRef@StarSetRef{#1}\@secondoffive
6098 }
6099 \AtBeginDocument{%
6100   \ifpackageloaded{varioref}{%
6101     \def\@Refstar#1{%
6102       \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
6103     }%
6104     \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
6105       \MakeUppercase#1%
6106     }%
6107     \DeclareRobustCommand*\Ref}{%
6108       \@ifstar\@Refstar\HyRef@Ref
6109     }%
6110     \def\HyRef@Ref#1{%
6111       \hyperref[#{1}]{\Ref*{#1}}%
6112     }%
6113     \def\Vr@f#1{%
6114       \leavevmode\unskip\vref@space
6115       \hyperref[#{1}]{%

```



```

6116         \Ref*{#1}%
6117         \let\vref@space\nobreakspace
6118         \@vpageref[\unskip]{#1}%
6119     }%
6120 }%
6121 \def\vr@f#1{%
6122     \leavevmode\unskip\vref@space
6123     \begingroup
6124         \let\T@pageref\@pagerefstar
6125         \hyperref[{#1}] {%
6126             \ref*{#1}%
6127             \vpageref[\unskip]{#1}%
6128         }%
6129     \endgroup
6130 }%
6131 }{}%
6132 }
6133 \DeclareRobustCommand*\autopageref{%
6134     \@ifstar{%
6135         \HyRef@autopagerefname\pageref*%
6136     }\HyRef@autopageref
6137 }
6138 \def\HyRef@autopageref#1{%
6139     \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
6140 }
6141 \def\HyRef@autopagerefname{%
6142     \@ifundefined{pageautorefname}{%
6143         \@ifundefined{pagename}{%
6144             \Hy@Warning{No autoref name for ‘page’}%
6145         }{%
6146             \pagename\nobreakspace
6147         }%
6148     }{%
6149         \pageautorefname\nobreakspace
6150     }%
6151 }
6152 \DeclareRobustCommand*\autoref{%
6153     \@ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@{link}}%
6154 }
6155 \def\HyRef@autoref#1#2{%
6156     \begingroup
6157         \Hy@safe@activetrue
6158         \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
6159     \endgroup
6160 }
6161 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
6162     \HyRef@ShowKeysRef{#2}%
6163     \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
6164         \edef\HyRef@thisref{%
6165             \expandafter\@fourthoffive#1\@empty\@empty\@empty
6166         }%
6167         \expandafter\HyRef@testreftype\HyRef@thisref.\@%
6168         \Hy@safe@activesfalse
6169         #3{%
6170             \expandafter\@fifthoffive#1\@empty\@empty\@empty
6171         }{%
6172             \expandafter\@fourthoffive#1\@empty\@empty\@empty

```

```

6173   }{%
6174     \HyRef@currentHtag
6175     \expandafter\@firstoffive#1\@empty\@empty\@empty
6176     \null
6177   }%
6178 \else
6179   \protect\G@refundefinedtrue
6180   \nfss@text{\reset@font\bfseries ??}%
6181   \@latex@warning{%
6182     Reference ‘#2’ on page \thepage\space undefined%
6183   }%
6184 \fi
6185 }
6186 \def\HyRef@testreftype#1.#2\{%
6187   \@ifundefined{#1autorefname}{%
6188     \@ifundefined{#1name}{%
6189       \HyRef@StripStar#1\*\@nil{#1}%
6190       \@ifundefined{\HyRef@name autorefname}{%
6191         \@ifundefined{\HyRef@name name}{%
6192           \def\HyRef@currentHtag{%
6193             \Hy@Warning{No autoref name for ‘#1’}%
6194           }{%
6195             \edef\HyRef@currentHtag{%
6196               \expandafter\noexpand\csname\HyRef@name name\endcsname
6197               \noexpand~%
6198             }%
6199           }%
6200         }{%
6201           \edef\HyRef@currentHtag{%
6202             \expandafter\noexpand\csname\HyRef@name autorefname\endcsname
6203             \noexpand~%
6204           }%
6205         }%
6206       }{%
6207         \edef\HyRef@currentHtag{%
6208           \expandafter\noexpand\csname#1name\endcsname
6209           \noexpand~%
6210         }%
6211       }%
6212     }{%
6213       \edef\HyRef@currentHtag{%
6214         \expandafter\noexpand\csname#1autorefname\endcsname
6215         \noexpand~%
6216       }%
6217     }%
6218 }
6219 \def\HyRef@StripStar#1*\@#2\@nil#3{%
6220   \def\HyRef@name{#2}%
6221   \ifx\HyRef@name\HyRef@CaseStar
6222     \def\HyRef@name{#1}%
6223   \else
6224     \def\HyRef@name{#3}%
6225   \fi
6226 }
6227 \def\HyRef@CaseStar{*\\}
6228 \def\HyRef@currentHtag{}

```

Support for package showkeys.

`\HyRef@ShowKeysRef`

```
6229 \let\HyRef@ShowKeysRef\@gobble
6230 \def\HyRef@ShowKeysInit{%
6231   \begingroup\expandafter\expandafter\expandafter\endgroup
6232   \expandafter\ifx\csname SK@@label\endcsname\relax
6233   \else
6234     \ifx\SK@ref\@empty
6235     \else
6236       \def\HyRef@ShowKeysRef{%
6237         \SK@\SK@@ref
6238       }%
6239     \fi
6240   \fi
6241 }
6242 \@ifpackageloaded{showkeys}{%
6243   \HyRef@ShowKeysInit
6244 }{%
6245   \AtBeginDocument{%
6246     \@ifpackageloaded{showkeys}{%
6247       \HyRef@ShowKeysInit
6248     }{}%
6249   }%
6250 }
```

Defaults for the names that `\autoref` uses.

```
6251 \providecommand*{\AMSautorefname}{\equationautorefname}
6252 \providecommand*{\Hfootnoteautorefname}{\footnoteautorefname}
6253 \providecommand*{\Itemautorefname}{\itemautorefname}
6254 \providecommand*{\itemautorefname}{item}
6255 \providecommand*{\equationautorefname}{Equation}
6256 \providecommand*{\footnoteautorefname}{footnote}
6257 \providecommand*{\itemautorefname}{item}
6258 \providecommand*{\figureautorefname}{Figure}
6259 \providecommand*{\tableautorefname}{Table}
6260 \providecommand*{\partautorefname}{Part}
6261 \providecommand*{\appendixautorefname}{Appendix}
6262 \providecommand*{\chapterautorefname}{chapter}
6263 \providecommand*{\sectionautorefname}{section}
6264 \providecommand*{\subsectionautorefname}{subsection}
6265 \providecommand*{\subsubsectionautorefname}{subsubsection}
6266 \providecommand*{\paragraphautorefname}{paragraph}
6267 \providecommand*{\subparagraphautorefname}{subparagraph}
6268 \providecommand*{\FancyVerbLineautorefname}{line}
6269 \providecommand*{\theoremautorefname}{Theorem}
6270 \providecommand*{\pageautorefname}{page}
6271 </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><sub>E</sub>X offers `\pdfescapestring`.

```

6272 <*pdfTeX | dvipdfm | vTeX | pdfmarkbase | dviwindo>
6273 \RequirePackage{pdfTeXcmds}[2007/11/11]
6274 \begingroup\expandafter\expandafter\expandafter\endgroup
6275 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
6276   \begingroup
6277     \catcode'\| =0 %
6278     \@makeother\| %
6279     |@firstofone{|endgroup
6280     |def|Hy@pstringdef#1#2{%
6281       |begingroup
6282         |edef~{|string~}%
6283         |xdef|Hy@gtemp{#2}%
6284         |endgroup
6285         |let#1|Hy@gtemp
6286         |@onelevel@sanitize#1%
6287         |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
6288         |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
6289         |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
6290       }%
6291       |def|Hy@ExchangeBackslash#1\#2|@nil{%
6292         #1%
6293         |ifx|\#2\| %
6294         |else
6295           \| %
6296           |Hy@ReturnAfterFi{%
6297             |Hy@ExchangeBackslash#2|@nil
6298           }%
6299         |fi
6300       }%
6301     }%
6302   \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
6303     #1%
6304     \ifx\#2\| %
6305     \else
6306       \@backslashchar(%
6307       \Hy@ReturnAfterFi{%
6308         \Hy@ExchangeLeftParenthesis#2\@nil
6309       }%
6310     \fi
6311   }%
6312   \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
6313     #1%
6314     \ifx\#2\| %
6315     \else
6316       \@backslashchar)%
6317       \Hy@ReturnAfterFi{%
6318         \Hy@ExchangeRightParenthesis#2\@nil
6319       }%
6320     \fi
6321   }%
6322 \else
6323   \def\Hy@pstringdef#1#2{%
6324     \begingroup
6325     \edef~{\string~}%

```

```

6326      \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
6327      \endgroup
6328      \let#1\Hy@gtemp
6329  }%
6330 \fi
6331 </pdfTeX | dvipdfm | vtex | pdfmarkbase | dviwindo>

```

## 46.2 pdfTeX

```

6332 < *pdfTeX>

```

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

```

6333 \let\Hy@pdfminorversion\relax
6334 \begingroup\expandafter\expandafter\expandafter\endgroup
6335 \expandafter\ifx\csname pdfminorversion\endcsname\relax
6336   \begingroup\expandafter\expandafter\expandafter\endgroup
6337   \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
6338     \else
6339       \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
6340     \fi
6341   \else
6342     \def\Hy@pdfminorversion{\pdfminorversion}%
6343   \fi
6344   \@ifundefined{Hy@pdfminorversion}{%
6345     \PackageInfo{hyperref}{%
6346       PDF version is not set, because pdfTeX is too old (<1.10a)%
6347     }%
6348   }{%
6349     \ifHy@setpdfversion
6350       \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
6351     \else
6352       \Hy@pdfminorversion=\Hy@pdfversion\relax
6353     \fi
6354     \PackageInfo{hyperref}{%
6355       \expandafter\string\Hy@pdfminorversion
6356       :=\number\Hy@pdfversion\space
6357     }%
6358   \fi
6359   \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
6360   \Hy@DisableOption{pdfversion}%
6361 }

```

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

```

6362 \def\setpdflinkmargin#1{\pdflinkmargin#1}
6363 \ifx\pdfstartlink\@undefined% less than version 14
6364   \let\pdfstartlink\pdfannotlink
6365   \let\pdflinkmargin\@tempdima
6366   \let\pdfxform\pdfform
6367   \let\pdflastxform\pdflastform
6368   \let\pdfrefxform\pdfrefform
6369 \else

```

```
6370 \pdfmargin1pt %
6371 \fi
```

First set up the default linking

```
6372 \providecommand*\pdfview{XYZ}
```

First define the anchors:

```
6373 \def\new@pdflink#1{%
6374   \ifHy@verbose
6375     \typeout{pdftex: define anchor at line \the\inputlineno: #1}%
6376   \fi
6377   \Hy@SaveLastskip
6378   \Hy@pstringdef\Hy@pstringDest{#1}%
6379   \Hy@DestName\Hy@pstringDest\pdfview
6380   \Hy@RestoreLastskip
6381 }
6382 \let\pdf@endanchor\empty
```

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

```
6383 \def\Hy@DestName#1#2{%
6384   \pdfdest name{#1}#2\relax
6385 }
```

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.

```
6386 \providecommand*\pdfborder{0 0 1}
6387 \providecommand*\pdfborderstyle{}
6388 \def\Hy@undefinedname{UNDEFINED}
6389 \def\find@pdflink#1#2{%
6390   \leavevmode
6391   \protected@edef\Hy@testname{#2}%
6392   \ifx\Hy@testname\empty
6393     \let\Hy@testname\Hy@undefinedname
6394   \else
6395     \Hy@pstringdef\Hy@testname\Hy@testname
6396   \fi
6397   \Hy@StartlinkName{%
6398     \Hy@setpdfborder
6399     \ifx\pdfhighlight\empty
6400     \else
6401       /H\pdfhighlight
6402     \fi
6403     \ifx\CurrentBorderColor\relax
6404     \else
6405       /C[\CurrentBorderColor]%
6406     \fi
6407   }\Hy@testname
6408   \expandafter\Hy@colorlink\csname @#1color\endcsname
6409 }
6410 \def\Hy@StartlinkName#1#2{%
6411   \pdfstartlink attr{#1}goto name{#2}\relax
6412 }
6413 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
6414 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
6415 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
```

```

6416 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
6417 \def\hyper@linkstart#1#2{%
6418   \@ifundefined{#@1bordercolor}{%
6419     \let\CurrentBorderColor\relax
6420   }{%
6421     \edef\CurrentBorderColor{\csname @1bordercolor\endcsname}%
6422   }%
6423   \find@pdflink{#1}{#2}%
6424 }
6425 \def\hyper@linkend{\close@pdflink}
6426 \def\hyper@link#1#2#3{%
6427   \@ifundefined{#@1bordercolor}{%
6428     \let\CurrentBorderColor\relax
6429   }{%
6430     \edef\CurrentBorderColor{\csname @1bordercolor\endcsname}%
6431   }%
6432   \find@pdflink{#1}{#2}#3\close@pdflink
6433 }
6434 \let\CurrentBorderColor\@linkbordercolor
6435 \def\hyper@linkurl#1#2{%
6436   \begin{group}
6437     \Hy@pstringdef\Hy@pstringURI{#2}%
6438     \hyper@chars
6439     \leavevmode
6440     \pdfstartlink
6441       attr{%
6442         \Hy@setpdfborder
6443         \ifx\@pdfhighlight\@empty
6444         \else
6445           /H\@pdfhighlight
6446         \fi
6447         \ifx\@urlbordercolor\relax
6448         \else
6449           /C[\@urlbordercolor]%
6450         \fi
6451       }%
6452     user{%
6453       /Subtype/Link%
6454       /A<<%
6455         /Type/Action%
6456         /S/URI%
6457         /URI(\Hy@pstringURI)%
6458       >>%
6459     }%
6460     \relax
6461     \Hy@colorlink\@urlcolor#1%
6462     \close@pdflink
6463   \end{group}
6464 }
6465 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
6466   \begin{group}
6467     \Hy@pstringdef\Hy@pstringF{#2}%
6468     \Hy@pstringdef\Hy@pstringD{#3}%
6469     \leavevmode
6470     \pdfstartlink
6471       attr{%
6472         \Hy@setpdfborder

```

```

6473      \ifx\@pdfhighlight\@empty
6474      \else
6475        /H\@pdfhighlight
6476      \fi
6477      \ifx\@filebordercolor\relax
6478      \else
6479        /C[\@filebordercolor]%
6480      \fi
6481    }%
6482    user {%
6483      /Subtype/Link%
6484      /A<%
6485        /F(\Hy@pstringF)%
6486        /S/GoToR%
6487        \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}

```

```

6488      \ifx\#3\%
6489        /D[0 \@pdfstartview]%
6490      \else
6491        /D(\Hy@pstringD)%
6492      \fi
6493    >>%
6494  }%
6495  \relax
6496  \Hy@colorlink\@filecolor#1%
6497  \close@pdflink
6498  \endgroup
6499 }
6500 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
6501  \begingroup
6502    \Hy@pstringdef\Hy@pstringF{#1}%
6503    \Hy@pstringdef\Hy@pstringP{#3}%
6504    \leavevmode
6505    \pdfstartlink
6506    attr{%
6507      \Hy@setpdfborder
6508      \ifx\@pdfhighlight\@empty
6509      \else
6510        /H\@pdfhighlight
6511      \fi
6512      \ifx\@runbordercolor\relax
6513      \else
6514        /C[\@runbordercolor]%
6515      \fi
6516    }%
6517    user {%
6518      /Subtype/Link%

```



```

6519      /A<<%
6520      /F(\Hy@pstringF)%
6521      /S/Launch%
6522      \Hy@SetNewWindow
6523      \ifx\\#3\\%
6524      \else
6525      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
6526      \fi
6527      >>%
6528      }%
6529      \relax
6530      \Hy@colorlink\@runcolor#2%
6531      \close@pdflink
6532 \endgroup
6533 }

```

\@pdfproducer

```

6534 \ifx\@pdfproducer\relax
6535 \begingroup\expandafter\expandafter\expandafter\endgroup
6536 \expandafter\ifx\csname luatexversion\endcsname\relax
6537 \def\@pdfproducer{pdfTeX}%
6538 \ifx\eTeXversion\@undefined
6539 \else
6540 \ifx\eTeXversion\relax
6541 \else
6542 \ifnum\eTeXversion>0 %
6543 \def\@pdfproducer{pdfTeX}%
6544 \fi
6545 \fi
6546 \fi
6547 \ifx\pdftexversion\@undefined
6548 \else
6549 \ifnum\pdftexversion<100 %
6550 \edef\@pdfproducer{%
6551 \@pdfproducer
6552 \the\pdftexversion.\pdftexrevision
6553 }%
6554 \else
6555 \ifnum\pdftexversion<130 %
6556 \edef\@pdfproducer{%
6557 \@pdfproducer-%
6558 \expandafter\@car\the\pdftexversion\@empty\@nil.%
6559 \expandafter\@cdr\the\pdftexversion\@empty\@nil
6560 \pdftexrevision
6561 }%
6562 \else
6563 \ifnum\pdftexversion<140 %
6564 \else
6565 \def\@pdfproducer{pdfTeX}%
6566 \fi
6567 \edef\@pdfproducer{%
6568 \@pdfproducer-%
6569 \expandafter\@car\the\pdftexversion\@empty\@nil.%
6570 \expandafter\@cdr\the\pdftexversion\@empty\@nil.%
6571 \pdftexrevision
6572 }%
6573 \fi

```

```

6574     \fi
6575     \fi
6576   \else
6577     \begingroup
6578       \count@=\luatexversion
6579       \divide\count@ by 100 %
6580       \edef\x{\the\count@}%
6581       \count@=-\x\relax
6582       \multiply\count@ by 100 %
6583       \advance\count@ by \luatexversion
6584       \edef\x{\endgroup
6585         \def\noexpand\pdfproducer{%
6586           LuaTeX-x.\the\count@.\luatexrevision
6587         }%
6588       }%
6589     \x
6590   \fi
6591 \fi

```

\PDF@SetupDox

```

6592 \def\PDF@SetupDoc{%
6593   \ifx\pdfpagescrop\empty
6594   \else
6595     \edef\process@me{%
6596       \pdfpagesattr={%
6597         /CropBox[\pdfpagescrop]%
6598         \expandafter\ifx\expandafter\the\pdfpagesattr\%
6599         \else
6600           ^^J\the\pdfpagesattr
6601         \fi
6602       }%
6603     }%
6604     \process@me
6605   \fi
6606   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6607   \pdfcatalog{%
6608     /PageMode/\pdfpagemode
6609     \ifx\@baseurl\empty
6610     \else
6611       /URI<</Base(\Hy@pstringB)>>%
6612     \fi
6613   }%
6614   \ifx\pdfstartpage\empty
6615   \else
6616     \ifx\pdfstartview\empty
6617     \else
6618       openaction goto page\pdfstartpage{\pdfstartview}%
6619     \fi
6620   \fi
6621   \edef\Hy@temp{%
6622     \ifHy@toolbar\else /HideToolbar true\fi
6623     \ifHy@menubar\else /HideMenubar true\fi
6624     \ifHy>windowui\else /HideWindowUI true\fi
6625     \ifHy@fitwindow /FitWindow true\fi
6626     \ifHy@centerwindow /CenterWindow true\fi
6627     \ifHy@displaydoctitle /DisplayDocTitle true\fi
6628     \Hy@UseNameKey{NonFullScreenPageMode}\pdfnonfullscreenpagemode

```

```

6629 \Hy@UseNameKey{Direction}\@pdfdirection
6630 \Hy@UseNameKey{ViewArea}\@pdfviewarea
6631 \Hy@UseNameKey{ViewClip}\@pdfviewclip
6632 \Hy@UseNameKey{PrintArea}\@pdfprintarea
6633 \Hy@UseNameKey{PrintClip}\@pdfprintclip
6634 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6635 \Hy@UseNameKey{Duplex}\@pdfduplex
6636 \ifx\@pdfpicktraybypdfsize\@empty
6637 \else
6638 /PickTrayByPDFSize \@pdfpicktraybypdfsize
6639 \fi
6640 \ifx\@pdfprintpagerange\@empty
6641 \else
6642 /PrintPageRange[\@pdfprintpagerange]%
6643 \fi
6644 \ifx\@pdfnumcopies\@empty
6645 \else
6646 /NumCopies \@pdfnumcopies
6647 \fi
6648 }%
6649 \pdfcatalog{%
6650 \ifx\Hy@temp\@empty
6651 \else
6652 /ViewerPreferences<<\Hy@temp>>%
6653 \fi
6654 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
6655 \ifx\@pdflang\@empty
6656 \else
6657 /Lang(\@pdflang)%
6658 \fi
6659 }%
6660 }

```

\PDF@FinishDoc

```

6661 \def\PDF@FinishDoc{%
6662 \Hy@UseMaketitleInfos
6663 \pdfinfo{%
6664 /Author(\@pdfauthor)%
6665 /Title(\@pdftitle)%
6666 /Subject(\@pdfsubject)%
6667 /Creator(\@pdfcreator)%
6668 \ifx\@pdfcreationdate\@empty
6669 \else
6670 /CreationDate(\@pdfcreationdate)%
6671 \fi
6672 \ifx\@pdfmoddate\@empty
6673 \else
6674 /ModDate(\@pdfmoddate)%
6675 \fi
6676 \ifx\@pdfproducer\relax
6677 \else
6678 /Producer(\@pdfproducer)%
6679 \fi
6680 /Keywords(\@pdfkeywords)%
6681 }%
6682 \Hy@DisableOption{pdfauthor}%
6683 \Hy@DisableOption{pdftitle}%

```

```

6684 \Hy@DisableOption{pdfsubject}%
6685 \Hy@DisableOption{pdfcreator}%
6686 \Hy@DisableOption{pdfcreationdate}%
6687 \Hy@DisableOption{pdfmoddate}%
6688 \Hy@DisableOption{pdfproducer}%
6689 \Hy@DisableOption{pdfkeywords}%
6690 }

```

`\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`.

```

6691 \def\hyper@pagetransition{%
6692   \ifx\pdfpagetransition\relax
6693   \else
6694     \expandafter\Hy@RemoveTransPageAttr
6695     \the\pdfpageattr^^J/Trans{}>>\END
6696     \ifx\pdfpagetransition\empty
6697     \else
6698       \edef\@processme{%
6699         \global\pdfpageattr{%
6700           \the\pdfpageattr
6701             ^^J/Trans << /S /\pdfpagetransition\space >>%
6702         }%
6703       }%
6704       \@processme
6705     \fi
6706   \fi
6707 }

```

`\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.

```

6708 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
6709   \ifx\#2\%
6710     \global\pdfpageattr{#1}%
6711   \else
6712     \Hy@RemoveTransPageAttr#1#4\END
6713   \fi
6714 }

```

`\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`.

```

6715 \def\hyper@pageduration{%
6716   \ifx\pdfpageduration\relax
6717   \else
6718     \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
6719     \ifx\pdfpageduration\empty
6720     \else
6721       \edef\@processme{%
6722         \global\pdfpageattr{%
6723           \the\pdfpageattr
6724             ^^J/Dur \pdfpageduration\space
6725         }%
6726       }%
6727       \@processme

```

```

6728     \fi
6729     \fi
6730 }

```

`\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.

```

6731 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
6732   \ifx\#2\%
6733     \global\pdfpageattr{#1}%
6734   \else
6735     \Hy@RemoveDurPageAttr#1#4\END
6736   \fi
6737 }

```

`\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).

```

6738 \def\hyper@pagehidden{%
6739   \ifHy@useHidKey
6740     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
6741   \ifHy@pdfpagehidden
6742     \edef\@processme{%
6743       \global\pdfpageattr{%
6744         \the\pdfpageattr
6745         ^^J/Hid true % SPACE
6746       }%
6747     }%
6748     \@processme
6749   \fi
6750 \fi
6751 }

```

`\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.

```

6752 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
6753   \ifx\#2\%
6754     \global\pdfpageattr{#1}%
6755   \else
6756     \Hy@RemoveHidPageAttr#1#4\END
6757   \fi
6758 }

```

```

6759 \g@addto@macro\Hy@EveryPageHook{%
6760   \hyper@pagetransition
6761   \hyper@pageduration
6762   \hyper@pagehidden
6763 }

```

Let us explicitly turn on PDF generation; they can reverse this decision in the document, but since we are emitting PDF links anyway, we *must* be in PDF mode.

```

6764 \pdfoutput=1
6765 \pdfcompresslevel=9
6766 \AtBeginDocument{%

```

```

6767 \ifHy@setpagesize
6768   \expandafter\@firstofone
6769 \else
6770   \expandafter\@gobble
6771 \fi
6772 {%
6773   \@ifclassloaded{seminar}{%
6774     \setlength{\pdfhorigin}{1truein}%
6775     \setlength{\pdfvorigin}{1truein}%
6776     \ifportrait
6777       \ifdim\paperwidth=\z@
6778       \else
6779         \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
6780       \fi
6781       \ifdim\paperheight=\z@
6782       \else
6783         \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
6784       \fi
6785     \else
6786       \ifdim\paperheight=\z@
6787       \else
6788         \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
6789       \fi
6790       \ifdim\paperwidth=\z@
6791       \else
6792         \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
6793       \fi
6794     \fi
6795   }{%
6796     \@ifundefined{stockwidth}{%
6797       \ifdim\paperwidth=\z@
6798       \else
6799         \setlength{\pdfpagewidth}{\paperwidth}%
6800       \fi
6801       \ifdim\paperheight=\z@
6802       \else
6803         \setlength{\pdfpageheight}{\paperheight}%
6804       \fi
6805     }{%
6806       \ifdim\stockwidth=\z@
6807       \else
6808         \setlength{\pdfpagewidth}{\stockwidth}%
6809       \fi
6810       \ifdim\stockheight=\z@
6811       \else
6812         \setlength{\pdfpageheight}{\stockheight}%
6813       \fi
6814     }%
6815   }%
6816 }%
6817 \Hy@DisableOption{setpagesize}%
6818 }
6819 \def\Acrobatmenu#1#2{%
6820   \leavevmode
6821   \pdfstartlink
6822   attr{%
6823     \Hy@setpdfborder

```

```

6824     \ifx\@pdfhighlight\@empty
6825     \else
6826         /H\@pdfhighlight
6827     \fi
6828     \ifx\@menubordercolor\relax
6829     \else
6830         /C[\@menubordercolor]%
6831     \fi
6832 }%
6833 user{%
6834     /Subtype/Link%
6835     /A<<%
6836         /S/Named/N/#1%
6837     >>%
6838 }%
6839 \relax
6840 \Hy@colorlink\@menucolor#2\close@pdflink
6841 }
6842 </pdftex>
6843 <*hypertex>

```

### 46.3 hypertex

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

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

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

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

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

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

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

The *href* and *name* commands must be paired with an *end* command later in the T<sub>E</sub>X file — the T<sub>E</sub>X commands between the two ends of a pair form an *anchor* in the document. In the case of an *href* command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by *href\_string*. The *anchor* associated with a name command represents a possible location to which other hypertext links may refer, either as local references (of the form `href="#name_string"` with the *name\_string* identical to the one in the name command) or as part of a URL (of the form `URL#name_string`). Here *href\_string* is a valid URL or local identifier, while *name\_string* could be any string at all: the only caveat is that ‘`"`’ characters should be escaped with a backslash (`\`), and if it looks like a URL name it may cause problems.

```

6844 \def\PDF@FinishDoc{}
6845 \def\PDF@SetupDoc{%

```

```

6846 \ifx\@baseurl\@empty
6847 \else
6848   \special{html:<base href="\@baseurl">}%
6849 \fi
6850 }
6851 \def\hyper@anchor#1{%
6852   \Hy@SaveLastskip
6853   \begingroup
6854     \let\protect=\string
6855     \hyper@chars
6856     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
6857   \endgroup
6858   \Hy@activeanchortrue
6859   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6860   \special{html:</a>}%
6861   \Hy@activeanchorfalse
6862   \Hy@RestoreLastskip
6863 }
6864 \def\hyper@anchorstart#1{%
6865   \Hy@SaveLastskip
6866   \begingroup
6867     \hyper@chars
6868     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
6869   \endgroup
6870   \Hy@activeanchortrue
6871 }
6872 \def\hyper@anchorend{%
6873   \special{html:</a>}%
6874   \Hy@activeanchorfalse
6875   \Hy@RestoreLastskip
6876 }
6877 \def\@urltype{url}
6878 \def\hyper@linkstart#1#2{%
6879   \expandafter\Hy@colorlink\csname @#1color\endcsname
6880   \def\Hy@tempa{#1}%
6881   \ifx\Hy@tempa\@urltype
6882     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
6883   \else
6884     \begingroup
6885       \hyper@chars
6886       \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
6887     \endgroup
6888   \fi
6889 }
6890 \def\hyper@linkend{%
6891   \special{html:</a>}%
6892   \Hy@endcolorlink
6893 }
6894 \def\hyper@linkfile#1#2#3{%
6895   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
6896 }
6897 \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.

```

6898 \leavevmode
6899 \ifHy@raiselinks

```



```

6900 \setbox\@tempboxa=\color@hbox #1\color@endbox
6901 \@linkdim\dp\@tempboxa
6902 \lower\@linkdim\hbox{%
6903   \hyper@chars
6904   \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
6905 }%
6906 \Hy@colorlink\@urlcolor#1%
6907 \@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).

```

6908 \advance\@linkdim by -6.5\p@
6909 \raise\@linkdim\hbox{\special{html:</a>}}%
6910 \Hy@endcolorlink
6911 \else
6912 \begingroup
6913 \hyper@chars
6914 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
6915 \Hy@colorlink\@urlcolor#1%
6916 \special{html:</a>}}%
6917 \Hy@endcolorlink
6918 \endgroup
6919 \fi
6920 }
6921 \def\hyper@link#1#2#3{%
6922 \hyper@linkurl{#3}{\##2}%
6923 }
6924 \def\hyper@image#1#2{%
6925 \begingroup
6926 \hyper@chars
6927 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
6928 \endgroup
6929 }
6930 </hypertex>
6931 <*dviwindo>

```

## 46.4 dviwindo

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

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

```

6932 \providecommand*{\wwwbrowser}{c:\string\netscape\string\netscape}
6933 \def\hyper@anchor#1{%
6934 \Hy@SaveLastskip
6935 \begingroup
6936 \let\protect=\string
6937 \special{mark: #1}%
6938 \endgroup

```

```

6939 \Hy@activeanchortrue
6940 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6941 \Hy@activeanchorfalse
6942 \Hy@RestoreLastskip
6943 }
6944 \def\hyper@anchorstart#1{%
6945 \Hy@SaveLastskip
6946 \special{mark: #1}%
6947 \Hy@activeanchortrue
6948 }
6949 \def\hyper@anchorend{%
6950 \Hy@activeanchorfalse
6951 \Hy@RestoreLastskip
6952 }
6953 \def\hyper@linkstart#1#2{%
6954 \expandafter\Hy@colorlink\csname @#1color\endcsname
6955 \special{button: %
6956 10000000 %
6957 \number\baselineskip\space
6958 #2%
6959 }%
6960 }
6961 \def\hyper@linkend{%
6962 \Hy@endcolorlink
6963 }
6964 \def\hyper@link#1#2#3{%
6965 \setbox\@tempboxa=\color@hbox #3\color@endbox
6966 \leavevmode
6967 \ifHy@raiselinks
6968 \@linkdim\dp\@tempboxa
6969 \lower\@linkdim\hbox{%
6970 \special{button: %
6971 \number\wd\@tempboxa\space
6972 \number\ht\@tempboxa\space
6973 #2%
6974 }%
6975 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
6976 \Hy@endcolorlink
6977 }%
6978 \@linkdim\ht\@tempboxa
6979 \advance\@linkdim by -6.5\p@
6980 \raise\@linkdim\hbox{}}%
6981 \else
6982 \special{button: %
6983 \number\wd\@tempboxa\space
6984 \number\ht\@tempboxa\space
6985 #2%
6986 }%
6987 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
6988 \Hy@endcolorlink
6989 \fi
6990 }
6991 \def\hyper@linkurl#1#2{%
6992 \begingroup
6993 \hyper@chars
6994 \leavevmode
6995 \setbox\@tempboxa=\color@hbox #1\color@endbox

```

```

6996 \ifHy@raiselinks
6997 \@linkdim\dp\@tempboxa
6998 \lower\@linkdim\hbox{%
6999 \special{button: %
7000 \number\wd\@tempboxa\space
7001 \number\ht\@tempboxa\space
7002 launch: \wwwbrowser\space
7003 #2%
7004 }%
7005 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7006 }%
7007 \@linkdim\ht\@tempboxa
7008 \advance\@linkdim by -6.5\p@
7009 \raise\@linkdim\hbox{}}%
7010 \else
7011 \special{button: %
7012 \number\wd\@tempboxa\space
7013 \number\ht\@tempboxa\space
7014 launch: \wwwbrowser\space
7015 #2%
7016 }%
7017 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7018 \fi
7019 \endgroup
7020 }
7021 \def\hyper@linkfile#1#2#3{%
7022 \begingroup
7023 \hyper@chars
7024 \leavevmode
7025 \setbox\@tempboxa=\color@hbox #1\color@endbox
7026 \ifHy@raiselinks
7027 \@linkdim\dp\@tempboxa
7028 \lower\@linkdim\hbox{%
7029 \special{button: %
7030 \number\wd\@tempboxa\space
7031 \number\ht\@tempboxa\space
7032 #3,%
7033 file: #2%
7034 }%
7035 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7036 }%
7037 \@linkdim\ht\@tempboxa
7038 \advance\@linkdim by -6.5\p@
7039 \raise\@linkdim\hbox{}}%
7040 \else
7041 \special{button: %
7042 \number\wd\@tempboxa\space
7043 \number\ht\@tempboxa\space
7044 #3,%
7045 file: #2%
7046 }%
7047 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7048 \fi
7049 \endgroup
7050 }
7051 \ifx\@pdfproducer\relax
7052 \def\@pdfproducer{dviwindo + Distiller}%

```

```

7053 \fi
7054 \def\PDF@FinishDoc{%
7055   \Hy@UseMaketitleInfos
7056   \special{PDF: Keywords \@pdfkeywords}%
7057   \special{PDF: Title \@pdftitle}%
7058   \special{PDF: Creator \@pdfcreator}%
7059   \ifx\@pdfcreationdate\@empty
7060   \else
7061     \special{PDF: CreationDate \@pdfcreationdate}%
7062   \fi
7063   \ifx\@pdfmoddate\@empty
7064   \else
7065     \special{PDF: ModDate \@pdfmoddate}%
7066   \fi
7067   \special{PDF: Author \@pdfauthor}%
7068   \ifx\@pdfproducer\relax
7069   \else
7070     \special{PDF: Producer \@pdfproducer}%
7071   \fi
7072   \special{PDF: Subject \@pdfsubject}%
7073   \Hy@DisableOption{pdfauthor}%
7074   \Hy@DisableOption{pdftitle}%
7075   \Hy@DisableOption{pdfsubject}%
7076   \Hy@DisableOption{pdfcreator}%
7077   \Hy@DisableOption{pdfcreationdate}%
7078   \Hy@DisableOption{pdfmoddate}%
7079   \Hy@DisableOption{pdfproducer}%
7080   \Hy@DisableOption{pdfkeywords}%
7081 }
7082 \def\PDF@SetupDoc{%
7083   \ifx\@baseurl\@empty
7084   \else
7085     \special{PDF: Base \@baseurl}%
7086   \fi
7087   \ifx\@pdfpagescrop\@empty\else
7088     \special{PDF: BBox \@pdfpagescrop}%
7089   \fi
7090   \def\Hy@temp{%
7091     \ifx\@pdfstartpage\@empty
7092     \else
7093       \ifx\@pdfstartview\@empty
7094       \else
7095         \edef\Hy@temp{%
7096           ,Page=\@pdfstartpage
7097           ,View=\@pdfstartview
7098         }%
7099       \fi
7100     \fi
7101     \edef\Hy@temp{%
7102       \noexpand\pdfmark{%
7103         pdfmark=/DOCVIEW,%
7104         PageMode=/\@pdfpagemode
7105       }\Hy@temp
7106     }%
7107   }%
7108   \Hy@temp
7109   \ifx\@pdfpagescrop\@empty

```

```

7110 \else
7111   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7112 \fi
7113 \edef\Hy@temp{%
7114   \ifHy@toolbar\else /HideToolbar true\fi
7115   \ifHy@menubar\else /HideMenubar true\fi
7116   \ifHy@windowui\else /HideWindowUI true\fi
7117   \ifHy@fitwindow /FitWindow true\fi
7118   \ifHy@centerwindow /CenterWindow true\fi
7119   \ifHy@displaydoctitle /DisplayDocTitle true\fi
7120   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7121   \Hy@UseNameKey{Direction}\@pdfdirection
7122   \Hy@UseNameKey{ViewArea}\@pdfviewarea
7123   \Hy@UseNameKey{ViewClip}\@pdfviewclip
7124   \Hy@UseNameKey{PrintArea}\@pdfprintarea
7125   \Hy@UseNameKey{PrintClip}\@pdfprintclip
7126   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7127   \Hy@UseNameKey{Duplex}\@pdfduplex
7128   \ifx\@pdfpicktraybypdfsize\@empty
7129   \else
7130     /PickTrayByPDFSize \@pdfpicktraybypdfsize
7131   \fi
7132   \ifx\@pdfprintpagerange\@empty
7133   \else
7134     /PrintPageRange[\@pdfprintpagerange]%
7135   \fi
7136   \ifx\@pdfnumcopies\@empty
7137   \else
7138     /NumCopies \@pdfnumcopies
7139   \fi
7140 }%
7141 \pdfmark{pdfmark=/PUT,%
7142   Raw={%
7143     \string{Catalog}\string}<<%
7144     \ifx\Hy@temp\@empty
7145     \else
7146       /ViewerPreferences<<\Hy@temp>>%
7147     \fi
7148     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7149     \ifx\@pdflang\@empty
7150     \else
7151       /Lang(\@pdflang)%
7152     \fi
7153   >>%
7154 }%
7155 }%
7156 }
7157 </dviwindo>
7158 <*dvi pdfm>

```

## 46.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

7159 \newsavebox{\pdfm@box}
7160 \def\@pdfm@mark#1{\special{pdf:#1}}
7161 \def\@pdfm@dest#1{%
7162   \Hy@SaveLastskip

```

```

7163 \begingroup
7164   \Hy@pstringdef\Hy@pstringDest{#1}%
7165   \def\x{XYZ}%
7166   \ifx\x\@pdfview
7167     \def\x{XYZ @xpos @ypos null}%
7168   \else
7169     \def\x{FitH}%
7170     \ifx\x\@pdfview
7171       \def\x{FitH @ypos}%
7172     \else
7173       \def\x{FitBH}%
7174       \ifx\x\@pdfview
7175         \def\x{FitBH @ypos}%
7176       \else
7177         \def\x{FitV}%
7178         \ifx\x\@pdfview
7179           \def\x{FitV @xpos}%
7180         \else
7181           \def\x{FitBV}%
7182           \ifx\x\@pdfview
7183             \def\x{FitBV @xpos}%
7184           \else
7185             \def\x{Fit}%
7186             \ifx\x\@pdfview
7187               \let\x\@pdfview
7188             \else
7189               \def\x{FitB}%
7190               \ifx\x\@pdfview
7191                 \let\x\@pdfview
7192               \else
7193                 \def\x{FitR}%
7194                 \ifx\x\@pdfview
7195                   \Hy@Warning{'pdfview=FitR' is not supported}%
7196                   \def\x{XYZ @xpos @ypos null}%
7197                 \else
7198                   \@onelevel@sanitize\@pdfview
7199                   \Hy@Warning{Unknown value '\@pdfview' for pdfview}%
7200                   \def\x{XYZ @xpos @ypos null}%
7201                 \fi
7202               \fi
7203             \fi
7204           \fi
7205         \fi
7206       \fi
7207     \fi
7208   \fi
7209   \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
7210 \endgroup
7211 \Hy@RestoreLastskip
7212 }
7213 \providecommand*\@pdfview{XYZ}
7214 \providecommand*\@pdfborder{0 0 1}
7215 \providecommand*\@pdfborderstyle{}
7216 \def\hyper@anchor#1{%
7217   \@pdfm@dest{#1}%
7218 }
7219 \def\hyper@anchorstart#1{%

```

```

7220 \Hy@activeanchortrue
7221 \@pdfm@dest{#1}%
7222 }
7223 \def\hyper@anchorend{%
7224 \Hy@activeanchorfalse
7225 }
7226 \def\Hy@undefinedname{UNDEFINED}
7227 \def\hyper@linkstart#1#2{%
7228 \protected@edef\Hy@testname{#2}%
7229 \ifx\Hy@testname\@empty
7230 \let\Hy@testname\Hy@undefinedname
7231 \else
7232 \Hy@pstringdef\Hy@testname\Hy@testname
7233 \fi
7234 \@pdfm@mark{%
7235 bann<<%
7236 /Type/Annot%
7237 /Subtype/Link%
7238 \Hy@setpdfborder
7239 \expandafter\ifx\csname @#1bordercolor\endcsname\relax
7240 \else
7241 /C[\csname @#1bordercolor\endcsname]%
7242 \fi
7243 /A<<%
7244 /S/GoTo%
7245 /D(\Hy@testname)%
7246 >>%
7247 >>%
7248 }%
7249 \expandafter\Hy@colorlink\csname @#1color\endcsname
7250 }
7251 \def\hyper@linkend{%
7252 \Hy@endcolorlink
7253 \@pdfm@mark{eann}%
7254 }
7255 \def\hyper@link#1#2#3{%
7256 \hyper@linkstart{#1}{#2}#3\hyper@linkend
7257 }
7258 \def\hyper@linkfile#1#2#3{%
7259 \Hy@pstringdef\Hy@pstringF{#2}%
7260 \Hy@pstringdef\Hy@pstringD{#3}%
7261 \leavevmode
7262 \@pdfm@mark{%
7263 bann<<%
7264 /Type/Annot%
7265 /Subtype/Link%
7266 \Hy@setpdfborder
7267 \ifx\@filebordercolor\relax
7268 \else
7269 /C[\@filebordercolor]%
7270 \fi
7271 /A<<%
7272 /S/GoToR%
7273 /F(\Hy@pstringF)%
7274 /D\ifx\@#3\@0 \pdfstartview\else(\Hy@pstringD)\fi
7275 \Hy@SetNewWindow
7276 >>%

```

```

7277     >>%
7278 }%
7279 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7280 \@pdfm@mark{eann}%
7281 }
7282 \def\hyper@launch run:#1\#2#3{% filename, anchor text linkname
7283 \Hy@pstringdef\Hy@pstringF{#1}%
7284 \Hy@pstringdef\Hy@pstringP{#3}%
7285 \leavevmode
7286 \@pdfm@mark{%
7287     bann<<%
7288     /Type/Annot%
7289     /Subtype/Link%
7290     \Hy@setpdfborder
7291     \ifx\@runbordercolor\relax
7292     \else
7293     /C[\@runbordercolor]%
7294     \fi
7295     /A<<%
7296     /S/Launch%
7297     /F(\Hy@pstringF)%
7298     \Hy@SetNewWindow
7299     \ifx\#3\%
7300     \else
7301     /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
7302     \fi
7303     >>%
7304     >>%
7305 }%
7306 \Hy@colorlink\@runcolor#2\Hy@endcolorlink
7307 \@pdfm@mark{eann}%
7308 }
7309 \def\hyper@linkurl#1#2{%
7310 \Hy@pstringdef\Hy@pstringURI{#2}%
7311 \leavevmode
7312 \@pdfm@mark{%
7313     bann<<%
7314     /Type/Annot%
7315     /Subtype/Link%
7316     \Hy@setpdfborder
7317     \ifx\@urlbordercolor\relax
7318     \else
7319     /C[\@urlbordercolor]%
7320     \fi
7321     /A<<%
7322     /S/URI%
7323     /URI(\Hy@pstringURI)%
7324     >>%
7325     >>%
7326 }%
7327 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7328 \@pdfm@mark{eann}%
7329 }
7330 \def\Acrobatmenu#1#2{%
7331 \leavevmode
7332 \@pdfm@mark{%
7333     bann<<%

```



```

7334      /Type/Annot%
7335      /Subtype/Link%
7336      /A<<%
7337          /S/Named%
7338          /N/#1%
7339      >>%
7340      \Hy@setpdfborder
7341      \ifx\@menubordercolor\relax
7342      \relax
7343      /C[\@menubordercolor]%
7344      \fi
7345      >>%
7346  }%
7347  \Hy@colorlink\@menucolor#2\Hy@endcolorlink
7348  \@pdfm@mark{eann}%
7349 }
7350 \ifx\@pdfproducer\relax
7351 \def\@pdfproducer{dvipdfm}%

```

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

```

7352 \begingroup\expandafter\expandafter\expandafter\endgroup
7353 \expandafter\ifx\csname XeTeXversion\endcsname\relax
7354 \else
7355 \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
7356 \fi
7357 \fi
7358 \def\PDF@FinishDoc{%
7359 \Hy@UseMaketitleInfos
7360 \@pdfm@mark{%
7361 docinfo<<%
7362 /Title(\@pdftitle)%
7363 /Subject(\@pdfsubject)%
7364 /Creator(\@pdfcreator)%
7365 \ifx\@pdfcreationdate\@empty
7366 \else
7367 /CreationDate(\@pdfcreationdate)%
7368 \fi
7369 \ifx\@pdfmoddate\@empty
7370 \else
7371 /ModDate(\@pdfmoddate)%
7372 \fi
7373 /Author(\@pdfauthor)%
7374 \ifx\@pdfproducer\relax
7375 \else
7376 /Producer(\@pdfproducer)%
7377 \fi
7378 /Keywords(\@pdfkeywords)%
7379 >>%
7380 }%
7381 \Hy@DisableOption{pdfauthor}%
7382 \Hy@DisableOption{pdftitle}%
7383 \Hy@DisableOption{pdfsubject}%
7384 \Hy@DisableOption{pdfcreator}%
7385 \Hy@DisableOption{pdfcreationdate}%
7386 \Hy@DisableOption{pdfmoddate}%
7387 \Hy@DisableOption{pdfproducer}%
7388 \Hy@DisableOption{pdfkeywords}%
7389 }

```

```

7390 \def\PDF@SetupDoc{%
7391   \edef\Hy@temp{%
7392     \ifHy@toolbar\else /HideToolbar true\fi
7393     \ifHy@menubar\else /HideMenubar true\fi
7394     \ifHy@windowui\else /HideWindowUI true\fi
7395     \ifHy@fitwindow /FitWindow true\fi
7396     \ifHy@centerwindow /CenterWindow true\fi
7397     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7398     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7399     \Hy@UseNameKey{Direction}\@pdfdirection
7400     \Hy@UseNameKey{ViewArea}\@pdfviewarea
7401     \Hy@UseNameKey{ViewClip}\@pdfviewclip
7402     \Hy@UseNameKey{PrintArea}\@pdfprintarea
7403     \Hy@UseNameKey{PrintClip}\@pdfprintclip
7404     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7405     \Hy@UseNameKey{Duplex}\@pdfduplex
7406     \ifx\@pdfpicktraybypdfsize\@empty
7407     \else
7408       /PickTrayByPDFSize \@pdfpicktraybypdfsize
7409     \fi
7410     \ifx\@pdfprintpagerange\@empty
7411     \else
7412       /PrintPageRange[\@pdfprintpagerange]%
7413     \fi
7414     \ifx\@pdfnumcopies\@empty
7415     \else
7416       /NumCopies \@pdfnumcopies
7417     \fi
7418   }%
7419   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7420   \@pdfm@mark{%
7421     docview<<%
7422       \ifx\@pdfstartpage\@empty
7423       \else
7424         \ifx\@pdfstartview\@empty
7425         \else
7426           /OpenAction[@page\@pdfstartpage\@pdfstartview]%
7427         \fi
7428       \fi
7429       \ifx\@baseurl\@empty
7430       \else
7431         /URI<</Base(\Hy@pstringB)>>%
7432       \fi
7433       /PageMode/\@pdfpagemode
7434       \ifx\Hy@temp\@empty
7435       \else
7436         /ViewerPreferences<<\Hy@temp>>%
7437       \fi
7438       \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7439       \ifx\@pdflang\@empty
7440       \else
7441         /Lang(\@pdflang)%
7442       \fi
7443     >>%
7444   }%
7445   \ifx\@pdfpagescrop\@empty
7446   \else

```

```

7447 \pdfmark{put @pages <</CropBox[\pdfpagescrop]>>}%
7448 \fi
7449 }
7450 </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.

```

7451 <*vtexhtml>
7452 \RequirePackage{vtexhtml}
7453 \newif\if@Localurl
7454 \def\PDF@FinishDoc{}
7455 \def\PDF@SetupDoc{%
7456   \ifx\@baseurl\@empty
7457   \else
7458     \special{!direct <base href="\@baseurl">}%
7459   \fi
7460 }
7461 \def\@urltype{url}
7462 \def\hyper@link#1#2#3{%
7463   \leavevmode
7464   \special{!direct <a href=\hyper@quote\hyper@hash#2\hyper@quote>}%
7465   #3%
7466   \special{!direct </a>}%
7467 }
7468 \def\hyper@linkurl#1#2{%
7469   \begingroup
7470   \hyper@chars
7471   \leavevmode
7472   \MathBSuppress=1\relax
7473   \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
7474   #1%
7475   \MathBSuppress=0\relax
7476   \special{!direct </a>}%
7477   \endgroup
7478 }
7479 \def\hyper@linkfile#1#2#3{%
7480   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
7481 }
7482 \def\hyper@linkstart#1#2{%
7483   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
7484     \@Localurltrue
7485     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
7486   \else
7487     \@Localurlfalse
7488     \begingroup
7489     \hyper@chars
7490     \special{!aref #2}%
7491     \endgroup
7492   \fi
7493 }
7494 \def\hyper@linkend{%
7495   \if@Localurl
7496     \special{!endaref}%
7497   \else
7498     \special{!direct </a>}%

```

```

7499 \fi
7500 }
7501 \def\hyper@anchorstart#1{%
7502   \Hy@SaveLastskip
7503   \begingroup
7504     \hyper@chars
7505     \special{!aname #1}%
7506     \special{!direct <a name=\hyper@quote#1\hyper@quote>}%
7507   \endgroup
7508   \Hy@activeanchortrue
7509 }
7510 \def\hyper@anchorend{%
7511   \special{!direct </a>}%
7512   \Hy@activeanchorfalse
7513   \Hy@RestoreLastskip
7514 }
7515 \def\hyper@anchor#1{%
7516   \Hy@SaveLastskip
7517   \begingroup
7518     \let\protect=\string
7519     \hyper@chars
7520     \leavevmode
7521     \special{!aname #1}%
7522     \special{!direct <a name=\hyper@quote #1\hyper@quote>}%
7523   \endgroup
7524   \Hy@activeanchortrue
7525   \bgroup\anchor@spot\egroup
7526   \special{!direct </a>}%
7527   \Hy@activeanchorfalse
7528   \Hy@RestoreLastskip
7529 }
7530 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
7531 \def\@endForm{}
7532 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7533   \typeout{Sorry, TeXpider does not yet support FORM gauges}%
7534 }
7535 \def\@TextField[#1]#2{% parameters, label
7536   \typeout{Sorry, TeXpider does not yet support FORM text fields}%
7537 }
7538 \def\@CheckBox[#1]#2{% parameters, label
7539   \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
7540 }
7541 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7542   \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
7543 }
7544 \def\@PushButton[#1]#2{% parameters, label
7545   \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
7546 }
7547 \def\@Reset[#1]#2{%
7548   \typeout{Sorry, TeXpider does not yet support FORMs}%
7549 }
7550 \def\@Submit[#1]#2{%
7551   \typeout{Sorry, TeXpider does not yet support FORMs}%
7552 }
7553 </vtexhtml>
7554 <*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.

```

7555 \ifx\mediaheight\@undefined
7556 \else
7557   \ifx\mediaheight\relax
7558   \else
7559     \ifHy@setpagesize
7560       \providecommand*\VTexInitMediaSize{%
7561         \ifundefined{stockwidth}{%
7562           \ifdim\paperheight>0pt %
7563             \setlength\mediaheight\paperheight
7564           \fi
7565           \ifdim\paperheight>0pt %
7566             \setlength\mediawidth\paperwidth
7567           \fi
7568         }{%
7569           \ifdim\stockheight>0pt %
7570             \setlength\mediaheight\stockheight
7571           \fi
7572           \ifdim\stockwidth>0pt %
7573             \setlength\mediawidth\stockwidth
7574           \fi
7575         }%
7576       }%
7577     \AtBeginDocument{\VTexInitMediaSize}%
7578   \fi
7579   \Hy@DisableOption{setpagesize}%
7580 \fi
7581 \fi

```

Older versions of VTeX require xyz in lower case.

```

7582 \providecommand*\@pdfview{xyz}
7583 \providecommand*\@pdfborder{0 0 1}
7584 \providecommand*\@pdfborderstyle{}
7585 \let\CurrentBorderColor\@linkbordercolor
7586 \def\hyper@anchor#1{%
7587   \Hy@SaveLastskip
7588   \begingroup
7589     \let\protect=\string
7590     \hyper@chars
7591     \special{!aname #1;\@pdfview}%
7592   \endgroup
7593   \Hy@activeanchortrue
7594   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7595   \Hy@activeanchorfalse
7596   \Hy@RestoreLastskip
7597 }
7598 \def\hyper@anchorstart#1{%
7599   \Hy@SaveLastskip
7600   \begingroup
7601     \hyper@chars
7602     \special{!aname #1;\@pdfview}%
7603   \endgroup
7604   \Hy@activeanchortrue
7605 }
7606 \def\hyper@anchorend{%
7607   \Hy@activeanchorfalse

```

```

7608 \Hy@RestoreLastskip
7609 }
7610 \def\@urltype{url}
7611 \def\Hy@undefinedname{UNDEFINED}
7612 \def\hyper@linkstart#1#2{%
7613   \Hy@pstringdef\Hy@pstringURI{#2}%
7614   \expandafter\Hy@colorlink\csname @#1color\endcsname
7615   \@ifundefined{#@#1bordercolor}{%
7616     \let\CurrentBorderColor\relax
7617   }{%
7618     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
7619   }%
7620   \def\Hy@tempa{#1}%
7621   \ifx\Hy@tempa\@urltype
7622     \special{!%
7623       aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
7624       a=<%
7625         \Hy@setpdfborder
7626         \ifx\CurrentBorderColor\relax
7627         \else
7628           /C [\CurrentBorderColor]%
7629         \fi
7630       >%
7631     }%
7632   \else
7633     \protected@edef\Hy@testname{#2}%
7634     \ifx\Hy@testname\@empty
7635       \let\Hy@testname\Hy@undefinedname
7636     \fi
7637     \special{!%
7638       aref \Hy@testname;%
7639       a=<%
7640         \Hy@setpdfborder
7641         \ifx\CurrentBorderColor\relax
7642         \else
7643           /C [\CurrentBorderColor]%
7644         \fi
7645       >%
7646     }%
7647   \fi
7648 }
7649 \def\hyper@linkend{%
7650   \special{!endaref}%
7651   \Hy@endcolorlink
7652 }
7653 \def\hyper@linkfile#1#2#3{%
7654   \leavevmode
7655   \special{!%
7656     aref <%
7657     \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
7658     f=#2>#3;%
7659     a=<%
7660     \Hy@setpdfborder
7661     \ifx\@filebordercolor\relax
7662     \else
7663       /C [\@filebordercolor]%
7664     \fi

```

```

7665 >%
7666 }%
7667 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7668 \special{!endaref}%
7669 }
7670 \def\hyper@linkurl#1#2{%
7671 \begingroup
7672 \Hy@pstringdef\Hy@pstringURI{#2}%
7673 \hyper@chars
7674 \leavevmode
7675 \special{!%
7676   aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
7677   a=<%
7678     \Hy@setpdfborder
7679     \ifx\@urlbordercolor\relax
7680     \else
7681       /C [\@urlbordercolor]%
7682     \fi
7683   >%
7684   }%
7685   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7686   \special{!endaref}%
7687 \endgroup
7688 }
7689 \def\hyper@link#1#2#3{%
7690 \@ifundefined{#@1bordercolor}{%
7691 \let\CurrentBorderColor\relax
7692 }{%
7693 \edef\CurrentBorderColor{\csname #@1bordercolor\endcsname}%
7694 }%
7695 \leavevmode
7696 \protected@edef\Hy@testname{#2}%
7697 \ifx\Hy@testname\@empty
7698 \let\Hy@testname\Hy@undefinedname
7699 \fi
7700 \special{!%
7701   aref \Hy@testname;%
7702   a=<%
7703     \Hy@setpdfborder
7704     \ifx\CurrentBorderColor\relax
7705     \else
7706       /C [\CurrentBorderColor]%
7707     \fi
7708   >%
7709   }%
7710 \expandafter\Hy@colorlink\csname #@1color\endcsname#3\Hy@endcolorlink
7711 \special{!endaref}%
7712 }
7713 \def\hyper@image#1#2{%
7714 \hyper@linkurl{#2}{#1}%
7715 }
7716 \def\@hyper@launch run:#1\#2#3{%
7717 \Hy@pstringdef\Hy@pstringF{#1}%
7718 \Hy@pstringdef\Hy@pstringP{#3}%
7719 \leavevmode
7720 \special{!aref %
7721   <u=%

```

```

7722 /Type/Action%
7723 /S/Launch%
7724 /F(\Hy@pstringF)%
7725 \Hy@SetNewWindow
7726 \ifx\#3\\else /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>\fi%
7727 >%
7728 a=<%
7729 \Hy@setpdfborder
7730 \ifx\@runbordercolor\relax
7731 \else
7732 /C[\@runbordercolor]%
7733 \fi
7734 >%
7735 }%
7736 \Hy@colorlink\@runcolor#2\Hy@endcolorlink
7737 \special{!endaref}%
7738 }
7739 \def\Acrobatmenu#1#2{%
7740 \leavevmode
7741 \special{!%
7742 aref <u=/S /Named /N /#1>;%
7743 a=<%
7744 \Hy@setpdfborder
7745 \ifx\@menubordercolor\relax
7746 \else
7747 /C[\@menubordercolor]%
7748 \fi
7749 >%
7750 }%
7751 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
7752 \special{!endaref}%
7753 }

```

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*.

```

7754 \ifnum\Hy@VTeXversion<702 %
7755 \else
7756 \def\hyper@pagetransition{%
7757 \ifx\@pdfpagetransition\relax
7758 \else
7759 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

7760 \else
7761 \hvtex@parse@trans\@pdfpagetransition
7762 \fi
7763 \fi
7764 }%

```

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:

```

7765 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
7766 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
7767 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
7768 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
7769 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
7770 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
7771 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

7772 \def\hvtex@par@dimension{/Dm}%
7773 \def\hvtex@par@direction{/Di}%
7774 \def\hvtex@par@duration{/D}%
7775 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

7776 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}%

```

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

```

7777 \def\hvtex@gettoken@#1 #2\@nil{%
7778   \edef\hvtex@token{#1}%
7779   \edef\hvtex@buffer{#2}%
7780 }%
7781 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

7782 \let\hvtex@trans@code\@empty
7783 \let\hvtex@param@dimension\@empty
7784 \let\hvtex@param@direction\@empty
7785 \let\hvtex@param@duration\@empty
7786 \let\hvtex@param@motion\@empty
7787 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

7788 \hvtex@gettoken
7789 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

7790 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

7791 \else
7792 \hvtex@gettoken
7793 \fi
7794 \fi
7795 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```
7796 \hvtex@trans@params
7797 }%
```

Reentrant macro to parse optional parameters.

```
7798 \def\hvtex@trans@params{%
7799 \ifx\hvtex@buffer\@empty
7800 \else
7801 \hvtex@gettoken
7802 \let\hvtex@trans@par\hvtex@token
7803 \ifx\hvtex@buffer\@empty
7804 \else
7805 \hvtex@gettoken
7806 \ifx\hvtex@trans@par\hvtex@par@duration
```

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

```
7807 \let\hvtex@param@duration\hvtex@token
7808 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
7809 \expandafter\edef\expandafter\hvtex@param@motion
7810 \expandafter{\expandafter\@gobble\hvtex@token}%
7811 \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
7812 \expandafter\edef\expandafter\hvtex@param@dimension
7813 \expandafter{\expandafter\@gobble\hvtex@token}%
7814 \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).

```
7815 \let\hvtex@param@direction\hvtex@token
7816 \fi\fi\fi\fi
7817 \fi
7818 \fi
7819 \ifx\hvtex@buffer\@empty
7820 \let\next\hvtex@produce@trans
7821 \else
7822 \let\next\hvtex@trans@params
7823 \fi
7824 \next
7825 }%
```

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

```
7826 \def\hvtex@produce@trans{%
7827 \let\vtex@trans@special\@empty
7828 \if S\hvtex@trans@code
7829 \edef\vtex@trans@special{\hvtex@trans@code
7830 \hvtex@param@dimension\hvtex@param@motion}%
7831 \else\if B\hvtex@trans@code
7832 \edef\vtex@trans@special{%
7833 \hvtex@trans@code\hvtex@param@dimension
7834 }%
7835 \else\if X\hvtex@trans@code
7836 \edef\vtex@trans@special{%
7837 \hvtex@trans@code\hvtex@param@motion
7838 }%
7839 \else\if W\hvtex@trans@code
```

```

7840     \edef\vtex@trans@special{%
7841       \hvtex@trans@code\hvtex@param@direction
7842     }%
7843     \else\if D\hvtex@trans@code
7844       \let\vtex@trans@special\hvtex@trans@code
7845     \else\if R\hvtex@trans@code
7846       \let\vtex@trans@special\hvtex@trans@code
7847     \else\if G\hvtex@trans@code
7848       \edef\vtex@trans@special{%
7849         \hvtex@trans@code\hvtex@param@direction
7850       }%
7851     \fi\fi\fi\fi\fi\fi
7852     \ifx\vtex@trans@special\@empty
7853     \else
7854       \ifx\hvtex@param@duration\@empty
7855       \else
7856         \setlength{\dimen@}{\hvtex@param@duration\p}%

```

I'm not guilty of possible overflow.

```

7857       \multiply\dimen@\@m
7858       \edef\vtex@trans@special{%
7859         \vtex@trans@special,\strip@pt\dimen@
7860       }%
7861     \fi

```

And all the mess is just for this.

```

7862     \special{!trans \vtex@trans@special}%
7863     \fi
7864   }%
7865   \def\hyper@pageduration{%
7866     \ifx\@pdfpageduration\relax
7867     \else
7868       \ifx\@pdfpageduration\@empty
7869       \special{!duration-}%
7870     \else
7871       \special{!duration \@pdfpageduration}%
7872     \fi
7873   \fi
7874 }%
7875 \def\hyper@pagehidden{%
7876   \ifHy@useHidKey
7877   \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
7878   \fi
7879 }%
7880 \g@addto@macro\Hy@EveryPageBoxHook{%
7881   \hyper@pagetransition
7882   \hyper@pageduration
7883   \hyper@pagehidden
7884 }%
7885 \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

```

7886 \ifx\@pdfproducer\relax
7887 \def\@pdfproducer{VTeX}%
7888 \ifnum\Hy@VTeXversion>\z@
7889 \count@\VTeXversion
7890 \divide\count@ 100 %
7891 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
7892 \multiply\count@ -100 %
7893 \advance\count@\VTeXversion
7894 \edef\@pdfproducer{%
7895 \@pdfproducer
7896 .\ifnum\count@<10 0\fi\the\count@
7897 \ifx\VTeXOS\@undefined\else
7898 \ifnum\VTeXOS>0 %
7899 \ifnum\VTeXOS<6 %
7900 \space(
7901 \ifcase\VTeXOS
7902 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
7903 \fi
7904 )%
7905 \fi
7906 \fi
7907 \fi
7908 ,\space
7909 \ifnum\OpMode=\@ne PDF\else PS\fi
7910 \space backend%
7911 \ifx\gexmode\@undefined\else
7912 \ifnum\gexmode>\z@\space with GeX\fi
7913 \fi
7914 }%
7915 \fi
7916 \fi

```

Current !pdfinfo key syntax:

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

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

```

7917 \def\PDF@SetupDoc{%
7918 \ifx\@pdfpagescrop\@empty
7919 \else
7920 \special{!pdfinfo b=<\@pdfpagescrop>}%
7921 \fi

```

```

7922 \ifx\@pdfstartpage\@empty
7923 \else
7924 \ifx\@pdfstartview\@empty
7925 \else
7926 \special{!onopen Page\@pdfstartpage}%
7927 \fi
7928 \fi
7929 \special{!pdfinfo p=</\@pdfpagemode>}%
7930 \ifx\@baseurl\@empty
7931 \else
7932 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
7933 \fi
7934 \special{!pdfinfo v=<<<%
7935 \ifHy@toolbar\else /HideToolbar true\fi
7936 \ifHy@menubar\else /HideMenubar true\fi
7937 \ifHy@windowui\else /HideWindowUI true\fi
7938 \ifHy@fitwindow /FitWindow true\fi
7939 \ifHy@centerwindow /CenterWindow true\fi
7940 \ifHy@displaydoctitle /DisplayDocTitle true\fi
7941 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7942 \Hy@UseNameKey{Direction}\@pdfdirection
7943 \Hy@UseNameKey{ViewArea}\@pdfviewarea
7944 \Hy@UseNameKey{ViewClip}\@pdfviewclip
7945 \Hy@UseNameKey{PrintArea}\@pdfprintarea
7946 \Hy@UseNameKey{PrintClip}\@pdfprintclip
7947 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7948 \Hy@UseNameKey{Duplex}\@pdfduplex
7949 \ifx\@pdfpicktraybypdfsize\@empty
7950 \else
7951 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7952 \fi
7953 \ifx\@pdfprintpagerange\@empty
7954 \else
7955 /PrintPageRange[\@pdfprintpagerange]%
7956 \fi
7957 \ifx\@pdfnumcopies\@empty
7958 \else
7959 /NumCopies \@pdfnumcopies
7960 \fi
7961 >>>}%
7962 \ifx\@pdfpagelayout\@empty
7963 \else
7964 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
7965 \fi
7966 }%
7967 \def\PDF@FinishDoc{%
7968 \Hy@UseMaketitleInfos
7969 \special{!pdfinfo a=<\@pdfauthor>}%
7970 \special{!pdfinfo t=<\@pdftitle>}%
7971 \special{!pdfinfo s=<\@pdfsubject>}%
7972 \special{!pdfinfo c=<\@pdfcreator>}%
7973 \ifx\@pdfproducer\relax
7974 \else
7975 \special{!pdfinfo r=<\@pdfproducer>}%
7976 \fi
7977 \special{!pdfinfo k=<\@pdfkeywords>}%
7978 \Hy@DisableOption{pdfauthor}%

```

```

7979 \Hy@DisableOption{pdftitle}%
7980 \Hy@DisableOption{pdfsubject}%
7981 \Hy@DisableOption{pdfcreator}%
7982 \Hy@DisableOption{pdfcreationdate}%
7983 \Hy@DisableOption{pdfmoddate}%
7984 \Hy@DisableOption{pdfproducer}%
7985 \Hy@DisableOption{pdfkeywords}%
7986 }
7987 </vtex>

```

## 46.7 Fix for Adobe bug number 466320

If a destination occurs at the very begin of a page, the destination is moved to the previous page by Adobe Distiller 5. As workaround Adobe suggests:

```

/showpage {
  //showpage
  clippath stroke erasepage
} bind def

```

But unfortunately this fix generates an empty page at the end of the document. Therefore another fix is used by writing some clipped text.

```

7988 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
7989 <package>\providecommand*\Hy@DistillerDestFix{}
7990 <*pdfmark | dviwindo>
7991 \def\Hy@DistillerDestFix{%
7992   \begin{group}
7993     \let\x\literalps@out

```

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

```

7994   \ifnum \@ifundefined{OpMode}{0}{}%
7995   \@ifundefined{gexmode}{0}{%
7996     \ifnum\gexmode>0 \OpMode\else 0\fi
7997   }>1 %
7998   \def\x##1{%
7999     \immediate\special{!=##1}%
8000   }%
8001   \fi
8002   \x{%
8003     /product where{%
8004       pop %
8005       product(Distiller)search{%
8006         pop pop pop %
8007         version(.)search{%
8008           exch pop exch pop%
8009           (3011)eq{%
8010             gsave %
8011             newpath 0 0 moveto closepath clip%
8012             /Courier findfont 10 scalefont setfont %
8013             72 72 moveto(.)show %
8014             grestore%
8015           }if%
8016         }{pop}ifelse%
8017       }{pop}ifelse%
8018     }if%
8019   }%
8020   \endgroup

```

```

8021 }
8022 </pdfmark | dviwindo>

```

## 46.8 Direct pdfmark support (dvipdf and pdfmark)

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

```

```

8023 <*pdfmark | dvipdf>
8024 \def\hyper@anchor#1{%
8025   \Hy@SaveLastskip
8026   \begingroup
8027     \pdfmark[\anchor@spot]{%
8028       pdfmark=/DEST,%
8029       linktype=anchor,%
8030       View=/\@pdfview \@pdfviewparams,%
8031       DestAnchor={#1}%
8032     }%
8033   \endgroup
8034   \Hy@RestoreLastskip
8035 }
8036 <*dvipdf>
8037 \def\hyper@anchorstart#1{\Hy@activeanchortrue}
8038 \def\hyper@anchorend{\Hy@activeanchorfalse}
8039 \def\hyper@linkstart#1#2{%
8040   \expandafter\Hy@colorlink\csname @#1color\endcsname
8041   \xdef\hyper@currentanchor{#2}%
8042 }
8043 \def\hyper@linkend{%
8044   \Hy@endcolorlink
8045 }
8046 </dvipdf>
8047 <*pdfmark>
8048 \ifundefined{hyper@anchorstart}{\endinput}
8049 \def\hyper@anchorstart#1{%
8050   \Hy@SaveLastskip
8051   \literalps@out{H.S}%
8052   \xdef\hyper@currentanchor{#1}%
8053   \Hy@activeanchortrue
8054 }
8055 \def\hyper@anchorend{%
8056   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
8057   \pdfmark{%
8058     pdfmark=/DEST,%
8059     linktype=anchor,%
8060     View=/\@pdfview \@pdfviewparams,%
8061     DestAnchor=\hyper@currentanchor,%

```

```

8062 }%
8063 \Hy@activeanchorfalse
8064 \Hy@RestoreLastskip
8065 }
8066 \def\hyper@linkstart#1#2{%
8067   \ifHy@breaklinks
8068   \else
8069     \leavevmode\hbox\bgroup
8070     \fi
8071     \expandafter\Hy@colorlink\csname @#1color\endcsname
8072     \literalps@out{H.S}%
8073     \xdef\hyper@currentanchor{#2}%
8074     \gdef\hyper@currentlinktype{#1}%
8075 }
8076 \def\hyper@linkend{%
8077   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
8078   \@ifundefined{@\hyper@currentlinktype bordercolor}{%
8079     \let\Hy@tempcolor\relax
8080   }{%
8081     \edef\Hy@tempcolor{%
8082       \csname @\hyper@currentlinktype bordercolor\endcsname
8083     }%
8084   }%
8085   \pdfmark{%
8086     pdfmark=/ANN,%
8087     linktype=link,%
8088     Subtype=/Link,%
8089     Dest=\hyper@currentanchor,%
8090     AcroHighlight=\@pdfhighlight,%
8091     Border=\@pdfborder,%
8092     BorderStyle=\@pdfborderstyle,%
8093     Color=\Hy@tempcolor,%
8094     Raw=H.B%
8095   }%
8096   \Hy@endcolorlink
8097   \ifHy@breaklinks
8098   \else
8099     \egroup
8100   \fi
8101 }
8102 \langle*pdfmark\rangle

```

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.

```

8103 \beginpgroup
8104   \catcode'P=12 %
8105   \catcode'T=12 %
8106   \lowercase{\endpgroup}
8107   \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
8108 }
8109 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
8110 \langle/pdfmark\rangle

```

`\hyper@pagetransition`

```

8111 \def\hyper@pagetransition{%
8112   \ifx\@pdfpagetransition\relax

```



```

8113 \else
8114 \ifx\@pdfpagetransition\@empty
8115 % 1. Does an old entry have to be deleted?
8116 % 2. If 1=yes, how to delete?
8117 \else
8118 \pdfmark{%
8119 pdfmark=/PUT,%
8120 Raw={%
8121 \string{ThisPage\string}%
8122 <</Trans << /S /\@pdfpagetransition\space >> >>%
8123 }%
8124 }%
8125 \fi
8126 \fi
8127 }

```

\hyper@pageduration

```

8128 \def\hyper@pageduration{%
8129 \ifx\@pdfpageduration\relax
8130 \else
8131 \ifx\@pdfpageduration\@empty
8132 % 1. Does an old entry have to be deleted?
8133 % 2. If 1=yes, how to delete?
8134 \else
8135 \pdfmark{%
8136 pdfmark=/PUT,%
8137 Raw={%
8138 \string{ThisPage\string}%
8139 <</Dur \@pdfpageduration>>%
8140 }%
8141 }%
8142 \fi
8143 \fi
8144 }

```

\hyper@pagehidden

```

8145 \def\hyper@pagehidden{%
8146 \ifHy@useHidKey
8147 \pdfmark{%
8148 pdfmark=/PUT,%
8149 Raw={%
8150 \string{ThisPage\string}%
8151 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
8152 }%
8153 }%
8154 \fi
8155 }

8156 \g@addto@macro\Hy@EveryPageBoxHook{%
8157 \hyper@pagetransition
8158 \hyper@pageduration
8159 \hyper@pagehidden
8160 }

8161 </pdfmark>
8162 \def\hyper@image#1#2{%
8163 \hyper@linkurl{#2}{#1}%
8164 }

```

```

8165 \def\Hy@undefinedname{UNDEFINED}
8166 \def\hyper@link#1#2#3{%
8167   \@ifundefined{#1bordercolor}{%
8168     \let\Hy@tempcolor\relax
8169   }{%
8170     \edef\Hy@tempcolor{\csname #1bordercolor\endcsname}%
8171   }%
8172   \begingroup
8173     \protected@edef\Hy@testname{#2}%
8174     \ifx\Hy@testname\@empty
8175       \let\Hy@testname\Hy@undefinedname
8176     \fi
8177   \<dvipdf>
8178     \pdfmark[#{3}]{%
8179       pdfmark=/LNK,%
8180       {},{%
8181         linktype={#1},%
8182         AcroHighlight=\@pdfhighlight,%
8183         Border=\@pdfborder,%
8184         BorderStyle=\@pdfborderstyle,%
8185         Color=\Hy@tempcolor,%
8186         Dest=\Hy@testname
8187       }%
8188   \</dvipdf>
8189   \<pdfmarkbase>
8190     \pdfmark[#{3}]{%
8191       Color=\Hy@tempcolor,%
8192       linktype={#1},%
8193       AcroHighlight=\@pdfhighlight,%
8194       Border=\@pdfborder,%
8195       BorderStyle=\@pdfborderstyle,%
8196       pdfmark=/ANN,%
8197       Subtype=/Link,%
8198       Dest=\Hy@testname
8199     }%
8200   \</pdfmarkbase>
8201   \endgroup
8202 }
8203 \newtoks\pdf@docset
8204 \def\PDF@FinishDoc{%
8205   \Hy@UseMaketitleInfos
8206   \let\Hy@temp\@empty
8207   \ifx\@pdfcreationdate\@empty
8208   \else
8209     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
8210   \fi
8211   \ifx\@pdfmoddate\@empty
8212   \else
8213     \expandafter\def\expandafter\Hy@temp\expandafter{%
8214       \Hy@temp
8215       ModDate=\@pdfmoddate,%
8216     }%
8217   \fi
8218   \ifx\@pdfproducer\relax
8219   \else
8220     \expandafter\def\expandafter\Hy@temp\expandafter{%
8221       \Hy@temp

```

```

8222     Producer=\@pdfproducer,%
8223 }%
8224 \fi
8225 \expandafter
8226 \pdfmark\expandafter{%
8227   \Hy@temp
8228   pdfmark=/DOCINFO,%
8229   Title=\@pdftitle,%
8230   Subject=\@pdfsubject,%
8231   Creator=\@pdfcreator,%
8232   Author=\@pdfauthor,%
8233   Keywords=\@pdfkeywords
8234 }%
8235 \Hy@DisableOption{pdfauthor}%
8236 \Hy@DisableOption{pdftitle}%
8237 \Hy@DisableOption{pdfsubject}%
8238 \Hy@DisableOption{pdfcreator}%
8239 \Hy@DisableOption{pdfcreationdate}%
8240 \Hy@DisableOption{pdfmoddate}%
8241 \Hy@DisableOption{pdfproducer}%
8242 \Hy@DisableOption{pdfkeywords}%
8243 }
8244 \def\PDF@SetupDoc{%
8245   \def\Hy@temp{}%
8246   \ifx\@pdfstartpage\@empty
8247   \else
8248     \ifx\@pdfstartview\@empty
8249     \else
8250       \edef\Hy@temp{%
8251         ,Page=\@pdfstartpage
8252         ,View=\@pdfstartview
8253       }%
8254     \fi
8255   \fi
8256   \edef\Hy@temp{%
8257     \noexpand\pdfmark{%
8258       pdfmark=/DOCVIEW,%
8259       PageMode=/\@pdfpagemode
8260     }\Hy@temp
8261   }%
8262 }%
8263 \Hy@temp
8264 \ifx\@pdfpagescrop\@empty
8265 \else
8266   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
8267 \fi
8268 \edef\Hy@temp{%
8269   \ifHy@toolbar\else /HideToolbar true\fi
8270   \ifHy@menubar\else /HideMenubar true\fi
8271   \ifHy>windowui\else /HideWindowUI true\fi
8272   \ifHy@fitwindow /FitWindow true\fi
8273   \ifHy@centerwindow /CenterWindow true\fi
8274   \ifHy@displaydoctitle /DisplayDocTitle true\fi
8275   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8276   \Hy@UseNameKey{Direction}\@pdfdirection
8277   \Hy@UseNameKey{ViewArea}\@pdfviewarea
8278   \Hy@UseNameKey{ViewClip}\@pdfviewclip

```

```

8279 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8280 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8281 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8282 \Hy@UseNameKey{Duplex}\@pdfduplex
8283 \ifx\@pdfpicktraybypdfsize\@empty
8284 \else
8285 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8286 \fi
8287 \ifx\@pdfprintpagerange\@empty
8288 \else
8289 /PrintPageRange[\@pdfprintpagerange]%
8290 \fi
8291 \ifx\@pdfnumcopies\@empty
8292 \else
8293 /NumCopies \@pdfnumcopies
8294 \fi
8295 }%
8296 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8297 \pdfmark{%
8298 pdfmark=/PUT,%
8299 Raw={%
8300 \string{Catalog\string}<<%
8301 \ifx\Hy@temp\@empty
8302 \else
8303 /ViewerPreferences<<\Hy@temp>>%
8304 \fi
8305 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8306 \ifx\@pdflang\@empty
8307 \else
8308 /Lang(\@pdflang)%
8309 \fi
8310 \ifx\@baseurl\@empty
8311 \else
8312 /URI<</Base(\Hy@pstringB)>>%
8313 \fi
8314 >>%
8315 }%
8316 }%
8317 }
8318 </pdfmark | dvipdf>
8319 <*pdfmarkbase | dvipdf>

```

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.

```

8320 \newif\ifHy@pdfmarkerror
8321 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
8322 \def\pdfmark@[#1]#2{%
8323 \Hy@pdfmarkerrorfalse
8324 \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
8325 \@processme
8326 \let\pdf@type\relax
8327 \setkeys{PDF}{#2}%
8328 \ifHy@pdfmarkerror
8329 \else

```

```

8330 \ifx\pdf@type\relax
8331 \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
8332 \ifx\#1\%
8333 \else
8334 \pdf@rect{#1}%
8335 \fi
8336 \else
8337 \ifx\#1\%
8338 (*pdfmarkbase)
8339 \literalps@out{%
8340 [\the\pdf@toks\space\pdf@type\space pdfmark%
8341 ]%
8342 /pdfmarkbase)
8343 (dvipdf) \literalps@out{/ANN >>}%
8344 \else
8345 \ifundefined{@\pdf@linktype color}{%
8346 \Hy@colorlink\@linkcolor
8347 }{%
8348 \expandafter\Hy@colorlink
8349 \csname @\pdf@linktype color\endcsname
8350 }%
8351 \pdf@rect{#1}%
8352 (*pdfmarkbase)
8353 \literalps@out{%
8354 [\the\pdf@toks\space\pdf@type\space pdfmark%
8355 ]%
8356 /pdfmarkbase)
8357 (dvipdf) \literalps@out{/ANN >>}%
8358 \Hy@endcolorlink
8359 \fi
8360 \fi
8361 \fi
8362 }

```

The complicated bit is working out the right enclosing rectangle of some piece of TeX text, needed by the /Rect key. This solution originates with Toby Thain (tobyth@netspace.net.au).

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

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

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

```

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

```

```

8363 \newsavebox{\pdf@box}
8364 \providecommand*{\Hy@setouterhbox}{\sbox}
8365 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
8366 \def\Hy@DEST{/DEST}
8367 \def\pdf@rect#1{%
8368 (dvipdf) \literalps@out{/ANN \pdf@type\space\the\pdf@toks\space <<#1%
8369 \leavevmode
8370 \ifHy@breaklinks
8371 \Hy@setouterhbox\pdf@box{#1}%
8372 \else
8373 \sbox\pdf@box{#1}%
8374 \fi
8375 \dimen@{\ht\pdf@box}

```

```

8376 \ifdim\dp\pdf@box=\z@
8377   \literalps@out{H.S}%
8378 \else
8379   \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
8380 \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...).

```

8381 \ifHy@breaklinks
8382   \expandafter\Hy@breaklinkssunhbox
8383 \else
8384   \expandafter\box
8385 \fi
8386 \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

8387 \ifdim\dimen@=\z@
8388   \literalps@out{H.R}%
8389 \else
8390   \raise\dimen@\hbox{\literalps@out{H.R}}%
8391 \fi
8392 \ifx\pdf@type\Hy@DEST
8393 \else
8394   \pdf@addtoksx{H.B}%
8395 \fi
8396 }

```

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.

```

8397 \newtoks\pdf@toks
8398 \newtoks\pdf@defaulttoks
8399 \pdf@defaulttoks={}%
8400 \def\pdf@addtoks#1#2{%
8401   \edef\@processme{\pdf@toks{\the\pdf@toks\space /#2 #1}}%
8402   \@processme
8403 }
8404 \def\pdf@addtoksx#1{%
8405   \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
8406   \@processme
8407 }
8408 \def\PDFdefaults#1{%
8409   \pdf@defaulttoks={#1}%
8410 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

8411 % what is the type of pdfmark?
8412 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
8413 % what is the link type?
8414 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
8415 \def\pdf@linktype{link}
8416 % parameter is a stream of PDF
8417 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
8418 % parameter is a name
8419 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}

```

```

8420 % parameter is a array
8421 \define@key{PDF}{Border}{%
8422   \edef\Hy@temp{#1}%
8423   \ifx\Hy@temp\@empty
8424   \else
8425     \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
8426   \fi
8427 }
8428 \let\Hy@BorderArrayPatch\@empty
8429 % parameter is a dictionary
8430 \define@key{PDF}{BorderStyle}{%
8431   \edef\Hy@temp{#1}%
8432   \ifx\Hy@temp\@empty
8433   \else
8434     \pdf@addtoks{<<#1>>}{BS}%
8435   \fi
8436 }
8437 % parameter is a array
8438 \define@key{PDF}{Color}{%
8439   \ifx\relax#1\relax
8440   \else
8441     \pdf@addtoks{[#1]}{Color}% hash-ok
8442   \fi
8443 }
8444 % parameter is a string
8445 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
8446 % parameter is a integer
8447 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
8448 % parameter is a array
8449 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
8450 % parameter is a string
8451 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
8452 % parameter is a string or file
8453 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
8454 % parameter is a destination
8455 \define@key{PDF}{Dest}{%
8456   \Hy@pstringdef\Hy@pstringDest{#1}%
8457   \ifx\Hy@pstringDest\@empty
8458     \Hy@pdfmarkerrortrue
8459     \Hy@Warning{Destination with empty name ignored}%
8460   \else
8461     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
8462   \fi
8463 }
8464 \define@key{PDF}{DestAnchor}{%
8465   \Hy@pstringdef\Hy@pstringDest{#1}%
8466   \ifx\Hy@pstringDest\@empty
8467     \Hy@pdfmarkerrortrue
8468     \Hy@Warning{Destination with empty name ignored}%
8469   \else
8470     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
8471   \fi
8472 }
8473 % parameter is a string
8474 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
8475 % parameter is a string
8476 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}

```

```

8477 % parameter is a int
8478 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
8479 % parameter is a name
8480 \define@key{PDF}{AcroHighlight}{%
8481   \beginngroup
8482     \edef\x{#1}%
8483     \expandafter\endgroup\ifx\x\@empty
8484       \else
8485         \pdf@addtoks{#1}{H}%
8486       \fi
8487 }
8488 % parameter is a string
8489 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
8490 % parameter is a string
8491 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
8492 % parameter is a string
8493 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
8494 % parameter is a string
8495 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
8496 % parameter is a Boolean
8497 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
8498 % parameter is a integer or name
8499 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
8500 % parameter is a name
8501 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
8502 % parameter is a string
8503 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
8504 % parameter is a array
8505 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
8506 % parameter is a integer
8507 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
8508 % parameter is a name
8509 \pdfmarkbase\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
8510 \dvipdf\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{}}
8511 % parameter is a string
8512 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
8513 % parameter is a string
8514 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
8515 % parameter is a string
8516 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
8517 % parameter is an array
8518 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
8519 % parameter is a string
8520 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

8521 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
8522 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
8523 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
8524 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
8525 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
8526 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
8527 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
8528 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
8529 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
8530 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
8531 </pdfmarkbase | dvipdf>
8532 <*pdfmark | dvipdf>

```



```

8533 \def\Acrobatmenu#1#2{%
8534   \pdfmark[{#2}] {%
8535     linktype=menu,%
8536     pdfmark=/ANN,%
8537     AcroHighlight=\@pdfhighlight,%
8538     Border=\@pdfborder,%
8539     BorderStyle=\@pdfborderstyle,%
8540     Action={<< /Subtype /Named /N /#1 >>},%
8541     Subtype=/Link%
8542   }%
8543 }

```

And now for some useful examples:

```

8544 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
8545 \def\PDFNextPage@[#1]#2{%
8546   \pdfmark[{#2}] {%
8547     #1,%
8548     Border=\@pdfborder,%
8549     BorderStyle=\@pdfborderstyle,%
8550     Color=.2 .1 .5,%
8551     pdfmark=/ANN,%
8552     Subtype=/Link,%
8553     Page=/Next%
8554   }%
8555 }
8556 \def\PDFPreviousPage{%
8557   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}]%
8558 }
8559 \def\PDFPreviousPage@[#1]#2{%
8560   \pdfmark[{#2}] {%
8561     #1,%
8562     Border=\@pdfborder,%
8563     BorderStyle=\@pdfborderstyle,%
8564     Color=.4 .4 .1,%
8565     pdfmark=/ANN,%
8566     Subtype=/Link,%
8567     Page=/Prev%
8568   }%
8569 }
8570 \def\PDFOpen#1{%
8571   \pdfmark{#1,pdfmark=/DOCVIEW}%
8572 }

```

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

```

8573 \def\hyper@linkurl#1#2{%
8574   \begingroup
8575     \Hy@pstringdef\Hy@pstringURI{#2}%
8576     \hyper@chars
8577     \leavevmode
8578   (*pdfmarkbase)
8579     \pdfmark[{#1}] {%
8580       pdfmark=/ANN,%
8581       linktype=url,%
8582       AcroHighlight=\@pdfhighlight,%
8583       Border=\@pdfborder,%
8584       BorderStyle=\@pdfborderstyle,%
8585       Color=\@urlbordercolor,%
8586       Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%

```

```

8587     Subtype=/Link%
8588   }%
8589 </pdfmarkbase>
8590 <*dvipdf>
8591   \pdfmark[{#1}]{%
8592     pdfmark=/LNK,%
8593     linktype=url,%
8594     AcroHighlight=\@pdfhighlight,%
8595     Border=\@pdfborder,%
8596     BorderStyle=\@pdfborderstyle,%
8597     Color=\@urlbordercolor,%
8598     Action={URI /URI <\Hy@hstringURI>}%
8599   }%
8600 </dvipdf>
8601   \endgroup
8602 }
8603 \def\hyper@linkfile#1#2#3{%
8604   \begingroup
8605     \Hy@pstringdef\Hy@pstringF{#2}%
8606     \Hy@pstringdef\Hy@pstringD{#3}%
8607     \leavevmode
8608 <*pdfmark>
8609   \pdfmark[{#1}]{%
8610     pdfmark=/ANN,%
8611     Subtype=/Link,%
8612     AcroHighlight=\@pdfhighlight,%
8613     Border=\@pdfborder,%
8614     BorderStyle=\@pdfborderstyle,%
8615     linktype=file,%
8616     Color=\@filebordercolor,%
8617     Action={%
8618       <<%
8619         /S/GoToR%
8620         \Hy@SetNewWindow
8621         /F(\Hy@pstringF)%
8622         /D\ifx\#3\ [0 \@pdfstartview]\else(\Hy@pstringD)cvn\fi
8623       >>%
8624     }%
8625   }%
8626 </pdfmark>
8627 <*dvipdf>
8628   \pdfmark[{#1}]{%
8629     pdfmark=/LNK,%
8630     linktype=file,%
8631     AcroHighlight=\@pdfhighlight,%
8632     Border=\@pdfborder,%
8633     BorderStyle=\@pdfborderstyle,%
8634     Color=\@filebordercolor,%
8635     Action={%
8636       <<%
8637         /S/GoToR%
8638         \Hy@SetNewWindow
8639         /F(\Hy@pstringF)%
8640         /D\ifx\#3\ [0 \@pdfstartview]\else(\Hy@pstringD)cvn\fi
8641       >>%
8642     }%
8643   }%

```

```

8644 </dvipdf>
8645   \endgroup
8646 }
8647 \def\@hyper@launch run:#1\|#2#3{%
8648   \begingroup
8649     \Hy@pstringdef\Hy@pstringF{#1}%
8650     \Hy@pstringdef\Hy@pstringP{#3}%
8651     \leavevmode
8652 <*pdfmark>
8653   \pdfmark[#{#2}]{%
8654     pdfmark=/ANN,%
8655     Subtype=/Link,%
8656     AcroHighlight=\@pdfhighlight,%
8657     Border=\@pdfborder,%
8658     BorderStyle=\@pdfborderstyle,%
8659     linktype=run,%
8660     Color=\@runbordercolor,%
8661     Action={%
8662       <<%
8663         /S/Launch%
8664         \Hy@SetNewWindow
8665         /F(\Hy@pstringF)%
8666         \ifx\|#3\|%
8667           \else
8668             /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8669         \fi
8670       >>%
8671     }%
8672   }%
8673 </pdfmark>
8674 <*dvipdf>
8675   \pdfmark[#{#2}]{%
8676     pdfmark=/LNK,%
8677     linktype=file,%
8678     AcroHighlight=\@pdfhighlight,%
8679     Border=\@pdfborder,%
8680     BorderStyle=\@pdfborderstyle,%
8681     Color=\@filebordercolor,%
8682     Action={%
8683       <<%
8684         /S/GoToR%
8685         \Hy@SetNewWindow
8686         /F(\Hy@pstringF)%
8687         \ifx\|#3\|%
8688           \else
8689             /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8690         \fi
8691       >>%
8692     }%
8693   }%
8694 </dvipdf>
8695   \endgroup
8696 }
8697 </pdfmark | dvipdf>

```

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.

```
8698 <*dvips>
8699 \input{pdfmark.def}%
8700 \ifx\@pdfproducer\relax
8701   \def\@pdfproducer{dvips + Distiller}%
8702 \fi
8703 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
8704 \def\headerps@out#1{\special{! #1}}%
8705 \providecommand*\@pdfborder{0 0 1}
8706 \providecommand*\@pdfborderstyle{}
8707 \providecommand*\@pdfview{XYZ}
8708 \providecommand*\@pdfviewparams{ H.V}
8709 \def\Hy@BorderArrayPatch{BorderArrayPatch}

8710 \AtBeginShipoutFirst{%
8711   \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.

```
8712   /DvipsToPDF{72.27 mul Resolution div} def%
8713   /PDFToDvips{72.27 div Resolution mul} def%
8714   /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.

```
8715   /BorderArrayPatch{%
8716     [exch{%
8717       dup dup type/integertype eq exch type/realtype eq or%
8718       {BPToDvips}if%
8719     }forall]%
8720   }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.

```
8721   /HyperBorder {1 PDFToDvips} def%
8722   /H.V {pdf@hoff pdf@voff null} def%
8723   /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

```
8724   /H.S {%
8725     currentpoint %
8726     HyperBorder add /pdf@lly exch def %
```

```

8727      dup DvipsToPDF 72 add /pdf@hoff exch def %
8728      HyperBorder sub /pdf@llx exch def%
8729  } 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`

```

8730  /H.L {%
8731    2 sub dup%
8732    /HyperBasePt exch def %
8733    PDFToDvips /HyperBaseDvips exch def %
8734    currentpoint %
8735    HyperBaseDvips sub /pdf@ury exch def%
8736    /pdf@urx exch def%
8737  } def%
8738  /H.A {%
8739    H.L %
8740 % |pdf@voff| = the distance from the top of the page to a point
8741 % |\baselineskip| above the current point in PDF coordinates
8742    currentpoint exch pop %
8743    vsize 72 sub exch DvipsToPDF %
8744    HyperBasePt sub % baseline skip
8745    sub /pdf@voff exch def%
8746  } def%
8747  /H.R {%
8748    currentpoint %
8749    HyperBorder sub /pdf@ury exch def %
8750    HyperBorder add /pdf@urx exch def %
8751 % |pdf@voff| = the distance from the top of the page to the current point, in
8752 % PDF coordinates
8753    currentpoint exch pop vsize 72 sub %
8754    exch DvipsToPDF sub /pdf@voff exch def%
8755  } def %
8756  systemdict /pdfmark known%
8757  {%
8758    userdict /?pdfmark systemdict /exec get put%
8759  }{%
8760    userdict /?pdfmark systemdict /pop get put %
8761    userdict /pdfmark systemdict /cleartomark get put%
8762  }%
8763  ifelse%
8764 }%
8765 }
8766 \AfterBeginDocument{%
8767   \ifx\special@paper\@empty\else
8768     \ifHy@setpagesize
8769       \special{papersize=\special@paper}%
8770     \fi
8771     \Hy@DisableOption{setpagesize}%
8772   \fi
8773 }
8774 </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.

```

8775 <*vtexpdfmark>
8776 \input{pdfmark.def}%
8777 \ifx\@pdfproducer\relax
8778   \ifnum\OpMode=\@ne
8779     \def\@pdfproducer{VTeX}%
8780   \else
8781     \def\@pdfproducer{VTeX + Distiller}%
8782   \fi
8783 \fi
8784 \def\literalps@out#1{\special{pS:#1}}%
8785 \def\headerps@out#1{\immediate\special{pS:#1}}%
8786 \providecommand*\@pdfborder{0 0 1}
8787 \providecommand*\@pdfborderstyle{}
8788 \providecommand*\@pdfview{XYZ}
8789 \providecommand*\@pdfviewparams{ H.V}

8790 \AtBeginShipoutFirst{%
8791   \headerps@out{%
8792     /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.

```

8793   /HyperBorder {1} def%
8794   /H.V {pdf@hoff pdf@voff null} def%
8795   /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: pdf@lly =  $Y_c - \text{HyperBorder}$ , pdf@hoff =  $X_c + 72$ , pdf@llx =  $X_c - \text{HyperBorder}$

```

8796   /H.S {%
8797     currentpoint %
8798     HyperBorder sub%
8799     /pdf@lly exch def %
8800     dup 72 add /pdf@hoff exch def %
8801     HyperBorder sub%
8802     /pdf@llx exch def%
8803   } def%

```

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

```

8804   /H.L {%
8805     2 sub%
8806     /HyperBasePt exch def %
8807     currentpoint %
8808     HyperBasePt add HyperBorder add%
8809     /pdf@ury exch def %
8810     HyperBorder add%
8811     /pdf@urx exch def%
8812   } def%
8813   /H.A {%
8814     H.L %
8815     currentpoint exch pop %

```

```

8816      vsize 72 sub exch %
8817      HyperBasePt add add%
8818      /pdf@voff exch def%
8819  } def%
pdf@ury =  $Y_c + \text{HyperBorder}$ , pdf@urx =  $X_c + \text{HyperBorder}$ 
8820  /H.R {%
8821      currentpoint %
8822      HyperBorder add%
8823      /pdf@ury exch def %
8824      HyperBorder add%
8825      /pdf@urx exch def %
8826      currentpoint exch pop vsize 72 sub add%
8827      /pdf@voff exch def%
8828  } def %
8829  systemdict /pdfmark known%
8830  {%
8831      userdict /?pdfmark systemdict /exec get put%
8832  }{%
8833      userdict /?pdfmark systemdict /pop get put %
8834      userdict /pdfmark systemdict /cleartomark get put%
8835  }%
8836  ifelse%
8837  }%
8838 }
8839 </vtxpdfmark>

```

## 46.11 Textures

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.

```

8840 <*textures>
8841 \begingroup
8842 \obeylines %
8843 \gdef\Hy@ps@CR{\noexpand
8844 }%
8845 \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`.

```

8846 \def\literalps@out#1{%
8847   \special{postscript 0 0 transform}%

```

```

8848 \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
8849 }%
8850 %

```

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.

```

8851 \def\headerps@out#1{%
8852   \special{%
8853     prepostscript TeXdict begin\Hy@ps@CR
8854       #1\Hy@ps@CR
8855     end%
8856   }%
8857 }%
8858 %

```

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.

```

8859 \AtBeginShipoutFirst{%
8860   \headerps@out{%
8861     /betterpdfmark {%
8862       systemdict begin %
8863         dup /BP eq%
8864         {cleartomark gsave nulldevice []}%
8865         {dup /EP eq%
8866           {cleartomark cleartomark grestore}%
8867           {cleartomark}%
8868         }ifelse%
8869       }ifelse %
8870     end%
8871   }def\Hy@ps@CR
8872   __pdfmark__ not{/pdfmark /betterpdfmark load def}if %
8873   systemdict /pdfmark known%
8874   {%
8875     userdict /?pdfmark systemdict /load get put%
8876   }{%
8877     userdict /?pdfmark systemdict /pop get put%
8878   }%
8879   ifelse%
8880 }% end of \headerps@out
8881}% end of \AtBeginShipoutFirst
8882 %
8883 \input{pdfmark.def}%
8884 %
8885 \ifx\@pdfproducer\relax
8886   \def\@pdfproducer{Textures + Distiller}%
8887 \fi
8888 \providecommand*\@pdfborder{0 0 1}
8889 \providecommand*\@pdfborderstyle{}
8890 \providecommand*\@pdfview{XYZ}
8891 \providecommand*\@pdfviewparams{ H.V}
8892 %

```

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  $\text{\TeX}$ .

```

8893 \headerps@out{%

```



Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

8894 /vsize {\Hy@pageheight} def%
8895 /DvipsToPDF {} def%
8896 /PDFToDvips {} def%
8897 /BPToDvips {} def%
8898 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
8899 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
8900 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
8901 /H.S {%
8902   currentpoint %
8903   HyperBorder add /pdf@lly exch def %
8904   dup DvipsToPDF 72 add /pdf@hoff exch def %
8905   HyperBorder sub /pdf@llx exch def%
8906 } def\Hy@ps@CR
8907 /H.L {%
8908   2 sub %
8909   PDFToDvips /HyperBase exch def %
8910   currentpoint %
8911   HyperBase sub /pdf@ury exch def%
8912   /pdf@urx exch def%
8913 } def\Hy@ps@CR
8914 /H.A {%
8915   H.L %
8916   currentpoint exch pop %
8917   vsize 72 sub exch DvipsToPDF %
8918   HyperBase sub % baseline skip
8919   sub /pdf@voff exch def%
8920 } def\Hy@ps@CR
8921 /H.R {%
8922   currentpoint %
8923   HyperBorder sub /pdf@ury exch def %
8924   HyperBorder add /pdf@urx exch def %
8925   currentpoint exch pop vsize 72 sub %
8926   exch DvipsToPDF sub /pdf@voff exch def%
8927 } def\Hy@ps@CR
8928 }

8929 \AfterBeginDocument{%
8930   \ifHy@colorlinks
8931     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
8932   \fi
8933 }

```

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.

```

8934 \expandafter\let\expandafter\keepPDF@SetupDoc
8935 \csname PDF@SetupDoc\endcsname
8936 \def\PDF@SetupDoc{%
8937   \ifx\@baseurl\@empty
8938   \else
8939     \special{html:<base href="\@baseurl">}%
8940   \fi
8941   \keepPDF@SetupDoc
8942 }
8943 \def\hyper@anchor#1{%
8944   \Hy@SaveLastskip
8945   \begingroup

```

```

8946 \let\protect=\string
8947 \special{html:<a name=\hyper@quote #1\hyper@quote>}%
8948 \endgroup
8949 \Hy@activeanchortrue
8950 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8951 \special{html:</a>}%
8952 \Hy@activeanchorfalse
8953 \Hy@RestoreLastskip
8954 }
8955 \def\hyper@anchorstart#1{%
8956 \Hy@SaveLastskip
8957 \begingroup
8958 \hyper@chars
8959 \special{html:<a name=\hyper@quote#1\hyper@quote>}%
8960 \endgroup
8961 \Hy@activeanchortrue
8962 }
8963 \def\hyper@anchorend{%
8964 \special{html:</a>}%
8965 \Hy@activeanchorfalse
8966 \Hy@RestoreLastskip
8967 }
8968 \def\@urlltype{url}
8969 \def\hyper@linkstart#1#2{%
8970 \expandafter\Hy@colorlink\csname @#1color\endcsname
8971 \def\Hy@tempa{#1}%
8972 \ifx\Hy@tempa\@urlltype
8973 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
8974 \else
8975 \begingroup
8976 \hyper@chars
8977 \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
8978 \endgroup
8979 \fi
8980 }
8981 \def\hyper@linkend{%
8982 \special{html:</a>}%
8983 \Hy@endcolorlink
8984 }
8985 \def\hyper@linkfile#1#2#3{%
8986 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
8987 }
8988 \def\hyper@linkurl#1#2{%
8989 \leavevmode
8990 \ifHy@raiselinks
8991 \setbox\@tempboxa=\color@hbox #1\color@endbox
8992 \@linkdim\dp\@tempboxa
8993 \lower\@linkdim\hbox{%
8994 \hyper@chars
8995 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
8996 }%
8997 \Hy@colorlink\@urlcolor#1%
8998 \@linkdim\ht\@tempboxa
8999 \advance\@linkdim by -6.5\p@
9000 \raise\@linkdim\hbox{\special{html:</a>}}%
9001 \Hy@endcolorlink
9002 \else

```

```

9003     \begingroup
9004     \hyper@chars
9005     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9006     \Hy@colorlink\@urlcolor#1%
9007     \special{html:</a>}%
9008     \Hy@endcolorlink
9009     \endgroup
9010 \fi
9011 }
9012 \def\hyper@link#1#2#3{%
9013   \hyper@linkurl{#3}{\##2}%
9014 }
9015 \def\hyper@image#1#2{%
9016   \begingroup
9017   \hyper@chars
9018   \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9019   \endgroup
9020 }
9021 </textures>

```

## 46.12 dvipsone

```

9022 % \subsection{dvipsone driver}
9023 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
9024 % |\special| commands.
9025 <*dvipsone>
9026 \providecommand*\@pdfborder{0 0 1}
9027 \providecommand*\@pdfborderstyle{}
9028 \input{pdfmark.def}%
9029 \ifx\@pdfproducer\relax
9030   \def\@pdfproducer{dvipsone + Distiller}%
9031 \fi
9032 \def\literalps@out#1{\special{ps:#1}}%
9033 \def\headerps@out#1{\special{! #1}}%
9034 \def\PDF@FinishDoc{%
9035   \Hy@UseMaketitleInfos
9036   \special{PDF: Keywords \@pdfkeywords}%
9037   \special{PDF: Title \@pdftitle}%
9038   \special{PDF: Creator \@pdfcreator}%
9039   \ifx\@pdfcreationdate\@empty
9040   \else
9041     \special{PDF: CreationDate \@pdfcreationdate}%
9042   \fi
9043   \ifx\@pdfmoddate\@empty
9044   \else
9045     \special{PDF: ModDate \@pdfmoddate}%
9046   \fi
9047   \special{PDF: Author \@pdfauthor}%
9048   \ifx\@pdfproducer\relax
9049   \else
9050     \special{PDF: Producer \@pdfproducer}%
9051   \fi
9052   \special{PDF: Subject \@pdfsubject}%
9053   \Hy@DisableOption{pdfauthor}%
9054   \Hy@DisableOption{pdftitle}%
9055   \Hy@DisableOption{pdfsubject}%
9056   \Hy@DisableOption{pdfcreator}%

```

```

9057 \Hy@DisableOption{pdfcreationdate}%
9058 \Hy@DisableOption{pdfmoddate}%
9059 \Hy@DisableOption{pdfproducer}%
9060 \Hy@DisableOption{pdfkeywords}%
9061 }
9062 \def\PDF@SetupDoc{%
9063   \def\Hy@temp{%
9064     \ifx\@pdfstartpage\@empty
9065     \else
9066       \ifx\@pdfstartview\@empty
9067       \else
9068         \edef\Hy@temp{%
9069           ,Page=\@pdfstartpage
9070           ,View=\@pdfstartview
9071         }%
9072       \fi
9073     \fi
9074     \edef\Hy@temp{%
9075       \noexpand\pdfmark{%
9076         pdfmark=/DOCVIEW,%
9077         PageMode=/\@pdfpagemode
9078       }\Hy@temp
9079     }%
9080   }%
9081   \Hy@temp
9082   \ifx\@pdfpagescrop\@empty
9083   \else
9084     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9085   \fi
9086   \edef\Hy@temp{%
9087     \ifHy@toolbar\else /HideToolbar true\fi
9088     \ifHy@menubar\else /HideMenubar true\fi
9089     \ifHy>windowui\else /HideWindowUI true\fi
9090     \ifHy@fitwindow /FitWindow true\fi
9091     \ifHy@centerwindow /CenterWindow true\fi
9092     \ifHy@displaydoctitle /DisplayDocTitle true\fi
9093     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9094     \Hy@UseNameKey{Direction}\@pdfdirection
9095     \Hy@UseNameKey{ViewArea}\@pdfviewarea
9096     \Hy@UseNameKey{ViewClip}\@pdfviewclip
9097     \Hy@UseNameKey{PrintArea}\@pdfprintarea
9098     \Hy@UseNameKey{PrintClip}\@pdfprintclip
9099     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9100     \Hy@UseNameKey{Duplex}\@pdfduplex
9101     \ifx\@pdfpicktraybypdfsize\@empty
9102     \else
9103       /PickTrayByPDFSize \@pdfpicktraybypdfsize
9104     \fi
9105     \ifx\@pdfprintpagerange\@empty
9106     \else
9107       /PrintPageRange[\@pdfprintpagerange]%
9108     \fi
9109     \ifx\@pdfnumcopies\@empty
9110     \else
9111       /NumCopies \@pdfnumcopies
9112     \fi
9113   }%

```

```

9114 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9115 \pdfmark{%
9116   pdfmark=/PUT,%
9117   Raw={%
9118     \string{Catalog\string}<<%
9119     \ifx\Hy@temp\@empty
9120     \else
9121       /ViewerPreferences<<\Hy@temp>>%
9122     \fi
9123     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9124     \ifx\@pdflang\@empty
9125     \else
9126       /Lang(\@pdflang)%
9127     \fi
9128     \ifx\@baseurl\@empty
9129     \else
9130       /URI<</Base(\Hy@pstringB)>>%
9131     \fi
9132   >>%
9133 }%
9134 }%
9135 }
9136 \providecommand*\@pdfview{XYZ}
9137 \providecommand*\@pdfviewparams{ %
9138   gsave revscl currentpoint grestore %
9139   72 add exch pop null exch null%
9140 }
9141 \def\Hy@BorderArrayPatch{BorderArrayPatch}

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called pdf@llx pdf@lly pdf@urx pdf@ury, which are the coordinates of the bounding rectangle of the link, and pdf@hoff pdf@voff which are the PDF page offsets. These latter are currently not used in the dvipsone setup. The Rect pair are called at the LL and UR corners of a box known to T<sub>E</sub>X.

```
9142 \special{headertext=%
```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

9143 /DvipsToPDF { 65781 div } def%
9144 /PDFToDvips { 65781 mul } def%
9145 /BPToDvips{65781 mul}def%
9146 /HyperBorder { 1 PDFToDvips } def%
9147 /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.

```

9148 /BorderArrayPatch{%
9149   [exch{%
9150     dup dup type/integertype eq exch type/realtype eq or%
9151     {BPToDvips}if%
9152   }forall]%
9153 }def%
9154 /H.S {%
9155   currentpoint %
9156   HyperBorder add /pdf@lly exch def %
9157   dup DvipsToPDF 72 add /pdf@hoff exch def %
9158   HyperBorder sub /pdf@llx exch def%
9159 } def%
9160 /H.L {%

```

```

9161 2 sub %
9162 PDFToDvips /HyperBase exch def %
9163 currentpoint %
9164 HyperBase sub /pdf@ury exch def%
9165 /pdf@urx exch def%
9166 } def%
9167 /H.A {%
9168 H.L %
9169 currentpoint exch pop %
9170 HyperBase sub % baseline skip
9171 DvipsToPDF /pdf@voff exch def%
9172 } def%
9173 /H.R {%
9174 currentpoint %
9175 HyperBorder sub /pdf@ury exch def %
9176 HyperBorder add /pdf@urx exch def %
9177 currentpoint exch pop DvipsToPDF /pdf@voff exch def%
9178 } def %
9179 systemdict%
9180 /pdfmark known%
9181 {%
9182 userdict /?pdfmark /exec load put%
9183 }{%
9184 userdict /?pdfmark /pop load put %
9185 userdict /pdfmark systemdict /cleartomark get put%
9186 }%
9187 ifelse%
9188 }
9189 </dvipsone>
9190 <*dvipdf>
9191 \def\literalps@out#1{\special{pdf: #1}}%
9192 \providecommand*\@pdfborder{0 0 1}
9193 \providecommand*\@pdfborderstyle{}
9194 </dvipdf>

```

## 46.13 TeX4ht

```

9195 <*tex4ht>
9196 \@ifpackageloaded{tex4ht}{%
9197 \typeout{hyperref tex4ht: tex4ht already loaded}%
9198 }{%
9199 \RequirePackage[htex4ht]{tex4ht}%
9200 }
9201 \hyperlinkfileprefix{}
9202 \def\PDF@FinishDoc{}
9203 \def\PDF@SetupDoc{%
9204 \ifx\@baseurl\@empty
9205 \else
9206 \special{t4ht=<base href="\@baseurl">}%
9207 \fi
9208 }
9209 \def\hyper@anchor#1{%
9210 \Hy@SaveLastskip
9211 \begingroup
9212 \let\protect=\string
9213 \special{t4ht=<a name=\hyper@quote #1\hyper@quote>}%
9214 \endgroup
9215 \Hy@activeanchortrue

```

```

9216 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9217 \special{t4ht=</a>}%
9218 \Hy@activeanchorfalse
9219 \Hy@RestoreLastskip
9220 }
9221 \def\hyper@anchorstart#1{%
9222 \Hy@SaveLastskip
9223 \begingroup
9224 \hyper@chars\special{t4ht=<a name=\hyper@quote#1\hyper@quote>}%
9225 \endgroup
9226 \Hy@activeanchortrue
9227 }
9228 \def\hyper@anchorend{%
9229 \special{t4ht=</a>}%
9230 \Hy@activeanchorfalse
9231 \Hy@RestoreLastskip
9232 }
9233 \def\@urltype{url}
9234 \def\hyper@linkstart#1#2{%
9235 \expandafter\Hy@colorlink\csname @#1color\endcsname
9236 \def\Hy@tempa{#1}%
9237 \ifx\Hy@tempa\@urltype
9238 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
9239 \else
9240 \begingroup
9241 \hyper@chars
9242 \special{t4ht=<a href=\hyper@quote\##2\hyper@quote>}%
9243 \endgroup
9244 \fi
9245 }
9246 \def\hyper@linkend{%
9247 \special{t4ht=</a>}%
9248 \Hy@endcolorlink
9249 }
9250 \def\hyper@linkfile#1#2#3{%
9251 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\#3\\\else\##3\fi}%
9252 }
9253 \def\hyper@linkurl#1#2{%
9254 \leavevmode
9255 \ifHy@raiselinks
9256 \setbox\@tempboxa=\color@hbox #1\color@endbox
9257 \@linkdim\dp\@tempboxa
9258 \lower\@linkdim\hbox{%
9259 \begingroup
9260 \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
9261 \endgroup
9262 }%
9263 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9264 \@linkdim\ht\@tempboxa
9265 \advance\@linkdim by -6.5\p@
9266 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
9267 \else
9268 \begingroup
9269 \hyper@chars
9270 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
9271 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9272 \special{t4ht=</a>}%

```

```

9273 \endgroup
9274 \fi
9275 }
9276 \def\hyper@link#1#2#3{%
9277 \hyper@linkurl{#3}{\##2}%
9278 }
9279 \def\hyper@image#1#2{%
9280 \begingroup
9281 \hyper@chars
9282 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
9283 \endgroup
9284 }
9285 \let\autoref\ref
9286 \ifx \rEfLiNK \UnDef
9287 \def\rEfLiNK #1#2{#2}%
9288 \fi
9289 \def\backref#1{}
9290 </tex4ht>
9291 <*tex4htcfg>
9292 \IfFileExists{\jobname.cfg}{\endinput}{}
9293 \Preamble{html}
9294 \begin{document}%
9295 \EndPreamble
9296 \def\TeX{TeX}
9297 \def\OMEGA{\Omega}
9298 \def\LaTeX{LaTeX}
9299 \def\LaTeXe{\LaTeX2e}
9300 \def\eTeX{e-TeX}
9301 \def\MF{Metafont}
9302 \def\MP{Metapost}
9303 </tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

9304 <*pdfmark>
9305 \long\def\@Form[#1]{%
9306 \AtBeginShipoutFirst{%
9307 \headerps@out{%
9308 [%
9309 /_objdef{pdfDocEncoding}%
9310 /type/dict%
9311 /OBJ pdfmark%
9312 [%
9313 {pdfDocEncoding}%
9314 <<%
9315 /Type/Encoding%
9316 /Differences[%
9317 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
9318 /tilde %
9319 39/quotesingle %
9320 96/grave %
9321 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
9322 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
9323 /quotedblbase/quotedblleft/quotedblright/quoteleft%
9324 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
9325 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %

```



```

9326     164/currency %
9327     166/brokenbar %
9328     168/dieresis/copyright/ordfeminine %
9329     172/logicalnot/.notdef/registered/macron/degree/plusminus%
9330         /twosuperior/threesuperior/acute/mu %
9331     183/periodcentered/cedilla/onesuperior/ordmasculine %
9332     188/onequarter/onehalf/threequarters %
9333     192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
9334         /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
9335         /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
9336         /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
9337         /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
9338         /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
9339         /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
9340         /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
9341         /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
9342         /ucircumflex/udieresis/yacute/thorn/ydieresis%
9343 ]%
9344 >>%
9345 /PUT pdfmark%
9346 [%
9347     /_objdef{ZaDb}%
9348     /type/dict%
9349 /OBJ pdfmark%
9350 [%
9351     {ZaDb}%
9352 <<%
9353     /Type/Font%
9354     /Subtype/Type1%
9355     /Name/ZaDb%
9356     /BaseFont/ZapfDingbats%
9357 >>%
9358 /PUT pdfmark%
9359 [%
9360     /_objdef{Helv}%
9361     /type/dict%
9362 /OBJ pdfmark%
9363 [%
9364     {Helv}%
9365 <<%
9366     /Type/Font%
9367     /Subtype/Type1%
9368     /Name/Helv%
9369     /BaseFont/Helvetica%
9370     /Encoding{pdfDocEncoding}%
9371 >>%
9372 /PUT pdfmark%
9373 [%
9374     /_objdef{aform}%
9375     /type/dict%
9376 /OBJ pdfmark%
9377 [%
9378     /_objdef{afields}%
9379     /type/array%
9380 /OBJ pdfmark%
9381 {%
9382 [%

```

```

9383     /BBox[0 0 100 100]%
9384     /_objdef{Check}%
9385 /BP pdfmark %
9386 1 0 0 setrgbcolor%
9387 /ZapfDingbats 80 selectfont %
9388 20 20 moveto%
9389 (4)show%
9390 [/EP pdfmark%
9391 [%
9392     /BBox[0 0 100 100]%
9393     /_objdef{Cross}%
9394 /BP pdfmark %
9395 1 0 0 setrgbcolor%
9396 /ZapfDingbats 80 selectfont %
9397 20 20 moveto%
9398 (8)show%
9399 [/EP pdfmark%
9400 [%
9401     /BBox[0 0 250 100]%
9402     /_objdef{Submit}%
9403 /BP pdfmark %
9404 0.6 setgray %
9405 0 0 250 100 rectfill %
9406 1 setgray %
9407 2 2 moveto %
9408 2 98 lineto %
9409 248 98 lineto %
9410 246 96 lineto %
9411 4 96 lineto %
9412 4 4 lineto %
9413 fill %
9414 0.34 setgray %
9415 248 98 moveto %
9416 248 2 lineto %
9417 2 2 lineto %
9418 4 4 lineto %
9419 246 4 lineto %
9420 246 96 lineto %
9421 fill%
9422 /Helvetica 76 selectfont %
9423 0 setgray %
9424 8 22.5 moveto%
9425 (Submit)show%
9426 [/EP pdfmark%
9427 [%
9428     /BBox[0 0 250 100]%
9429     /_objdef{SubmitP}%
9430 /BP pdfmark %
9431 0.6 setgray %
9432 0 0 250 100 rectfill %
9433 0.34 setgray %
9434 2 2 moveto %
9435 2 98 lineto %
9436 248 98 lineto %
9437 246 96 lineto %
9438 4 96 lineto %
9439 4 4 lineto %

```

```

9440 fill %
9441 1 setgray %
9442 248 98 moveto %
9443 248 2 lineto %
9444 2 2 lineto %
9445 4 4 lineto %
9446 246 4 lineto %
9447 246 96 lineto %
9448 fill%
9449 /Helvetica 76 selectfont %
9450 0 setgray %
9451 10 20.5 moveto%
9452 (Submit)show%
9453 [/EP pdfmark%
9454 } ?pdfmark%
9455 [%
9456 {aform}%
9457 <<%
9458   /Fields{afields}%
9459   /DR<<%
9460     /Font<<%
9461       /ZaDb{ZaDb}%
9462       /Helv{Helv}%
9463     >>%
9464   >>%
9465   /DA(/Helv 10 Tf 0 g)%
9466   /CO{corder}%
9467   /NeedAppearances true%
9468 >>%
9469 /PUT pdfmark%
9470 [%
9471 {Catalog}%
9472 <<%
9473   /AcroForm{aform}%
9474 >>%
9475 /PUT pdfmark%
9476 [%
9477   /_objdef{corder}%
9478   /type/array%
9479 /OBJ pdfmark% dps
9480 }}%
9481 \setkeys{Form}{#1}%
9482 }
9483 \def\@endForm{}
9484 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9485   \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
9486 }
9487 \def\@TextField[#1]#2{% parameters, label
9488   \def\Fld@name{#2}%
9489   \def\Fld@default{}%
9490   \let\Fld@value\@empty
9491   \def\Fld@width{\DefaultWidthofText}%
9492   \def\Fld@height{%
9493     \ifFld@multiline
9494       \DefaultHeightofTextMultiline
9495     \else
9496       \DefaultHeightofText

```

```

9497 \fi
9498 }%
9499 \begingroup
9500 \Field@toks={ }%
9501 \expandafter\HyField@SetKeys\expandafter{%
9502 \DefaultOptionsofText,#1%
9503 }%
9504 \HyField@FlagsText
9505 \ifFld@hidden\def\Fld@width{1sp}\fi
9506 \ifx\Fld@value\empty\def\Fld@value{\Fld@default}\fi
9507 \LayoutTextField{#2}{%
9508 \Hy@escapeform\PDFForm@Text
9509 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
9510 pdfmark=/ANN,Raw={\PDFForm@Text}%
9511 }%
9512 }%
9513 \endgroup
9514 }
9515 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9516 \def\Fld@name{#2}%
9517 \let\Fld@default\relax
9518 \let\Fld@value\relax
9519 \def\Fld@width{\DefaultWidthofChoiceMenu}%
9520 \def\Fld@height{\DefaultHeightofChoiceMenu}%
9521 \begingroup
9522 \Fld@menulength=0 %
9523 \@tempdima\z@
9524 \@for\@curropt:=#3\do{%
9525 \expandafter\Fld@checkequals\@curropt==\%
9526 \Hy@StepCount\Fld@menulength
9527 \settowidth{\@tempdimb}{\@currDisplay}%
9528 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
9529 }%
9530 \advance\@tempdima by 15\p@
9531 \Field@toks={ }%
9532 \begingroup
9533 \HyField@SetKeys{#1}%
9534 \edef\x{\endgroup
9535 \noexpand\expandafter
9536 \noexpand\HyField@SetKeys
9537 \noexpand\expandafter{%
9538 \expandafter\noexpand\cname DefaultOptionsof%
9539 \ifFld@radio
9540 Radio%
9541 \else
9542 \ifFld@combo
9543 \ifFld@popdown
9544 PopdownBox%
9545 \else
9546 ComboBox%
9547 \fi
9548 \else
9549 ListBox%
9550 \fi
9551 \fi
9552 \endcsname
9553 }%

```

```

9554 } \x
9555 \HyField@SetKeys{#1}%
9556 \ifFld@hidden\def\Fld@width{1sp}\fi
9557 \ifx\Fld@value\relax
9558 \let\Fld@value\Fld@default
9559 \fi
9560 \LayoutChoiceField{#2}{%
9561 \ifFld@radio
9562 \HyField@FlagsRadioButton
9563 \@@Radio{#3}%
9564 \else
9565 \beginngroup
9566 \HyField@FlagsChoice
9567 \ifdim\Fld@width<\@tempdima
9568 \ifdim\@tempdima<1cm\@tempdima1cm\fi
9569 \edef\Fld@width{\the\@tempdima}%
9570 \fi
9571 \ifFld@combo
9572 \else
9573 \@tempdima=\the\Fld@menulength\Fld@charsize
9574 \advance\@tempdima by \Fld@borderwidth bp %
9575 \advance\@tempdima by \Fld@borderwidth bp %
9576 \edef\Fld@height{\the\@tempdima}%
9577 \fi
9578 \@@ListBox{#3}%
9579 \endgroup
9580 \fi
9581 }%
9582 \endgroup
9583 }
9584 \def\@@Radio#1{%
9585 \Fld@listcount=0 %
9586 \@for\@curropt:=#1\do{%
9587 \expandafter\Fld@checkequals\@curropt==\%
9588 \Hy@StepCount\Fld@listcount
9589 \@currDisplay\space
9590 \Hy@escapeform\PDFForm@Radio
9591 \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
9592 pdfmark=/ANN,%
9593 Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
9594 } % deliberate space between radio buttons
9595 }%
9596 }
9597 \newcount\Fld@listcount
9598 \def\@@ListBox#1{%
9599 \HyField@PDFChoices{#1}%
9600 \Hy@escapeform\PDFForm@List
9601 \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
9602 pdfmark=/ANN,Raw={\PDFForm@List}%
9603 }%
9604 }
9605 \def\@PushButton[#1]#2{% parameters, label
9606 \def\Fld@name{#2}%
9607 \beginngroup
9608 \Fld@toks={}%
9609 \expandafter\HyField@SetKeys\expandafter{%
9610 \DefaultOptionsofPushButton,#1%

```

```

9611 }%
9612 \HyField@FlagsPushButton
9613 \ifFld@hidden\def\Fld@width{1sp}\fi
9614 \LayoutPushButtonField{%
9615 \Hy@escapeform\PDFForm@Push
9616 \pdfmark[\MakeButtonField{#2}]{%
9617 pdfmark=/ANN,Raw={\PDFForm@Push}%
9618 }%
9619 }%
9620 \endgroup
9621 }
9622 \def\@Submit[#1]#2{%
9623 \Field@toks={ }%
9624 \def\Fld@width{\DefaultWidthofSubmit}%
9625 \def\Fld@height{\DefaultHeightofSubmit}%
9626 \beginingroup
9627 \expandafter\HyField@SetKeys\expandafter{%
9628 \DefaultOptionsofSubmit,#1%
9629 }%
9630 \HyField@FlagsPushButton
9631 \HyField@FlagsSubmit
9632 \ifFld@hidden\def\Fld@width{1sp}\fi
9633 \Hy@escapeform\PDFForm@Submit
9634 \pdfmark[\MakeButtonField{#2}]{%
9635 pdfmark=/ANN,%
9636 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
9637 }%
9638 \endgroup
9639 }
9640 \def\@Reset[#1]#2{%
9641 \Field@toks={ }%
9642 \def\Fld@width{\DefaultWidthofReset}%
9643 \def\Fld@height{\DefaultHeightofReset}%
9644 \beginingroup
9645 \expandafter\HyField@SetKeys\expandafter{%
9646 \DefaultOptionsofReset,#1%
9647 }%
9648 \HyField@FlagsPushButton
9649 \ifFld@hidden\def\Fld@width{1sp}\fi
9650 \Hy@escapeform\PDFForm@Reset
9651 \pdfmark[\MakeButtonField{#2}]{%
9652 pdfmark=/ANN,Raw={\PDFForm@Reset}%
9653 }%
9654 \endgroup
9655 }
9656 \def\@CheckBox[#1]#2{% parameters, label
9657 \def\Fld@name{#2}%
9658 \def\Fld@default{0}%
9659 \beginingroup
9660 \def\Fld@width{\DefaultWidthofCheckBox}%
9661 \def\Fld@height{\DefaultHeightofCheckBox}%
9662 \Field@toks={ }%
9663 \expandafter\HyField@SetKeys\expandafter{%
9664 \DefaultOptionsofCheckBox,#1%
9665 }%
9666 \HyField@FlagsCheckBox
9667 \ifFld@hidden\def\Fld@width{1sp}\fi

```

```

9668 \LayoutCheckField{#2}{%
9669 \Hy@escapeform\PDFForm@Check
9670 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
9671 pdfmark=/ANN,Raw={\PDFForm@Check}%
9672 }%
9673 }%
9674 \endgroup
9675 }
9676 \pdfmark>

```

## 47.2 dvipdf

```

9677 <dvipdf>
9678 \def\@Form[#1]{\typeout{Sorry, I do not support FORMs}}
9679 \def\@endForm{}
9680 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9681 \typeout{Sorry, dvipdf does not support FORM gauges}%
9682 }
9683 \def\@TextField[#1]#2{% parameters, label
9684 \typeout{Sorry, dvipdf does not support FORM text fields}%
9685 }
9686 \def\@CheckBox[#1]#2{% parameters, label
9687 \typeout{Sorry, dvipdf does not support FORM checkboxes}%
9688 }
9689 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9690 \typeout{Sorry, dvipdf does not support FORM choice menus}%
9691 }
9692 \def\@PushButton[#1]#2{% parameters, label
9693 \typeout{Sorry, dvipdf does not support FORM pushbuttons}%
9694 }
9695 \def\@Reset[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
9696 \def\@Submit[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
9697 </dvipdf>

```

## 47.3 HyperTeX

```

9698 <hypertex>
9699 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
9700 \def\@endForm{}
9701 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9702 \typeout{Sorry, HyperTeX does not support FORM gauges}%
9703 }
9704 \def\@TextField[#1]#2{% parameters, label
9705 \typeout{Sorry, HyperTeX does not support FORM text fields}%
9706 }
9707 \def\@CheckBox[#1]#2{% parameters, label
9708 \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
9709 }
9710 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9711 \typeout{Sorry, HyperTeX does not support FORM choice menus}%
9712 }
9713 \def\@PushButton[#1]#2{% parameters, label
9714 \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
9715 }
9716 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
9717 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
9718 </hypertex>

```

## 47.4 TeX4ht

```

9719 <*tex4ht>
9720 \def\@Form[#1]{%
9721   \setkeys{Form}{#1}%
9722   \HCode{<form action="\Form@action" method="\Form@method">%}
9723 }
9724 \def\@endForm{\HCode{</form>}}
9725 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9726   \typeout{Sorry, TeX4ht does not support gauges}%
9727 }
9728 \def\@TextField[#1]#2{% parameters, label
9729   \let\Hy@reserved@a\@empty
9730   \def\Fld@name{#2}%
9731   \def\Fld@default{}%
9732   \bgroup
9733     \Field@toks={ }%
9734     \setkeys{Field}{#1}%
9735     \HCode{<label for="\Fld@name">#2</label>%}
9736     \ifFld@password
9737       \@@PasswordField
9738     \else
9739       \@@TextField
9740     \fi
9741   \egroup
9742 }
9743 \def\@@PasswordField{%
9744   \HCode{%
9745     <input type="password" %
9746       id="\Fld@name" %
9747       name="\Fld@name" %
9748       \ifFld@hidden type="hidden" \fi
9749       value="\Fld@default" %
9750       \the\Field@toks
9751     >%
9752   }%
9753 }
9754 \def\@@TextField{%
9755   \ifFld@multiline
9756     \HCode{<textarea %
9757       \ifFld@readonly readonly \fi
9758       id="\Fld@name" %
9759       name="\Fld@name" %
9760       \ifFld@hidden type="hidden" \fi
9761       \the\Field@toks>%
9762     }%
9763     \Fld@default
9764     \HCode{</textarea>%}
9765   \else
9766     \HCode{<input type="text" %
9767       \ifFld@readonly readonly \fi
9768       id="\Fld@name" %
9769       name="\Fld@name" %
9770       \ifFld@hidden type="hidden" \fi
9771       value="\Fld@default" %
9772       \the\Field@toks>%
9773     }%
9774   \fi
9775 }

```



```

9776 \def \@ChoiceMenu[#1]#2#3{% parameters, label, choices
9777   \def \Fld@name{#2}%
9778   \def \Fld@default{}%
9779   \let \Hy@reserved@a\relax
9780   \begingroup
9781     \expandafter \Fld@findlength#3\\%
9782     \Field@toks={ }%
9783     \setkeys{Field}{#1}%
9784     #2%
9785     \ifFld@radio
9786       \expandafter \@Radio#3\\%
9787     \else
9788       \expandafter \@Menu#3\\%
9789     \fi
9790   \endgroup
9791 }
9792 \def \Fld@findlength#1\\{%
9793   \Fld@menulength=0 %
9794   \@for \@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
9795 }
9796 \def \@Menu#1\\{%
9797   \HCode{<select size="\the\Fld@menulength" %
9798     name="\Fld@name" %
9799     \the\Field@toks>%
9800   }%
9801   \@for \@curropt:=#1\do{%
9802     \expandafter \Fld@checkequals \@curropt==\\%
9803     \HCode{<option %
9804       \ifx \@curropt\Fld@default selected \fi
9805       value="\@currValue">\@currDisplay</option>%
9806     }%
9807   }%
9808   \HCode{</select>}%
9809 }
9810 \def \@Radio#1\\{%
9811   \@for \@curropt:=#1\do{%
9812     \expandafter \Fld@checkequals \@curropt==\\%
9813     \HCode{<input type="radio" %
9814       \ifx \@curropt\Fld@default checked \fi
9815       name="\Fld@name" %
9816       value="\@currValue" %
9817       \the\Field@toks>%
9818     }%
9819     \@currDisplay
9820   }%
9821 }
9822 \def \@PushButton[#1]#2{% parameters, label
9823   \def \Fld@name{#2}%
9824   \bgroup
9825     \Field@toks={ }%
9826     \setkeys{Field}{#1}%
9827     \HCode{<input type="button" %
9828       name="\Fld@name" %
9829       value="#2" %
9830       \the\Field@toks>%
9831     }%
9832     \HCode{</button>}%

```

```

9833 \egroup
9834 }
9835 \def\@Submit[#1]#2{%
9836 \HCode{<button type="submit">#2</button>}%
9837 }
9838 \def\@Reset[#1]#2{%
9839 \HCode{<button type="reset">#2</button>}%
9840 }
9841 \def\@CheckBox[#1]#2{% parameters, label
9842 \let\Hy@reserved@a\@empty
9843 \def\Fld@name{#2}%
9844 \def\Fld@default{0}%
9845 \bgroup
9846 \Field@toks={ }%
9847 \setkeys{Field}{#1}%
9848 \HCode{<input type="checkbox" %
9849 \ifFld@checked checked \fi
9850 \ifFld@disabled disabled \fi
9851 \ifFld@readonly readonly \fi
9852 name="\Fld@name" %
9853 \ifFld@hidden type="hidden" \fi
9854 value="\Fld@default" %
9855 \the\Field@toks>%
9856 #2%
9857 }%
9858 \egroup
9859 }
9860 </tex4ht>

```

## 47.5 pdfTeX

```

9861 <*pdfTeX>
9862 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9863 \typeout{Sorry, pdfTeX does not support FORM gauges}%
9864 }
9865 \def\MakeFieldObject#1#2{\sbox0{#1}%
9866 \immediate\pdfxform0 %
9867 \expandafter\edef\csname #2Object\endcsname{%
9868 \the\pdflastxform\space 0 R%
9869 }%
9870 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
9871 }%
9872 \def\@Form[#1]{%
9873 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
9874 \setkeys{Form}{#1}%
9875 \ifnum\pdfTeXversion>13 %
9876 \pdfrefobj\OBJ@pdfdocencoding
9877 \pdfrefobj\OBJ@ZaDb
9878 \pdfrefobj\OBJ@Helv
9879 \pdfrefobj\OBJ@acroform
9880 \fi
9881 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
9882 \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

9883 \begingroup
9884 \fontfamily{pzd}%
9885 \fontencoding{U}%
9886 \fontseries{m}%

```

```

9887     \fontshape{n}%
9888     \selectfont
9889     \char123 %
9890   \endgroup
9891 }{Ding}%
9892 \MakeFieldObject{%
9893   \fbox{\textcolor{yellow}{\textsf{Submit}}}%
9894 }{Submit}%
9895 \MakeFieldObject{%
9896   \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
9897 }{SubmitP}%
9898 }
9899 \def\@endForm{}
9900 \def\@TextField[#1]#2{% parameters, label
9901   \def\Fld@name{#2}%
9902   \def\Fld@default{}%
9903   \let\Fld@value\@empty
9904   \def\Fld@width{\DefaultWidthofText}%
9905   \def\Fld@height{%
9906     \ifFld@multiline
9907       \DefaultHeightofTextMultiline
9908     \else
9909       \DefaultHeightofText
9910     \fi
9911   }%
9912   \begingroup
9913     \Field@toks={ }%
9914     \expandafter\HyField@SetKeys\expandafter{%
9915       \DefaultOptionsofText,#1%
9916     }%
9917     \PDFForm@Name
9918     \HyField@FlagsText
9919     \ifFld@hidden\def\Fld@width{1sp}\fi
9920     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
9921     \LayoutTextField{#2}{%
9922       \Hy@escapeform\PDFForm@Text
9923       \pdfstartlink user {\PDFForm@Text}\relax
9924       \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
9925     }%
9926   \endgroup
9927 }
9928 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9929   \def\Fld@name{#2}%
9930   \let\Fld@default\relax
9931   \let\Fld@value\relax
9932   \def\Fld@width{\DefaultWidthofChoiceMenu}%
9933   \def\Fld@height{\DefaultHeightofChoiceMenu}%
9934   \begingroup
9935     \Fld@menulength=0 %
9936     \@tempdima\z@
9937     \@for\@curropt:=#3\do{%
9938       \expandafter\Fld@checkequals\@curropt==\%
9939       \Hy@StepCount\Fld@menulength
9940       \settowidth{\@tempdimb}{\@currDisplay}%
9941       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
9942     }%
9943     \advance\@tempdima by 15\p@

```

```

9944 \Field@toks={ }%
9945 \begingroup
9946 \HyField@SetKeys{#1}%
9947 \edef\x{\endgroup
9948 \noexpand\expandafter
9949 \noexpand\HyField@SetKeys
9950 \noexpand\expandafter{%
9951 \expandafter\noexpand\csname DefaultOptionsof%
9952 \ifFld@radio
9953 Radio%
9954 \else
9955 \ifFld@combo
9956 \ifFld@popdown
9957 PopdownBox%
9958 \else
9959 ComboBox%
9960 \fi
9961 \else
9962 ListBox%
9963 \fi
9964 \fi
9965 \endcsname
9966 }%
9967 }\x
9968 \HyField@SetKeys{#1}%
9969 \PDFForm@Name
9970 \ifFld@hidden\def\Fld@width{1sp}\fi
9971 \ifx\Fld@value\relax
9972 \let\Fld@value\Fld@default
9973 \fi
9974 \LayoutChoiceField{#2}{%
9975 \ifFld@radio
9976 \HyField@FlagsRadioButton
9977 \@@Radio{#3}%
9978 \else
9979 \begingroup
9980 \HyField@FlagsChoice
9981 \ifdim\Fld@width<\@tempdima
9982 \ifdim\@tempdima<1cm\@tempdima1cm\fi
9983 \edef\Fld@width{\the\@tempdima}%
9984 \fi
9985 \ifFld@combo
9986 \else
9987 \@tempdima=\the\Fld@menulength\Fld@charsize
9988 \advance\@tempdima by \Fld@borderwidth bp %
9989 \advance\@tempdima by \Fld@borderwidth bp %
9990 \edef\Fld@height{\the\@tempdima}%
9991 \fi
9992 \@@ListBox{#3}%
9993 \endgroup
9994 \fi
9995 }%
9996 \endgroup
9997 }
9998 \def\@@Radio#1{%
9999 \Fld@listcount=0 %
10000 \@for\@curropt:=#1\do{%

```

```

10001 \expandafter\Fld@checkequals\@curropt==\%
10002 \Hy@StepCount\Fld@listcount
10003 \@currDisplay\space
10004 \leavevmode
10005 \Hy@escapeform\PDFForm@Radio
10006 \pdfstartlink user {%
10007 \PDFForm@Radio
10008 /AP<<%
10009 /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.

```

10010 /\@currValue\space \DingObject
10011 >>%
10012 >>%
10013 }%
10014 \relax
10015 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
10016 \space % deliberate space between radio buttons
10017 }%
10018 }
10019 \newcount\Fld@listcount
10020 \def\@@ListBox#1{%
10021 \HyField@PDFChoices{#1}%
10022 \leavevmode
10023 \Hy@escapeform\PDFForm@List
10024 \pdfstartlink user {\PDFForm@List}\relax
10025 \MakeChoiceField{\Fld@width}{\Fld@height}%
10026 \pdfendlink
10027 }
10028 \def\@PushButton[#1]#2{% parameters, label
10029 \def\Fld@name{#2}%
10030 \begingroup
10031 \Field@toks={ }%
10032 \expandafter\HyField@SetKeys\expandafter{%
10033 \DefaultOptionsofPushButton,#1%
10034 }%
10035 \PDFForm@Name
10036 \HyField@FlagsPushButton
10037 \ifFld@hidden\def\Fld@width{1sp}\fi
10038 \LayoutPushButtonField{%
10039 \leavevmode
10040 \Hy@escapeform\PDFForm@Push
10041 \pdfstartlink user {\PDFForm@Push}\relax
10042 \MakeButtonField{#2}%
10043 \pdfendlink
10044 }%
10045 \endgroup
10046 }
10047 \def\@Submit[#1]#2{%
10048 \Field@toks={ }%
10049 \def\Fld@width{\DefaultWidthofSubmit}%
10050 \def\Fld@height{\DefaultHeightofSubmit}%
10051 \begingroup
10052 \expandafter\HyField@SetKeys\expandafter{%
10053 \DefaultOptionsofSubmit,#1%
10054 }%

```

```

10055 \HyField@FlagsPushButton
10056 \HyField@FlagsSubmit
10057 \ifFld@hidden\def\Fld@width{1sp}\fi
10058 \leavevmode
10059 \Hy@escapeform\PDFForm@Submit
10060 \pdfstartlink user {%
10061 \PDFForm@Submit
10062 /AP<</N \SubmitObject/D \SubmitPObject>>%
10063 }%
10064 \relax
10065 \MakeButtonField{#2}%
10066 \pdfendlink
10067 \endgroup
10068 }
10069 \def\@Reset[#1]#2{%
10070 \Field@toks={ }%
10071 \def\Fld@width{\DefaultWidthofReset}%
10072 \def\Fld@height{\DefaultHeightofReset}%
10073 \beginngroup
10074 \expandafter\HyField@SetKeys\expandafter{%
10075 \DefaultOptionsofReset,#1%
10076 }%
10077 \HyField@FlagsPushButton
10078 \ifFld@hidden\def\Fld@width{1sp}\fi
10079 \leavevmode
10080 \Hy@escapeform\PDFForm@Reset
10081 \pdfstartlink user {\PDFForm@Reset}\relax
10082 \MakeButtonField{#2}%
10083 \pdfendlink
10084 \endgroup
10085 }
10086 \def\@CheckBox[#1]#2{% parameters, label
10087 \def\Fld@name{#2}%
10088 \def\Fld@default{0}%
10089 \beginngroup
10090 \def\Fld@width{\DefaultWidthofCheckBox}%
10091 \def\Fld@height{\DefaultHeightofCheckBox}%
10092 \Field@toks={ }%
10093 \expandafter\HyField@SetKeys\expandafter{%
10094 \DefaultOptionsofCheckBox,#1%
10095 }%
10096 \PDFForm@Name
10097 \HyField@FlagsCheckBox
10098 \ifFld@hidden\def\Fld@width{1sp}\fi
10099 \LayoutCheckField{#2}{%
10100 \Hy@escapeform\PDFForm@Check
10101 \pdfstartlink user {\PDFForm@Check}\relax
10102 \MakeCheckField{\Fld@width}{\Fld@height}%
10103 \pdfendlink
10104 }%
10105 \endgroup
10106 }
10107 \pdfobj {%
10108 <<%
10109 /Type/Encoding%
10110 /Differences[%
10111 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%

```

```

10112      /ring/tilde %
10113      39/quotesingle %
10114      96/grave %
10115      128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10116      /fraction/guilsinglleft/guilsinglright/minus/perthousand%
10117      /quotedblbase/quotedblleft/quotedblright/quoteleft%
10118      /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
10119      /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
10120      164/currency %
10121      166/brokenbar %
10122      168/dieresis/copyright/ordfeminine %
10123      172/logicalnot/.notdef/registered/macron/degree/plusminus%
10124      /twosuperior/threesuperior/acute/mu %
10125      183/periodcentered/cedilla/onesuperior/ordmasculine %
10126      188/onequarter/onehalf/threequarters %
10127      192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
10128      /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
10129      /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
10130      /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
10131      /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
10132      /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
10133      /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
10134      /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
10135      /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
10136      /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
10137      1%
10138      >>%
10139 }
10140 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
10141 \pdfobj{%
10142   <<%
10143     /Type/Font%
10144     /Subtype/Type1%
10145     /Name/ZaDb%
10146     /BaseFont/ZapfDingbats%
10147   >>%
10148 }
10149 \edef\OBJ@ZaDb{\the\pdflastobj}
10150 \pdfobj{%
10151   <<%
10152     /Type/Font%
10153     /Subtype/Type1%
10154     /Name/Helv%
10155     /BaseFont/Helvetica%
10156     /Encoding \OBJ@pdfdocencoding\space 0 R%
10157   >>%
10158 }
10159 \edef\OBJ@Helv{\the\pdflastobj}
10160 \pdfobj{%
10161   <<%
10162     /Fields[]%
10163     /DR<<%
10164       /Font<<%
10165         /ZaDb \OBJ@ZaDb\space 0 R%
10166         /Helv \OBJ@Helv\space 0 R%
10167       >>%
10168     >>%

```

```

10169 /DA(/Helv 10 Tf 0 g)%
10170 /NeedAppearances true%
10171 >>%
10172 }
10173 \edef\OBJ@acroform{\the\pdflastobj}
10174 </pdfTeX>

```

## 47.6 dvipdfm

D. P. Story adapted the pdfTeX forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```

10175 <*dvipdfm>

```

\@Gauge

```

10176 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10177 \typeout{Sorry, dvipdfm does not support FORM gauges}%
10178 }

```

\@Form

```

10179 \def\@Form[#1]{%
10180 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
10181 \setkeys{Form}{#1}%
10182 \@pdfm@mark{obj @afields []}%
10183 \@pdfm@mark{obj @corder []}%
10184 \@pdfm@mark{%
10185   obj @aform <<%
10186     /Fields @afields%
10187     /DR<<%
10188     /Font<<%
10189     /ZaDb @OBJZaDb%
10190     /Helv @OBJHelv%
10191     >>%
10192     >>%
10193     /DA(/Helv 10 Tf 0 g)%
10194     /CO @corder%
10195     /NeedAppearances true%
10196     >>%
10197   }%
10198 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
10199 }

```

\@endForm

```

10200 \def\@endForm{}

```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```

10201 \def\dvipdfm@setdim{%
10202   height \the\ht\pdfm@box\space
10203   width \the\wd\pdfm@box\space
10204   depth \the\dp\pdfm@box\space
10205 }

```

\HyField@AnnotCount

```

10206 \newcount\HyField@AnnotCount
10207 \HyField@AnnotCount=\z@

```



\HyField@AdvanceAnnotCount

```
10208 \def\HyField@AdvanceAnnotCount{%
10209   \global\advance\HyField@AnnotCount\@ne
10210 }
```

\HyField@TheAnnotCount

```
10211 \def\HyField@TheAnnotCount{%
10212   \the\HyField@AnnotCount
10213 }
```

\@TextField

```
10214 \def\@TextField[#1]#2{% parameters, label
10215   \def\Fld@name{#2}%
10216   \def\Fld@default{}%
10217   \let\Fld@value\@empty
10218   \def\Fld@width{\DefaultWidthofText}%
10219   \def\Fld@height{%
10220     \ifFld@multiline
10221       \DefaultHeightofTextMultiline
10222     \else
10223       \DefaultHeightofText
10224     \fi
10225   }%
10226   \begingroup
10227     \Field@toks={ }%
10228     \expandafter\HyField@SetKeys\expandafter{%
10229       \DefaultOptionsofText,#1%
10230     }%
10231     \PDFForm@Name
10232     \HyField@FlagsText
10233     \ifFld@hidden\def\Fld@width{1sp}\fi
10234     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
10235     \setbox\pdfm@box=\hbox{%
10236       \MakeTextField{\Fld@width}{\Fld@height}%
10237     }%
10238     \HyField@AdvanceAnnotCount
10239     \LayoutTextField{#2}{%
10240       \Hy@escapeform\PDFForm@Text
10241       \@pdfm@mark{%
10242         ann @text\HyField@TheAnnotCount\space
10243         \dvipdfm@setdim << \PDFForm@Text >>%
10244       }%
10245     }%
10246     \unhbox\pdfm@box
10247     \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
10248     % record in @afields array
10249   \endgroup
10250 }
```

\@ChoiceMenu

```
10251 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10252   \def\Fld@name{#2}%
10253   \let\Fld@default\relax
10254   \let\Fld@value\relax
10255   \def\Fld@width{\DefaultWidthofChoiceMenu}%
10256   \def\Fld@height{\DefaultHeightofChoiceMenu}%

```

```

10257 \beginngroup
10258   \Fld@menulength=0 %
10259   \@tempdima\z@
10260   \@for\@curropt:=#3\do{%
10261     \expandafter\Fld@checkequals\@curropt==\%
10262     \Hy@StepCount\Fld@menulength
10263     \settowidth{\@tempdimb}{\@currDisplay}%
10264     \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10265   }%
10266   \advance\@tempdima by 15\p@
10267   \Field@toks={ }%
10268   \beginngroup
10269     \HyField@SetKeys{#1}%
10270   \edef\x{\endgroup
10271     \noexpand\expandafter
10272     \noexpand\HyField@SetKeys
10273     \noexpand\expandafter{%
10274       \expandafter\noexpand\cname DefaultOptionsof%
10275       \ifFld@radio
10276         Radio%
10277       \else
10278         \ifFld@combo
10279           \ifFld@popdown
10280             PopdownBox%
10281           \else
10282             ComboBox%
10283           \fi
10284         \else
10285           ListBox%
10286         \fi
10287       \fi
10288     \endcname
10289   }%
10290   }\x
10291   \HyField@SetKeys{#1}%
10292   \PDFForm@Name
10293   \ifFld@hidden\def\Fld@width{1sp}\fi
10294   \ifx\Fld@value\relax
10295     \let\Fld@value\Fld@default
10296   \fi
10297   \LayoutChoiceField{#2}{%
10298     \ifFld@radio
10299       \HyField@FlagsRadioButton
10300       \@@Radio{#3}%
10301     \else
10302       \beginngroup
10303         \HyField@FlagsChoice
10304         \ifdim\Fld@width<\@tempdima
10305           \ifdim\@tempdima<1cm\@tempdima1cm\fi
10306           \edef\Fld@width{\the\@tempdima}%
10307         \fi
10308         \ifFld@combo
10309         \else
10310           \@tempdima=\the\Fld@menulength\Fld@charsize
10311           \advance\@tempdima by \Fld@borderwidth bp %
10312           \advance\@tempdima by \Fld@borderwidth bp %
10313           \edef\Fld@height{\the\@tempdima}%

```

```

10314         \fi
10315         \@@Listbox{#3}%
10316     \endgroup
10317     \fi
10318 }%
10319 \endgroup
10320 }

\@@Radio

10321 \def\@@Radio#1{%
10322     \Fld@listcount=0 %
10323     \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
10324     \@for\@curropt:=#1\do{%
10325         \expandafter\Fld@checkequals\@curropt==\%
10326         \Hy@StepCount\Fld@listcount
10327         \@currDisplay\space
10328         \leavevmode
10329         \Hy@escapeform\PDFForm@Radio
10330         \ifnum\Fld@listcount=1 %
10331             \HyField@AdvanceAnnotCount
10332             \fi
10333         \@pdfm@mark{%
10334             ann \ifnum\Fld@listcount=1 @radio\HyField@TheAnnotCount\space\fi
10335             \dvi pdfm@setdim
10336             <<%
10337                 \PDFForm@Radio
10338                 /AP<</N<</\@currValue /null>>>>%
10339             >>%
10340         }%
10341         \unhcopy\pdfm@box\space% deliberate space between radio buttons
10342         \ifnum\Fld@listcount=1 %
10343             \@pdfm@mark{put @afields @radio\HyField@TheAnnotCount}%
10344         \fi
10345     }%
10346 }

\Fld@listcount

10347 \newcount\Fld@listcount

\@@Listbox

10348 \def\@@Listbox#1{%
10349     \HyField@PDFChoices{#1}%
10350     \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
10351     \leavevmode
10352     \Hy@escapeform\PDFForm@List
10353     \HyField@AdvanceAnnotCount
10354     \@pdfm@mark{%
10355         ann @list\HyField@TheAnnotCount\space
10356         \dvi pdfm@setdim
10357         <<\PDFForm@List>>%
10358     }%
10359     \unhbox\pdfm@box
10360     \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
10361 }

\@PushButton

```

```

10362 \def\@PushButton[#1]#2{% parameters, label
10363   \def\Fld@name{#2}%
10364   \begingroup
10365     \Field@toks={ }%
10366     \expandafter\HyField@SetKeys\expandafter{%
10367       \DefaultOptionsofPushButton,#1%
10368     }%
10369     \PDFForm@Name
10370     \HyField@FlagsPushButton
10371     \ifFld@hidden\def\Fld@width{1sp}\fi
10372     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10373     \HyField@AdvanceAnnotCount
10374     \LayoutPushButtonField{%
10375       \leavevmode
10376       \Hy@escapeform\PDFForm@Push
10377       \@pdfm@mark{%
10378         ann @push\HyField@TheAnnotCount\space
10379         \dvipdfm@setdim
10380         <<\PDFForm@Push>>%
10381       }%
10382     }%
10383     \unhbox\pdfm@box
10384     \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
10385   \endgroup
10386 }

\@Submit

10387 \def\@Submit[#1]#2{%
10388   \Field@toks={ }%
10389   \def\Fld@width{\DefaultWidthofSubmit}%
10390   \def\Fld@height{\DefaultHeightofSubmit}%
10391   \begingroup
10392     \expandafter\HyField@SetKeys\expandafter{%
10393       \DefaultOptionsofSubmit,#1%
10394     }%
10395     \HyField@FlagsPushButton
10396     \HyField@FlagsSubmit
10397     \ifFld@hidden\def\Fld@width{1sp}\fi
10398     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10399     \leavevmode
10400     \Hy@escapeform\PDFForm@Submit
10401     \HyField@AdvanceAnnotCount
10402     \@pdfm@mark{%
10403       ann @submit\HyField@TheAnnotCount\space
10404       \dvipdfm@setdim
10405       <<\PDFForm@Submit>>%
10406     }%
10407     \unhbox\pdfm@box%
10408     \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
10409   \endgroup
10410 }

\@Reset

10411 \def\@Reset[#1]#2{%
10412   \Field@toks={ }%
10413   \def\Fld@width{\DefaultWidthofReset}%
10414   \def\Fld@height{\DefaultHeightofReset}%

```

```

10415 \beginpgroup
10416   \expandafter\HyField@SetKeys\expandafter{%
10417     \DefaultOptionsofReset,#1%
10418   }%
10419   \HyField@FlagsPushButton
10420   \ifFld@hidden\def\Fld@width{1sp}\fi
10421   \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10422   \leavevmode
10423   \Hy@escapeform\PDFForm@Reset
10424   \HyField@AdvanceAnnotCount
10425   \@pdfm@mark{%
10426     ann @reset\HyField@TheAnnotCount\space
10427     \dvipdfm@setdim
10428     <<\PDFForm@Reset>>%
10429   }%
10430   \unhbox\pdfm@box
10431   \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
10432 \endpgroup
10433 }

```

#### \@CheckBox

```

10434 \def\@CheckBox[#1]#2{% parameters, label
10435   \def\Fld@name{#2}%
10436   \def\Fld@default{0}%
10437   \beginpgroup
10438     \def\Fld@width{\DefaultWidthofCheckBox}%
10439     \def\Fld@height{\DefaultHeightofCheckBox}%
10440     \Field@toks={ }%
10441     \expandafter\HyField@SetKeys\expandafter{%
10442       \DefaultOptionsofCheckBox,#1%
10443     }%
10444     \PDFForm@Name
10445     \HyField@FlagsCheckBox
10446     \ifFld@hidden\def\Fld@width{1sp}\fi
10447     \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
10448     \HyField@AdvanceAnnotCount
10449     \LayoutCheckField{#2}{%
10450       \Hy@escapeform\PDFForm@Check
10451       \@pdfm@mark{%
10452         ann @check\HyField@TheAnnotCount\space
10453         \dvipdfm@setdim
10454         <<\PDFForm@Check>>%
10455       }%
10456       \unhbox\pdfm@box
10457       \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
10458     }%
10459   \endpgroup
10460 }

10461 \@pdfm@mark{obj @OBJpdfdocencoding%
10462 <<%
10463   /Type/Encoding%
10464   /Differences[%
10465     24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
10466     39/quotesingle %
10467     96/grave %
10468     128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10469     /fraction/guilsinglleft/guilsinglright/minus/perthousand%

```

```

10470      /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
10471      /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
10472      /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
10473      164/currency %
10474      166/brokenbar %
10475      168/dieresis/copyright/ordfeminine %
10476      172/logicalnot/.notdef/registered/macron/degree/plusminus%
10477      /twosuperior/threesuperior/acute/mu %
10478      183/periodcentered/cedilla/onesuperior/ordmasculine %
10479      188/onequarter/onehalf/threequarters %
10480      192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
10481      /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
10482      /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
10483      /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
10484      /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
10485      /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
10486      /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
10487      /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%
10488      /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
10489      /thorn/ydieresis%
10490      ]%
10491      >>%
10492 }
10493 \@pdfmark{obj @OBJZaDb%
10494      <<%
10495      /Type/Font%
10496      /Subtype/Type1%
10497      /Name/ZaDb%
10498      /BaseFont/ZapfDingbats%
10499      >>%
10500 }
10501 \@pdfmark{obj @OBJHelv%
10502      <<%
10503      /Type/Font%
10504      /Subtype/Type1%
10505      /Name/Helv%
10506      /BaseFont/Helvetica%
10507      /Encoding @OBJpdfdocencoding%
10508      >>%
10509 }
10510 </dvipdfm>

```

## 47.7 Common forms part

```

10511 <*pdfform>

```

\Hy@escapestring

```

10512 \begingroup\expandafter\expandafter\expandafter\endgroup
10513 \expandafter\ifx\csname pdfescapestring\endcsname\relax
10514   \let\Hy@escapestring\@firstofone
10515   \def\Hy@escapeform#1{%
10516     \ifHy@escapeform
10517       \def\Hy@escapestring##1{%
10518         \noexpand\Hy@escapestring{\noexpand##1}%
10519       }%
10520     \edef\Hy@temp{#1}%
10521     \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil

```

```

10522     \def\Hy@escapestring##1{%
10523         \ifundefined{Hy@esc@\string##1}{%
10524             ##1%
10525             \ThisShouldNotHappen
10526         }{%
10527             \csname Hy@esc@\string##1\endcsname
10528         }%
10529     }%
10530     \else
10531         \let\Hy@escapestring\@firstofone
10532     \fi
10533 }%
10534 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
10535     \ifx\#3\%
10536     \else
10537         \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
10538         \Hy@ReturnAfterFi{%
10539             \Hy@@escapeform#3\@nil
10540         }%
10541     \fi
10542 }%
10543 \else
10544     \def\Hy@escapeform#1{%
10545         \ifHy@escapeform
10546             \let\Hy@escapestring\pdfescapestring
10547         \else
10548             \let\Hy@escapestring\@firstofone
10549         \fi
10550     }%
10551     \Hy@escapeform{}%
10552 \fi

```

#### \PDFForm@Name

```

10553 \def\PDFForm@Name{%
10554     \begingroup
10555     \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
10556         \ifHy@unicode
10557             \Hy@unicodedefalse
10558         \fi
10559     \fi
10560     \pdfstringdef\Hy@gtemp\Fld@name
10561 \endgroup
10562 \let\Fld@name\Hy@gtemp
10563 }

```

#### \PDFForm@Check

```

10564 \def\PDFForm@Check{%
10565     /Subtype/Widget%
10566     \Fld@annotflags
10567     /T(\Fld@name)%
10568     /FT/Btn%
10569     \Fld@flags
10570     /Q \Fld@align
10571     /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
10572     /MK<<%
10573         \ifnum\Fld@rotation=\z@
10574         \else

```

```

10575      /R \Fld@rotation
10576      \fi
10577      \ifx\Fld@bordercolor\relax
10578      \else
10579      /BC[\Fld@bordercolor]%
10580      \fi
10581      \ifx\Fld@bcolor\relax
10582      \else
10583      /BG[\Fld@bcolor]%
10584      \fi
10585      /CA(\Hy@escapestring{\Fld@cbsymbol})%
10586      >>%
10587      /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
10588      \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10589      /H/P%
10590      \ifFld@checked /V/Yes\else /V/Off\fi
10591 }

```

\PDFForm@Push

```

10592 \def\PDFForm@Push{%
10593   /Subtype/Widget%
10594   \Fld@annotflags
10595   /T(\Fld@name)%
10596   /FT/Btn%
10597   \HyField@flags
10598   /H/P%
10599   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10600   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
10601       \ifx\Fld@bordercolor\relax\else 1\fi
10602       \space
10603   \else
10604     /MK<<%
10605     \ifnum\Fld@rotation=\z@
10606     \else
10607       /R \Fld@rotation
10608       \fi
10609       \ifx\Fld@bordercolor\relax
10610       \else
10611       /BC[\Fld@bordercolor]%
10612       \fi
10613     >>%
10614   \fi
10615   /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick})>>%
10616 }

```

\Fld@additionalactions

```

10617 \def\Fld@@additionalactions{%
K input (keystroke) format
10618   \ifx\Fld@keystroke@code\@empty
10619   \else
10620     /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
10621   \fi
F display format
10622   \ifx\Fld@format@code\@empty
10623   \else
10624     /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%

```



```

10625  \fi
V validation
10626  \ifx\Fld@validate@code\@empty
10627  \else
10628    /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
10629  \fi
C calculation
10630  \ifx\Fld@calculate@code\@empty
10631  \else
10632    /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
10633  \fi
Fo receiving the input focus
10634  \ifx\Fld@onfocus@code\@empty
10635  \else
10636    /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
10637  \fi
Bl loosing the input focus (blurred)
10638  \ifx\Fld@onblur@code\@empty
10639  \else
10640    /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
10641  \fi
D pressing the mouse button (down)
10642  \ifx\Fld@onmousedown@code\@empty
10643  \else
10644    /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
10645  \fi
U releasing the mouse button (up)
10646  \ifx\Fld@onmouseup@code\@empty
10647  \else
10648    /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
10649  \fi
E cursor enters the annotation's active area.
10650  \ifx\Fld@onenter@code\@empty
10651  \else
10652    /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
10653  \fi
X cursor exits the annotation's active area.
10654  \ifx\Fld@onexit@code\@empty
10655  \else
10656    /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
10657  \fi
10658 }
10659 \def\Fld@additionalactions{%
10660 \if-\Fld@@additionalactions-%
10661 \else
10662 /AA<<\Fld@@additionalactions>>%
10663 \fi
10664 }

```

\PDFForm@List

```

10665 \def\PDFForm@List{%
10666 /Subtype/Widget%

```

```

10667 \Fld@annotflags
10668 /T(\Fld@name)%
10669 /FT/Ch%
10670 \Fld@flags
10671 /Q \Fld@align
10672 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10673 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
10674 \ifx\Fld@bordercolor\relax\else 1\fi
10675 \ifx\Fld@bcolor\relax \else 1\fi
10676 \space
10677 \else
10678 /MK<<%
10679 \ifnum\Fld@rotation=\z@
10680 \else
10681 /R \Fld@rotation
10682 \fi
10683 \ifx\Fld@bordercolor\relax
10684 \else
10685 /BC[\Fld@bordercolor]%
10686 \fi
10687 \ifx\Fld@bcolor\relax
10688 \else
10689 /BG[\Fld@bcolor]%
10690 \fi
10691 >>%
10692 \fi
10693 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
10694 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10695 \Fld@choices
10696 \Fld@additionalactions
10697 }

```

\PDFForm@Radio

```

10698 \def\PDFForm@Radio{%
10699 /Subtype/Widget%
10700 \Fld@annotflags
10701 /T(\Fld@name)%
10702 /FT/Btn%
10703 \Fld@flags
10704 /H/P%
10705 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10706 /MK<<%
10707 \ifnum\Fld@rotation=\z@
10708 \else
10709 /R \Fld@rotation
10710 \fi
10711 \ifx\Fld@bordercolor\relax
10712 \else
10713 /BC[\Fld@bordercolor]%
10714 \fi
10715 \ifx\Fld@bcolor\relax
10716 \else
10717 /BG[\Fld@bcolor]%
10718 \fi
10719 /CA(H)%
10720 >>%
10721 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%

```

```

10722     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10723 \ifx\@currValue\Fld@default
10724     /V/\Fld@default
10725 \else
10726     /V/Off%
10727 \fi
10728 \Fld@additionalactions
10729 }

```

#### \PDFForm@Text

```

10730 \def\PDFForm@Text{%
10731 /Subtype/Widget%
10732 \Fld@annotflags
10733 /T(\Fld@name)%
10734 /FT/Tx%
10735 \Fld@flags
10736 /Q \Fld@align
10737 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
10738 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
10739     \ifx\Fld@bordercolor\relax\else 1\fi
10740     \ifx\Fld@bcolor\relax \else 1\fi
10741     \space
10742 \else
10743     /MK<<%
10744     \ifnum\Fld@rotation=\z@
10745     \else
10746     /R \Fld@rotation
10747 \fi
10748 \ifx\Fld@bordercolor\relax
10749 \else
10750 /BC[\Fld@bordercolor]%
10751 \fi
10752 \ifx\Fld@bcolor\relax
10753 \else
10754 /BG[\Fld@bcolor]%
10755 \fi
10756 >>%
10757 \fi
10758 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
10759     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10760 /DV(\Hy@escapestring{\Fld@default})%
10761 /V(\Hy@escapestring{\Fld@value})%
10762 \Fld@additionalactions
10763 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
10764 }

```

#### \PDFForm@Submit

```

10765 \def\PDFForm@Submit{%
10766 /Subtype/Widget%
10767 \Fld@annotflags
10768 /T(\Fld@name)%
10769 /FT/Btn%
10770 \Fld@flags
10771 /H/P%
10772 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10773 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
10774     \ifx\Fld@bordercolor\relax\else 1\fi

```

```

10775         \space
10776     \else
10777         /MK<<%
10778         \ifnum\Fld@rotation=\z@
10779         \else
10780             /R \Fld@rotation
10781         \fi
10782         \ifx\Fld@bordercolor\relax
10783         \else
10784             /BC[\Fld@bordercolor]%
10785         \fi
10786         >>%
10787     \fi
10788     /A<<%
10789     /S/SubmitForm%
10790     /F<<%
10791     /FS/URL%
10792     /F(\Hy@escapestring{\Form@action})%
10793     >>%
10794     \Fld@submitflags
10795     >>%
10796 }

```

#### \PDFForm@Reset

```

10797 \def\PDFForm@Reset{%
10798     /Subtype/Widget%
10799     \Fld@annotflags
10800     /T(\Fld@name)%
10801     /FT/Btn%
10802     \Fld@flags
10803     /H/P%
10804     /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
10805     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
10806         \ifx\Fld@bordercolor\relax\else 1\fi
10807         \space
10808     \else
10809         /MK<<%
10810         \ifnum\Fld@rotation=\z@
10811         \else
10812             /R \Fld@rotation
10813         \fi
10814         \ifx\Fld@bordercolor\relax
10815         \else
10816             /BC[\Fld@bordercolor]%
10817         \fi
10818     % /CA (Clear)
10819     % /AC (Done)
10820     >>%
10821     \fi
10822     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10823     /A<</S/ResetForm>>%
10824 }

10825 </pdfform>
10826 <*package>

```

## 48 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in  $\LaTeX$  macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```
10827 \def\phantomsection{%
10828   \Hy@GlobalStepCount\Hy@linkcounter
10829   \xdef\@currentHref{section*.\the\Hy@linkcounter}%
10830   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
10831 }
10832 \</package>
```

### 48.1 Bookmarks

```
10833 \< *outlines>
```

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

```
10834 \def\Hy@writebookmark#1#2#3#4#5{%
10835   % section number, text, label, level, file
10836   \ifx\WriteBookmarks\relax%
10837   \else
10838     \ifnum#4>\Hy@bookmarksdepth\relax
10839     \else
10840       \@writetorep{#1}{#2}{#3}{#4}{#5}%
10841     \fi
10842   \fi
10843 }
10844 \def\Hy@currentbookmarklevel{0}
10845 \def\Hy@numberline#1{#1 }
10846 \def\@writetorep#1#2#3#4#5{%
10847   \begingroup
10848     \edef\Hy@tempa{#5}%
10849     \ifx\Hy@tempa\Hy@bookmarkstype
10850       \edef\Hy@level{#4}%
10851       \ifx\Hy@levelcheck Y%
10852         \@tempcnta\Hy@level\relax
10853         \advance\@tempcnta by -1 %
10854         \ifnum\Hy@currentbookmarklevel<\@tempcnta
10855           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
10856           \advance\@tempcnta by 1 %
10857           \Hy@Warning{%
10858             Difference (\the\@tempcnta) between bookmark levels is %
10859             greater \MessageBreak than one, level fixed%
10860           }%
10861           \@tempcnta\Hy@currentbookmarklevel
10862           \advance\@tempcnta by 1 %
10863           \edef\Hy@level{\the\@tempcnta}%

```

```

10864     \fi
10865   \else
10866     \global\let\Hy@levelcheck Y%
10867   \fi
10868   \global\let\Hy@currentbookmarklevel\Hy@level
10869   \@tempcnta\Hy@level\relax
10870   \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
10871   \advance\@tempcnta by -1 %
10872   \edef\Hy@tempa{#3}%
10873   \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
10874   \ifx\Hy@tempa\Hy@tempb
10875     \Hy@Warning{%
10876       The anchor of a bookmark and its parent's must not%
10877       \MessageBreak be the same. Added a new anchor%
10878     }%
10879     \phantomsection
10880   \fi
10881   \ifHy@bookmarksnumbered
10882     \let\numberline\Hy@numberline
10883     \let\partnumberline\Hy@numberline
10884     \let\chapternumberline\Hy@numberline
10885   \else
10886     \let\numberline\@gobble
10887     \let\partnumberline\@gobble
10888     \let\chapternumberline\@gobble
10889   \fi
10890   \pdfstringdef\Hy@tempa{#2}%
10891   \if@filesw
10892     \protected@write\@outlinefile{}{%
10893       \protect\BOOKMARK
10894         [\Hy@level] [\@bookmarkopenstatus{\Hy@level}]{#3}%
10895       {\Hy@tempa}{\Hy@tempb}%
10896     }%
10897   \fi
10898   \fi
10899 \endgroup
10900 }

```

In the call of `\BOOKMARK` the braces around #4 are omitted, because it is not likely, that the level number contains ] .

```

10901 \newcommand{\currentpdfbookmark}{%
10902   \pdfbookmark[\Hy@currentbookmarklevel]%
10903 }
10904 \newcommand{\subpdfbookmark}{%
10905   \@tempcnta\Hy@currentbookmarklevel
10906   \Hy@StepCount\@tempcnta
10907   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
10908 }
10909 \newcommand{\belowpdfbookmark}[2]{%
10910   \@tempcnta\Hy@currentbookmarklevel
10911   \Hy@StepCount\@tempcnta
10912   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
10913   \advance\@tempcnta by -1 %
10914   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
10915 }

```

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.

```

10916 \renewcommand\pdfbookmark[3][0]{%
10917   \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
10918   \hyper@anchorstart{#3.#1}\hyper@anchorend
10919 }
10920 \def\BOOKMARK{\ifnextchar[{\@BOOKMARK}{\@BOOKMARK[1][-]}}
10921 \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 pdf macros.

The VTEX section was written originally by VTEX, but then amended by Denis Girou (denis.girou@idris.fr), then by Taco Hoekwater (taco.hoekwater@wkap.nl). The problem is that VTEX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping \ and the like.

```

10922 < *vtex >
10923 \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.

```

10924 \begingroup
10925   \catcode'\'=12 %
10926   \ifnum\Hy@VTeXversion<650 %
10927     \catcode'\=12 %
10928     \gdef\hv@pdf@char#1#2#3{%
10929       \char
10930       \ifcase'#1#2#3 %
10931         "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
10932         \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
10933         \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
10934         \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
10935         \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
10936         \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
10937         \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
10938         \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
10939         \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
10940         \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
10941         \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
10942         \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
10943         \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
10944         \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
10945         \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
10946         \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
10947         \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
10948         \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
10949         \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
10950         \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
10951         \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
10952         \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
10953         \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
10954         \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
10955         \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
10956         \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
10957         \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
10958         \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
10959         \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
10960         \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
10961         \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%

```

```

10962      \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
10963      \fi
10964    }%
10965  \else
10966    \gdef\hv@pdf@char{\char'}%
10967  \fi
10968 \endgroup

```

\@@BOOKMARK

```

10969 \def\@@BOOKMARK[#1][#2]#3#4#5{%
10970   \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
10971   \edef\@mycount{\the\@serial@counter}%
10972   \Hy@StepCount\@serial@counter
10973   \edef\@parcount{%
10974     \expandafter\ifx\csname @count@#5\endcsname\relax
10975     0%
10976     \else
10977       \csname @count@#5\endcsname
10978     \fi
10979   }%
10980   \immediate\special{%
10981     !outline #3;p=\@parcount,i=\@mycount,%
10982     s=\ifx#2-c\else o\fi,t=#4%
10983   }%
10984 }%

```

\ReadBookmarks

```

10985 \def\ReadBookmarks{%
10986   \begingroup
10987     \def\0{\hv@pdf@char 0}%
10988     \def\1{\hv@pdf@char 1}%
10989     \def\2{\hv@pdf@char 2}%
10990     \def\3{\hv@pdf@char 3}%
10991     \def\({}%
10992     \def\)}%
10993     \def\do##1{%
10994       \ifnum\the\catcode'##1=\active
10995       \@makeother##1%
10996     \fi
10997   }%
10998   \dospecials
10999   \InputIfFileExists{\jobname.out}{\}{}%
11000 \endgroup
11001 \ifx\WriteBookmarks\relax
11002 \else
11003   \if@filesw
11004     \newwrite\@outlinefile
11005     \immediate\openout\@outlinefile=\jobname.out\relax
11006     \ifHy@typexml
11007       \immediate\write\@outlinefile{<relaxxml>\relax}%
11008     \fi
11009   \fi
11010 \fi
11011 }

11012 </vtex>
11013 <!*vtex>

```



```

11014 \def\ReadBookmarks{%
11015   \begingroup
11016   \escapechar='\'%
11017   \let\escapechar\@gobble %
11018   \def\@@BOOKMARK[##1][##2]##3##4##5{\calc@bm@number{##5}}%
11019   \InputIfFileExists{\jobname.out}{-}{-}%
11020   \ifx\WriteBookmarks\relax
11021     \global\let\WriteBookmarks\relax
11022   \fi
11023   \def\@@BOOKMARK[##1][##2]##3##4##5{%
11024     \def\Hy@temp{##4}%
11025 \<pdfTex>
11026     \Hy@pstringdef\Hy@pstringName{##3}%
11027     \Hy@OutlineName{}\Hy@pstringName{%
11028       ##2\check@bm@number{##3}%
11029     }{%
11030       \expandafter\strip@prefix\meaning\Hy@temp
11031     }%
11032 \</pdfTex>
11033 \<pdfmark>
11034     \Hy@pstringdef\Hy@pstringName{##3}%
11035     \pdfmark{%
11036       pdfmark=/OUT,%
11037       Count={##2\check@bm@number{##3}},%
11038       Dest={\Hy@pstringName},%
11039       Title=\expandafter\strip@prefix\meaning\Hy@temp
11040     }%
11041 \</pdfmark>
11042 \<dvipdfm>
11043     \Hy@pstringdef\Hy@pstringName{##3}%
11044     \@pdfm@mark{%
11045       outline \ifHy@DvipdfmxOutlineOpen
11046         [%
11047           \ifnum##21>\z@
11048           \else
11049             -%
11050           \fi
11051         ] %
11052         \fi
11053         ##1<<%
11054         /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
11055         /A<<%
11056         /S/GoTo%
11057         /D(\Hy@pstringName)%
11058         >>%
11059       >>%
11060     }%
11061 \</dvipdfm>
11062   }%
11063   {%
11064     \def\WriteBookmarks{0}%
11065     \InputIfFileExists{\jobname.out}{-}{-}%
11066   }%
11067   {%\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
11068   \ifx\WriteBookmarks\relax
11069   \else
11070     \if@filesW

```

```

11071      \newwrite\@outlinefile
11072      \immediate\openout\@outlinefile=\jobname.out\relax
11073      \ifHy@typexml
11074          \immediate\write\@outlinefile{<relaxxml>\relax}%
11075      \fi
11076      \fi
11077      \fi
11078      \endgroup
11079 }
11080 <*pdftex>
11081 \def\Hy@OutlineName#1#2#3#4{%
11082     \pdfoutline goto name{#2}count#3{#4}%
11083 }
11084 </pdftex>
11085 \def\check@bm@number#1{%
11086     \expandafter\ifx\csname B_#1\endcsname\relax
11087         0%
11088     \else
11089         \csname B_#1\endcsname
11090     \fi
11091 }
11092 \def\calc@bm@number#1{%
11093     \@tempcnta=\check@bm@number{#1}\relax
11094     \advance\@tempcnta by 1 %
11095     \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
11096 }
11097 </!vtex>

11098 \ifHy@implicit
11099 \else
11100     \expandafter\endinput
11101 \fi

11102 </outlines>
11103 <*outlines | hypertex>

11104 \let\H@old@ssect\@ssect
11105 \def\@ssect#1#2#3#4#5{%
11106     \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
11107     \phantomsection
11108 }
11109 \let\H@old@schapter\@schapter
11110 \def\@schapter#1{%
11111     \H@old@schapter{#1}%
11112     \begingroup
11113         \let\@mkboth\@gobbletwo
11114         \Hy@GlobalStepCount\Hy@linkcounter
11115         \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11116         \Hy@raisedlink{%
11117             \hyper@anchorstart{\@currentHref}\hyper@anchorend
11118         }%
11119     \endgroup
11120 }

```

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:

```

11121 \@ifundefined{@chapter}{-}{%
11122     \let\Hy@org@chapter\@chapter

```

```

11123 \def\@chapter{%
11124   \def\Hy@next{%
11125     \Hy@GlobalStepCount\Hy@linkcounter
11126     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11127     \Hy@raisedlink{%
11128       \hyper@anchorstart{\@currentHref}\hyper@anchorend
11129     }%
11130   }%
11131   \ifnum\c@secnumdepth>\m@ne
11132     \@ifundefined{if@mainmatter}%
11133     \iftrue{\csname if@mainmatter\endcsname}%
11134     \let\Hy@next\relax
11135   \fi
11136 \fi
11137 \Hy@next
11138 \Hy@org@chapter
11139 }%
11140 }

11141 \let\H@old@part\@part
11142 \begingroup\expandafter\expandafter\expandafter\endgroup
11143 \expandafter\ifx\csname chapter\endcsname\relax
11144   \let\Hy@secnum@part\z@
11145 \else
11146   \let\Hy@secnum@part\m@ne
11147 \fi
11148 \def\@part{%
11149   \ifnum\Hy@secnum@part>\c@secnumdepth
11150     \phantomsection
11151   \fi
11152   \H@old@part
11153 }

11154 \let\H@old@spart\@spart
11155 \def\@spart#1{%
11156   \H@old@spart{#1}%
11157   \Hy@GlobalStepCount\Hy@linkcounter
11158   \xdef\@currentHref{part*.\the\Hy@linkcounter}%
11159   \Hy@raisedlink{%
11160     \hyper@anchorstart{\@currentHref}\hyper@anchorend
11161   }%
11162 }

11163 \let\H@old@sect\@sect
11164 \def\@sect#1#2#3#4#5#6[#7]#8{%
11165   \ifnum #2>\c@secnumdepth
11166     \Hy@GlobalStepCount\Hy@linkcounter
11167     \xdef\@currentHref{section*.\the\Hy@linkcounter}%
11168   \fi
11169   \H@old@sect{#1}-{#2}-{#3}-{#4}-{#5}-{#6}[#{#7}]{#8}%
11170   \ifnum #2>\c@secnumdepth
11171     \Hy@raisedlink{%
11172       \hyper@anchorstart{\@currentHref}\hyper@anchorend
11173     }%
11174   \fi
11175 }

11176 </outlines | hypertex>
11177 <*outlines>

11178 \expandafter\def\csname Parent-4\endcsname{}

```

```

11179 \expandafter\def\csname Parent-3\endcsname{}
11180 \expandafter\def\csname Parent-2\endcsname{}
11181 \expandafter\def\csname Parent-1\endcsname{}
11182 \expandafter\def\csname Parent0\endcsname{}
11183 \expandafter\def\csname Parent1\endcsname{}
11184 \expandafter\def\csname Parent2\endcsname{}
11185 \expandafter\def\csname Parent3\endcsname{}
11186 \expandafter\def\csname Parent4\endcsname{}
11187 </outlines>

```

## 49 Compatibility with koma-script classes

```
11188 <(*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.

```

11189 \def\Hy@tempa{%
11190   \def\@addchap[##1]##2{%
11191     \typeout{##2}%
11192     \if@twoside
11193       \mkboth{##1}{}%
11194     \else
11195       \mkboth{}{##1}%
11196     \fi
11197     \addtocontents{lof}{\protect\addvspace{10\p@}}%
11198     \addtocontents{lot}{\protect\addvspace{10\p@}}%
11199     \Hy@GlobalStepCount\Hy@linkcounter
11200     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11201     \Hy@raisedlink{%
11202       \hyper@anchorstart{\@currentHref}\hyper@anchorend
11203     }%
11204     \if@twocolumn
11205       \topnewpage[\@makeschapterhead{##2}]%
11206     \else
11207       \@makeschapterhead{##2}%
11208       \@afterheading
11209     \fi
11210     \addcontentsline{toc}{chapter}{##1}%
11211   }%
11212 }
11213 \@ifclassloaded{scrbook}{%
11214   \@ifclasslater{scrbook}{2001/01/01}{%
11215     \let\Hy@tempa\@empty
11216   }{}%
11217 }{%
11218   \@ifclassloaded{scrreprt}{%
11219     \@ifclasslater{scrreprt}{2001/01/01}{%
11220       \let\Hy@tempa\@empty
11221     }{}%
11222   }{%
11223     \let\Hy@tempa\@empty
11224   }%
11225 }%
11226 \Hy@tempa
11227 </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

```
11228 (*pd1enc)
11229 \DeclareFontEncoding{PD1}{-}{-}
```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```
11230 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
11231 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
11232 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
11233 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
11234 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed
```

Accents

```
11235 \DeclareTextAccent{\'}{PD1}{\textgrave}
11236 \DeclareTextAccent{\'}{PD1}{\textacute}
11237 \DeclareTextAccent{\`}{PD1}{\textcircumflex}
11238 \DeclareTextAccent{\~}{PD1}{\texttilde}
11239 \DeclareTextAccent{\"}{PD1}{\textdieresis}
11240 \DeclareTextAccent{\r}{PD1}{\textring}
11241 \DeclareTextAccent{\v}{PD1}{\textcaron}
11242 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
11243 \DeclareTextAccent{\c}{PD1}{\textcedilla}
11244 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textgrave}
11245 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
11246 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textcircumflex}
11247 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
11248 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textdieresis}
11249 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
11250 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}
11251 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
11252 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
11253 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
```

Accent glyph names

```
11254 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve
11255 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
11256 \DeclareTextCommand{\textcircumflex}{PD1}{\032} % circumflex
11257 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
11258 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
11259 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
11260 \DeclareTextCommand{\textring}{PD1}{\036} % ring
11261 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde
```

\040: space

\041: exclam

```
11262 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042
11263 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign
11264 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar
11265 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent
11266 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand
```

\047: quotesingle

```
11267 \DeclareTextCommand{\textparenleft}{PD1}{\string\({} % parenleft \050
11268 \DeclareTextCommand{\textparenright}{PD1}{\string\)} % parenright \051
```

\052: asterisk

\053: plus

```

\054: comma
\055: hyphen
\056: period
\057: slash
\060...\071: 0...9
\072: colon
\073: semicolon
11269 \DeclareTextCommand{\textless}{PD1}{<} % less \074
\075: equal
11270 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076
\077: question
\100: at
\101...\132: A...Z
\133: bracketleft
11271 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash
\135: bracketright
11272 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum
11273 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
11274 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave
\141...\172: a...z
11275 \DeclareTextCompositeCommand{\.}{PD1}{i}{i} % i
11276 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
11277 \DeclareTextCommand{\textbar}{PD1}{|} % bar
11278 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
11279 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde
No glyph \177 in PDFDocEncoding.
11280 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
11281 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
11282 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl
11283 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis
11284 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
11285 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
11286 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
11287 \DeclareTextCommand{\textfractionmark}{PD1}{\207} % fraction, \207
11288 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft
11289 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
11290 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
11291 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
11292 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
11293 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
11294 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright
11295 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
11296 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
11297 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
11298 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark
11299 \DeclareTextCommand{\textfi}{PD1}{\223} % fi ?? \223
11300 \DeclareTextCommand{\textfl}{PD1}{\224} % fl ?? \224
11301 \DeclareTextCommand{\L}{PD1}{\225} % Lslash, \225
11302 \DeclareTextCommand{\OE}{PD1}{\226} % OE
11303 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron
11304 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230} % Ydieresis
11305 \DeclareTextCommand{\IJ}{PD1}{\230}
11306 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231} % Zcaron, \231
11307 \DeclareTextCommand{\i}{PD1}{\232} % dotlessi, \232
11308 \DeclareTextCommand{\l}{PD1}{\233} % lslash, \233

```

```

11309 \DeclareTextCommand{\oe}{PD1}{\234} % oe
11310 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
11311 \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.

```

11312 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
11313 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown
11314 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
11315 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
11316 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
11317 \DeclareTextCommand{\textyen}{PD1}{\245} % yen
11318 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
11319 \DeclareTextCommand{\textsection}{PD1}{\247} % section
11320 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
11321 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
11322 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
11323 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
11324 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

```

No glyph \255 in PDFDocEncoding.

```

11325 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
11326 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
11327 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
11328 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
11329 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
11330 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
11331 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
11332 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
11333 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
11334 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
11335 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
11336 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior
11337 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine
11338 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright
11339 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter
11340 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf
11341 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters
11342 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown
11343 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300} % Agrave
11344 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301} % Aacute
11345 \DeclareTextCompositeCommand{\~}{PD1}{A}{\302} % Acircumflex
11346 \DeclareTextCompositeCommand{\`}{PD1}{A}{\303} % Atilde
11347 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304} % Adieresis
11348 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring
11349 \DeclareTextCommand{\AE}{PD1}{\306} % AE
11350 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla
11351 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310} % Egrave
11352 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311} % Eacute
11353 \DeclareTextCompositeCommand{\~}{PD1}{E}{\312} % Ecircumflex
11354 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313} % Edieresis
11355 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314} % Igrave
11356 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315} % Iacute
11357 \DeclareTextCompositeCommand{\~}{PD1}{I}{\316} % Icircumflex
11358 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317} % Idieresis
11359 \DeclareTextCommand{\DH}{PD1}{\320} % Eth
11360 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth
11361 \DeclareTextCompositeCommand{\`}{PD1}{N}{\321} % Ntilde
11362 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322} % Ograve

```

```

11363 \DeclareTextCompositeCommand{\'}{PD1}{0}{\323} % Oacute
11364 \DeclareTextCompositeCommand{\^}{PD1}{0}{\324} % Ocircumflex
11365 \DeclareTextCompositeCommand{\~}{PD1}{0}{\325} % Otilde
11366 \DeclareTextCompositeCommand{\"}{PD1}{0}{\326} % Odieresis
11367 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply
11368 \DeclareTextCommand{\O}{PD1}{\330} % Oslash
11369 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331} % Ugrave
11370 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute
11371 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333} % Ucircumflex
11372 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis
11373 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335} % Yacute
11374 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn
11375 \DeclareTextCommand{\ss}{PD1}{\337} % germanbls
11376 \DeclareTextCompositeCommand{\'}{PD1}{a}{\340} % agrave
11377 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute
11378 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342} % acircumflex
11379 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343} % atilde
11380 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344} % adieresis
11381 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring
11382 \DeclareTextCommand{\ae}{PD1}{\346} % ae
11383 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla
11384 \DeclareTextCompositeCommand{\'}{PD1}{e}{\350} % egrave
11385 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute
11386 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352} % ecircumflex
11387 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353} % edieresis
11388 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
11389 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % igrave
11390 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
11391 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
11392 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356} % icircumflex
11393 \DeclareTextCompositeCommand{\~}{PD1}{i}{\356} % icircumflex
11394 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
11395 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
11396 \DeclareTextCommand{\dh}{PD1}{\360} % eth
11397 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361} % ntilde
11398 \DeclareTextCompositeCommand{\'}{PD1}{o}{\362} % ograve
11399 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363} % oacute
11400 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364} % ocircumflex
11401 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365} % otilde
11402 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366} % odieresis
11403 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
11404 \DeclareTextCommand{\o}{PD1}{\370} % oslash
11405 \DeclareTextCompositeCommand{\'}{PD1}{u}{\371} % ugrave
11406 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372} % uacute
11407 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373} % ucircumflex
11408 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374} % udieresis
11409 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375} % yacute
11410 \DeclareTextCommand{\th}{PD1}{\376} % thorn
11411 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377} % ydieresis
11412 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

11413 \DeclareTextCommand{\SS}{PD1}{SS}
11414 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

11415 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
11416 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
11417 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}

```



```

11418 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
11419 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
11420 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
11421 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
11422 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

11423 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
11424 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
11425 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
11426 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
11427 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
11428 \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;

```

11429 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
11430 \DeclareTextCompositeCommand{\'}{PD1}{c}{c} % cacute
11431 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
11432 \DeclareTextCompositeCommand{\'}{PD1}{n}{n} % nacute
11433 \DeclareTextCompositeCommand{\'}{PD1}{s}{s} % sacute
11434 \DeclareTextCompositeCommand{\'}{PD1}{z}{z} % zacute
11435 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot
11436 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
11437 \DeclareTextCompositeCommand{\'}{PD1}{C}{C} % Cacute
11438 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
11439 \DeclareTextCompositeCommand{\'}{PD1}{N}{N} % Nacute
11440 \DeclareTextCompositeCommand{\'}{PD1}{S}{S} % Sacute
11441 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z} % Zacute
11442 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot

```

```

11443 \pdfenc)

```

## 50.2 PU encoding

```

11444 \langle *puenc \rangle
11445 \DeclareFontEncoding{PU}{-}{-}

```

### 50.2.1 Basic Latin

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

11446 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
11447 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
11448 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
11449 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
11450 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed

```

Accents

```

11451 \DeclareTextAccent{\'}{PU}{\textgrave}
11452 \DeclareTextAccent{\'}{PU}{\textacute}
11453 \DeclareTextAccent{\^}{PU}{\textcircumflex}
11454 \DeclareTextAccent{\~}{PU}{\texttilde}
11455 \DeclareTextAccent{"}{PU}{\textdieresis}
11456 \DeclareTextAccent{\r}{PU}{\textring}
11457 \DeclareTextAccent{\v}{PU}{\textcaron}
11458 \DeclareTextAccent{\.}{PU}{\textdotaccent}
11459 \DeclareTextAccent{\c}{PU}{\textcedilla}
11460 \DeclareTextAccent{\U}{PU}{\textbreve}
11461 \DeclareTextAccent{\C}{PU}{\textdoublegrave}
11462 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textgrave}
11463 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}

```

```

11464 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textcircumflex}
11465 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
11466 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textdieresis}
11467 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
11468 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
11469 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
11470 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
11471 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
11472 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}
11473 \DeclareTextCommand{\=}{PU}[1]{\TextSymbolUnavailable{\={#1}}#1}
11474 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
11475 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
11476 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}

Accent glyph names
11477 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
11478 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
11479 \DeclareTextCommand{\textcircumflex}{PU}{\80\032} % circumflex
11480 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
11481 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
11482 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
11483 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
11484 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
11485 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave

\040: space
\041: exclam

11486 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
11487 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
11488 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
11489 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
11490 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand

\047: quotesingle

11491 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft
11492 \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

11493 \DeclareTextCommand{\textless}{PU}{<} % less \80\074

\075: equal

11494 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076

\077: question
\100: at
\101... \132: A...Z
\133: bracketleft

11495 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash

\135: bracketright

11496 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum

```

```

11497 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore
11498 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave
\141...\172: a...z
11499 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % i
11500 \DeclareTextCommand{\j}{PU}{j} % jdotless
11501 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft
11502 \DeclareTextCommand{\textbar}{PU}{|} % bar
11503 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright
11504 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde
No glyph \177 in PDFDocEncoding.

```

## 50.2.2 Latin-1 Supplement

```

11505 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212
11506 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223
11507 \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, testbmse, testbmzc, and testbmyi for details. Problematic are all positions, but especially \OE, \oe, and \i.

```

11508 \DeclareTextCommand{\OE}{PU}{OE} % OE
11509 \DeclareTextCommand{\oe}{PU}{oe} % oe

```

The euro \240 is inserted in version 1.3 of the pdf specification.

```

11510 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown
11511 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent
11512 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling
11513 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency
11514 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen
11515 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar
11516 \DeclareTextCommand{\textsection}{PU}{\80\247} % section
11517 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis
11518 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright
11519 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine
11520 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft
11521 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot

```

No glyph \255 in PDFDocEncoding.

```

11522 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered
11523 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron
11524 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree
11525 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus
11526 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior
11527 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior
11528 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute
11529 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu
11530 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph
11531 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered
11532 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla
11533 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior
11534 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine
11535 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright
11536 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter
11537 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf
11538 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters
11539 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown
11540 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300} % Agrave
11541 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute

```

```

11542 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\302} % Acircumflex
11543 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303} % Atilde
11544 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis
11545 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring
11546 \DeclareTextCommand{\AE}{PU}{\80\306} % AE
11547 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla
11548 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310} % Egrave
11549 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311} % Eacute
11550 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312} % Ecircumflex
11551 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis
11552 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314} % Igrave
11553 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315} % Iacute
11554 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316} % Icircumflex
11555 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317} % Idieresis
11556 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth
11557 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321} % Ntilde
11558 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322} % Ograve
11559 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323} % Oacute
11560 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324} % Ocircumflex
11561 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325} % Otilde
11562 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326} % Odieresis
11563 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply
11564 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash
11565 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331} % Ugrave
11566 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332} % Uacute
11567 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333} % Ucircumflex
11568 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334} % Udieresis
11569 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335} % Yacute
11570 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn
11571 \DeclareTextCommand{\ss}{PU}{\80\337} % germandbls
11572 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340} % agrave
11573 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341} % aacute
11574 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342} % acircumflex
11575 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343} % atilde
11576 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344} % adieresis
11577 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
11578 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
11579 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
11580 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350} % egrave
11581 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351} % eacute
11582 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352} % ecircumflex
11583 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353} % edieresis
11584 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave
11585 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave
11586 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
11587 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
11588 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
11589 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
11590 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
11591 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
11592 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
11593 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361} % ntilde
11594 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362} % ograve
11595 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363} % oacute
11596 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364} % ocircumflex
11597 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365} % otilde
11598 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366} % odieresis

```

```

11599 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
11600 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
11601 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371} % ugrave
11602 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372} % uacute
11603 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373} % ucircumflex
11604 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374} % udieresis
11605 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375} % yacute
11606 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
11607 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377} % ydieresis
11608 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```

11609 \DeclareTextCommand{\SS}{PU}{SS}

```

Aliases (german.sty)

```

11610 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
11611 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
11612 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
11613 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
11614 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
11615 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
11616 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
11617 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

11618 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
11619 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
11620 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
11621 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
11622 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

### 50.2.3 Latin Extended-A

```

11623 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% Amacron
11624 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% amacron
11625 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% Abreve
11626 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% abreve
11627 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% Aogonek
11628 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% aogonek
11629 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% Cacute
11630 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% cacute
11631 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% Ccircumflex
11632 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% ccircumflex
11633 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% Cdot
11634 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% cdot
11635 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% Ccaron
11636 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% ccaron
11637 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% Dcaron
11638 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% dcaron
11639 \DeclareTextCommand{\DJ}{PU}{\81\020}% Dslash
11640 \DeclareTextCommand{\dj}{PU}{\81\021}% dslash
11641 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% Emacron
11642 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% emacron
11643 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% Ebreve
11644 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% ebreve
11645 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% Edot
11646 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% edot
11647 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% Eogonek
11648 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% eogonek
11649 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% Ecaron

```

```

11650 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033} % ecaron
11651 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034} % Gcircumflex
11652 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035} % gcircumflex
11653 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036} % Gbreve
11654 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037} % gbreve
11655 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040} % Gdot
11656 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041} % gdot
11657 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042} % Gcedilla
11658 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043} % gcedilla
11659 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044} % Hcircumflex
11660 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045} % hcircumflex
11661 \DeclareTextCommand{\textHslash}{PU}{\81\046} % Hslash
11662 \DeclareTextCommand{\texthslash}{PU}{\81\047} % hslash
11663 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050} % Itilde
11664 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde
11665 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde
11666 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052} % Imacron
11667 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053} % imacron
11668 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053} % imacron
11669 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054} % Ibreve
11670 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
11671 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
11672 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056} % Iogonek
11673 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
11674 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
11675 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060} % Idot
11676 \DeclareTextCommand{\i}{PU}{\81\061} % idotless
11677 % IJlig
11678 % ijlig
11679 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064} % Jcircumflex
11680 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
11681 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
11682 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
11683 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
11684 % kgreen
11685 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
11686 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
11687 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
11688 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
11689 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
11690 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
11691 % L middle dot
11692 % l middle dot
11693 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
11694 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
11695 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute
11696 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
11697 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
11698 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
11699 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
11700 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
11701 % n apostrophe
11702 \DeclareTextCommand{\NG}{PU}{\81\112} % NG
11703 \DeclareTextCommand{\ng}{PU}{\81\113} % ng
11704 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114} % Omacron
11705 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115} % omacron
11706 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve

```

```

11707 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
11708 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
11709 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
11710 \DeclareTextCommand{\OE}{PU}{\81\122} % OE
11711 \DeclareTextCommand{\oe}{PU}{\81\123} % oe
11712 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
11713 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
11714 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
11715 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
11716 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
11717 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
11718 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
11719 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
11720 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134} % Scircumflex
11721 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135} % scircumflex
11722 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
11723 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
11724 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
11725 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
11726 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
11727 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
11728 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
11729 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
11730 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
11731 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
11732 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150} % Utilde
11733 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151} % utilde
11734 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152} % Umacron
11735 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153} % umacron
11736 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
11737 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
11738 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring
11739 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
11740 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
11741 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute
11742 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Uogonek
11743 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % uogonek
11744 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164} % Wcircumflex
11745 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165} % wcircumflex
11746 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166} % Ycircumflex
11747 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167} % ycircumflex
11748 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170} % Ydieresis
11749 \DeclareTextCommand{\IJ}{PU}{\81\170}
11750 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
11751 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
11752 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
11753 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
11754 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
11755 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

```

#### 50.2.4 Latin Extended-B

```

11756 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
11757 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
11758 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
11759 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
11760 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
11761 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron

```

```

11762 \DeclareTextCompositeCommand{\v}{PU}{0}{\81\321} % Ocaron
11763 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
11764 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
11765 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
11766 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
11767 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
11768 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
11769 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
11770 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
11771 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
11772 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Oogonek
11773 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

```

## 50.2.5 Greek

```

11774 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}
11775 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}
11776 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
11777 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
11778 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}
11779 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
11780 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
11781 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
11782 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
11783 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
11784 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}
11785 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
11786 \DeclareTextCommand{\textBeta}{PU}{\83\222}
11787 \DeclareTextCommand{\textGamma}{PU}{\83\223}
11788 \DeclareTextCommand{\textDelta}{PU}{\83\224}
11789 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
11790 \DeclareTextCommand{\textZeta}{PU}{\83\226}
11791 \DeclareTextCommand{\textEta}{PU}{\83\227}
11792 \DeclareTextCommand{\textTheta}{PU}{\83\230}
11793 \DeclareTextCommand{\textIota}{PU}{\83\231}
11794 \DeclareTextCommand{\textKappa}{PU}{\83\232}
11795 \DeclareTextCommand{\textLambda}{PU}{\83\233}
11796 \DeclareTextCommand{\textMu}{PU}{\83\234}
11797 \DeclareTextCommand{\textNu}{PU}{\83\235}
11798 \DeclareTextCommand{\textXi}{PU}{\83\236}
11799 \DeclareTextCommand{\textOmicron}{PU}{\83\237}
11800 \DeclareTextCommand{\textPi}{PU}{\83\240}
11801 \DeclareTextCommand{\textRho}{PU}{\83\241}
11802 \DeclareTextCommand{\textSigma}{PU}{\83\243}
11803 \DeclareTextCommand{\textTau}{PU}{\83\244}
11804 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}
11805 \DeclareTextCommand{\textPhi}{PU}{\83\246}
11806 \DeclareTextCommand{\textChi}{PU}{\83\247}
11807 \DeclareTextCommand{\textPsi}{PU}{\83\250}
11808 \DeclareTextCommand{\textOmega}{PU}{\83\251}
11809 \DeclareTextCompositeCommand{\"}{PU}{\textIota}{\83\252}
11810 \DeclareTextCompositeCommand{\"}{PU}{\textUpsilon}{\83\253}
11811 \DeclareTextCompositeCommand{\'}{PU}{\textalpha}{\83\254}
11812 \DeclareTextCompositeCommand{\'}{PU}{\textepsilon}{\83\255}
11813 \DeclareTextCompositeCommand{\'}{PU}{\texteta}{\83\256}
11814 \DeclareTextCompositeCommand{\'}{PU}{\textiota}{\83\257}
11815 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}
11816 \DeclareTextCompositeCommand{\"}{PU}{\textupsilonacute}{\83\260}

```



```

11817 \DeclareTextCommand{\textalpha}{PU}{\83\261}
11818 \DeclareTextCommand{\textbeta}{PU}{\83\262}
11819 \DeclareTextCommand{\textgamma}{PU}{\83\263}
11820 \DeclareTextCommand{\textdelta}{PU}{\83\264}
11821 \DeclareTextCommand{\textepsilon}{PU}{\83\265}
11822 \DeclareTextCommand{\textzeta}{PU}{\83\266}
11823 \DeclareTextCommand{\texteta}{PU}{\83\267}
11824 \DeclareTextCommand{\texttheta}{PU}{\83\270}
11825 \DeclareTextCommand{\textiota}{PU}{\83\271}
11826 \DeclareTextCommand{\textkappa}{PU}{\83\272}
11827 \DeclareTextCommand{\textlambda}{PU}{\83\273}
11828 \DeclareTextCommand{\textmu}{PU}{\83\274}
11829 \DeclareTextCommand{\textnu}{PU}{\83\275}
11830 \DeclareTextCommand{\textxi}{PU}{\83\276}
11831 \DeclareTextCommand{\textomicron}{PU}{\83\277}
11832 \DeclareTextCommand{\textpi}{PU}{\83\300}
11833 \DeclareTextCommand{\textrho}{PU}{\83\301}
11834 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
11835 \DeclareTextCommand{\textsigma}{PU}{\83\303}
11836 \DeclareTextCommand{\texttau}{PU}{\83\304}
11837 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
11838 \DeclareTextCommand{\textphi}{PU}{\83\306}
11839 \DeclareTextCommand{\textchi}{PU}{\83\307}
11840 \DeclareTextCommand{\textpsi}{PU}{\83\310}
11841 \DeclareTextCommand{\textomega}{PU}{\83\311}
11842 \DeclareTextCompositeCommand{\"}{PU}{\textiota}{\83\312}
11843 \DeclareTextCompositeCommand{\'}{PU}{\textupsilon}{\83\313}
11844 \DeclareTextCompositeCommand{\'}{PU}{\textomicron}{\83\314}
11845 \DeclareTextCompositeCommand{\'}{PU}{\textupsilon}{\83\315}
11846 \DeclareTextCompositeCommand{\'}{PU}{\textomega}{\83\316}
11847 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}
11848 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}
11849 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}
11850 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}
11851 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}
11852 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}
11853 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}
11854 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}
11855 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}
11856 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}
11857 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}
11858 %\DeclareTextCommand{\textvarkappa}{PU}{\83\360}
11859 %\DeclareTextCommand{\textvarrho}{PU}{\83\361}

```

## 50.2.6 Cyrillic

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names.

```

11860 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
11861 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}%
11862 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
11863 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% GJE
11864 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
11865 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
11866 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
11867 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI
11868 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
11869 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE

```

11870 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE  
11871 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE  
11872 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% KJE  
11873 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U  
11874 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE  
11875 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A  
11876 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE  
11877 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE  
11878 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE  
11879 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE  
11880 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE  
11881 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE  
11882 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE  
11883 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I  
11884 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I  
11885 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}%  
11886 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA  
11887 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL  
11888 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM  
11889 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN  
11890 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O  
11891 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE  
11892 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER  
11893 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES  
11894 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE  
11895 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U  
11896 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF  
11897 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA  
11898 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE  
11899 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE  
11900 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA  
11901 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA  
11902 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN  
11903 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU  
11904 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN  
11905 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E  
11906 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU  
11907 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA  
11908 \DeclareTextCommand{\cyra}{PU}{\84\060}% a  
11909 \DeclareTextCommand{\cyrb}{PU}{\84\061}% be  
11910 \DeclareTextCommand{\cyrv}{PU}{\84\062}% ve  
11911 \DeclareTextCommand{\cyrg}{PU}{\84\063}% ghe  
11912 \DeclareTextCommand{\cyrd}{PU}{\84\064}% de  
11913 \DeclareTextCommand{\cyre}{PU}{\84\065}% ie  
11914 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% zhe  
11915 \DeclareTextCommand{\cyrz}{PU}{\84\067}% ze  
11916 \DeclareTextCommand{\cyri}{PU}{\84\070}% i  
11917 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i  
11918 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}%  
11919 \DeclareTextCommand{\cyrk}{PU}{\84\072}% ka  
11920 \DeclareTextCommand{\cyrl}{PU}{\84\073}% el  
11921 \DeclareTextCommand{\cyrm}{PU}{\84\074}% em  
11922 \DeclareTextCommand{\cyrn}{PU}{\84\075}% en  
11923 \DeclareTextCommand{\cyro}{PU}{\84\076}% o  
11924 \DeclareTextCommand{\cyrp}{PU}{\84\077}% pe  
11925 \DeclareTextCommand{\cyrr}{PU}{\84\100}% er  
11926 \DeclareTextCommand{\cyrs}{PU}{\84\101}% es

11927 \DeclareTextCommand{\cyr t}{PU}{\84\102}% te  
11928 \DeclareTextCommand{\cyr u}{PU}{\84\103}% u  
11929 \DeclareTextCommand{\cyr f}{PU}{\84\104}% ef  
11930 \DeclareTextCommand{\cyr h}{PU}{\84\105}% ha  
11931 \DeclareTextCommand{\cyr c}{PU}{\84\106}% tse  
11932 \DeclareTextCommand{\cyr ch}{PU}{\84\107}% che  
11933 \DeclareTextCommand{\cyr sh}{PU}{\84\110}% sha  
11934 \DeclareTextCommand{\cyr shch}{PU}{\84\111}% shcha  
11935 \DeclareTextCommand{\cyr hrdsn}{PU}{\84\112}% hard sign  
11936 \DeclareTextCommand{\cyr rery}{PU}{\84\113}% yeru  
11937 \DeclareTextCommand{\cyr sftsn}{PU}{\84\114}% soft sign  
11938 \DeclareTextCommand{\cyr rerev}{PU}{\84\115}% e  
11939 \DeclareTextCommand{\cyr yu}{PU}{\84\116}% yu  
11940 \DeclareTextCommand{\cyr ya}{PU}{\84\117}% ya  
11941 \DeclareTextCommand{\cyr yo}{PU}{\84\121}% io  
11942 \DeclareTextCompositeCommand{\ "}{PU}{\cyr e}{\84\121}%  
11943 \DeclareTextCommand{\cyr dje}{PU}{\84\122}% dje  
11944 \DeclareTextCompositeCommand{\ '}{PU}{\cyr g}{\84\123}% gje  
11945 \DeclareTextCommand{\cyr ie}{PU}{\84\124}% ukrainian ie  
11946 \DeclareTextCommand{\cyr dze}{PU}{\84\125}% dze  
11947 \DeclareTextCommand{\cyr ii}{PU}{\84\126}% byelorussian-ukrainian i  
11948 \DeclareTextCommand{\cyr yi}{PU}{\84\127}% yi  
11949 \DeclareTextCommand{\cyr je}{PU}{\84\130}% je  
11950 \DeclareTextCommand{\cyr lje}{PU}{\84\131}% lje  
11951 \DeclareTextCommand{\cyr nje}{PU}{\84\132}% nje  
11952 \DeclareTextCommand{\cyr tshe}{PU}{\84\133}% tshe  
11953 \DeclareTextCompositeCommand{\ '}{PU}{\cyr k}{\84\134}% kje  
11954 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% short u  
11955 \DeclareTextCommand{\cyr dzhe}{PU}{\84\137}% dzhe  
11956 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA  
11957 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega  
11958 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT  
11959 \DeclareTextCommand{\cyryat}{PU}{\84\143}% yat  
11960 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E  
11961 \DeclareTextCommand{\cyriote}{PU}{\84\145}% iotified e  
11962 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS  
11963 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% little yus  
11964 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS  
11965 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% iotified little yus  
11966 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS  
11967 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% big yus  
11968 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS  
11969 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% iotified big yus  
11970 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI  
11971 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% ksi  
11972 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI  
11973 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi  
11974 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA  
11975 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita  
11976 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA  
11977 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa  
11978 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave  
11979 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave  
11980 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK  
11981 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk  
11982 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA  
11983 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega

11984 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo  
11985 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo  
11986 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT  
11987 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot  
11988 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA  
11989 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa  
11990 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign  
11991 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO  
11992 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION  
11993 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA  
11994 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA  
11995 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn  
11996 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn  
11997 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke  
11998 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke  
11999 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook  
12000 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook  
12001 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender  
12002 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender  
12003 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender  
12004 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender  
12005 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender  
12006 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% ka descender  
12007 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke  
12008 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke  
12009 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke  
12010 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% ka stroke  
12011 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA  
12012 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka  
12013 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender  
12014 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender  
12015 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE  
12016 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe  
12017 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook  
12018 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook  
12019 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA  
12020 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha  
12021 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender  
12022 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% es descender  
12023 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender  
12024 \DeclareTextCommand{\cyrtldsc}{PU}{\84\255}% te descender  
12025 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U  
12026 \DeclareTextCommand{\cyry}{PU}{\84\257}% straight u  
12027 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke  
12028 \DeclareTextCommand{\cyr yhcrs}{PU}{\84\261}% straight u stroke  
12029 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender  
12030 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% ha descender  
12031 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE  
12032 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% ligature te tse  
12033 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender  
12034 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender  
12035 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke  
12036 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% che vertical stroke  
12037 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA  
12038 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha  
12039 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhasian CHE  
12040 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhasian che

12041 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% abkhasian CHE descender  
12042 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhasian che descender  
12043 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% palochka  
12044 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve  
12045 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\302}% zhe breve  
12046 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook  
12047 \DeclareTextCommand{\cyrk}{PU}{\84\304}% ka hook  
12048 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook  
12049 \DeclareTextCommand{\cyrn}{PU}{\84\310}% en hook  
12050 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE  
12051 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che  
12052 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve  
12053 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve  
12054 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% A diaeresis  
12055 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% a diaeresis  
12056 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE  
12057 \DeclareTextCommand{\cyrae}{PU}{\84\325}% ligature a ie  
12058 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve  
12059 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve  
12060 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA  
12061 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% schwa  
12062 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis  
12063 \DeclareTextCompositeCommand{\U}{PU}{\cyrschwa}{\84\333}% schwa diaeresis  
12064 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\334}% ZHE diaeresis  
12065 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\335}% zhe diaeresis  
12066 \DeclareTextCompositeCommand{\U}{PU}{\CYRZ}{\84\336}% ZE diaeresis  
12067 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\337}% ze diaeresis  
12068 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhasian DZE  
12069 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhasian dze  
12070 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\342}% I macron  
12071 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\343}% i macron  
12072 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\344}% I diaeresis  
12073 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\345}% i diaeresis  
12074 \DeclareTextCompositeCommand{\U}{PU}{\CYRO}{\84\346}% O diaeresis  
12075 \DeclareTextCompositeCommand{\U}{PU}{\cyro}{\84\347}% o diaeresis  
12076 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O  
12077 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% barred o  
12078 \DeclareTextCompositeCommand{\U}{PU}{\CYROTLD}{\84\352}% barred O diaeresis  
12079 \DeclareTextCompositeCommand{\U}{PU}{\cyrotld}{\84\353}% barred o diaeresis  
12080 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\356}% U macron  
12081 \DeclareTextCompositeCommand{\U}{PU}{\cyru}{\84\357}% u macron  
12082 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\360}% U diaeresis  
12083 \DeclareTextCompositeCommand{\U}{PU}{\cyru}{\84\361}% u diaeresis  
12084 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U double acute  
12085 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% u double acute  
12086 \DeclareTextCompositeCommand{\U}{PU}{\CYRCH}{\84\364}% CHE diaeresis  
12087 \DeclareTextCompositeCommand{\U}{PU}{\cyrch}{\84\365}% che diaeresis  
12088 \DeclareTextCompositeCommand{\U}{PU}{\CYRERY}{\84\370}% YERU diaeresis  
12089 \DeclareTextCompositeCommand{\U}{PU}{\cyrery}{\84\371}% yeru diaeresis

## 50.2.7 Symbols

12090 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash  
12091 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash  
12092 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030} % quoteleft  
12093 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright  
12094 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase

```

12095 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
12096 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
12097 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
12098 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
12099 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
12100 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet
12101 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
12102 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
12103 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
12104 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
12105 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
12106 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
12107 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
12108 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}
12109 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
12110 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
12111 %\DeclareTextCommand{\cyrlangle}{PU}{\9043\051}
12112 %\DeclareTextCommand{\cyrrangle}{PU}{\9043\052}

12113 </puenc>

```

## 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

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12114 <*puvnenc>

12115 \DeclareTextCommand{\abreve}{PU}{\81\003}
12116 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
12117 \DeclareTextCommand{\dj}{PU}{\81\021}
12118 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
12119 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
12120 \DeclareTextCommand{\ohorn}{PU}{\81\241}
12121 \DeclareTextCommand{\uhorn}{PU}{\81\260}
12122 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
12123 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
12124 \DeclareTextCommand{\DJ}{PU}{\81\020}
12125 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
12126 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
12127 \DeclareTextCommand{\OHORN}{PU}{\81\240}
12128 \DeclareTextCommand{\UHORN}{PU}{\81\257}

12129 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
12130 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
12131 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
12132 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
12133 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
12134 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
12135 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
12136 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
12137 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
12138 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
12139 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
12140 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
12141 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
12142 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}
12143 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}
12144 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}
12145 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}
12146 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}

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12147 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
12148 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
12149 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
12150 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
12151 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
12152 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
12153 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
12154 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
12155 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
12156 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
12157 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
12158 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
12159 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
12160 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
12161 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
12162 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
12163 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
12164 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
12165 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
12166 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
12167 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
12168 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
12169 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
12170 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
12171 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
12172 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
12173 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
12174 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
12175 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
12176 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
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12178 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
12179 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
12180 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
12181 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
12182 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
12183 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
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12187 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
12188 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
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12190 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
12191 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
12192 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
12193 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
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12195 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
12196 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
12197 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
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12199 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}  
12200 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}  
12201 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}  
12202 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}  
12203 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}

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12204 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}
12205 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}
12206 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}
12207 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}
12208 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}
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12215 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}
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12221 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}
12222 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}
12223 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}
12224 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}
12225 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}
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12227 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}
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12231 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}
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12233 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
12234 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
12235 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
12236 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}
12237 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
12238 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
12239 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}
12240 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
12241 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
12242 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
12243 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
12244 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}
12245 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
12246 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
12247 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
12248 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
12249 </puvnenc>

```

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```
12250 <*puarenc>
```

```

12251 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LETTER HAMZA
12252 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADDA A
12253 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA A
12254 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afii57412;ARABIC LETTER WAW WITH HAMZA AE
12255 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HA

```



12256 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE  
12257 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF  
12258 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH  
12259 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA  
12260 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH  
12261 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH  
12262 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM  
12263 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH  
12264 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH  
12265 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL  
12266 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL  
12267 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH  
12268 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN  
12269 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN  
12270 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN  
12271 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD  
12272 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD  
12273 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH  
12274 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH  
12275 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN  
12276 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN  
12277 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEEL  
12278 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afii57441;ARABIC LETTER FEH  
12279 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF  
12280 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF  
12281 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM  
12282 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LETTER MEEM  
12283 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON  
12284 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH  
12285 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afii57448;ARABIC LETTER WAW  
12286 \DeclareTextCommand{\alefmaqsurah}{PU}{\86\111}% 0649;afii57449;ARABIC LETTER ALEF MAKSURA  
12287 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afii57450;ARABIC LETTER YEH  
  
12288 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afii57451;ARABIC FATHATAN  
12289 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afii57452;ARABIC DAMMATAN  
12290 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN  
12291 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afii57454;ARABIC FATHA  
12292 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afii57455;ARABIC DAMMA  
12293 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA  
12294 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA  
12295 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afii57458;ARABIC SUKUN  
  
Farsi  
12296 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afii57506;ARABIC LETTER PEH  
12297 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afii57507;ARABIC LETTER TCHEH  
12298 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afii57508;ARABIC LETTER JEH  
12299 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afii????;FARSI LETTER KAF  
12300 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF  
12301 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afii????;FARSI LETTER YEH  
  
12302 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%  
12303 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ  
  
12304 </puarenc>

## 51 End of file hycheck.tex

12305 <\*check>

```
12306 \typeout{}  
12307 \begin{document}  
12308 \end{document}  
12309 </check>
```

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