

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

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processed November 2, 2007

## 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 Euro $\text{\TeX}$  1999.

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

Source code documentation:

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

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

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

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### 3 File hycheck.tex

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

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

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

```
4 \newcommand*{\checklatex}[1] [] {%
5   \typeout{}%
6   \typeout{* Format: 'LaTeX2e' #1}%
7   \typeout{\space\space Loaded: '\fmtname' \fmtversion}%
8 }%
```

`\checkpackage` The argument of `\checkpackage` is the package name without extension optionally followed by a release date.

```
9 \newcommand*{\checkpackage}[1] {%
10  \def\HyC@package{#1}%
11  \let\HyC@date\@empty
12  \@ifnextchar[\HyC@getDate\HyC@checkPackage
13 }
```

`\HyC@getDate` The release date is scanned.

```
14 \def\HyC@getDate[#1] {%
15  \def\HyC@date{#1}%
16  \HyC@checkPackage
17 }
```

`\HyC@checkPackage`

```
18 \def\HyC@checkPackage{%
19  \typeout{}%
20  \begingroup
21    \edef\x{\endgroup
22      \noexpand\RequirePackage{\HyC@package}%
23      \ifx\HyC@date\@empty\relax\else[\HyC@date]\fi%
24    }%
25  \x
26  \typeout{}%
27  \typeout{%
28    * Package '\HyC@package'%
29    \ifx\HyC@date\@empty
30      \else
31        \space\HyC@date
32      \fi
33  }%
34  \@ifundefined{ver@\HyC@package.sty}{%
35  }{%
36    \typeout{%
37      \space\space Loaded: '\HyC@package' %
38      \csname ver@\HyC@package.sty\endcsname
39    }%
40  }%
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@activesfalse    babel is not loaded.

```

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

```

### 5.3 Coordinate transformations

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

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

```

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

```

- It cannot be used inside \usepackage, because LaTeX expands the options before package hyperref is loaded and \hypercalcbp is defined.
- With e-TeX extensions an expandable implementation is very easy; \hypercalcbp can be used everywhere and is expanded at use.

- Without e-TeX's features `\hypercalcbp` cannot be implemented expandable (practically) and have to be supported by `\hypercalcbpdef`. Limitations:
  - Works only in options that use `\hypercalcbpdef` (currently only `pdfstartview`).
  - For calculations package `calc` has to be loaded.
  - The expansion of the argument is done at definition time.

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

```

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

\hypercalcbp

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

### 6.2 Definition of `\pdfstringdef`

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

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

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

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

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

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

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

```
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.** Whereever “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  $\LaTeX$  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  $\TeX$ '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 PDF 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{!'}\texttexclamdown#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\({\050}#1%
582         \HyPsd@Subst({\050}#1%
583         \HyPsd@StringSubst{\050}{\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 \yPsd@@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\@car\csname r@#1\endcsname\@nil
1019 \fi
1020 }

```

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

```

1021 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

```

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

```
1022 \def\HyPsd@@pageref#1*#2\END{%
1023   \ifx\#2\%
1024     \HyPsd@@pageref{#1}%
1025   \else
1026     \expandafter\HyPsd@@pageref
1027   \fi
1028 }
```

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

```
1029 \def\HyPsd@@@pageref#1{%
1030   \expandafter\ifx\csname r@#1\endcsname\relax
1031     ??%
1032   \else
1033     \expandafter\expandafter\expandafter\expandafter
1034     \expandafter\expandafter\expandafter\@car
1035     \expandafter\expandafter\expandafter\@gobble
1036     \csname r@#1\endcsname\@nil
1037   \fi
1038 }
```

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

```
1039 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}
```

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

```
1040 \def\HyPsd@@autoref#1*#2\END{%
1041   \ifx\#2\%
1042     \HyPsd@@autoref{#1}%
1043   \else
1044     \expandafter\HyPsd@@autoref
1045   \fi
1046 }
```

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

```
1047 \def\HyPsd@@@autoref#1{%
1048   \expandafter\ifx\csname r@#1\endcsname\relax
1049     ??%
1050   \else
1051     \expandafter\expandafter\expandafter\HyPsd@autorefname
1052     \csname r@#1\endcsname{}{}{}{}@nil
1053     \expandafter\expandafter\expandafter\@car\csname r@#1\endcsname\@nil
1054   \fi
1055 }
```

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

```
1056 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1057   \ifx\#4\%
1058   \else
1059     \HyPsd@@autorefname#4.\@nil
1060   \fi
1061 }
```

`\HyPsd@@autorefname`

```
1062 \def\HyPsd@@autorefname#1.#2\@nil{%
```

```

1063 \@ifundefined{#1autorefname}{%
1064   \@ifundefined{#1name}{%
1065     }{%
1066       \csname#1name\endcsname\space
1067     }%
1068   }{%
1069     \csname#1autorefname\endcsname\space
1070   }%
1071 }

```

### 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
1072 \begingroup
1073   \def\x#1#2{%
1074     \endgroup
1075     \let#1\def
1076     \def\HyPsd@DefCommand##1##2##3{%
1077       #1%
1078       \expandafter\noexpand
1079       \csname\expandafter\@gobble\string##1\@empty\endcsname
1080     \@gobble
1081   }%
1082   \let#2\let
1083   \def\HyPsd@LetCommand##1{%
1084     \expandafter\ifx\csname##1\expandafter\endcsname
1085       \csname iftrue\endcsname
1086     \pdfstringdefWarn\let

```

```

1087     \expandafter\@gobble
1088   \else
1089     \expandafter\ifx\csname##1\expandafter\endcsname
1090       \csname iffalse\endcsname
1091     \pdfstringdefWarn\let
1092     \expandafter\expandafter\expandafter\@gobble
1093   \else
1094     #2%
1095     \expandafter\noexpand
1096     \csname##1\expandafter\expandafter\expandafter\endcsname
1097   \fi
1098 \fi
1099 }%
1100 }%
1101 \expandafter\x\csname <def>-command\expandafter\endcsname
1102     \csname <let>-command\endcsname
1103 \def\HyPsd@LetCommand#1{%
1104   \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1105   \expandafter\expandafter\expandafter{%
1106     \expandafter\@gobble\string#1\@empty
1107   }%
1108 }

```

### 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.

```

1109 \def\HyPsd@ifnextchar{%
1110   \pdfstringdefWarn\@ifnextchar
1111   \expandafter\@gobbletwo\@gobble
1112 }

```

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

```

1113 \def\HyPsd@new@ifnextchar{%
1114   \pdfstringdefWarn\new@ifnextchar
1115   \expandafter\@gobbletwo\@gobble
1116 }

```

### 6.5.12 \@protected@testoptifnextchar

`\HyPsd@protected@testopt` Macros with optional arguments doesn't work properly, because they call `\@ifnextchar` to detect the optional argument (see the explanation of `\HyPsd@ifnextchar`). But a warning, that `\@ifnextchar` doesn't work, doesn't help the user very much. Therefore `\@protected@testopt` is also disabled, because its first argument is the problematic macro with the optional argument and it is called before `\@ifnextchar`.

```

1117 \def\HyPsd@protected@testopt#1{%
1118   \pdfstringdefWarn#1%
1119   \@gobbletwo
1120 }

```

## 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:

```
1121 \def\HyPsd@Warning#1{%
1122   \begingroup
1123     \def\space{ }%
1124     \Hy@Warning{#1}%
1125   \endgroup
1126 }
```

### 6.6.2 Protecting spaces

```
1127 \RequirePackage{etexcmds}
1128 \ifetex@unexpanded
1129   \expandafter\@secondoftwo
1130 \else
1131   \expandafter\@firstoftwo
1132 \fi
1133 {%
```

`\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`.

```
1134   \def\HyPsd@ProtectSpaces#1{%
1135     \iftrue
1136       \expandafter\HyPsd@@ProtectSpacesFi
1137       \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1138     \fi
1139   }%
```

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

```
1140   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1141     \fi
1142     \ifx\scrollmode#2\scrollmode
1143       \HyPsd@RemoveMask#1\HyPsd@End#3%
1144     \else
1145       \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1146       \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1147     \fi
1148   }%
```

### 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.

```
1149   \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1150     \toks@\expandafter{#1}%
1151     \xdef#2{\the\toks@}%
1152   }%
1153 }{%
1154   \let\HyPsd@fi\fi
1155   \def\HyPsd@ProtectSpaces#1{%
```

```

1156 \xdef#1{%
1157 \iftrue
1158 \expandafter\HyPsd@@ProtectSpacesFi
1159 \expandafter\expandafter\@empty#1| %
1160 \HyPsd@fi
1161 }%
1162 \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1163 }%
1164 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1165 \fi
1166 \etex@unexpanded{#1}%
1167 \ifx\scrollmode#2\scrollmode
1168 \else
1169 \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1170 \HyPsd@fi
1171 }%
1172 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1173 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1174 }%
1175 }

```

### 6.6.3 Remove grouping braces

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

```

1176 \def\HyPsd@RemoveBraces#1{%
1177 \ifx\scrollmode#1\scrollmode
1178 \else
1179 \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1180 \fi
1181 }

```

`\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`.

```

1182 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1183 \fi
1184 \def\Hy@temp@A{#1#2}%
1185 \def\Hy@temp@B{#3}%
1186 \ifx\Hy@temp@A\Hy@temp@B
1187 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1188 \HyPsd@String#1%
1189 }%
1190 \ifx\scrollmode#2\scrollmode
1191 \else
1192 \Hy@ReturnAfterFiFiEnd{%
1193 \HyPsd@RemoveBraces{#2}%
1194 }%
1195 \fi
1196 \else
1197 \def\Hy@temp@A{#1}%

```



```

1198 \HyPsd@AppendItalcorr\HyPsd@String
1199 \ifx\Hy@temp@A\@empty
1200 \Hy@ReturnAfterElseFiFiEnd{%
1201 \HyPsd@RemoveBraces{#2}%
1202 }%
1203 \else
1204 \HyPsd@ProtectSpaces\Hy@temp@A
1205 \HyPsd@AppendItalcorr\Hy@temp@A
1206 \Hy@ReturnAfterFiFiEnd{%
1207 \expandafter\HyPsd@RemoveBraces\expandafter
1208 {\Hy@temp@A#2}%
1209 }%
1210 \fi
1211 \fi
1212 \Hy@ReturnEnd
1213 }

```

\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.

```

1214 \def\HyPsd@AppendItalcorr#1{%
1215 \expandafter\HyPsd@@AppendItalcorr\expandafter{/}\#1%
1216 }
1217 \def\HyPsd@@AppendItalcorr#1#2{%
1218 \expandafter\def\expandafter#2\expandafter{#2#1}%
1219 }

```

## 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).

```

1220 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1221 \global\let\HyPsd@Rest\relax
1222 \ifcat\relax\noexpand#1\relax
1223 \ifx#1\protect
1224 \else
1225 \ifx#1\penalty
1226 \setbox\z@=\hbox{%
1227 \afterassignment\HyPsd@AfterCountRemove
1228 \count@=#2\HyPsd@End
1229 }%
1230 \else
1231 \ifx#1\kern
1232 \setbox\z@=\hbox{%
1233 \afterassignment\HyPsd@AfterDimenRemove
1234 \dimen@=#2\HyPsd@End
1235 }%
1236 \else

```

```

1237         \ifx#1\hskip
1238             \setbox\z@=\hbox{%
1239                 \afterassignment\HyPsd@AfterSkipRemove
1240                 \skip@=#2\HyPsd@End
1241             }%
1242         \else
1243             \HyPsd@CatcodeWarning{#1}%
1244         \fi
1245     \fi
1246 \fi
1247 \fi
1248 \else
1249     \ifcat#1A% letter
1250         \expandafter\def\expandafter\HyPsd@String\expandafter{%
1251             \HyPsd@String#1%
1252         }%
1253     \else
1254         \ifcat#1 % SPACE
1255             \expandafter\def\expandafter\HyPsd@String\expandafter{%
1256                 \HyPsd@String\HyPsd@SPACEOPTI
1257             }%
1258         \else
1259             \ifcat$#1%
1260                 \HyPsd@CatcodeWarning{math shift}%
1261             \else
1262                 \ifcat&#1%
1263                     \HyPsd@CatcodeWarning{alignment tab}%
1264                 \else
1265                     \ifcat^#1%
1266                         \HyPsd@CatcodeWarning{superscript}%
1267                     \else
1268                         \ifcat_#1%
1269                             \HyPsd@CatcodeWarning{subscript}%
1270                         \else
1271                             \expandafter\def\expandafter\HyPsd@String\expandafter{%
1272                                 \HyPsd@String#1%
1273                             }%
1274                         \fi
1275                     \fi
1276                 \fi
1277             \fi
1278         \fi
1279     \fi
1280 \fi
1281 \ifx\HyPsd@Rest\relax
1282     \ifx\scrollmode#2\scrollmode
1283     \else
1284         \Hy@ReturnAfterFiFiEnd{%
1285             \HyPsd@CheckCatcodes#2\HyPsd@End
1286         }%
1287     \fi
1288 \else
1289     \ifx\HyPsd@Rest\@empty
1290     \else
1291         \Hy@ReturnAfterFiFiEnd{%
1292             \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1293         }%

```

```

1294     \fi
1295     \fi
1296     \Hy@ReturnEnd
1297 }

```

### Remove counts, dimens, skips.

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

```

1298 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1299     \gdef\HyPsd@Rest{#1}%
1300 }

```

`\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.

```

1301 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1302     \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1303         \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1304         \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1305     \else
1306         \ifdim\dimen@=\z@
1307         \else
1308             \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1309         \fi
1310         \gdef\HyPsd@Rest{#1}%
1311     \fi
1312 }

```

`\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).

```

1313 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1314     \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1315         \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1316         \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1317     \else
1318         \ifdim\skip@=\z@
1319         \else
1320             \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1321         \fi
1322         \gdef\HyPsd@Rest{#1}%
1323     \fi
1324 }

```

### Catcode warnings.

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

```

1325 \def\HyPsd@CatcodeWarning#1{%
1326     \HyPsd@Warning{%
1327         Token not allowed in a PDF string (%)
1328         \ifHy@unicode
1329             Unicode%
1330         \else
1331             PDFDocEncoding%
1332         \fi
1333     },%

```

```

1334 \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1335 }%
1336 }
1337 \beginngroup
1338 \catcode'\|=0 %
1339 \catcode'\|=12 %
1340 |gdef|HyPsd@RemoveCmdPrefix#1{%
1341 |expandafter|HyPsd@@RemoveCmdPrefix
1342 |string#1|@empty\<>-|@empty|@empty
1343 }%
1344 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1345 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

1346 \def\HyPsd@RemoveSpaceWarning#1{%
1347 \HyPsd@Warning{%
1348 Token not allowed in a PDFDocEncoded string:%
1349 \MessageBreak #1\MessageBreak
1350 removed%
1351 }%
1352 }

```

\HyPsd@ReplaceSpaceWarning

```

1353 \def\HyPsd@ReplaceSpaceWarning#1{%
1354 \HyPsd@Warning{%
1355 Token not allowed in a PDFDocEncoded string:%
1356 \MessageBreak #1\MessageBreak
1357 replaced by space%
1358 }%
1359 }

```

### 6.6.5 Check for wrong glyphs

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

```

1360 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1361 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1362 \HyPsd@String#1%
1363 }%
1364 \ifx\|#2\%
1365 \else
1366 \Hy@ReturnAfterFi{%
1367 \HyPsd@GlyphProcessWarning#2\@empty
1368 }%
1369 \fi
1370 }
1371 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1372 \HyPsd@Warning{%
1373 Glyph not defined in %
1374 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1375 removing '\@backslashchar#1'%
1376 }%
1377 \HyPsd@GlyphProcess#2\@empty
1378 }

```

## 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`.

```
1379 \def\HyPsd@spaceopti#1{ % first space
1380   \ifx\HyPsd@spaceopti#1%
1381     \040%
1382   \else
1383     #1%
1384   \fi
1385 }%
```

### 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.

```
1386 \def\HyPsd@Subst#1#2#3{%
1387   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1388     \fi
1389     ##1%
1390     \ifx\scrollmode##2\scrollmode
1391     \else
1392       #2%
1393       \HyPsd@@ReplaceFi##2\END
1394     \fi
1395   }%
1396   \xdef#3{%
1397     \iftrue
1398       \expandafter\HyPsd@@ReplaceFi#3#1\END
1399     \fi
1400   }%
1401 }
```

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

```
1402 \def\HyPsd@StringSubst#1{%
1403   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1404 }
```

### 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.

```
1405 \def\HyPsd@doxspace#1{%
1406   \ifx#1\relax\else
1407   \ifx#1.\else
1408   \ifx#1:\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         \HyPsd@SPACEOPTI
1417         \fi
1418         \fi
1419         \fi
1420         \fi
1421         \fi
1422         \fi
1423         \fi
1424         \fi
1425         \fi
1426         \fi
1427         #1%
1428     }%

```

### 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.

```

1429 \begingroup
1430   \catcode'\|=0 %
1431   \catcode'\|=12 %

```

\HyPsd@ConvertToUnicode

```

1432 |gdef|HyPsd@ConvertToUnicode#1{%
1433   |xdef#1{%
1434     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1435   }%
1436   |ifx#1|@empty
1437   |else
1438     |xdef#1{%
1439       \376\377%
1440       #1%
1441     }%
1442   |fi
1443 }%

```

\HyPsd@DoConvert

```

1444 |gdef|HyPsd@DoConvert#1{%
1445   |ifx#1|@empty
1446   |else
1447     |Hy@ReturnAfterFi{%
1448       |ifx#1\|%
1449       \|%
1450       |expandafter|HyPsd@DoEscape
1451     |else
1452       \000#1%
1453       |expandafter|HyPsd@DoConvert
1454     |fi
1455   }%
1456   |fi
1457 }%

```

\HyPsd@DoEscape

```

1458 |gdef|HyPsd@DoEscape#1{%
1459   |ifx#19%
1460   |expandafter|HyPsd@GetTwoBytes
1461   |else
1462   |Hy@ReturnAfterFi{%
1463     |ifx#18%
1464     00%
1465     |expandafter|HyPsd@GetTwoBytes
1466     |else
1467     #1%
1468     |expandafter|HyPsd@GetOneByte
1469   |fi
1470 }%
1471 |fi
1472 }%

```

\HyPsd@GetTwoBytes

```

1473 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1474   #1\#2#3#4%
1475   |HyPsd@DoConvert
1476 }%

```

\HyPsd@GetOneByte

```

1477 |gdef|HyPsd@GetOneByte#1#2{%
1478   #1#2%
1479   |HyPsd@DoConvert
1480 }%
1481 |endgroup

```

\HyPsd@@GetNextTwoTokens

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

```

1482 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1483   \xdef#4{#4#1#2}%
1484   \HyPsd@@ConvertToUnicode#3\END#4%
1485 }

```

### 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`

```

1486 \begingroup\expandafter\expandafter\expandafter\endgroup
1487 \expandafter\ifx\csname numexpr\endcsname\relax
1488   \let\HyPsd@UTFviii\relax
1489 \else
1490   \def\HyPsd@UTFviii{%
1491     \let\UTFviii@two@octets\HyPsd@UTFviii@two
1492     \let\UTFviii@three@octets\HyPsd@UTFviii@three

```

```

1493 \let\unichar\HyPsd@unichar
1494 }%

```

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.

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

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

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

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

$$(5)$$

```

1495 \def\HyPsd@UTFviii@two#1#2{%
1496 \expandafter\HyPsd@UTFviii@two
1497 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1498 \number'#1\expandafter|%
1499 \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|%
1500 \number'#2 \@nil
1501 }%
1502 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
1503 \expandafter\8%
1504 \number\numexpr #1-48\expandafter\relax
1505 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1506 \number\numexpr #3-8*%
1507 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1508 \number\numexpr #4-8*#3\relax
1509 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

1510 \def\HyPsd@UTFviii@three#1#2#3{%
1511 \expandafter\HyPsd@UTFviii@three
1512 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1513 \number'#1\expandafter|%
1514 \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter|%
1515 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|%
1516 \number'#2\expandafter|%
1517 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|%
1518 \number'#3 \@nil
1519 }%
1520 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1521 \expandafter\9%
1522 \number\numexpr #1-56\expandafter\relax
1523 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1524 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax

```



```

1525 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1526 \number\numexpr #6-16\expandafter\relax
1527 \number\numexpr #7-8*#6\relax
1528 }%

```

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:

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

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

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

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

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

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

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

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

$$(21)$$

```

1529 \def\HyPsd@UTFviii@four#1{%
1530 \expandafter\HyPsd@UTFviii@@four\number'#1|}%
1531 }%
1532 \def\HyPsd@UTFviii@@four#1|#2|#3|#4{%
1533 \expandafter\HyPsd@UTFviii@@@four\number#1\expandafter|}%
1534 \number'#2\expandafter|}%
1535 \number\dimexpr.03125\dimexpr'#2sp\expandafter|}%
1536 \number'#3\expandafter|}%
1537 \number\dimexpr.03125\dimexpr'#3sp\expandafter|}%
1538 \number'#4\expandafter|}%
1539 \number\dimexpr.125\dimexpr'#4|}%
1540 }%
1541 \def\HyPsd@UTFviii@@@four#1|#2|#3|#4|#5|#6|#7|{%
1542 \931%
1543 \number\numexpr\dimexpr.5\dimexpr#1sp\relax\relax -120\relax
1544 \csname\number\numexpr\ifodd#1 2\else 0\fi +#3-4\relax\endcsname
1545 \number\dimexpr.25\dimexpr #2sp - 32\dimexpr#3sp\relax\relax\relax
1546 % ...
1547 }%

```

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

```

1548 \def\HyPsd@unichar#1{%
1549 \ifHy@unicode
1550 \ifnum#1>"10FFFF %
1551 \HyPsd@UnicodeReplacementCharacter % illegal
1552 \else
1553 \ifnum#1>"FFFF %

```

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

```

1554 \expandafter\HyPsd@unichar\expandafter{%
1555 \number\numexpr 55296+%
1556 \dimexpr.0009765625\dimexpr\number#1sp-\p@
1557 \relax\relax\relax
1558 }%

```

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

```

1559         \expandafter\HyPsd@unichar\expandafter{%
1560         \number\dimexpr#1-9216%
1561         -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1562         \relax\relax\relax
1563     }%
1564     \else
1565         \ifnum#1>"7FF %
1566         \9%
1567         \expandafter\HyPsd@unichar@first@byte\expandafter{%
1568         \number
1569         \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1570     }%
1571     \else
1572         \8%
1573         \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
1574     \fi
1575     \expandafter\HyPsd@unichar@second@byte\expandafter{%
1576     \number
1577     \numexpr#1-256*\number
1578     \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
1579     }%
1580     \fi
1581     \fi
1582     \else
1583     .% unsupported (Unicode -> PDF Doc Encoding)
1584     \fi
1585 }%
1586 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
1587 \def\HyPsd@unichar@first@byte#1{%
1588     \number\dimexpr.015625\dimexpr#1sp\relax\relax
1589     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1590     \number
1591     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp\relax\relax\relax
1592     }%
1593 }%
1594 \def\HyPsd@unichar@second@byte#1{%
1595     \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
1596     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1597     \number
1598     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp\relax\relax\relax
1599     }%
1600 }%
1601 \def\HyPsd@unichar@octtwo#1{%
1602     \number\dimexpr.125\dimexpr#1sp\relax\relax
1603     \number\dimexpr#1-8*\number\dimexpr.125\dimexpr#1sp\relax\relax\relax
1604 }%
1605 \fi

```

## 7 Support of other packages

### 7.1 Class memoir

```

1606 \@ifclassloaded{memoir}{%
1607     \AtEndOfPackage{\RequirePackage{memhfixc}}%
1608 }{}

```

## 7.2 Package subfigure

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

```
1609 \@ifpackageloaded{subfigure}{%
1610   \@ifundefined{sub@label}{%
1611     \Hy@hypertextnamesfalse
1612   }{%
1613     \renewcommand*{\sub@label}[1]{%
1614       \bsphack
1615       \subfig@oldlabel{#1}%
1616       \if@filesw
1617         \begingroup
1618         \edef\@currentlabstr{%
1619           \expandafter\strip@prefix\meaning\@currentlabelname
1620         }%
1621         \protected@write\@auxout{}{%
1622           \string\newlabel{sub@#1}{%
1623             {\@nameuse{@thesub\@capttype}}%
1624             {\thepage}%
1625             {\expandafter\strip@period\@currentlabstr\relax.\relax\@@@}%
1626             {\@currentHref}%
1627           }%
1628         }%
1629       }%
1630     \endgroup
1631   \fi
1632   \@esphack
1633 }%
1634 \@ifpackagelater{subfigure}{2002/03/26}{%
1635   \providecommand*{\toclevel@subfigure}{1}%
1636   \providecommand*{\toclevel@subtable}{1}%
1637 }%
1638 }%
1639 }
```

## 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:

```
1640 \@ifundefined{XR@addURL}{%
1641 }
```

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.

```
1642 \def\XR@addURL#1{\XR@dURL#1{}{}{}{}\\}%
1643 \def\XR@dURL#1#2#3#4#5\\{%
1644   {#1}{#2}%
1645   \if!#4!%
1646   \else
1647     {#3}{#4}{\XR@URL}%
1648   \fi
1649 }%
1650 }

1651 \def\Hy@true{true}
1652 \def\Hy@false{false}
```

Providing dummy definitions.

```

1653 \let\literalps@out\@gobble
1654 \newcommand\pdfbookmark[3][]{\{}
1655 \let\Acrobatmenu\@gobble
1656 \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

```

1657 \let\HyperRaiseLinkHook\@empty
1658 \def\HyperRaiseLinkDefault{\baselineskip}

```

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

```

1659 \def\Hy@raisedlink#1{%
1660   \ifvmode
1661     #1%
1662   \else
1663     \penalty\@M
1664     \smash{%
1665       \begingroup
1666         \let\HyperRaiseLinkLength\@tempdima
1667         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1668         \HyperRaiseLinkHook
1669       \expandafter\endgroup
1670       \expandafter\raise\the\HyperRaiseLinkLength\hbox{#1}%
1671     }%
1672   \fi
1673 }

```

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

```

1674 \def\Hy@SaveLastskip{%
1675   \let\Hy@RestoreLastskip\relax
1676   \ifvmode
1677     \ifdim\lastskip=\z@
1678       \let\Hy@RestoreLastskip\nobreak
1679     \else
1680       \begingroup
1681         \skip@=-\lastskip
1682         \edef\x{%
1683           \endgroup
1684           \def\noexpand\Hy@RestoreLastskip{%
1685             \noexpand\ifvmode
1686               \noexpand\nobreak
1687               \vskip\the\skip@
1688               \vskip\the\lastskip\relax
1689             \noexpand\fi

```

```

1690      }%
1691    }%
1692    \x
1693    \fi
1694  \else
1695    \ifhmode
1696      \ifdim\lastskip=\z@
1697        \let\Hy@RestoreLastskip\nobreak
1698      \else
1699        \begingroup
1700          \skip@=-\lastskip
1701          \edef\x{%
1702            \endgroup
1703            \def\noexpand\Hy@RestoreLastskip{%
1704              \noexpand\ifhmode
1705                \noexpand\nobreak
1706                \hskip\the\skip@
1707                \hskip\the\lastskip\relax
1708              \noexpand\fi
1709            }%
1710          }%
1711        \x
1712      \fi
1713    \fi
1714  \fi
1715 }%

```

## 9 Options

### 9.1 Help macros

\Hy@boolkey

```

1716 \def\Hy@boolkey{\@dblarg\Hy@boolkey}
1717 \def\Hy@boolkey[#1]#2#3{%
1718   \lowercase{\def\Hy@tempa{#3}}%
1719   \ifx\Hy@tempa\@empty
1720     \let\Hy@tempa\Hy@true
1721   \fi
1722   \ifx\Hy@tempa\Hy@true
1723   \else
1724     \ifx\Hy@tempa\Hy@false
1725     \else
1726       \let\Hy@tempa\relax
1727     \fi
1728   \fi
1729   \ifx\Hy@tempa\relax
1730     \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1731   \else
1732     \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1733     \csname Hy@#2\Hy@tempa\endcsname
1734   \fi
1735 }

```

\Hy@WarnOptionValue

```

1736 \def\Hy@WarnOptionValue#1#2#3{%
1737   \Hy@Warning{%

```

```

1738     Unexpected value ‘#1’\MessageBreak
1739     of option ‘#2’ instead of\MessageBreak
1740     #3%
1741 }%
1742 }

```

#### \Hy@DisableOption

```

1743 \def\Hy@DisableOption#1{%
1744   \@ifundefined{KV@Hyp@#1@default}{%
1745     \define@key{Hyp}{#1}%
1746   }{%
1747     \define@key{Hyp}{#1}[]%
1748   }%
1749   {\Hy@WarnOptionDisabled{#1}}%
1750 }

```

#### \Hy@WarnOptionDisabled

```

1751 \def\Hy@WarnOptionDisabled#1{%
1752   \Hy@Warning{%
1753     Option ‘#1’ has already been used,\MessageBreak
1754     setting the option has no effect%
1755   }%
1756 }

```

\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.

```

1757 \def\Hy@CheckOptionValue#1#2#3{%
1758   \begingroup
1759   \edef\x{#1}%
1760   \@onelevel@sanitize\x
1761   \let\y=y%
1762   \def\do##1##2{%
1763     \def\z{##1}%
1764     \@onelevel@sanitize\z
1765     \ifx\x\z
1766       \let\y=n%
1767       \let\do\@gobbletwo
1768     \fi
1769   }%
1770   #3%
1771   \ifx\y y%
1772     \def\do##1##2{%
1773       * ‘##1’%
1774       \ifx\##2\\\else\space(##2)\fi
1775       \MessageBreak
1776     }%
1777     \Hy@Warning{%
1778       Values of option ‘#2’:\MessageBreak
1779       #3%
1780       * An empty value disables the option.\MessageBreak
1781       Unknown value ‘\x’%
1782     }%
1783   \fi
1784   \endgroup
1785 }

```

```

\Hy@DefNameKey #1: option name
#2: \do list with known values, first argument of \do is value, second argument is a
comment.
1786 \def\Hy@DefNameKey#1{%
1787   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
1788 }

\Hy@@DefNameKey #1: macro for value storage
#2: option name
#3: \do list with known values.
1789 \def\Hy@@DefNameKey#1#2#3{%
1790   \define@key{Hyp}{#2}{%
1791     \edef#1{##1}%
1792     \ifx#1\@empty
1793     \else
1794       \Hy@CheckOptionValue{##1}{#2}{#3}%
1795     \fi
1796   }%
1797   \let#1\@empty
1798 }

\Hy@UseNameKey
1799 \def\Hy@UseNameKey#1#2{%
1800   \ifx#2\@empty
1801   \else
1802     /#1/#2%
1803   \fi
1804 }

```

## 9.2 Defining the options

```

1805 \define@key{Hyp}{implicit}[true]{%
1806   \Hy@boolkey{implicit}{#1}%
1807 }
1808 \define@key{Hyp}{draft}[true]{%
1809   \Hy@boolkey{draft}{#1}%
1810 }
1811 \define@key{Hyp}{final}[true]{%
1812   \Hy@boolkey{final}{#1}%
1813 }
1814 \let\KV@Hyp@nolinks\KV@Hyp@draft
1815 \define@key{Hyp}{a4paper}[true]{%
1816   \def\special@paper{210mm,297mm}%
1817   \def\Hy@pageheight{842}%
1818 }
1819 \define@key{Hyp}{a5paper}[true]{%
1820   \def\special@paper{148mm,210mm}%
1821   \def\Hy@pageheight{595}%
1822 }
1823 \define@key{Hyp}{b5paper}[true]{%
1824   \def\special@paper{176mm,250mm}%
1825   \def\Hy@pageheight{709}%
1826 }
1827 \define@key{Hyp}{letterpaper}[true]{%
1828   \def\special@paper{8.5in,11in}%
1829   \def\Hy@pageheight{792}%

```

```

1830 }
1831 \define@key{Hyp}{legalpaper}[true]{%
1832   \def\special@paper{8.5in,14in}%
1833   \def\Hy@pageheight{1008}%
1834 }
1835 \define@key{Hyp}{executivepaper}[true]{%
1836   \def\special@paper{7.25in,10.5in}%
1837   \def\Hy@pageheight{720}%
1838 }
1839 \define@key{Hyp}{setpagesize}[true]{%
1840   \Hy@boolkey{setpagesize}{#1}%
1841 }
1842 \define@key{Hyp}{debug}[true]{%
1843   \Hy@boolkey[debug]{verbose}{#1}%
1844 }
1845 \define@key{Hyp}{linktopage}[true]{%
1846   \Hy@boolkey{linktopage}{#1}%
1847 }
1848 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1849 \def\XR@ext{dvi}
1850 \define@key{Hyp}{verbose}[true]{%
1851   \Hy@boolkey{verbose}{#1}%
1852 }
1853 \define@key{Hyp}{typexml}[true]{%
1854   \Hy@boolkey{typexml}{#1}%
1855 }

```

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.

```

1856 \define@key{Hyp}{raiselinks}[true]{%
1857   \Hy@boolkey{raiselinks}{#1}%
1858 }

```

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

```

1859 \define@key{Hyp}{breaklinks}[true]{%
1860   \Hy@boolkey{breaklinks}{#1}%
1861 }

```

Determines whether an automatic anchor is put on each page

```

1862 \define@key{Hyp}{pageanchor}[true]{%
1863   \Hy@boolkey{pageanchor}{#1}%
1864 }

```

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.

```

1865 \define@key{Hyp}{plainpages}[true]{%
1866   \Hy@boolkey{plainpages}{#1}%
1867 }

```

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

```

1868 \define@key{Hyp}{naturalnames}[true]{%
1869   \Hy@boolkey{naturalnames}{#1}%
1870 }

```

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

```

1871 \define@key{Hyp}{hypertextnames}[true]{%
1872   \Hy@boolkey{hypertextnames}{#1}%
1873 }

```



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

```

1874 \define@key{Hyp}{nesting}[true]{%
1875   \Hy@boolkey{nesting}{#1}%
1876 }

1877 \define@key{Hyp}{unicode}[true]{%
1878   \Hy@boolkey{unicode}{#1}%
1879   \ifHy@unicode
1880     \def\HyPsd@pdfencoding{unicode}%
1881   \else
1882     \def\HyPsd@pdfencoding{pdfdoc}%
1883   \fi
1884   \HyPsd@LoadUnicode
1885 }

1886 \def\HyPsd@LoadUnicode{%
1887   \@ifundefined{T@PU}{\input{puenc.def}}{}%
1888   \DeclareFontFamily{PU}{pdf}{}%
1889   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
1890   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
1891   \global\let\HyPsd@LoadUnicode\relax
1892 }

1893 \AtBeginDocument{%
1894   \ifx\HyPsd@LoadUnicode\relax
1895   \else
1896     \def\HyPsd@LoadUnicode{%
1897       \PackageError{hyperref}{%
1898         Unicode support for bookmarks is not available.\MessageBreak
1899         Activate unicode support by using one of the options\MessageBreak
1900         'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
1901         in the preamble%
1902       } \@ehc
1903       \global\let\HyPsd@LoadUnicode\relax
1904       \global\Hy@unicodedefalse
1905       \global\let\Hy@unicodetrue\Hy@unicodedefalse
1906     }%
1907   \fi
1908 }

1909 \define@key{Hyp}{pdfencoding}{%
1910   \edef\HyPsd@temp{#1}%
1911   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
1912     \let\HyPsd@pdfencoding\HyPsd@temp
1913     \Hy@unicodedefalse
1914   \else
1915     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
1916       \z@
1917     \else
1918       \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
1919         \z@
1920       \else
1921         \@ne
1922       \fi
1923     \fi
1924     \let\HyPsd@pdfencoding\HyPsd@temp
1925     \hypersetup{unicode}%
1926     \ifHy@unicode
1927       \def\HyPsd@pdfencoding{#1}%
1928       \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto

```

```

1929         \HyPsd@LoadStringEnc
1930     \fi
1931 \else
1932     \Hy@Warning{Cannot switch to unicode bookmarks}%
1933     \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
1934 \fi
1935 \else
1936     \@onelevel@sanitize\HyPsd@temp
1937     \Hy@Warning{%
1938         Values of option 'pdfencoding':\MessageBreak
1939         'pdfdoc', 'unicode', 'auto'.\MessageBreak
1940         Ignoring unknown value '\HyPsd@temp'%
1941     }%
1942 \fi
1943 \fi
1944 }
1945 \def\HyPsd@pdfencoding@auto{auto}
1946 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
1947 \def\HyPsd@pdfencoding@unicode{unicode}
1948 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
1949 \def\HyPsd@LoadStringEnc{%
1950     \RequirePackage{stringenc}[2007/06/14]%
1951     \let\HyPsd@LoadStringEnc\relax
1952 }
1953 \AtBeginDocument{%
1954     \@ifpackageloaded{stringenc}{%
1955         \let\HyPsd@LoadStringEnc\relax
1956     }{%
1957         \def\HyPsd@LoadStringEnc{%
1958             \Hy@WarningNoLine{%
1959                 Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak
1960                 in the preamble or load the package there%
1961             }%
1962         }%
1963     }%
1964 }
1965 \newif\ifHy@setpdfversion
1966 \define@key{Hyp}{pdfversion}{%
1967     \@ifundefined{Hy@pdfversion@#1}{%
1968         \PackageWarning{hyperref}{%
1969             Unsupported PDF version '#1'.\MessageBreak
1970             Valid values: 1.2 until 1.7%
1971         }%
1972     }{%
1973         \Hy@setpdfversiontrue
1974         \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
1975     }%
1976 }
1977 \@namedef{Hy@pdfversion@1.2}{2}%
1978 \@namedef{Hy@pdfversion@1.3}{3}%
1979 \@namedef{Hy@pdfversion@1.4}{4}%
1980 \@namedef{Hy@pdfversion@1.5}{5}%
1981 \@namedef{Hy@pdfversion@1.6}{6}%
1982 \@namedef{Hy@pdfversion@1.7}{7}%
1983 \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

1984 \define@key{Hyp}{hyperref}[true]{}
1985 \define@key{Hyp}{tex4ht}[true]{}%
1986 \def\XR@ext{html}%
1987 \Hy@texhttrue
1988 \def\Hy@raisedlink{}%
1989 \setkeys{Hyp}{colorlinks=true}%
1990 \def\BeforeTeXIVht{\usepackage{color}}%
1991 \def\Hy@driver{htex4ht}%
1992 \def\MaybeStopEarly{%
1993   \typeout{Hyperref stopped early}%
1994   \AfterBeginDocument{%
1995     \PDF@FinishDoc
1996     \gdef\PDF@FinishDoc{}%
1997   }%
1998 \endinput
1999 }%
2000 }
2001 \define@key{Hyp}{pdftex}[true]{}%
2002 \def\Hy@driver{hpdftex}%
2003 \def\XR@ext{pdf}%
2004 \PassOptionsToPackage{pdftex}{color}%
2005 \Hy@breaklinkstrue
2006 }
2007 \define@key{Hyp}{dvipdf}[true]{}%
2008 \Hy@WarningNoLine{%
2009   Option 'dvipdf' is deprecated.\MessageBreak
2010   See the user manual for available driver options%
2011 }%
2012 }
2013 \define@key{Hyp}{nativepdf}[true]{}%
2014 \def\Hy@driver{hdvips}%
2015 \def\Hy@raisedlink{}%
2016 \def\XR@ext{pdf}%
2017 }
2018 \define@key{Hyp}{dvipdfm}[true]{}%
2019 \def\Hy@driver{hdvipdfm}%
2020 \def\XR@ext{pdf}%
2021 \Hy@breaklinkstrue
2022 }
2023 \define@key{Hyp}{dvipdfmx}[true]{}%
2024 \def\Hy@driver{hdvipdfm}%
2025 \def\XR@ext{pdf}%
2026 \Hy@breaklinkstrue
2027 }
2028 \define@key{Hyp}{dvipdfmx-outline-open}[true]{}%
2029 \expandafter\ifx\csname if#1\expandafter\endcsname
2030   \csname iftrue\endcsname
2031   \chardef\SpecialDvipdfmxOutlineOpen\@ne
2032 \else
2033   \chardef\SpecialDvipdfmxOutlineOpen\z@
2034 \fi
2035 }
2036 \define@key{Hyp}{xetex}[true]{}%
2037 \def\Hy@driver{hdvipdfm}%
2038 \def\XR@ext{pdf}%

```

```

2039 \Hy@breaklinkstrue
2040 }
2041 \define@key{Hyp}{pdfmark}[true]{%
2042   \def\Hy@driver{hdvips}%
2043   \def\Hy@raisedlink{}%
2044   \def\XR@ext{pdf}%
2045 }
2046 \define@key{Hyp}{dvips}[true]{%
2047   \def\Hy@driver{hdvips}%
2048   \def\Hy@raisedlink{}%
2049   \def\XR@ext{pdf}%
2050 }
2051 \define@key{Hyp}{hypertex}[true]{%
2052   \def\Hy@driver{hypertex}%
2053 }
2054 \let\Hy@MaybeStopNow\relax
2055 \define@key{Hyp}{vtex}[true]{%
2056   \begingroup\expandafter\expandafter\expandafter\endgroup
2057   \expandafter\ifx\csname OpMode\endcsname\relax
2058     \latex@error{Non-VTeX processor}{}%
2059     \global\let\Hy@MaybeStopNow\endinput
2060     \endinput
2061   \else
2062     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2063       \def\XR@ext{pdf}%
2064       \def\Hy@driver{hvtex}%
2065     \else
2066       \ifnum\OpMode=10\relax
2067         \def\XR@ext{htm}%
2068         \def\Hy@driver{hvtexhtm}%
2069         \def\MaybeStopEarly{%
2070           \typeout{Hyperref stopped early}%
2071           \AfterBeginDocument{%
2072             \PDF@FinishDoc
2073             \gdef\PDF@FinishDoc{}%
2074           }%
2075         \endinput
2076       }%
2077     \else
2078       \latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2079       \global\let\Hy@MaybeStopNow\endinput
2080       \endinput
2081     \fi
2082   \fi
2083 \fi
2084 }
2085 \define@key{Hyp}{vtexpdfmark}[true]{%
2086   \begingroup\expandafter\expandafter\expandafter\endgroup
2087   \expandafter\ifx\csname OpMode\endcsname\relax
2088     \latex@error{Non-VTeX processor}{}%
2089     \let\Hy@MaybeStopNow\endinput
2090     \endinput
2091   \else
2092     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2093       \def\XR@ext{pdf}%
2094       \def\Hy@driver{hvtexmrk}%
2095       \def\Hy@raisedlink{}%

```

```

2096 \else
2097 \latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2098 \let\Hy@MaybeStopNow\endinput
2099 \endinput
2100 \fi
2101 \fi
2102 }
2103 \define@key{Hyp}{dviwindo}[true]{%
2104 \def\Hy@driver{hdviwind}%
2105 \setkeys{Hyp}{colorlinks}%
2106 \PassOptionsToPackage{dviwindo}{color}%
2107 }
2108 \define@key{Hyp}{dvipsone}[true]{%
2109 \def\XR@ext{pdf}%
2110 \def\Hy@driver{hdvipson}%
2111 \def\Hy@raisedlink{}%
2112 }
2113 \define@key{Hyp}{textures}[true]{%
2114 \def\XR@ext{pdf}%
2115 \def\Hy@driver{htexture}%
2116 }
2117 \define@key{Hyp}{latex2html}[true]{%
2118 \AtBeginDocument{\@@latextohtmlX}%
2119 }

```

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

```

2120 \define@key{Hyp}{ps2pdf}[true]{%
2121 \def\Hy@driver{hdvips}%
2122 \def\Hy@raisedlink{}%
2123 \providecommand*\@pdfborder{0 0 1}%
2124 }

```

## 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.

```

2125 \define@key{Hyp}{hyperfigures}[true]{%
2126 \Hy@boolkey[hyperfigures]{figures}{#1}%
2127 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

2128 \define@key{Hyp}{hyperfootnotes}[true]{%
2129 \Hy@boolkey{hyperfootnotes}{#1}%
2130 }

```

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

```

2131 \def\back@none{none}
2132 \def\back@section{section}
2133 \def\back@page{page}
2134 \def\back@slide{slide}
2135 \define@key{Hyp}{backref}[section]{%
2136 \lowercase{\def\Hy@tempa{#1}}%
2137 \ifx\Hy@tempa\@empty
2138 \let\Hy@tempa\back@section
2139 \fi
2140 \ifx\Hy@tempa\Hy@false
2141 \let\Hy@tempa\back@none
2142 \fi

```

```

2143 \ifx\Hy@tempa\back@slide
2144   \let\Hy@tempa\back@section
2145 \fi
2146 \ifx\Hy@tempa\back@page
2147   \PassOptionsToPackage{hyperpageref}{backref}%
2148   \Hy@backreftrue
2149 \else
2150   \ifx\Hy@tempa\back@section
2151     \PassOptionsToPackage{hyperref}{backref}%
2152     \Hy@backreftrue
2153   \else
2154     \ifx\Hy@tempa\back@none
2155       \Hy@backreffalse
2156     \else
2157       \Hy@WarnOptionValue{#1}{backref}{%
2158         'section', 'slide', 'page', 'none', \MessageBreak
2159         or 'false'}%
2160     \fi
2161   \fi
2162 \fi
2163 }
2164 \define@key{Hyp}{pagebackref}[true]{%
2165   \lowercase{\def\Hy@tempa{#1}}%
2166   \ifx\Hy@tempa\@empty
2167     \let\Hy@tempa\Hy@true
2168   \fi
2169   \ifx\Hy@tempa\Hy@true
2170     \PassOptionsToPackage{hyperpageref}{backref}%
2171     \Hy@backreftrue
2172   \else
2173     \ifx\Hy@tempa\Hy@false
2174       \Hy@backreffalse
2175     \else
2176       \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
2177     \fi
2178   \fi
2179 }

```

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

```

2180 \define@key{Hyp}{hyperindex}[true]{%
2181   \Hy@boolkey{hyperindex}{#1}%
2182 }

```

Configuration of encap char.

```

2183 \define@key{Hyp}{encap}{\|}{%
2184   \def\HyInd@EncapChar{#1}%
2185 }

```

## 12 Language options

The `\autoref` feature depends on the language.

```

2186 \def\HyLang@afrikaans{%
2187   \def\equationautorefname{Vergelyking}%
2188   \def\footnoteautorefname{Voetnota}%
2189   \def\itemautorefname{Item}%
2190   \def\figureautorefname{Figuur}%

```

```

2191 \def\tableautorefname{Tabel}%
2192 \def\partautorefname{Deel}%
2193 \def\appendixautorefname{Bylae}%
2194 \def\chapterautorefname{Hoofstuk}%
2195 \def\sectionautorefname{Afdeling}%
2196 \def\subsectionautorefname{Subafdeling}%
2197 \def\subsubsectionautorefname{Subsubafdeling}%
2198 \def\paragraphautorefname{Paragraaf}%
2199 \def\subparagraphautorefname{Subparagraaf}%
2200 \def\FancyVerbLineautorefname{Lyn}%
2201 \def\theoremautorefname{Teorema}%
2202 \def\pageautorefname{Bladsy}%
2203 }
2204 \def\HyLang@english{%
2205 \def\equationautorefname{Equation}%
2206 \def\footnoteautorefname{footnote}%
2207 \def\itemautorefname{item}%
2208 \def\figureautorefname{Figure}%
2209 \def\tableautorefname{Table}%
2210 \def\partautorefname{Part}%
2211 \def\appendixautorefname{Appendix}%
2212 \def\chapterautorefname{chapter}%
2213 \def\sectionautorefname{section}%
2214 \def\subsectionautorefname{subsection}%
2215 \def\subsubsectionautorefname{subsubsection}%
2216 \def\paragraphautorefname{paragraph}%
2217 \def\subparagraphautorefname{subparagraph}%
2218 \def\FancyVerbLineautorefname{line}%
2219 \def\theoremautorefname{Theorem}%
2220 \def\pageautorefname{page}%
2221 }
2222 \def\HyLang@french{%
2223 \def\equationautorefname{\`Equation}%
2224 \def\footnoteautorefname{note}%
2225 \def\itemautorefname{item}%
2226 \def\figureautorefname{Figure}%
2227 \def\tableautorefname{Tableau}%
2228 \def\partautorefname{Partie}%
2229 \def\appendixautorefname{Appendice}%
2230 \def\chapterautorefname{chapitre}%
2231 \def\sectionautorefname{section}%
2232 \def\subsectionautorefname{sous-section}%
2233 \def\subsubsectionautorefname{sous-sous-section}%
2234 \def\paragraphautorefname{paragraphe}%
2235 \def\subparagraphautorefname{sous-paragraphe}%
2236 \def\FancyVerbLineautorefname{ligne}%
2237 \def\theoremautorefname{Th\'eor\'eme}%
2238 \def\pageautorefname{page}%
2239 }
2240 \def\HyLang@german{%
2241 \def\equationautorefname{Gleichung}%
2242 \def\footnoteautorefname{Fu\ss note}%
2243 \def\itemautorefname{Punkt}%
2244 \def\figureautorefname{Abbildung}%
2245 \def\tableautorefname{Tabelle}%
2246 \def\partautorefname{Teil}%
2247 \def\appendixautorefname{Anhang}%

```

```

2248 \def\chapterautorefname{Kapitel}%
2249 \def\sectionautorefname{Abschnitt}%
2250 \def\subsectionautorefname{Unterabschnitt}%
2251 \def\subsubsectionautorefname{Unterunterabschnitt}%
2252 \def\paragraphautorefname{Absatz}%
2253 \def\subparagraphautorefname{Unterabsatz}%
2254 \def\FancyVerbLineautorefname{Zeile}%
2255 \def\theoremautorefname{Theorem}%
2256 \def\pageautorefname{Seite}%
2257 }
2258 \def\HyLang@italian{%
2259 \def\equationautorefname{Equazione}%
2260 \def\footnoteautorefname{nota}%
2261 \def\itemautorefname{punto}%
2262 \def\figureautorefname{Figura}%
2263 \def\tableautorefname{Tabella}%
2264 \def\partautorefname{Parte}%
2265 \def\appendixautorefname{Appendice}%
2266 \def\chapterautorefname{Capitolo}%
2267 \def\sectionautorefname{sezione}%
2268 \def\subsectionautorefname{sottosezione}%
2269 \def\subsubsectionautorefname{sottosottosezione}%
2270 \def\paragraphautorefname{paragrafo}%
2271 \def\subparagraphautorefname{sottoparagrafo}%
2272 \def\FancyVerbLineautorefname{linea}%
2273 \def\theoremautorefname{Teorema}%
2274 \def\pageautorefname{Pag.\@}%
2275 }
2276 \def\HyLang@magyar{%
2277 \def\equationautorefname{Egyenlet}%
2278 \def\footnoteautorefname{l\'abjegyzet}%
2279 \def\itemautorefname{Elem}%
2280 \def\figureautorefname{\'Abra}%
2281 \def\tableautorefname{T\'abl\'azat}%
2282 \def\partautorefname{R\'esz}%
2283 \def\appendixautorefname{F\'uggel\'ek}%
2284 \def\chapterautorefname{fejezet}%
2285 \def\sectionautorefname{szakasz}%
2286 \def\subsectionautorefname{alszakasz}%
2287 \def\subsubsectionautorefname{alalszakasz}%
2288 \def\paragraphautorefname{bekezd\'es}%
2289 \def\subparagraphautorefname{albekezd\'es}%
2290 \def\FancyVerbLineautorefname{sor}%
2291 \def\theoremautorefname{T\'étel}%
2292 \def\pageautorefname{oldal}%
2293 }
2294 \def\HyLang@portuges{%
2295 \def\equationautorefname{Equa\c c\~ao}%
2296 \def\footnoteautorefname{Nota de rodap\'e}%
2297 \def\itemautorefname{Item}%
2298 \def\figureautorefname{Figura}%
2299 \def\tableautorefname{Tabela}%
2300 \def\partautorefname{Parte}%
2301 \def\appendixautorefname{Ap\^endice}%
2302 \def\chapterautorefname{Cap\'itulo}%
2303 \def\sectionautorefname{Se\c c\~ao}%
2304 \def\subsectionautorefname{Subse\c c\~ao}%

```



```

2305 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
2306 \def\paragraphautorefname{par\~'agrafo}%
2307 \def\subparagraphautorefname{subpar\~'agrafo}%
2308 \def\FancyVerbLineautorefname{linha}%
2309 \def\theoremautorefname{Teorema}%
2310 \def\pageautorefname{P\~'agina}%
2311 }
2312 \def\HyLang@spanish{%
2313 \def\equationautorefname{Ecuaci\~'on}%
2314 \def\footnoteautorefname{Nota a pie de p\~'agina}%
2315 \def\itemautorefname{Elemento}%
2316 \def\figureautorefname{Figura}%
2317 \def\tableautorefname{Tabla}%
2318 \def\partautorefname{Parte}%
2319 \def\appendixautorefname{Ap\~'endice}%
2320 \def\chapterautorefname{Cap\~'itulo}%
2321 \def\sectionautorefname{Secci\~'on}%
2322 \def\subsectionautorefname{Subsecci\~'on}%
2323 \def\subsubsectionautorefname{Subsubsecci\~'on}%
2324 \def\paragraphautorefname{P\~'arrafo}%
2325 \def\subparagraphautorefname{Subp\~'arrafo}%
2326 \def\FancyVerbLineautorefname{L\~'inea}%
2327 \def\theoremautorefname{Teorema}%
2328 \def\pageautorefname{P\~'agina}%
2329 }
2330 \def\HyLang@vietnamese{%
2331 \def\equationautorefname{Ph\~uhorn{\}ohorn{\}ng tr\~'inh}%
2332 \def\footnoteautorefname{Ch\~'u th\~'ich}%
2333 \def\itemautorefname{m\~d{u}c}%
2334 \def\figureautorefname{H\~'inh}%
2335 \def\tableautorefname{B\~h{a}ng}%
2336 \def\partautorefname{Ph\~'\acircumflex{\}n}%
2337 \def\appendixautorefname{Ph\~d{u} l\~d{u}c}%
2338 \def\chapterautorefname{ch\~uhorn{\}ohorn{\}ng}%
2339 \def\sectionautorefname{m\~d{u}c}%
2340 \def\subsectionautorefname{m\~d{u}c}%
2341 \def\subsubsectionautorefname{m\~d{u}c}%
2342 \def\paragraphautorefname{\~dj{\}o\~d{a}n}%
2343 \def\subparagraphautorefname{\~dj{\}o\~d{a}n}%
2344 \def\FancyVerbLineautorefname{d\~'ong}%
2345 \def\theoremautorefname{DJ{\}d{i}nh l\~'y}%
2346 \def\pageautorefname{Trang}%
2347 }

```

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

```

2348 \def\HyLang@addto#1#2{%
2349 #2%
2350 \@temptokena{#2}%
2351 \ifx#1\relax
2352 \let#1\@empty
2353 \fi
2354 \ifx#1\undefined
2355 \edef#1{\the\@temptokena}%
2356 \else
2357 \toks@\expandafter{#1}%
2358 \edef#1{\the\toks@\the\@temptokena}%
2359 \fi

```

```

2360 \@temptokena{\toks@\@temptokena
2361 }
2362 \def\HyLang@DeclareLang#1#2{%
2363   \begingroup
2364     \edef\x##1##2{%
2365       \noexpand\ifx##2\relax
2366         \errmessage{No definitions for language #2' found!}%
2367       \noexpand\fi
2368     \endgroup
2369     \noexpand\define@key{Hyp}{#1}[]{%
2370       \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
2371     }%
2372   }%
2373   \expandafter\x\csname extras#1\expandafter\endcsname
2374     \csname HyLang@#2\endcsname
2375 }
2376 \HyLang@DeclareLang{english}{english}
2377 \HyLang@DeclareLang{UKenglish}{english}
2378 \HyLang@DeclareLang{british}{english}
2379 \HyLang@DeclareLang{USenglish}{english}
2380 \HyLang@DeclareLang{american}{english}
2381 \HyLang@DeclareLang{german}{german}
2382 \HyLang@DeclareLang{austrian}{german}
2383 \HyLang@DeclareLang{ngerman}{german}
2384 \HyLang@DeclareLang{naustrian}{german}
2385 \HyLang@DeclareLang{brazil}{portuges}
2386 \HyLang@DeclareLang{brazilian}{portuges}
2387 \HyLang@DeclareLang{portuguese}{portuges}
2388 \HyLang@DeclareLang{spanish}{spanish}
2389 \HyLang@DeclareLang{afrikaans}{afrikaans}
2390 \HyLang@DeclareLang{french}{french}
2391 \HyLang@DeclareLang{frenchb}{french}
2392 \HyLang@DeclareLang{français}{french}
2393 \HyLang@DeclareLang{acadian}{french}
2394 \HyLang@DeclareLang{canadien}{french}
2395 \HyLang@DeclareLang{italian}{italian}
2396 \HyLang@DeclareLang{magyar}{magyar}
2397 \HyLang@DeclareLang{hungarian}{magyar}

```

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

```

2398 \define@key{Hyp}{vietnamese}[]{%
2399   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
2400   \AtEndOfPackage{%
2401     \@ifundefined{T@PU}{}%
2402     \input{puvnenc.def}%
2403   }%
2404 }%
2405 }
2406 \define@key{Hyp}{vietnam}[]{%
2407   \HyLang@addto\extravietnam\HyLang@vietnamese
2408   \AtEndOfPackage{%
2409     \@ifundefined{T@PU}{}%
2410     \input{puvnenc.def}%
2411   }%
2412 }%
2413 }

```

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

```

2414 \define@key{Hyp}{arabic}[] {%
2415   \AtEndOfPackage{%
2416     \ifundefined{T@PU}{}%
2417     \input{puarenc.def}%
2418   }%
2419 }%
2420 }

```

## 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.

```

2421 \define@key{Hyp}{colorlinks}[true] {%
2422   \Hy@boolkey{colorlinks}{#1}%
2423   \ifHy@colorlinks
2424     \def\pdfborder{0 0 0}%
2425     \let\pdfborderstyle\@empty
2426   \fi
2427 }
2428 \define@key{Hyp}{frenchlinks}[true] {%
2429   \Hy@boolkey{frenchlinks}{#1}%
2430 }

```

## 14 Bookmarking

```

2431 \define@key{Hyp}{bookmarks}[true] {%
2432   \Hy@boolkey{bookmarks}{#1}%
2433 }
2434 \define@key{Hyp}{bookmarksopen}[true] {%
2435   \Hy@boolkey{bookmarksopen}{#1}%
2436 }

```

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.

```

2437 \let\Hy@bookmarksdepth\c@tocdepth
2438 \define@key{Hyp}{bookmarksdepth}[] {%
2439   \begingroup
2440     \edef\x{#1}%
2441     \ifx\x\empty
2442       \global\let\Hy@bookmarksdepth\c@tocdepth
2443     \else
2444       \ifundefined{toclevel@\x}{%
2445         \@onelevel@sanitize\x
2446         \edef\y{\expandafter\@car\x\@nil}%
2447         \ifcase 0\expandafter\ifx\y-1\fi
2448           \expandafter\ifnum\expandafter\y>47 %
2449             \expandafter\ifnum\expandafter\y<58 1\fi\fi\relax

```

```

2450      \Hy@Warning{Unknown document division name (\x)}%
2451      \else
2452        \setbox\z@=\hbox{%
2453          \count@=\x
2454          \xdef\Hy@bookmarksdepth{\the\count@}%
2455        }%
2456      \fi
2457    }{%
2458      \setbox\z@=\hbox{%
2459        \count@=\csname toplevel@\x\endcsname
2460        \xdef\Hy@bookmarksdepth{\the\count@}%
2461      }%
2462    }%
2463  \fi
2464 \endgroup
2465 }

```

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

```

2466 \define@key{Hyp}{bookmarksopenlevel}{%
2467   \def\@bookmarksopenlevel{#1}%
2468 }
2469 \def\@bookmarksopenlevel{\maxdimen}
2470 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
2471 \define@key{Hyp}{bookmarkstype}{%
2472   \def\Hy@bookmarkstype{#1}%
2473 }
2474 \def\Hy@bookmarkstype{toc}

```

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

```

2475 \define@key{Hyp}{bookmarksnumbered}[true]{%
2476   \Hy@boolkey{bookmarksnumbered}{#1}%
2477 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2478 \define@key{Hyp}{CJKbookmarks}[true]{%
2479   \Hy@boolkey{CJKbookmarks}{#1}%
2480 }
2481 \def\Hy@temp#1{%
2482   \expandafter\Hy@temp\csname @#1color\endcsname{#1}%
2483 }
2484 \def\Hy@temp#1#2#3{%
2485   \define@key{Hyp}{#2color}{%
2486     \HyColor@HyperrefColor{##1}#1%
2487   }%
2488   \def#1{#3}%
2489 }
2490 \Hy@temp{link}{red}
2491 \Hy@temp{anchor}{black}
2492 \Hy@temp{cite}{green}
2493 \Hy@temp{file}{cyan}
2494 \Hy@temp{url}{magenta}
2495 \Hy@temp{menu}{red}
2496 \Hy@temp{run}{\@filecolor}
2497 \define@key{Hyp}{pagecolor}{%
2498   \Hy@WarningPageColor
2499 }
2500 \def\Hy@WarningPageColor{%

```

```

2501 \Hy@WarningNoLine{Option 'pagecolor' is not available anymore}%
2502 \global\let\Hy@WarningPageColor\relax
2503 }

2504 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2505 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2506 \let\@baseurl\empty
2507 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2508 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2509 \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.

```

2510 \let\@pdfpagetransition\relax
2511 \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.

```

2512 \let\@pdfpageduration\relax
2513 \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.

```

2514 \newif\ifHy@useHidKey
2515 \Hy@useHidKeyfalse
2516 \define@key{Hyp}{pdfpagehidden}[true]{%
2517   \Hy@boolkey{pdfpagehidden}{#1}%
2518   \ifHy@pdfpagehidden
2519     \global\Hy@useHidKeytrue
2520   \fi
2521 }

```

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).

```

2522 \def\Hy@ColorList{cite,file,link,menu,run,url}
2523 \@for\Hy@temp:=\Hy@ColorList\do{%
2524   \edef\Hy@temp{%
2525     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2526       \noexpand\HyColor@HyperrefBorderColor
2527       {##1}%
2528       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
2529       {hyperref}%
2530       {\Hy@temp bordercolor}%
2531     }%
2532   }%
2533   \Hy@temp

```

```

2534 }
2535 \define@key{Hyp}{pagebordercolor}{%
2536   \Hy@WarningPageBorderColor
2537 }
2538 \def\Hy@WarningPageBorderColor{%
2539   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
2540   \global\let\Hy@WarningPageBorderColor\relax
2541 }

2542 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2543 \Hy@DefNameKey{pdfhighlight}{%
2544   \do{/I}{Invert}%
2545   \do{/N}{None}%
2546   \do{/O}{Outline}%
2547   \do{/P}{Push}%
2548 }
2549 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2550 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2551 \def\Hy@setpdfborder{%
2552   \ifx\@pdfborder\@empty
2553   \else
2554     /Border[\@pdfborder]%
2555   \fi
2556   \ifx\@pdfborderstyle\@empty
2557   \else
2558     /BS<<\@pdfborderstyle>>%
2559   \fi
2560 }
2561 \Hy@DefNameKey{pdfpagemode}{%
2562   \do{UseNone}{}%
2563   \do{UseOutlines}{}%
2564   \do{UseThumbs}{}%
2565   \do{FullScreen}{}%
2566   \do{UseOC}{PDF 1.5}%
2567   \do{UseAttachments}{PDF 1.6}%
2568 }
2569 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2570   \do{UseNone}{}%
2571   \do{UseOutlines}{}%
2572   \do{UseThumbs}{}%
2573   \do{FullScreen}{}%
2574   \do{UseOC}{PDF 1.5}%
2575   \do{UseAttachments}{PDF 1.6}%
2576 }
2577 \Hy@DefNameKey{pdfdirection}{%
2578   \do{L2R}{Left to right}%
2579   \do{R2L}{Right to left}%
2580 }
2581 \Hy@DefNameKey{pdfviewarea}{%
2582   \do{MediaBox}{}%
2583   \do{CropBox}{}%
2584   \do{BleedBox}{}%
2585   \do{TrimBox}{}%
2586   \do{ArtBox}{}%
2587 }
2588 \Hy@DefNameKey{pdfviewclip}{%
2589   \do{MediaBox}{}%
2590   \do{CropBox}{}%

```

```

2591 \do{BleedBox}{}%
2592 \do{TrimBox}{}%
2593 \do{ArtBox}{}%
2594 }
2595 \Hy@DefNameKey{pdfprintarea}{%
2596 \do{MediaBox}{}%
2597 \do{CropBox}{}%
2598 \do{BleedBox}{}%
2599 \do{TrimBox}{}%
2600 \do{ArtBox}{}%
2601 }
2602 \Hy@DefNameKey{pdfprintclip}{%
2603 \do{MediaBox}{}%
2604 \do{CropBox}{}%
2605 \do{BleedBox}{}%
2606 \do{TrimBox}{}%
2607 \do{ArtBox}{}%
2608 }
2609 \Hy@DefNameKey{pdfprintscaling}{%
2610 \do{AppDefault}{}%
2611 \do{None}{}%
2612 }
2613 \Hy@DefNameKey{pdfduplex}{%
2614 \do{Simplex}{}%
2615 \do{DuplexFlipShortEdge}{}%
2616 \do{DuplexFlipLongEdge}{}%
2617 }
2618 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
2619 \do{true}{}%
2620 \do{false}{}%
2621 }
2622 \define@key{Hyp}{pdfprintpagerange}{%
2623 \def\@pdfprintpagerange{#1}%
2624 }
2625 \Hy@DefNameKey{pdfnumcopies}{%
2626 \do{2}{two copies}%
2627 \do{3}{three copies}%
2628 \do{4}{four copies}%
2629 \do{5}{five copies}%
2630 }
2631 \define@key{Hyp}{pdfusetitle}[true]{%
2632 \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2633 }
2634 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2635 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2636 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2637 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2638 \define@key{Hyp}{pdfcreationdate}{\pdfstringdef\@pdfcreationdate{#1}}
2639 \define@key{Hyp}{pdfmoddate}{\pdfstringdef\@pdfmoddate{#1}}
2640 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2641 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2642 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
2643 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2644 \let\setpdflinkmargin\@gobble
2645 \def\calculate@pdfview#1 #2\\{%
2646 \def\@pdfview{#1}%
2647 \ifx\@#2\\%

```

```

2648     \def\@pdfviewparams{ -32768}%
2649     \else
2650         \def\@pdfviewparams{ #2}%
2651     \fi
2652 }
2653 \define@key{Hyp}{pdfstartpage}{\def\@pdfstartpage{#1}}
2654 \define@key{Hyp}{pdfstartview}{%
2655     \ifx\@#1\%
2656         \def\@pdfstartview{}%
2657     \else
2658         \hypercalcbpdef\@pdfstartview{ /#1 }%
2659     \fi
2660 }
2661 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
2662 \define@key{Hyp}{pdftoolbar}[true]{%
2663     \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2664 }
2665 \define@key{Hyp}{pdfmenubar}[true]{%
2666     \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2667 }
2668 \define@key{Hyp}{pdfwindowui}[true]{%
2669     \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2670 }
2671 \define@key{Hyp}{pdffitwindow}[true]{%
2672     \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2673 }
2674 \define@key{Hyp}{pdfcenterwindow}[true]{%
2675     \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2676 }
2677 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2678     \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2679 }
2680 \define@key{Hyp}{pdfnewwindow}[true]{%
2681     \def\Hy@temp{#1}%
2682     \ifx\Hy@temp\@empty
2683         \Hy@newwindowsetfalse
2684     \else
2685         \Hy@newwindowsettrue
2686         \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2687     \fi
2688 }
2689 \def\Hy@SetNewWindow{%
2690     \ifHy@newwindowset
2691         /NewWindow %
2692     \ifHy@newwindow true\else false\fi
2693     \fi
2694 }
2695 \Hy@DefNameKey{pdfpagelayout}{%
2696     \do{SinglePage}{}%
2697     \do{OneColumn}{}%
2698     \do{TwoColumnLeft}{}%
2699     \do{TwoColumnRight}{}%
2700     \do{TwoPageLeft}{PDF 1.5}%
2701     \do{TwoPageRight}{PDF 1.5}%
2702 }
2703 \define@key{Hyp}{pdflang}{%
2704     \def\@pdflang{#1}%

```



```

2705 }
2706 \define@key{Hyp}{pdfpagelabels}[true]{%
2707   \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2708 }
2709 \define@key{Hyp}{pdfescapeform}[true]{%
2710   \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2711 }

```

Default values:

```

2712 \def\@linkbordercolor{1 0 0}
2713 \def\@urlbordercolor{0 1 1}
2714 \def\@menubordercolor{1 0 0}
2715 \def\@filebordercolor{0 .5 .5}
2716 \def\@runbordercolor{0 .7 .7}
2717 \def\@citebordercolor{0 1 0}
2718 \def\@pdfhighlight{/I}
2719 \def\@pdftitle{}
2720 \def\@pdfauthor{}
2721 \let\@pdfproducer\relax
2722 \def\@pdfcreator{LaTeX with hyperref package}
2723 \def\@pdfcreationdate{}
2724 \def\@pdfmoddate{}
2725 \def\@pdfsubject{}
2726 \def\@pdfkeywords{}
2727 \def\@pdfpagescrop{}
2728 \def\@pdfstartview{/Fit }
2729 \def\@pdfstartpage{1}
2730 \def\@pdfprintpagerange{}
2731 \def\@pdflang{}
2732 \let\PDF@SetupDoc\@empty
2733 \let\PDF@FinishDoc\@empty
2734 \let\phantomsection\@empty
2735 \let\special@paper\@empty
2736 \@ifundefined{stockwidth}{%
2737   \ifdim\paperwidth>\z@
2738     \ifdim\paperheight>\z@
2739       \edef\special@paper{\the\paperwidth,\the\paperheight}%
2740     \fi
2741   \fi
2742 }{%
2743   \ifdim\stockwidth>\z@
2744     \ifdim\stockheight>\z@
2745       \edef\special@paper{\the\stockwidth,\the\stockheight}%
2746     \fi
2747   \fi
2748 }
2749 \begingroup
2750 \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
2751 \dimen@=\x\relax
2752 \ifdim\dimen@>\z@
2753   \else
2754     \dimen@=11in\relax
2755     \Hy@WarningNoLine{%
2756       Height of page (\expandafter\string\x) %
2757       is invalid (\the\x),\MessageBreak
2758       using 11in%
2759     }%
2760   \fi

```

```

2761 \dimen@=0.99626401\dimen@
2762 \xdef\Hy@pageheight{\strip@pt\dimen@}%
2763 \endgroup
2764 \def\HyInd@EncapChar{\|}
2765 \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.

```

2766 \let\hyper@normalise\ExecuteOptions
2767 \let\ExecuteOptions\hypersetup
2768 \Hy@RestoreCatcodes
2769 \InputIfFileExists{hyperref.cfg}{-}{-}
2770 \Hy@SetCatcodes
2771 \let\ExecuteOptions\hyper@normalise
2772 \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`.

```

2773 \RequirePackage{kvoptions}[2006/08/17]

```

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

```

2774 \@ifpackageloaded{tex4ht}{%
2775   \@ifpackagewith{hyperref}{tex4ht}{-}{-}%
2776   \PassOptionsToPackage{tex4ht}{hyperref}%
2777 }%
2778 }{}
2779 \let\ReadBookmarks\relax
2780 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2781 \AtBeginDocument{%
2782   \ifHy@draft
2783     \let\hyper@@anchor\@gobble
2784     \gdef\hyper@link#1#2#3{#3}%
2785     \let\hyper@anchorstart\@gobble
2786     \let\hyper@anchorend\@empty
2787     \let\hyper@linkstart\@gobbletwo
2788     \let\hyper@linkend\@empty
2789     \def\hyper@linkurl#1#2{#1}%
2790     \def\hyper@linkfile#1#2#3{#1}%
2791     \def\hyper@link@{#1}#2#3{#1}%
2792     \def\Acrobatmenu#1#2{#2}%
2793     \let\PDF@SetupDoc\@empty
2794     \let\PDF@FinishDoc\@empty
2795     \let\@fifthoffive\@secondoftwo
2796     \let\@secondoffive\@secondoftwo
2797     \let\ReadBookmarks\relax
2798     \let\WriteBookmarks\relax
2799     \Hy@WarningNoLine{ draft mode on}%
2800   \fi
2801   \Hy@DisableOption{draft}%
2802   \Hy@DisableOption{nolinks}%
2803   \Hy@DisableOption{final}%
2804 }
2805 \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.

```
2806 \Hy@nextfalse
2807 \@ifundefined{spanish@sh@"@sel}{\Hy@nexttrue}
2808 \@ifundefined{galician@sh@"@sel}{\Hy@nexttrue}
2809 \@ifundefined{estonian@sh@"@sel}{\Hy@nexttrue}
2810 \ifHy@next
2811   \let\texttilde\~%
2812 \fi

2813 \ifHy@figures
2814   \Hy@Info{Hyper figures ON}%
2815 \else
2816   \Hy@Info{Hyper figures OFF}%
2817 \fi

2818 \ifHy@nesting
2819   \Hy@Info{Link nesting ON}%
2820 \else
2821   \Hy@Info{Link nesting OFF}%
2822 \fi

2823 \ifHy@hyperindex
2824   \Hy@Info{Hyper index ON}%
2825 \else
2826   \Hy@Info{Hyper index OFF}%
2827 \fi

2828 \ifHy@plainpages
2829   \Hy@Info{Plain pages ON}%
2830 \else
2831   \Hy@Info{Plain pages OFF}%
2832 \fi

2833 \ifHy@backref
2834   \Hy@Info{Backreferencing ON}%
2835 \else
2836   \Hy@Info{Backreferencing OFF}%
2837 \fi

2838 \ifHy@typexml
2839   \AtEndOfPackage{%
2840     \RequirePackage{color}%
2841     \RequirePackage{nameref}%
2842   }%
2843 \fi

2844 \Hy@DisableOption{typexml}
2845 \ifHy@implicit
2846   \typeout{Implicit mode ON; LaTeX internals redefined}%
2847 \else
2848   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
2849   \def\MaybeStopEarly{%
2850     \typeout{Hyperref stopped early}%
2851     \AfterBeginDocument{%
2852       \PDF@FinishDoc
2853       \gdef\PDF@FinishDoc{}}%
2854   }%
2855   \endinput
2856 }%
2857 \AtBeginDocument{%
2858   \let\autoref\ref
```

```

2859 \let\autopageref\pageref
2860 \ifx\@pdfpagemode\@empty
2861 \gdef\@pdfpagemode{UseNone}%
2862 \fi
2863 \global\Hy@backreffalse
2864 }%
2865 \AtEndOfPackage{%
2866 \global\let\ReadBookmarks\relax
2867 \global\let\WriteBookmarks\relax
2868 }%
2869 \fi
2870 \Hy@DisableOption{implicit}

```

### 15.1.1 Driver loading

```

2871 \AtEndOfPackage{%
2872 \@ifpackageloaded{tex4ht}{%
2873 \def\Hy@driver{htex4ht}%
2874 \Hy@texhttrue
2875 }{}%
2876 \ifx\Hy@driver\@empty
2877 \providecommand*{\Hy@defaultdriver}{hypertex}%
2878 \begingroup\expandafter\expandafter\expandafter\endgroup
2879 \expandafter\ifx\csname pdfoutput\endcsname\relax
2880 \begingroup\expandafter\expandafter\expandafter\endgroup
2881 \expandafter\ifx\csname OpMode\endcsname\relax
2882 \begingroup\expandafter\expandafter\expandafter\endgroup
2883 \expandafter\ifx\csname XeTeXversion\endcsname\relax
2884 \let\Hy@driver\Hy@defaultdriver
2885 \else
2886 \def\Hy@driver{hdvipdfm}%
2887 \fi
2888 \else
2889 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2890 \def\Hy@driver{hvtex}%
2891 \def\XR@ext{pdf}%
2892 \else
2893 \ifnum\OpMode=10\relax
2894 \def\XR@ext{htm}%
2895 \def\Hy@driver{hvtexhtm}%
2896 \def\MaybeStopEarly{%
2897 \typeout{Hyperref stopped early}%
2898 \AfterBeginDocument{%
2899 \PDF@FinishDoc
2900 \gdef\PDF@FinishDoc{}}%
2901 }%
2902 \endinput
2903 }%
2904 \else
2905 \let\Hy@driver\Hy@defaultdriver
2906 \fi
2907 \fi
2908 \fi
2909 \else
2910 \ifnum\pdfoutput<1 %
2911 \let\Hy@driver\Hy@defaultdriver
2912 \else

```

```

2913     \def\Hy@driver{hpdftex}%
2914     \def\XR@ext{pdf}%
2915     \PassOptionsToPackage{pdftex}{color}%
2916     \Hy@breaklinkstrue
2917   \fi
2918 \fi
2919 \ifx\Hy@driver\Hy@defaultdriver
2920   \def\Hy@temp{hdvips}%
2921   \ifx\Hy@temp\Hy@driver
2922     \def\Hy@raisedlink{}%
2923     \def\XR@ext{pdf}%
2924   \fi
2925   \def\Hy@temp{hdvipdfm}%
2926   \ifx\Hy@temp\Hy@driver
2927     \def\XR@ext{pdf}%
2928     \Hy@breaklinkstrue
2929   \fi
2930   \def\Hy@temp{hdviwind}%
2931   \ifx\Hy@temp\Hy@driver
2932     \setkeys{Hyp}{colorlinks}%
2933     \PassOptionsToPackage{dviwindo}{color}%
2934   \fi
2935   \def\Hy@temp{hdvipson}%
2936   \ifx\Hy@temp\Hy@driver
2937     \def\XR@ext{pdf}%
2938     \def\Hy@raisedlink{}%
2939   \fi
2940   \def\Hy@temp{textures}%
2941   \ifx\Hy@temp\Hy@driver
2942     \def\XR@ext{pdf}%
2943   \fi
2944 \fi
2945 \typeout{*hyperref using default driver \Hy@driver*}%
2946 \else
2947   \typeout{*hyperref using driver \Hy@driver*}%
2948 \fi
2949 \input{\Hy@driver.def}%
2950 \let\@unprocessedoptions\relax
2951 \Hy@RestoreCatcodes
2952 }
2953 \newif\ifHy@DvipdfmxOutlineOpen
2954 \begingroup\expandafter\expandafter\expandafter\endgroup
2955 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
2956 \else
2957   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
2958     \Hy@DvipdfmxOutlineOpentru
2959   \fi
2960 \fi
2961 \Hy@DisableOption{tex4ht}
2962 \Hy@DisableOption{pdftex}
2963 \Hy@DisableOption{dvipdf}
2964 \Hy@DisableOption{nativepdf}
2965 \Hy@DisableOption{dvipdfm}
2966 \Hy@DisableOption{dvipdfmx}
2967 \Hy@DisableOption{dvipdfmx-outline-open}
2968 \Hy@DisableOption{pdfmark}
2969 \Hy@DisableOption{dvips}

```

```

2970 \Hy@DisableOption{hypertext}
2971 \Hy@DisableOption{vtex}
2972 \Hy@DisableOption{vtexpdfmark}
2973 \Hy@DisableOption{dviwindo}
2974 \Hy@DisableOption{dvipsone}
2975 \Hy@DisableOption{textures}
2976 \Hy@DisableOption{latex2html}
2977 \Hy@DisableOption{ps2pdf}
2978 \Hy@DisableOption{xetex}

```

### 15.1.2 Bookmarks

```

2979 \def\WriteBookmarks{0}
2980 \def\@bookmarkopenstatus#1{%
2981   \ifHy@bookmarksopen

```

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

```

2982   \ifnum#1<\expandafter\@firstofone\expandafter
2983     {\number\@bookmarkopenlevel} % explicit space
2984   \else
2985     -%
2986   \fi
2987 \else
2988   -%
2989 \fi
2990 }
2991 \ifHy@bookmarks
2992   \Hy@Info{Bookmarks ON}%
2993   \ifx\@pdfpagemode\@empty
2994     \def\@pdfpagemode{UseOutlines}%
2995   \fi
2996 \else
2997   \def\@bookmarkopenstatus#1{%
2998     \Hy@Info{Bookmarks OFF}%
2999     \AtEndOfPackage{%
3000       \global\let\ReadBookmarks\relax
3001       \global\let\WriteBookmarks\relax
3002     }%
3003     \ifx\@pdfpagemode\@empty
3004       \def\@pdfpagemode{UseNone}%
3005     \fi
3006 \fi
3007 \Hy@DisableOption{bookmarks}

```

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

```

3008 \AtBeginDocument{%
3009   \ifHy@colorlinks
3010     \ifHy@typexml
3011     \else
3012       \RequirePackage{color}%
3013     \fi
3014     \def\Hy@colorlink#1{%
3015       \begingroup
3016         \HyColor@UseColor#1%
3017       }%
3018     \def\Hy@endcolorlink{\endgroup}%
3019     \Hy@Info{Link coloring ON}%

```

```

3020 \else
3021   \ifHy@frenchlinks
3022     \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
3023     \def\Hy@endcolorlink{\endgroup}%
3024     \Hy@Info{French linking ON}%
3025   \else
for grouping consistency:
3026     \def\Hy@colorlink#1{\begingroup}%
3027     \def\Hy@endcolorlink{\endgroup}%
3028     \Hy@Info{Link coloring OFF}%
3029   \fi
3030 \fi
3031 \Hy@DisableOption{colorlinks}%
3032 \Hy@DisableOption{frenchlinks}%
3033 \ifHy@texht
3034   \long\def\@firstoffive#1#2#3#4#5{#1}%
3035   \long\def\@secondoffive#1#2#3#4#5{#2}%
3036   \long\def\@thirdoffive#1#2#3#4#5{#3}%
3037   \long\def\@fourthoffive#1#2#3#4#5{#4}%
3038   \long\def\@fifthoffive#1#2#3#4#5{#5}%
3039   \providecommand*\@safe@activestruer{}%
3040   \providecommand*\@safe@activesfalse{}%
3041   \def\T@ref#1{%
3042     \Hy@safe@activestruer
3043     \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
3044     \Hy@safe@activesfalse
3045   }%
3046   \def\T@pageref#1{%
3047     \Hy@safe@activestruer
3048     \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
3049     \Hy@safe@activesfalse
3050   }%
3051 \else
3052   \ifHy@typexml\else\RequirePackage{nameref}\fi
3053 \fi
3054 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
3055 \DeclareRobustCommand\pageref{%
3056   \@ifstar\@pagerefstar\T@pageref
3057 }%
3058 }
3059 \AfterBeginDocument{%
3060   \ifHy@texht
3061   \else
3062     \ReadBookmarks
3063   \fi
3064 }
3065 \ifHy@backref
3066   \RequirePackage{backref}%
3067 \else
3068   \let\Hy@backout\@gobble
3069 \fi
3070 \Hy@DisableOption{backref}
3071 \Hy@DisableOption{pagebackref}
3072 \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.

```

3073 \begingroup
3074   \endlinechar=-1 %
3075   \catcode'\^^A=14 %
3076   \catcode'\^^M\active
3077   \catcode'\%\active
3078   \catcode'\#\active
3079   \catcode'\_\active
3080   \catcode'\$\active
3081   \gdef\hyper@normalise{^^A
3082     \begingroup
3083     \catcode'\^^M\active
3084     \def^^M{ }^^A
3085     \catcode'\%\active
3086     \let%\@percentchar
3087     \let%\@percentchar
3088     \catcode'\#\active
3089     \def#{\hyper@hash}^^A
3090     \def\#{\hyper@hash}^^A
3091     \@makeother\&^^A
3092     \edef\textunderscore{\string_}^^A
3093     \let\_ \textunderscore
3094     \catcode'\_\active
3095     \let\_ \textunderscore
3096     \let~\hyper@tilde
3097     \let~\hyper@tilde
3098     \let\textasciitilde\hyper@tilde
3099     \let\\\@backslashchar
3100     \edef$\string$}^^A
3101     \Hy@safe@activetrue
3102     \hyper@n@rmalise
3103   }^^A
3104   \catcode'\#=6 ^^A
3105   \gdef\Hy@ActiveCarriageReturn{^^M}^^A
3106   \gdef\hyper@n@rmalise#1#2{^^A
3107     \def\Hy@tempa{#2}^^A
3108     \ifx\Hy@tempa\Hy@ActiveCarriageReturn
3109       \Hy@ReturnAfterElseFi{^^A
3110         \hyper@@normalise{#1}^^A
3111       }^^A
3112     \else
3113       \Hy@ReturnAfterFi{^^A
3114         \hyper@@normalise{#1}{#2}^^A
3115       }^^A
3116     \fi
3117   }^^A
3118   \gdef\hyper@@normalise#1#2{^^A
3119     \edef\Hy@tempa{^^A
3120       \endgroup
3121       \noexpand#1{\Hy@RemovePercentCr#2%\^^M\@nil}^^A

```



```

3122 }^^A
3123 \Hy@tempa
3124 }^^A
3125 \gdef\Hy@RemovePercentCr#1%^M#2\@nil{^^A
3126 #1^^A
3127 \ifx\limits#2\limits
3128 \else
3129 \Hy@ReturnAfterFi{^^A
3130 \Hy@RemovePercentCr #2\@nil
3131 }^^A
3132 \fi
3133 }^^A
3134 \endgroup
3135 \providecommand*\hyper@chars{%
3136 \let#\hyper@hash
3137 \let%\@percentchar
3138 \Hy@safe@activetrue
3139 }

3140 \def\hyperlink#1#2{%
3141 \hyper@link{#1}{#2}%
3142 }

3143 \DeclareRobustCommand*\href{%
3144 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
3145 }
3146 \def\Hy@href#1{%
3147 \hyper@normalise\href@
3148 }
3149 \begingroup
3150 \catcode'\$=6 %
3151 \catcode'\#=12 %
3152 \gdef\href@#1{\expandafter\href@split$1##\}%
3153 \gdef\href@split$1#$2#$3\{%
3154 \hyper@link{$1}{$2}%
3155 }%
3156 \endgroup

```

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

```

3157 \RequirePackage{url}
3158 \let\HyOrg@url\url
3159 \def\Hurl{\begingroup \Url}
3160 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
3161 \def\nolinkurl@#1{\Hurl{#1}}
3162 \DeclareRobustCommand*\url{\hyper@normalise\url@}
3163 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

3164 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
3165 \providecommand\hyper@image[2]{#2}

3166 \def\hypertarget#1#2{%
3167 \ifHy@nesting
3168 \hyper@@anchor{#1}{#2}%
3169 \else
3170 \hyper@@anchor{#1}{\relax}#2%
3171 \fi
3172 }

```

`\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  $\text{\LaTeX}$  label which can be used in a short form of `\hyperref` later, to avoid remembering the name and category.

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

```

3223 \@esphack
3224 \ifHy@nesting
3225   \hyper@@anchor{#2.#3}{#4}%
3226 \else
3227   \hyper@@anchor{#2.#3}{\relax}#4%
3228 \fi
3229 }

```

## 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.

```

3230 \def\hyper@link{\let\Hy@reserved@a\relax
3231   \@ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
3232 }
3233 \def\hyper@link@[#1]#2#3#4{%
3234   \begingroup
3235     \protected@edef\Hy@tempa{#2}%
3236     \Hy@safe@activestrue
3237     \edef\x{#3}%
3238     \ifx\Hy@tempa\@empty
3239       \toks0{\hyper@link{#1}}%
3240     \else
3241       \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
3242     \fi
3243     \toks2{#4}%
3244     \edef\Hy@tempa{\the\toks2}%
3245     \edef\x{\endgroup
3246       \ifx\Hy@tempa\@empty
3247         \noexpand\Hy@Warning{Suppressing empty link}%
3248       \else
3249         \the\toks0 \{ \x} {\the\toks2} %%
3250       \fi
3251     }%
3252   \x
3253 }

```

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.

```

3254 \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.

```

3255 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1:.\{#1}%
3256 }

```

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

```

3257 \def\@pdftempwordfile{file}%
3258 \def\@pdftempwordrun{run}%
3259 \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:

```

3260 \ifx\\\#6\\\%
3261 \expandafter\@hyper@linkfile file:#7\\\{#3}{#2}%
3262 \else
3263 \ifx\\\#4\\\%
3264 \expandafter\@hyper@linkfile file:#7\\\{#3}{#2}%
3265 \else

```

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

```

3266 \def\@pdftempa{#4}%
3267 \ifx\@pdftempa\@pdftempwordfile
3268 \expandafter\@hyper@linkfile#7\\\{#3}{#2}%
3269 \else

```

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

```

3270 \ifx\@pdftempa\@pdftempwordrun
3271 \expandafter\@hyper@launch#7\\\{#3}{#2}%
3272 \else

```

otherwise its a URL

```

3273 \hyper@linkurl{#3}{#7\ifx\\\#2\\\else\hyper@hash#2\fi}%
3274 \fi
3275 \fi
3276 \fi
3277 \fi
3278 }

```

By default, turn run: into file:

```

3279 \def\@hyper@launch run:#1\\\#2#3{% filename, anchor text, linkname
3280 \hyper@linkurl{#2}{\Hy@linkfileprefix#1\ifx\\\#3\\\else\hyper@hash#3\fi}%
3281 }

```

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

```

3282 \def\@hyper@linkfile file:#1\\\#2#3{%
3283 %file url,link string, name
3284 \filename@parse{#1}%
3285 \ifx\filename@ext\relax
3286 \edef\filename@ext{\XR@ext}%
3287 \fi
3288 \def\use@file{\filename@area\filename@base.\filename@ext}%
3289 \ifx\filename@ext\XR@ext
3290 \hyper@linkfile{#2}{\use@file}{#3}%
3291 \else
3292 \ifx\@baseurl\@empty
3293 \hyper@linkurl{#2}{%
3294 \Hy@linkfileprefix\use@file\ifx\\\#3\\\else\hyper@hash#3\fi

```

```

3295     }%
3296     \else
3297         \hyper@linkurl{#2}{\use@file\ifx\\#3\\ \else\hyper@hash#3\fi}%
3298     \fi
3299 \fi
3300 }

```

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.

```

3301 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
3302 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
3303     \ifx\\#1\\%
3304         #2\Hy@WarningNoLine{empty link? #1: #2#3}%
3305     \else
3306         \def\anchor@spot{#2#3}%
3307         \let\put@me@back\@empty
3308         \ifx\relax#2\relax
3309             \else
3310                 \ifHy@nesting
3311                 \else
3312                     \ifcat a\noexpand#2\relax
3313                     \else
3314                         \ifcat 0\noexpand#2 \relax
3315                         \else
3316 %                     \typeout{Anchor start is not alphanumeric %
3317 %                         on input line\the\inputlineno%
3318 %                     }%
3319                     \let\anchor@spot\@empty
3320                     \def\put@me@back{#2#3}%
3321                 \fi
3322             \fi
3323         \fi
3324     \fi
3325     \ifHy@activeanchor
3326         \anchor@spot
3327     \else
3328         \hyper@anchor{#1}%
3329     \fi
3330     \expandafter\put@me@back
3331 \fi
3332 \let\anchor@spot\@empty
3333 }

```

## 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 circum-

stances by this package.

```

3334 \let\htmladding\hyperimage
3335 \def\htmladdnormallink#1#2{\href{#2}{#1}}
3336 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
3337 \def\htmlref#1#2{% anchor text, label
3338   \label@hyperref[{#2}]{#1}%
3339 }

```

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.

```

3340 \def\@latextohtmlX{%
3341   \let\hhyperref\hyperref
3342   \def\hyperref##1##2##3##4{% anchor text for HTML
3343     % text to print before label in print
3344     % label
3345     % post-label text in print
3346     ##2\ref{##4}##3%
3347   }%
3348 }

```

## 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.

```

3349 \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
3350 \def\HyField@NewFlag#1#2{%
3351   \lowercase{\HyField@NewOption{#2}}%
3352   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3353 }

```

```

\HyField@NewFlagOnly
3354 \def\HyField@NewFlagOnly#1#2{%
3355   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3356 }

```

```

\HyField@NewOption #1: option name
3357 \def\HyField@NewOption#1{%
3358   \expandafter\newif\csname iffld@#1\endcsname
3359   \define@key{Field}{#1}[true]{%

```

```

3360 \lowercase{\Field@boolkey{##1}}{#1}%
3361 }%
3362 }

```

\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

```

3363 \def\HyField@NewBitsetFlag#1#2#3#4{%
3364 \begingroup
3365 \count@=#4\relax
3366 \advance\count@\m@ne
3367 \def\x##1{%
3368 \endgroup
3369 \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
3370 \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
3371 \expandafter\edef\csname HyField@#3@##1\endcsname{%
3372 (\number#4) #2%
3373 }%
3374 \else
3375 \expandafter\edef\csname HyField@#3@##1\endcsname{%
3376 \csname HyField@#3@##1\endcsname
3377 /#2%
3378 }%
3379 \fi
3380 }%
3381 \expandafter\x\expandafter{\the\count@}%
3382 }

```

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

```

3383 \def\HyField@UseFlag#1#2{%
3384 \lowercase{\HyField@@UseFlag{#2}}{#1}%
3385 }

```

\HyField@@UseFlag

```

3386 \def\HyField@@UseFlag#1#2{%
3387 \bitsetSetValue{HyField@#2}{%
3388 \csname HyField@#2@#1\endcsname
3389 }{%
3390 \csname ifFld@#1\endcsname 1\else 0\fi
3391 }%
3392 }

```

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

```

3393 \def\HyField@SetFlag#1#2{%
3394 \lowercase{\HyField@@SetFlag{#2}}{#1}%
3395 }

```

\HyField@@SetFlag

```

3396 \def\HyField@@SetFlag#1#2{%
3397 \bitsetSetValue{HyField@#2}{%
3398 \csname HyField@#2@#1\endcsname
3399 }{1}%
3400 }

```

\HyField@PrintFlags

```
3401 \def\HyField@PrintFlags#1#2{%
3402   \ifHy@verbose
3403     \begingroup
3404     \let\Hy@temp\@empty
3405     \let\MessageBreak\relax
3406     \expandafter\@for\expandafter\x\expandafter:\expandafter=%
3407     \bitsetGetSetBitList{HyField@#1}\do{%
3408       \edef\Hy@temp{%
3409         \Hy@temp
3410         \csname HyField@#1@\x\endcsname\MessageBreak
3411       }%
3412     }%
3413   \edef\x{\endgroup
3414     \noexpand\Hy@Info{%
3415       Field flags: %
3416       \expandafter\ifx\@car#1\@nil S\else/\fi
3417       #1 %
3418       \bitsetGetDec{HyField@#1} %
3419       (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
3420       \Hy@temp
3421       for #2%
3422     }%
3423   }\x
3424   \fi
3425 }
```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```
3426 \HyField@NewFlag{Ff}{ReadOnly}{1}
3427 \HyField@NewFlag{Ff}{Required}{2}
3428 \HyField@NewFlag{Ff}{NoExport}{3}
```

“Table 8.75 Field flags specific to button fields”

```
3429 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
3430 \HyField@NewFlag{Ff}{Radio}{16}
3431 \HyField@NewFlag{Ff}{Pushbutton}{17}
3432 \HyField@NewFlag{Ff}{RadiosInUnison}{26}
```

“Table 8.77 Field flags specific to text fields”

```
3433 \HyField@NewFlag{Ff}{Multiline}{13}
3434 \HyField@NewFlag{Ff}{Password}{14}
3435 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
3436 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3437 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
3438 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
3439 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5
```

“Table 8.79 field flags specific to choice fields”

```
3440 \HyField@NewFlag{Ff}{Combo}{18}
3441 \HyField@NewFlag{Ff}{Edit}{19}
3442 \HyField@NewFlag{Ff}{Sort}{20}
3443 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
3444 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3445 \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.

```
3446 \newif\ifFld@popdown
3447 \define@key{Field}{popdown}[true]{%
3448   \lowercase{\Field@boolkey{#1}}{popdown}%
3449 }
```

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.

```
3450 \HyField@NewFlag{F}{Invisible}{1}
3451 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
3452 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
3453 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
3454 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
3455 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
3456 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
3457 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
3458 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7
```

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

```
3459 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
3460 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
3461 \HyField@NewFlag{Submit}{GetMethod}{4}
3462 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
3463 \HyField@NewFlagOnly{Submit}{XFDF}{6}
3464 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
3465 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
3466 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
3467 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
3468 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
3469 \HyField@NewFlag{Submit}{ExclFKey}{12}
3470 \HyField@NewFlag{Submit}{EmbedForm}{14}

3471 \define@key{Field}{export}{%
3472   \lowercase{\def\Hy@temp{#1}}%
3473   \@ifundefined{Fld@export@Hy@temp}{%
3474     \onelevel@sanitize\Hy@temp
3475     \PackageError{hyperref}{%
3476       Unknown export format ‘\Hy@temp’.\MessageBreak
3477       Known formats are ‘FDF’, ‘HTML’, ‘XFDF’, and ‘PDF’%
3478     }\@ehc
3479   }{%
3480     \let\Fld@export\Hy@temp
3481   }%
3482 }

3483 \def\Fld@export{fdf}
3484 \@namedef{Fld@export@fdf}{0}%
3485 \@namedef{Fld@export@html}{1}%
3486 \@namedef{Fld@export@xfdf}{2}%
3487 \@namedef{Fld@export@pdf}{3}%
```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```
3488 \def\HyField@FlagsSubmit{%
```

```

3489 \bitsetReset{HyField@Submit}%
3490 \ifcase\@nameuse{Fld@export@\Fld@export} %
3491 % FDF
3492 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3493 \HyField@UseFlag{Submit}{SubmitCoordinates}%
3494 \HyField@UseFlag{Submit}{IncludeAppendSaves}%
3495 \HyField@UseFlag{Submit}{IncludeAnnotations}%
3496 \HyField@UseFlag{Submit}{CanonicalFormat}%
3497 \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
3498 \HyField@UseFlag{Submit}{ExclFKey}%
3499 \HyField@UseFlag{Submit}{EmbedForm}%
3500 \or % HTML
3501 \HyField@SetFlag{Submit}{ExportFormat}%
3502 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3503 \HyField@UseFlag{Submit}{GetMethod}%
3504 \HyField@UseFlag{Submit}{SubmitCoordinates}%
3505 \HyField@UseFlag{Submit}{CanonicalFormat}%
3506 \or % XFDF
3507 \HyField@SetFlag{Submit}{XFDF}%
3508 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3509 \HyField@UseFlag{Submit}{SubmitCoordinates}%
3510 \HyField@UseFlag{Submit}{CanonicalFormat}%
3511 \or % PDF
3512 \HyField@SetFlag{Submit}{SubmitPDF}%
3513 \HyField@UseFlag{Submit}{GetMethod}%
3514 \fi
3515 \HyField@PrintFlags{Submit}{submit button field}%
3516 \bitsetIsEmpty{HyField@Submit}{%
3517 \def\Fld@submitflags{%
3518 }{%
3519 \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
3520 }%
3521 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

3522 \def\HyField@FlagsAnnot#1{%
3523 \bitsetReset{HyField@F}%
3524 \HyField@UseFlag{F}{Invisible}%
3525 \HyField@UseFlag{F}{Hidden}%
3526 \HyField@UseFlag{F}{Print}%
3527 \HyField@UseFlag{F}{NoZoom}%
3528 \HyField@UseFlag{F}{NoRotate}%
3529 \HyField@UseFlag{F}{NoView}%
3530 \HyField@UseFlag{F}{Locked}%
3531 \HyField@UseFlag{F}{ToggleNoView}%
3532 \HyField@UseFlag{F}{LockedContents}%
3533 \HyField@PrintFlags{F}{#1}%
3534 \bitsetIsEmpty{HyField@F}{%
3535 \def\Fld@annotflags{%
3536 }{%
3537 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
3538 }%
3539 }

```

#### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```
3540 \def\HyField@FlagsPushButton{%
3541   \HyField@FlagsAnnot{push button field}%
3542   \bitsetReset{HyField@Ff}%
3543   \HyField@UseFlag{Ff}{ReadOnly}%
3544   \HyField@UseFlag{Ff}{Required}%
3545   \HyField@UseFlag{Ff}{NoExport}%
3546   \HyField@SetFlag{Ff}{PushButton}%
3547   \HyField@PrintFlags{Ff}{push button field}%
3548   \bitsetIsEmpty{HyField@Ff}{%
3549     \def\Fld@flags{%
3550     }{%
3551     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3552     }%
3553 }
```

#### 19.1.5 Check box field

\HyField@FlagsCheckBox

```
3554 \def\HyField@FlagsCheckBox{%
3555   \HyField@FlagsAnnot{check box field}%
3556   \bitsetReset{HyField@Ff}%
3557   \HyField@UseFlag{Ff}{ReadOnly}%
3558   \HyField@UseFlag{Ff}{Required}%
3559   \HyField@UseFlag{Ff}{NoExport}%
3560   \HyField@PrintFlags{Ff}{check box field}%
3561   \bitsetIsEmpty{HyField@Ff}{%
3562     \def\Fld@flags{%
3563     }{%
3564     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3565     }%
3566 }
```

#### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```
3567 \def\HyField@FlagsRadioButton{%
3568   \HyField@FlagsAnnot{radio button field}%
3569   \bitsetReset{HyField@Ff}%
3570   \HyField@UseFlag{Ff}{ReadOnly}%
3571   \HyField@UseFlag{Ff}{Required}%
3572   \HyField@UseFlag{Ff}{NoExport}%
3573   \HyField@UseFlag{Ff}{NoToggleToOff}%
3574   \HyField@SetFlag{Ff}{Radio}%
3575   \HyField@UseFlag{Ff}{RadiosInUnison}%
3576   \HyField@PrintFlags{Ff}{radio button field}%
3577   \bitsetIsEmpty{HyField@Ff}{%
3578     \def\Fld@flags{%
3579     }{%
3580     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3581     }%
3582 }
```

### 19.1.7 Text fields

\HyField@FlagsText

```
3583 \def\HyField@FlagsText{%
3584   \HyField@FlagsAnnot{text field}%
3585   \bitsetReset{HyField@Ff}%
3586   \HyField@UseFlag{Ff}{ReadOnly}%
3587   \HyField@UseFlag{Ff}{Required}%
3588   \HyField@UseFlag{Ff}{NoExport}%
3589   \HyField@UseFlag{Ff}{Multiline}%
3590   \HyField@UseFlag{Ff}{Password}%
3591   \HyField@UseFlag{Ff}{FileSelect}%
3592   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
3593   \HyField@UseFlag{Ff}{DoNotScroll}%
3594   \ifFld@comb
3595     \ifcase0\ifFld@multiline
3596       \else\ifFld@password
3597       \else\ifFld@fileselect
3598       \else 1\fi\fi\fi\relax
3599     \PackageError{hyperref}{%
3600       Field option ‘comb’ cannot used together with\MessageBreak
3601       ‘multiline’, ‘password’, or ‘fileselect’%
3602     }\@ehc
3603   \else
3604     \HyField@UseFlag{Ff}{Comb}%
3605   \fi
3606 \fi
3607 \HyField@UseFlag{Ff}{RichText}%
3608 \HyField@PrintFlags{Ff}{text field}%
3609 \bitsetIsEmpty{HyField@Ff}{%
3610   \def\Fld@flags{%
3611   }{%
3612   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3613   }%
3614 }
```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```
3615 \def\HyField@FlagsChoice{%
3616   \HyField@FlagsAnnot{choice field}%
3617   \bitsetReset{HyField@Ff}%
3618   \HyField@UseFlag{Ff}{ReadOnly}%
3619   \HyField@UseFlag{Ff}{Required}%
3620   \HyField@UseFlag{Ff}{NoExport}%
3621   \HyField@UseFlag{Ff}{Combo}%
3622   \ifFld@combo
3623     \HyField@UseFlag{Ff}{Edit}%
3624   \fi
3625   \HyField@UseFlag{Ff}{Sort}%
3626   \HyField@UseFlag{Ff}{MultiSelect}%
3627   \ifFld@combo
3628     \ifFld@edit
3629       \HyField@UseFlag{Ff}{DoNotSpellCheck}%
3630     \fi
3631   \fi
3632   \HyField@UseFlag{Ff}{CommitOnSelChange}%

```

```

3633 \HyField@PrintFlags{Ff}{choice field}%
3634 \bitsetIsEmpty{HyField@Ff}{%
3635   \def\Fld@flags{%
3636 }{%
3637   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3638 }%
3639 }

```

## 19.2 Choice field

```

3640 \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.

```

3641 \def\HyField@PDFChoices#1{%
3642   \beginingroup
3643   \gdef\Fld@choices{%
3644     \def\HyTmp@optlist{%
3645       \let\HyTmp@optitem\relax
3646       \count@=0 %
3647       \kv@parse{#1}{%
3648         \Hy@pdfstringdef\kv@key\kv@key
3649         \ifx\kv@value\relax
3650           \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
3651             \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
3652           \else
3653             \xdef\Fld@choices{\Fld@choices(\kv@key)}%
3654           \fi
3655         \else
3656           \Hy@pdfstringdef\kv@value\kv@value
3657           \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@value)]}%
3658         \fi
3659       \edef\HyTmp@optlist{%
3660         \HyTmp@optlist
3661         \HyTmp@optitem{the\count@}{\kv@key}0%
3662       }%
3663       \advance\count@ by 1 %
3664       \@gobbletwo
3665     }%
3666     \xdef\Fld@choices{/Opt[\Fld@choices]}%
3667     \ifFld@multiselect
3668       \HyField@@PDFChoices{DV}\Fld@default
3669       \HyField@@PDFChoices{V}\Fld@value
3670     \else
3671       \ifx\Fld@default\relax
3672       \else
3673         \pdfstringdef\Hy@gtemp\Fld@default
3674         \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
3675       \fi
3676       \ifx\Fld@value\relax
3677       \else
3678         \pdfstringdef\Hy@gtemp\Fld@value
3679         \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
3680       \fi
3681     \fi
3682   \endgroup

```

3683 }

\HyField@@PDFChoices

```
3684 \def\HyField@@PDFChoices#1#2{%
3685   \ifx#2\relax
3686   \else
3687     \count@=0 %
3688     \def\HyTmp@optitem##1##2##3{%
3689       \def\HyTmp@key{##2}%
3690       \ifx\HyTmp@key\Hy@gtemp
3691         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
3692           \HyTmp@optlist
3693           \HyTmp@optitem{##1}{##2}1%
3694         }%
3695         \let\HyTmp@found=Y%
3696       \else
3697         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
3698           \HyTmp@optlist
3699           \HyTmp@optitem{##1}{##2}##3%
3700         }%
3701       \fi
3702     }%
3703     \expandafter\comma@parse\expandafter{#2}{%
3704       \pdfstringdef\Hy@gtemp\comma@entry
3705       \let\HyTmp@found=N %
3706       \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
3707       \HyTmp@optlist
3708       \ifx\HyTmp@found Y%
3709         \advance\count@ by 1 %
3710       \else
3711         \@onelevel@sanitize\comma@entry
3712         \PackageWarning{hyperref}{%
3713           \string\ChoiceBox: Ignoring value ‘\comma@entry’,%
3714           \MessageBreak
3715           it cannot be found in the choices%
3716         }%
3717       \fi
3718       \@gobble
3719     }%
3720     \def\HyTmp@optitem##1##2##3{%
3721       \ifnum##3=1 %
3722         (##2)%
3723       \fi
3724     }%
3725     \ifcase\count@
3726     \or
3727       \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
3728     \else
3729       \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
3730       \ifx#1V%
3731         \def\HyTmp@optitem##1##2##3{%
3732           \ifnum##3=1 %
3733             \@firstofone{ ##1}%
3734           \fi
3735         }%
3736       \edef\HyTmp@optlist{\HyTmp@optlist}%
3737       \xdef\Fld@choices{%
```

```

3738         \Fld@choices
3739         /I[\expandafter\@firstofone\HyTmp@optlist]%
3740     }%
3741     \fi
3742     \fi
3743     \fi
3744 }

```

## 19.3 Forms

\HyField@SetKeys

```

3745 \def\HyField@SetKeys{%
3746   \setkeys{Field}%
3747 }

3748 \newif\ifFld@checked
3749 \newif\ifFld@disabled
3750 \Fld@checkedfalse
3751 \Fld@disabledfalse
3752 \newcount\Fld@menulength
3753 \newdimen\Fld@Width
3754 \newdimen\Fld@charsize
3755 \Fld@charsize=10\p@
3756 \def\Fld@maxlen{0}
3757 \def\Fld@align{0}
3758 \def\Fld@color{0 0 0 rg}
3759 \def\Fld@bcolor{1 1 1}
3760 \def\Fld@bordercolor{1 0 0}
3761 \def\Fld@bordersep{1\p@}
3762 \def\Fld@borderwidth{1}
3763 \def\Fld@borderstyle{S}
3764 \def\Fld@cbsymbol{4}
3765 \def\Fld@rotation{0}
3766 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
3767 \def\endForm{\@endForm}
3768 \newif\ifForm@html
3769 \Form@htmlfalse
3770 \def\Form@boolkey#1#2{%
3771   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
3772 }
3773 \define@key{Form}{action}{%
3774   \hyper@normalise\Hy@DefFormAction{#1}%
3775 }
3776 \def\Hy@DefFormAction{\def\Form@action}
3777 \def\enc@html{html}
3778 \define@key{Form}{encoding}{%
3779   \def\Hy@tempa{#1}%
3780   \ifx\Hy@tempa\enc@html
3781     \Form@htmltrue
3782     \def\Fld@export{html}%
3783   \else
3784     \typeout{hyperref: form 'encoding' key set to #1 %
3785       -- unknown type%
3786   }%
3787   \Form@htmlfalse
3788   \fi
3789 }

```

```

3790 \define@key{Form}{method}{%
3791   \lowercase{\def\Hy@temp{#1}}%
3792   \@ifundefined{Form@method@\Hy@temp}{%
3793     \@onelevel@sanitize\Hy@temp
3794     \PackageError{hyperref}{%
3795       Unknown method '\Hy@temp'.\MessageBreak
3796       Known values are 'post' and 'get'%
3797     }\@ehc
3798   }{%
3799     \let\Form@method\Hy@temp
3800     \ifcase\@nameuse{Form@method@\Hy@temp} %
3801       \Fld@getmethodfalse
3802     \else
3803       \Fld@getmethodtrue
3804     \fi
3805   }%
3806 }
3807 \def\Form@method{}
3808 \@namedef{Form@method@post}{0}
3809 \@namedef{Form@method@get}{1}
3810 \def\Fld@boolkey#1#2{%
3811   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
3812 }
3813 \newtoks\Fld@toks
3814 \Fld@toks={ }%
3815 \def\Fld@addtoks#1#2{%
3816   \edef\@processme{\Fld@toks{\the\Fld@toks\space #1="#2"}}%
3817   \@processme
3818 }
3819 \def\Fld@checkequals#1=#2=#3\{%
3820   \def\@currDisplay{#1}%
3821   \ifx\#2\%
3822     \def\@currValue{#1}%
3823   \else
3824     \def\@currValue{#2}%
3825   \fi
3826 }
3827 \define@key{Field}{loc}{%
3828   \def\Fld@loc{#1}%
3829 }
3830 \define@key{Field}{checked}[true]{%
3831   \lowercase{\Fld@boolkey{#1}}{checked}%
3832 }
3833 \define@key{Field}{disabled}[true]{%
3834   \lowercase{\Fld@boolkey{#1}}{disabled}%
3835 }
3836 \define@key{Field}{accesskey}{%
3837   \Fld@addtoks{accesskey}{#1}%
3838 }
3839 \define@key{Field}{tabkey}{%
3840   \Fld@addtoks{tabkey}{#1}%
3841 }
3842 \define@key{Field}{name}{%
3843   \def\Fld@name{#1}%
3844 }
3845 \define@key{Field}{width}{%
3846   \def\Fld@width{#1}%

```



```

3847 \Field@Width#1\setbox0=\hbox{m}%
3848 }
3849 \define@key{Field}{maxlen}{%
3850 \def\Fld@maxlen{#1}%
3851 }
3852 \define@key{Field}{menulength}{%
3853 \Fld@menulength=#1\relax
3854 }
3855 \define@key{Field}{height}{%
3856 \def\Fld@height{#1}%
3857 }
3858 \define@key{Field}{charsize}{%
3859 \Fld@charsize#1%
3860 }
3861 \define@key{Field}{borderwidth}{%
3862 \def\Fld@borderwidth{#1}%
3863 }
3864 \define@key{Field}{borderstyle}{%
3865 \def\Fld@borderstyle{#1}%
3866 }
3867 \define@key{Field}{bordersep}{%
3868 \def\Fld@bordersep{#1}%
3869 }
3870 \define@key{Field}{default}{%
3871 \def\Fld@default{#1}%
3872 }
3873 \define@key{Field}{align}{%
3874 \def\Fld@align{#1}%
3875 }
3876 \define@key{Field}{value}{%
3877 \def\Fld@value{#1}%
3878 }
3879 \define@key{Field}{checkboxsymbol}{%
3880 \def\Fld@cbsymbol{#1}%
3881 }
3882 \define@key{Field}{rotation}{%
3883 \def\Fld@rotation{#1}%
3884 }
3885 \define@key{Field}{backgroundcolor}{%
3886 \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
3887 }
3888 \define@key{Field}{bordercolor}{%
3889 \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
3890 }
3891 \define@key{Field}{color}{%
3892 \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
3893 }
3894 \def\Fld@format@code{}
3895 \def\Fld@validate@code{}
3896 \def\Fld@calculate@code{}
3897 \def\Fld@keystroke@code{}
3898 \def\Fld@onfocus@code{}
3899 \def\Fld@onblur@code{}
3900 \def\Fld@onmousedown@code{}
3901 \def\Fld@onmouseup@code{}
3902 \def\Fld@onenter@code{}

```

```

3903 \def\Fld@onexit@code{}
3904 \define@key{Field}{keystroke}{%
3905   \def\Fld@keystroke@code{#1}%
3906 }
3907 \define@key{Field}{format}{%
3908   \def\Fld@format@code{#1}%
3909 }
3910 \define@key{Field}{validate}{%
3911   \def\Fld@validate@code{#1}%
3912 }
3913 \define@key{Field}{calculate}{%
3914   \def\Fld@calculate@code{#1}%
3915 }
3916 \define@key{Field}{onfocus}{%
3917   \def\Fld@onfocus@code{#1}%
3918 }
3919 \define@key{Field}{onblur}{%
3920   \def\Fld@onblur@code{#1}%
3921 }
3922 \define@key{Field}{onenter}{%
3923   \def\Fld@onenter@code{#1}%
3924 }
3925 \define@key{Field}{onexit}{%
3926   \def\Fld@onexit@code{#1}%
3927 }
3928 \define@key{Field}{onselect}{%
3929   \Field@addtoks{onselect}{#1}%
3930 }
3931 \define@key{Field}{onchange}{%
3932   \Field@addtoks{onchange}{#1}%
3933 }
3934 \define@key{Field}{onclick}{%
3935   \def\Fld@onclick{#1}%
3936   \Field@addtoks{onclick}{#1}%
3937 }
3938 \define@key{Field}{ondblclick}{%
3939   \Field@addtoks{ondblclick}{#1}%
3940 }
3941 \define@key{Field}{onmousedown}{%
3942   \Field@addtoks{onmousedown}{#1}%
3943 }
3944 \define@key{Field}{onmouseup}{%
3945   \Field@addtoks{onmouseup}{#1}%
3946 }
3947 \define@key{Field}{onmouseover}{%
3948   \Field@addtoks{onmouseover}{#1}%
3949 }
3950 \define@key{Field}{onmousemove}{%
3951   \Field@addtoks{onmousemove}{#1}%
3952 }
3953 \define@key{Field}{onmouseout}{%
3954   \Field@addtoks{onmouseout}{#1}%
3955 }
3956 \define@key{Field}{onkeypress}{%
3957   \Field@addtoks{onkeypress}{#1}%
3958 }
3959 \define@key{Field}{onkeydown}{%

```

```

3960 \Field@addtoks{onkeydown}{#1}%
3961 }
3962 \define@key{Field}{onkeyup}{%
3963 \Field@addtoks{onkeyup}{#1}%
3964 }
3965 %
3966 \DeclareRobustCommand\TextField{%
3967 \@ifnextchar[{\@TextField}{\@TextField[]}%
3968 }
3969 \DeclareRobustCommand\ChoiceMenu{%
3970 \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
3971 }
3972 \DeclareRobustCommand\CheckBox{%
3973 \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
3974 }
3975 \DeclareRobustCommand\PushButton{%
3976 \@ifnextchar[{\@PushButton}{\@PushButton[]}%
3977 }
3978 \DeclareRobustCommand\Gauge{%
3979 \@ifnextchar[{\@Gauge}{\@Gauge[]}%
3980 }
3981 \DeclareRobustCommand\Submit{%
3982 \@ifnextchar[{\@Submit}{\@Submit[]}%
3983 }
3984 \DeclareRobustCommand\Reset{%
3985 \@ifnextchar[{\@Reset}{\@Reset[]}%
3986 }
3987 \def\LayoutTextField#1#2{% label, field
3988 #1 #2%
3989 }
3990 \def\LayoutChoiceField#1#2{% label, field
3991 #1 #2%
3992 }
3993 \def\LayoutCheckField#1#2{% label, field
3994 #1 #2%
3995 }
3996 \def\LayoutPushButtonField#1{% button
3997 #1%
3998 }
3999 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4000 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4001 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4002 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4003 \def\MakeButtonField#1{%
4004 \sbox0{%
4005 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
4006 }%
4007 \@tempdima\ht0 %
4008 \advance\@tempdima by \Fld@borderwidth bp %
4009 \advance\@tempdima by \Fld@borderwidth bp %
4010 \ht0\@tempdima
4011 \@tempdima\dp0 %
4012 \advance\@tempdima by \Fld@borderwidth bp %
4013 \advance\@tempdima by \Fld@borderwidth bp %
4014 \dp0\@tempdima
4015 \box0\relax
4016 }

```

```

4017 \def\DefaultHeightofSubmit{14pt}
4018 \def\DefaultWidthofSubmit{2cm}
4019 \def\DefaultHeightofReset{14pt}
4020 \def\DefaultWidthofReset{2cm}
4021 \def\DefaultHeightofCheckBox{\baselineskip}
4022 \def\DefaultWidthofCheckBox{\baselineskip}
4023 \def\DefaultHeightofChoiceMenu{\baselineskip}
4024 \def\DefaultWidthofChoiceMenu{\baselineskip}
4025 \def\DefaultHeightofText{\baselineskip}
4026 \def\DefaultHeightofTextMultiline{4\baselineskip}
4027 \def\DefaultWidthofText{3cm}
4028 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
4029 \def\DefaultOptionsofReset{print,name=Reset,noexport}
4030 \def\DefaultOptionsofPushButton{print}
4031 \def\DefaultOptionsofCheckBox{print}
4032 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

4033 \def\DefaultOptionsofListBox{print}
4034 \def\DefaultOptionsofComboBox{print,edit,sort}
4035 \def\DefaultOptionsofPopdownBox{print}
4036 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

4037 \ifHy@figures
4038   \Hy@Info{Hyper figures ON}%
4039 \else
4040   \Hy@Info{Hyper figures OFF}%
4041 \fi
4042 \ifHy@nesting
4043   \Hy@Info{Link nesting ON}%
4044 \else
4045   \Hy@Info{Link nesting OFF}%
4046 \fi
4047 \ifHy@hyperindex
4048   \Hy@Info{Hyper index ON}%
4049 \else
4050   \Hy@Info{Hyper index OFF}%
4051 \fi
4052 \ifHy@backref
4053   \Hy@Info{backreferencing ON}%
4054 \else
4055   \Hy@Info{backreferencing OFF}%
4056 \fi
4057 \ifHy@colorlinks
4058   \Hy@Info{Link coloring ON}%
4059 \else
4060   \Hy@Info{Link coloring OFF}%
4061 \fi

```

## 21 Low-level utility macros

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

```

4062 \edef\hyper@hash{\string#}
4063 \edef\hyper@tilde{\string~}

```

```

4064 \edef\hyper@quote{\string"}
4065 \let\@currentHref\@empty
4066 \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.

```

4067 \AfterBeginDocument{%
4068   \Hy@pdfstringtrue
4069   \PDF@SetupDoc
4070   \let\PDF@SetupDoc\@empty
4071   \Hy@DisableOption{pdfpagescrop}%
4072   \Hy@DisableOption{pdfpagemode}%
4073   \Hy@DisableOption{pdfnonfullscreenpagemode}%
4074   \Hy@DisableOption{pdfdirection}%
4075   \Hy@DisableOption{pdfviewarea}%
4076   \Hy@DisableOption{pdfviewclip}%
4077   \Hy@DisableOption{pdfprintarea}%
4078   \Hy@DisableOption{pdfprintclip}%
4079   \Hy@DisableOption{pdfprintsclaling}%
4080   \Hy@DisableOption{pdfduplex}%
4081   \Hy@DisableOption{pdfpicktraybypdfsize}%
4082   \Hy@DisableOption{pdfprintpagerange}%
4083   \Hy@DisableOption{pdfnumcopies}%
4084   \Hy@DisableOption{pdfstartview}%
4085   \Hy@DisableOption{pdfstartpage}%
4086   \Hy@DisableOption{pdftoolbar}%
4087   \Hy@DisableOption{pdfmenubar}%
4088   \Hy@DisableOption{pdfwindowui}%
4089   \Hy@DisableOption{pdffitwindow}%
4090   \Hy@DisableOption{pdfcenterwindow}%
4091   \Hy@DisableOption{pdfdisplaydoctitle}%
4092   \Hy@DisableOption{pdfpagelayout}%
4093   \Hy@DisableOption{pdflang}%
4094   \Hy@DisableOption{baseurl}%
4095   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
4096   \Hy@pdfstringfalse
4097 }

```

## 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.

```

4098 \def\NoHyper{%
4099   \def\hyper@link@{##1}##2##3##4{##4}%
4100   \def\hyper@anchor##1{}%
4101   \global\let\hyper@livelink\hyper@link
4102   \gdef\hyper@link##1##2##3{##3}%
4103   \def\hyper@anchorstart##1{}%
4104   \let\hyper@anchorend\@empty
4105   \def\hyper@linkstart##1##2{}%
4106   \let\hyper@linkend\@empty
4107   \def\hyper@linkurl##1##2{##1}%
4108   \def\hyper@linkfile##1##2##3{##1}%
4109   \def\hyper@link@{##1}##2##3{}%

```

```

4110 \let\Hy@backout\@gobble
4111 }
4112 \def\stop@hyper{%
4113 \def\hyper@link@{##1}##2##3##4{##4}%
4114 \let\Hy@backout\@gobble
4115 \def\hyper@@anchor##1{%
4116 \def\hyper@link##1##2##3{##3}%
4117 \def\hyper@anchorstart##1{%
4118 \let\hyper@anchorend\@empty
4119 \def\hyper@linkstart##1##2{%
4120 \let\hyper@linkend\@empty
4121 \def\hyper@linkurl##1##2{##1}%
4122 \def\hyper@linkfile##1##2##3{##1}%
4123 \def\hyper@link@{##1}##2##3}%
4124 }
4125 \def\endNoHyper{%
4126 \global\let\hyper@link\hyper@livelink
4127 }
4128 \</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:

```

4129 \<*nohyperref>
4130 \let\hyper@@anchor\@gobble
4131 \def\hyper@link#1#2#3{#3}%
4132 \let\hyper@anchorstart\@gobble
4133 \let\hyper@anchorend\@empty
4134 \let\hyper@linkstart\@gobbletwo
4135 \let\hyper@linkend\@empty
4136 \def\hyper@linkurl#1#2{#1}%
4137 \def\hyper@linkfile#1#2#3{#1}%
4138 \def\hyper@link@{#1}#2#3}%
4139 \let\PDF@SetupDoc\@empty
4140 \let\PDF@FinishDoc\@empty

```

Some top-level commands:

```

4141 \let\Acrobatmenu\@gobble
4142 \let\pdfstringdefDisableCommands\@gobbletwo
4143 \let\texorpdfstring\@firstoftwo
4144 \let\pdfbookmark\@undefined
4145 \newcommand\pdfbookmark[3][]{ }
4146 \let\phantomsection\@empty
4147 \let\hypersetup\@gobble
4148 \let\hyperbaseurl\@gobble
4149 \let\href\@gobble
4150 \let\hyperdef\@gobbletwo
4151 \let\hyperlink\@gobble
4152 \let\hypertarget\@gobble
4153 \def\hyperref{\@ifnextchar[\@gobbleopt\@expandafter\@gobbletwo\@gobble]}
4154 \long\def\@gobbleopt[#1]{ }

```

```

4155 \let\hyperpage\@empty
4156 \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}`

```

4157 \*package
4158 \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.

```

4159 \if@filesw
4160   \ifHy@typexml
4161     \immediate\closeout\@mainaux
4162     \immediate\openout\@mainaux\jobname.aux\relax
4163     \immediate\write\@auxout{<relaxxml>\relax}%
4164   \fi
4165   \immediate\write\@auxout{%
4166     \string\ifx\string\hyper@anchor\string\@undefined^^J%
4167     \global\let\string\oldcontentsline\string\contentsline^^J%
4168     \gdef\string\contentsline%
4169       \string#1\string#2\string#3\string#4{%
4170       \string\oldcontentsline%
4171       {\string#1}{\string#2}{\string#3}}^^J%
4172     \global\let\string\oldnewlabel\string\newlabel^^J%
4173     \gdef\string\newlabel\string#1\string#2{%
4174     \string\newlabelxx{\string#1}\string#2}^^J%
4175     \gdef\string\newlabelxx%
4176       \string#1\string#2\string#3\string#4\string#5\string#6{%
4177       \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.

```

4178   \string\AtEndDocument{%
4179     \let\string\contentsline\string\oldcontentsline^^J%
4180     \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.

```

4181     \string\else^^J%
4182     \global\let\string\hyper@last\relax^^J%
4183     \string\fi^^J%
4184   }%
4185 \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.

```

4186 \ifx\hyper@last\@undefined
4187   \def\starttoc#1{%
4188     \begingroup

```

```

4189     \makeatletter
4190     \IfFileExists{\jobname.#1}{%
4191         \Hy@WarningNoLine{%
4192             old #1 file detected, not used; run LaTeX again%
4193         }%
4194     }{%
4195         \if@filesw
4196             \expandafter\newwrite\csname tf@#1\endcsname
4197             \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
4198         \fi
4199         \@nobreakfalse
4200     \endgroup
4201 }%
4202 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
4203 \fi
4204 }

```

## 25 Title strings

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

```

4205 \ifHy@usetitle
4206   \let\HyOrg@title\title
4207   \let\HyOrg@author\author
4208   \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
4209   \def\Hy@scanopttitle[#1]{%
4210       \gdef\Hy@title{#1}%
4211       \HyOrg@title[#1]}%
4212   }%
4213   \def\Hy@scantitle#1{%
4214       \gdef\Hy@title{#1}%
4215       \HyOrg@title{#1}%
4216   }%
4217   \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
4218   \def\Hy@scanoptauthor[#1]{%
4219       \gdef\Hy@author{#1}%
4220       \HyOrg@author[#1]}%
4221   }%
4222   \def\Hy@scanauthor#1{%
4223       \gdef\Hy@author{#1}%
4224       \HyOrg@author{#1}%
4225   }%

```

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.

```

4226 \begingroup
4227   \def\process@me#1\@nil#2{%
4228       \expandafter\let\expandafter\x\csname @#2\endcsname
4229       \edef\y{\expandafter\strip@prefix\meaning\x}%
4230       \def\c##1##2\@nil{%
4231           \ifx\\##1\\%
4232           \else
4233               \expandafter\gdef\csname Hy@#2\expandafter\endcsname
4234               \expandafter{\x}%
4235           \fi
4236       }%

```



```

4237     \expandafter\c\y\relax#1\@nil
4238   }%
4239   \expandafter\process@me\string\@latex@\@nil{title}%
4240   \expandafter\process@me\string\@latex@\@nil{author}%
4241 \endgroup
4242 \fi
4243 \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.

```

4244 \def\Hy@UseMaketitleString#1{%
4245   \@ifundefined{Hy@#1}{-}{%
4246     \begingroup
4247     \let\Hy@saved@hook\pdfstringdefPreHook
4248     \pdfstringdefDisableCommands{%
4249       \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
4250       \let\newline\\%
4251     }%
4252     \expandafter\ifx\csname @pdf#1\endcsname\@empty
4253       \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
4254         \csname Hy@#1\endcsname\@empty
4255       }%
4256     \fi
4257     \global\let\pdfstringdefPreHook\Hy@saved@hook
4258   \endgroup
4259 }%
4260 }
4261 \def\Hy@newline@title#1{ #1}
4262 \def\Hy@newline@author#1{, #1}
4263 \def\Hy@UseMaketitleInfos{%
4264   \Hy@UseMaketitleString{title}%
4265   \Hy@UseMaketitleString{author}%
4266 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

4267 \RequirePackage{atbegshi}[2007/09/09]
4268 \def\Hy@EveryPageHook{}
4269 \def\Hy@EveryPageBoxHook{}
4270 \def\Hy@FirstPageHook{}
4271 \AtBeginShipout{%
4272   \Hy@EveryPageHook
4273   \ifx\Hy@EveryPageBoxHook\@empty
4274     \else

```

```

4275 \setbox\AtBeginShipoutBox=\vbox{%
4276 \offinterlineskip
4277 \Hy@EveryPageBoxHook
4278 \box\AtBeginShipoutBox
4279 }%
4280 \fi
4281 }
4282 \AtBeginShipoutFirst{%
4283 \Hy@FirstPageHook
4284 }
4285 \g@addto@macro\Hy@FirstPageHook{%
4286 \PDF@FinishDoc
4287 \gdef\PDF@FinishDoc{}}%
4288 }

```

## 27.1 PDF /PageLabels

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

```

4289 \ifHy@pagelabels
4290 \begingroup\expandafter\expandafter\expandafter\endgroup
4291 \expandafter\ifx\csname thepage\endcsname\relax
4292 \Hy@pagelabelsfalse
4293 \Hy@WarningNoLine{%
4294 Option 'pdfpagelabels' is turned off\MessageBreak
4295 because \string\thepage\space is undefined%
4296 }%
4297 \csname fi\endcsname
4298 \csname iffalse\expandafter\endcsname
4299 \fi

```

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

```

4300 \def\thispdfpagelabel#1{%
4301 \gdef\HyPL@thisLabel{#1}%
4302 }%
4303 \global\let\HyPL@thisLabel\relax

```

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

```

4304 \def\HyPL@Labels{}%

```

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

```

4305 \newcount\Hy@abspage
4306 \Hy@abspage=0 %

```

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

```

4307 \def\HyPL@LastType{init}%
4308 \def\HyPL@LastNumber{0}%
4309 \def\HyPL@LastPrefix{}%

```

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

```

4310 \def\HyPL@arabic{D}%
4311 \def\HyPL@Roman{R}%
4312 \def\HyPL@roman{r}%
4313 \def\HyPL@Alph{A}%
4314 \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.

```

4315 \def\HyPL@EveryPage{%
4316   \begingroup
4317   \ifx\HyPL@thisLabel\relax
4318     \let\HyPL@page\thepage
4319   \else
4320     \let\HyPL@page\HyPL@thisLabel
4321     \global\let\HyPL@thisLabel\relax
4322   \fi
4323   \let\HyPL@Type\relax
4324   \ifnum\the\c@page>0 %
4325     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
4326   \fi
4327   \let\Hy@temp Y%
4328   \ifx\HyPL@Type\HyPL@LastType
4329   \else
4330     \let\Hy@temp N%
4331   \fi
4332   \ifx\HyPL@Type\relax
4333     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
4334   \else
4335     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
4336   \fi
4337   \ifx\HyPL@Prefix\HyPL@LastPrefix
4338   \else
4339     \let\Hy@temp N%
4340   \fi
4341   \if Y\Hy@temp
4342     \advance\c@page by -1 %
4343     \ifnum\HyPL@LastNumber=\the\c@page\relax
4344     \else
4345       \let\Hy@temp N%
4346     \fi
4347     \Hy@StepCount\c@page
4348   \fi
4349   \if N\Hy@temp
4350     \ifx\HyPL@Type\relax
4351       \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
4352     \else
4353       \HyPL@StorePageLabel{%
4354         \ifx\HyPL@Prefix\@empty
4355         \else
4356           /P(\HyPL@Prefix)%
4357         \fi
4358         /S/\csname HyPL\HyPL@Type\endcsname
4359         \ifnum\the\c@page=1 %
4360         \else
4361           \space/St \the\c@page
4362         \fi
4363       }%
4364     \fi
4365   \fi
4366   \xdef\HyPL@LastNumber{\the\c@page}%
4367   \global\let\HyPL@LastType\HyPL@Type
4368   \global\let\HyPL@LastPrefix\HyPL@Prefix
4369 \endgroup

```

```

4370 \Hy@GlobalStepCount\Hy@abspage
4371 }%

```

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

```

4372 \def\HyPL@CheckThePage#1\@nil{%
4373 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
4374 }%

```

`\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`.

```

4375 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
4376 \def\Hy@tempa{#4}%
4377 \def\Hy@tempb{\csname\endcsname\c@page}%
4378 \ifx\Hy@tempa\Hy@tempb
4379 \expandafter\ifx\csname HyPL#3\endcsname\relax
4380 \else
4381 \def\HyPL@Type{#3}%
4382 \def\HyPL@Prefix{#2}%
4383 \fi
4384 \else
4385 \begingroup
4386 \let\Hy@next\endgroup
4387 \let\HyPL@found\@undefined
4388 \def\arabic{\HyPL@Format{arabic}}%
4389 \def\Roman{\HyPL@Format{Roman}}%
4390 \def\roman{\HyPL@Format{roman}}%
4391 \def\Alph{\HyPL@Format{Alph}}%
4392 \def\alph{\HyPL@Format{alph}}%
4393 \protected@edef\Hy@temp{#1}%
4394 \ifx\HyPL@found\relax
4395 \toks@{\expandafter{\Hy@temp}}%
4396 \edef\Hy@next{\endgroup
4397 \noexpand\HyPL@@CheckThePage\the\toks@
4398 \noexpand\HyPL@found\relax\noexpand\@nil
4399 }%
4400 \fi
4401 \Hy@next
4402 \fi
4403 }%

```

`\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`.

```

4404 \def\HyPL@Format#1#2{%
4405 \ifx\HyPL@found\@undefined
4406 \expandafter\ifx\csname c@#2\endcsname\c@page
4407 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
4408 \else
4409 \expandafter\noexpand\csname#1\endcsname{#2}%
4410 \fi
4411 \else
4412 \expandafter\noexpand\csname#1\endcsname{#2}%
4413 \fi
4414 }%

```

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

```

4415 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
4416   \def\Hy@tempa{#3}%
4417   \def\Hy@tempb{\HyPL@found\relax}%
4418   \ifx\Hy@tempa\Hy@tempb
4419     \def\HyPL@Type{#2}%
4420     \def\HyPL@Prefix{#1}%
4421   \fi
4422 }%
```

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

```

4423 \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`.

```

4424 \def\HyPL@Useless{0<</S/D>>}%
4425 \@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.

```

4426 \def\HyPL@SetPageLabels{%
4427   \@onelevel@sanitize\HyPL@Labels
4428   \ifx\HyPL@Labels\@empty
4429   \else
4430     \ifx\HyPL@Labels\HyPL@Useless
4431     \else
4432       \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
4433     \fi
4434   \fi
4435 }%
```

```

4436 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
4437 \fi
```

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

```

4438 \Hy@DisableOption{pdfpagelabels}
4439 \</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`

```

4440 \<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.

```

4441 \<*vTeX>
4442 \edef\Hy@VTeXversion{%
4443   \ifx\VTeXversion\@undefined
4444     \z@
4445   \else
```

```

4446 \ifx\VTexVersion\relax
4447 \z@
4448 \else
4449 \VTexVersion
4450 \fi
4451 \fi
4452 }
4453 \begingroup
4454 \ifnum\Hy@VTexVersion<660 %
4455 \gdef\Hy@PutCatalog#1{%
4456 \Hy@WarningNoLine{%
4457 VTeX 6.59g or above required for pdfpagelabels%
4458 }%
4459 }%
4460 \else
4461 \gdef\Hy@PutCatalog#1{%
4462 \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
4463 }%
4464 \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
4465 \ifx\#2\%
4466 \else
4467 \immediate\special{!pdfpagelabels #2}%
4468 \fi
4469 }%
4470 \fi
4471 \endgroup
4472 </vtex>
4473 <*pdfTeX | vtex>

```

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

```

4474 \ifHy@pagelabels
4475 \def\HyPL@StorePageLabel#1{%
4476 \toks@{\expandafter{\HyPL@Labels}}%
4477 \xdef\HyPL@Labels{%
4478 \the\toks@
4479 \the\Hy@abspage<<#1>>%
4480 }%
4481 }%

```

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.

```

4482 \@ifclassloaded{revtex4}{%
4483 \g@addto@macro\clear@document{\HyPL@SetPageLabels}%
4484 }{%
4485 \AtEndDocument{\clearpage\HyPL@SetPageLabels}%
4486 }%
4487 \fi
4488 </pdfTeX | vtex>

```

### 27.1.2 pdfmarkbase, dvipdfm

`\Hy@PutCatalog`

```

4489 <dvipdfm>\def\Hy@PutCatalog#1{\@pdfm@mark{docview << #1 >>}}
4490 <*pdfmarkbase>
4491 \def\Hy@PutCatalog#1{%

```

```

4492 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog}\string} << #1 >>}}%
4493 }
4494 \pdfmarkbase>

4495 < *pdfmarkbase | dvipdfm>
4496 \ifHy@pagelabels

```

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

```

4497 \def\HyPL@StorePageLabel#1{%
4498   \if@filesw
4499     \begingroup
4500       \edef\Hy@tempa{\the\Hy@abspage<<#1>>}}%
4501       \immediate\write\@mainaux{%
4502         \string\HyPL@Entry{\Hy@tempa}%
4503       }%
4504     \endgroup
4505   \fi
4506 }%

```

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.

```

4507 \AfterBeginDocument{%
4508   \if@filesw
4509     \immediate\write\@mainaux{%
4510       \string\providecommand\string*\string\HyPL@Entry[1]{}%
4511     }%
4512   \fi
4513   \ifx\HyPL@Labels\@empty
4514     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
4515   \else
4516     \HyPL@SetPageLabels
4517   \fi
4518   \let\HyPL@Entry\@gobble
4519 }%

```

`\HyPL@Entry`

```

4520 \def\HyPL@Entry#1{%
4521   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
4522     \HyPL@Labels
4523     #1%
4524   }%
4525 }%

4526 \fi
4527 \pdfmarkbase | dvipdfm>

4528 < *package>
4529 \MaybeStopEarly

```

## 28 Automated L<sup>A</sup>T<sub>E</sub>X hypertext cross-references

Anything which can be referenced advances some counter; we overload this to put in a hypertext starting point (with no visible anchor), and make a note of that for later use in `\label`. This will fail badly if `\theH<name>` does not expand to a sensible reference. This means that classes or package which introduce new elements need to define an equivalent `\theH<name>` for every `\the<name>`. We do make a trap to make `\theH<name>`

be the same as `\arabic{<name>}`, if `\theH<name>` is not defined, but this is not necessarily a good idea. Alternatively, the ‘naturalnames’ option uses whatever  $\LaTeX$  provides, which may be useable. But then its up to you to make sure these are legal PDF and HTML names. The ‘hypertextnames=false’ option just makes up arbitrary names.

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

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

Start with a fallback for equations

```

4530 \def\Hy@CounterExists#1{%
4531   \begingroup\expandafter\expandafter\expandafter\endgroup
4532   \expandafter\ifx\csname c@#1\endcsname\relax
4533     \expandafter\@gobble
4534   \else
4535     \begingroup\expandafter\expandafter\expandafter\endgroup
4536     \expandafter\ifx\csname the#1\endcsname\relax
4537       \expandafter\expandafter\expandafter\@gobble
4538     \else
4539       \expandafter\expandafter\expandafter\@firstofone
4540     \fi
4541   \fi
4542 }
4543 \Hy@CounterExists{section}{%
4544   \newcommand\theHequation{\theHsection.\arabic{equation}}%
4545 }
4546 \Hy@CounterExists{part}{%
4547   \newcommand\theHpart{\arabic{part}}%
4548 }
4549 \@ifundefined{thechapter}{%
4550   \newcommand\theHsection    {\arabic{section}}%
4551   \newcommand\theHfigure     {\arabic{figure}}%
4552   \newcommand\theHtable      {\arabic{table}}%
4553 }{%
4554   \newcommand\theHchapter     {\arabic{chapter}}%
4555   \newcommand\theHfigure      {\theHchapter.\arabic{figure}}%
4556   \newcommand\theHtable       {\theHchapter.\arabic{table}}%
4557   \newcommand\theHsection     {\theHchapter.\arabic{section}}%
4558 }
4559 \newcommand\theHsubsection    {\theHsection.\arabic{subsection}}
4560 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
4561 \newcommand\theHparagraph     {\theHsubsubsection.\arabic{paragraph}}
4562 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
4563 \newcommand\theHtheorem       {\theHsection.\arabic{theorem}}
4564 \newcommand\theHthm           {\theHsection.\arabic{thm}}

```

Thanks to Greta Meyer (gbd@pop.cwru.edu) for making me realize that enumeration starts at 0 for every list! But `\item` occurs inside `\trivlist`, so check if its a real `\item` before incrementing counters.

```

4565 \let\H@item\item
4566 \newcounter{Item}
4567 \def\theHItem{\arabic{Item}}
4568 \def\item{%
4569   \@hyper@itemfalse
4570   \if@nmbrlist\@hyper@itemtrue\fi
4571   \H@item

```



```

4572 }
4573 \newcommand\theHenumi {\theHItem}
4574 \newcommand\theHenumii {\theHItem}
4575 \newcommand\theHenumiii {\theHItem}
4576 \newcommand\theHenumiv {\theHItem}
4577 \newcommand\theHHfootnote {\arabic{Hfootnote}}
4578 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
4579 \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.

```

4580 \let\H@refstepcounter\refstepcounter
4581 \edef\name@of@eq{equation}%
4582 \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.

```

4583 \newif\if@hyper@item
4584 \newif\if@skiphyperref
4585 \@hyper@itemfalse
4586 \@skiphyperreffalse
4587 \def\refstepcounter#1{%
4588   \ifHy@pdfstring
4589   \else
4590     \H@refstepcounter{#1}%
4591     \edef\This@name{#1}%
4592     \ifx\This@name\name@of@slide
4593     \else
4594       \if@skiphyperref
4595       \else
4596         \if@hyper@item
4597         \stepcounter{Item}%
4598         \hyper@refstepcounter{Item}%
4599       \else
4600         \hyper@refstepcounter{#1}%
4601       \fi
4602     \fi
4603   \fi
4604 \fi
4605 }

```

AMS<sup>L</sup>TEX 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.

```

4606 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

4607 \def\hyper@refstepcounter#1{%
4608   \edef\This@name{#1}%
4609   \ifx\This@name\name@of@eq
4610     \@ifundefined{theHequation}{%
4611       \make@stripped@name{\theequation}%
4612       \let\theHequation\newname
4613     }{}%
4614   \fi

```

```

4615 \@ifundefined{theH#1}{%
4616   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
4617 }{}%
4618 \hyper@makecurrent{#1}%
4619 \ifmeasuring@
4620 \else
4621   \Hy@raisedlink{%
4622     \hyper@anchorstart{\@currentHref}\hyper@anchorend
4623   }%
4624 \fi
4625 }

```

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.

```

4626 \begingroup\expandafter\expandafter\expandafter\endgroup
4627 \expandafter\ifx\csname chapter\endcsname\relax
4628   \def\Hy@chapterstring{section}%
4629 \else
4630   \def\Hy@chapterstring{chapter}%
4631 \fi
4632 \def\Hy@appendixstring{appendix}
4633 \def\Hy@chapapp{\Hy@chapterstring}
4634 \let\HyOrg@appendix\appendix
4635 \def\appendix{%
4636   \ifundefined{chapter}%
4637     {\gdef\theHsection{\Alph{section}}}%
4638     {\gdef\theHchapter{\Alph{chapter}}}%
4639   \xdef\Hy@chapapp{\Hy@appendixstring}%
4640   \HyOrg@appendix
4641 }

```

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

```

4642 \def\hyper@makecurrent#1{%
4643   \begingroup
4644     \edef\Hy@param{#1}%
4645     \ifx\Hy@param\Hy@chapterstring
4646       \let\Hy@param\Hy@chapapp
4647     \fi
4648     \ifHy@hypertextnames
4649       \let\@number\@firstofone
4650       \ifundefined{latin@Alph}{%
4651         \ifx\@Alph\greek@Alph
4652           \def\@Alph{Alph\@arabic}%
4653         \fi
4654       }%
4655       \ifHy@naturalnames
4656         \let\textlatin\@firstofone
4657         \xdef\@currentHlabel{\csname the#1\endcsname}%
4658       \else
4659         \xdef\@currentHlabel{\csname theH#1\endcsname}%
4660       \fi
4661       \xdef\@currentHref{%

```

```

4662      \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
4663      }%
4664    \else
4665      \Hy@GlobalStepCount\Hy@linkcounter
4666      \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
4667    \fi
4668  \endgroup
4669 }

4670 \@ifpackageloaded{fancyvrb}{%
4671   \def\FV@StepLineNo{%
4672     \FV@SetLineNo
4673     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
4674     \FV@StepLineNo
4675   }%
4676 }{}

```

## 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`

```

4677 \AtBeginDocument{%
4678   \@ifclassloaded{revtex4}{%
4679     \namedef{ver@lastpage.sty}{1994/06/25}%
4680   }{}%
4681   \@ifpackageloaded{lastpage}{%
4682     \ifHy@pageanchor
4683     \else
4684       \Hy@WarningNoLine{%
4685         The \string\pageref{LastPage} link doesn't work\MessageBreak
4686         with disabled option 'pageanchor'%
4687       }%
4688     \fi
4689     \def\lastpage@putlabel{%
4690       \addtocounter{page}{-1}%
4691       \if@filesw
4692         \begingroup
4693           \let\@number\@firstofone
4694           \ifHy@pageanchor
4695             \ifHy@hypertexnames
4696               \ifHy@plainpages
4697                 \def\Hy@temp{\arabic{page}}%
4698               \else
4699                 \Hy@unicodefalse
4700                 \pdfstringdef\Hy@temp{\thepage}%
4701             \fi
4702           \else
4703             \def\Hy@temp{\the\Hy@pagecounter}%
4704           \fi
4705         \fi

```

```

4706         \immediate\write\@auxout{%
4707             \string\newlabel
4708             {LastPage}{\thepage}{\thepage}%
4709             \ifHy@pageanchor page.\Hy@temp\fi}}}%
4710     }%
4711 \endgroup
4712 \fi
4713 \addtocounter{page}{1}%
4714 }%
4715 \@ifclassloaded{revtex4}{%
4716     \begingroup
4717     \toks@{\expandafter{\lastpage@putlabel}}%
4718     \edef\x{\endgroup
4719         \def\noexpand\lastpage@putlabel{%
4720             \noexpand\stepcounter{page}%
4721             \the\toks@
4722             \noexpand\addtocounter{page}\noexpand\m@ne
4723         }%
4724     }%
4725     \x
4726 }{}%
4727 }{}%
4728 }
4729 \end{package}
4730 \check
4731 \checkpackage{lastpage}[1994/06/25]
4732 \checkcommand\def\lastpage@putlabel{%
4733     \addtocounter{page}{-1}%
4734     \immediate\write\@auxout{%
4735         \string\newlabel{LastPage}{\thepage}{\thepage}%
4736     }%
4737     \addtocounter{page}{1}%
4738 }
4739 \end{check}
4740 \end{package}

```

## 30 Package ifthen support

Since version 6.75a this is done in package nameref.

For compatibility `\hypergetref` and `\hypergetpageref` are still provided. But they do not generate warnings, if the reference is undefined.

```

4741 \def\hypergetref#1{\getrefbykeydefault{#1}{}}{??}}
4742 \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:

```

4743 \@ifpackageloaded{titlesec}{%
4744     \def\ttl@Hy@steplink#1{%
4745         \Hy@GlobalStepCount\Hy@linkcounter
4746         \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
4747         \def\ttl@Hy@saveanchor{%
4748             \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%

```

```

4749 }%
4750 }%
4751 \def\ttl@Hy@refstepcounter#1{%
4752   \let\ttl@b\Hy@raisedlink
4753   \def\Hy@raisedlink##1{\def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}}%
4754   \refstepcounter{#1}%
4755   \let\Hy@raisedlink\ttl@b
4756 }%
4757 }{}

Package titletoc support:
4758 \@ifpackageloaded{titletoc}{%
4759   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
4760 }{}

```

## 32 Package varioref support

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

```

4761 \def\Hy@varioref@undefined{???}{?}{?}{?}{?}
4762 \@ifpackageloaded{varioref}{%
4763   \def\vref@pagenum#1#2{%
4764     \@ifundefined{r@#2}{%
4765       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
4766     }{}%
4767     \edef#1{\getpagerefnumber{#2}}%
4768   }%
4769 }{}

```

## 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 `\refstepcounter` and the anchor setting is moved after `\vskip\LTpre`.

Patch of `\LT@array`: replace `\refstepcounter` by the original `\H@refstepcounter` without anchor generation

```

4770 \@ifpackageloaded{longtable}{%
4771   \begingroup
4772     \def\y{\LT@array}%
4773     \@ifundefined{scr@LT@array}{\def\y{\scr@LT@array}}%
4774     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
4775       \expandafter\endgroup
4776       \expandafter\def\y[##1]##2{%
4777         \H@refstepcounter{#1}%
4778         \hyper@makecurrent{table}%
4779         \let\Hy@LT@currentHlabel\@currentHlabel
4780         \let\Hy@LT@currentHref\@currentHref
4781         #2\@sharp####4%
4782       }%
4783     }%
4784     \expandafter\expandafter\expandafter\x\y[##1][##2]\@nil

```

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

```

4785   \begingroup
4786     \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%

```

```

4787 \endgroup
4788 \def\LT@start{%
4789   #1%
4790   \let\@currentHlabel\Hy@LT@currentHlabel
4791   \let\@currentHref\Hy@LT@currentHref
4792   \Hy@raisedlink{%
4793     \hyper@anchorstart{\@currentHref}\hyper@anchorend
4794   }%
4795   \ifvoid\LT@firsthead\copy
4796   #2%
4797 }%
4798 }%
4799 \expandafter\x\LT@start\@nil
4800 }{}

```

## 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.

```

4801 \let\new@refstepcounter\refstepcounter
4802 \let\H@equation\equation
4803 \let\H@endequation\endequation
4804 \@ifpackageloaded{amsmath}{%
4805   \long\def\Hy@temp{%
4806     \incr@eqnum
4807     \mathdisplay@push
4808     \st@rredfalse \global\@eqnswtrue
4809     \mathdisplay{equation}%
4810   }%
4811   \ifx\Hy@temp\equation
4812     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
4813       \csname iftrue\endcsname
4814   \else
4815     \long\def\equation{%
4816       \mathdisplay@push
4817       \st@rredfalse \global\@eqnswtrue
4818       \mathdisplay{equation}%
4819       \incr@eqnum
4820     }%
4821   \fi
4822 }{}
4823 }{}
4824 \def\equation{%
4825   \let\refstepcounter\H@refstepcounter
4826   \H@equation
4827   \@ifundefined{theHequation}{%
4828     \make@stripped@name{\theequation}%
4829     \let\theHequation\newname
4830   }{}%
4831   \hyper@makecurrent{equation}%
4832   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
4833   \let\refstepcounter\new@refstepcounter

```

```

4834 }%
4835 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
4836 }

```

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.

```

4837 \newif\if@eqnstar
4838 \@eqnstarfalse
4839 \let\H@eqnarray\eqnarray
4840 \let\H@endeqnarray\endeqnarray
4841 \def\eqnarray{%
4842   \let\Hy@reserved@a\relax
4843   \def\@currentHref{}%
4844   \H@eqnarray
4845   \if@eqnstar
4846   \else
4847     \ifx\\ \@currentHref\\%
4848     \else
4849       \@ifundefined{theHequation}{%
4850         \make@stripped@name{\theequation}%
4851         \let\theHequation\newname
4852       }{}%
4853       \hyper@makecurrent{equation}%
4854       \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
4855     \fi
4856   \fi
4857 }
4858 \def\endeqnarray{%
4859   \H@endeqnarray
4860 }

```

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.

```

4861 \@namedef{eqnarray*}{%
4862   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
4863 }
4864 \@namedef{endeqnarray*}{%
4865   \nonumber\endeqnarray\@eqnstarfalse
4866 }

```

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

```

4867 \@ifundefined{subeqnarray}{}{%
4868   \let\H@subeqnarray\subeqnarray
4869   \let\H@endsubeqnarray\endsubeqnarray
4870   \def\subeqnarray{%
4871     \let\Hy@reserved@a\relax
4872     \H@subeqnarray
4873     \@ifundefined{theHequation}{%
4874       \make@stripped@name{\theequation}%
4875       \let\theHequation\newname
4876     }{}%
4877     \hyper@makecurrent{equation}%
4878     \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
4879   }%
4880   \def\endsubeqnarray{%

```

```

4881 \H@endsubeqnarray
4882 }%
4883 \newcommand\theHsubequation{\theHequation\alph{subequation}}%
4884 }

```

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

```

4885 \def\make@stripped@name#1{%
4886 \begingroup
4887 \escapechar\m@ne
4888 \global\let\newname\@empty
4889 \protected@edef\Hy@tempa{#1}%
4890 \edef\@tempb{%
4891 \noexpand\@tfor\noexpand\Hy@tempa:=%
4892 \expandafter\strip@prefix\meaning\Hy@tempa
4893 }%
4894 \@tempb\do{%
4895 \if\Hy@tempa\else
4896 \if}\Hy@tempa\else
4897 \xdef\newname{\newname\Hy@tempa}%
4898 \fi
4899 \fi
4900 }%
4901 \endgroup
4902 }

```

Support for amsmath's subequations:

```

4903 \begingroup\expandafter\expandafter\expandafter\endgroup
4904 \expandafter\ifx\csname subequations\endcsname\relax
4905 \else
4906 \let\HyOrg@subequations\subequations
4907 \def\subequations{%
4908 \stepcounter{equation}%
4909 \protected@edef\theHparentequation{%
4910 \@ifundefined{theHequation}\theequation\theHequation
4911 }%
4912 \addtocounter{equation}{-1}%
4913 \HyOrg@subequations
4914 \def\theHequation{\theHparentequation\alph{equation}}%
4915 \ignorespaces
4916 }%
4917 \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.

```

4918 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
4919 \ifHy@hyperfootnotes
4920 \newcounter{Hfootnote}%
4921 \let\H@@footnotetext\@footnotetext
4922 \let\H@@footnotemark\@footnotemark
4923 \def\@xfootnotenext[#1]{%

```



```

4924 \begingroup
4925 \csname c@\mpfn\endcsname #1\relax
4926 \unrestored@protected@xdef\@thefnmark{\thempfn}%
4927 \endgroup
4928 \ifx\@footnotetext\@mpfootnotetext
4929 \expandafter\H@\mpfootnotetext
4930 \else
4931 \expandafter\H@\footnotetext
4932 \fi
4933 }%
4934 \def\@xfootnotemark[#1]{%
4935 \begingroup
4936 \c@footnote #1\relax
4937 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
4938 \endgroup
4939 \H@\footnotemark
4940 }%
4941 \let\H@\mpfootnotetext\@mpfootnotetext
4942 \long\def\@mpfootnotetext#1{%
4943 \H@\mpfootnotetext{%
4944 \ifHy@nesting
4945 \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
4946 \else
4947 \Hy@raisedlink{%
4948 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
4949 }#1%
4950 \fi
4951 }%
4952 }%
4953 \long\def\@footnotetext#1{%
4954 \H@\footnotetext{%
4955 \ifHy@nesting
4956 \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
4957 \else
4958 \Hy@raisedlink{%
4959 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
4960 }%
4961 \let\@currentHlabel\Hy@footnote@currentHlabel
4962 \let\@currentHref\Hy@footnote@currentHref
4963 \let\@currentlabelname\@empty
4964 #1%
4965 \fi
4966 }%
4967 }%

```

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.

```

4968 \def\@footnotemark{%
4969 \leavevmode
4970 \ifhmode\edef\@xsf{\the\spacefactor}\nobreak\fi
4971 \stepcounter{Hfootnote}%
4972 \global\let\Hy@saved@currentHlabel\@currentHlabel
4973 \global\let\Hy@saved@currentHref\@currentHref
4974 \hyper@makecurrent{Hfootnote}%
4975 \global\let\Hy@footnote@currentHlabel\@currentHlabel
4976 \global\let\Hy@footnote@currentHref\@currentHref

```

```

4977 \global\let\@currentHlabel\Hy@saved@currentHlabel
4978 \global\let\@currentHref\Hy@saved@currentHref
4979 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
4980 \@makefnmark
4981 \hyper@linkend
4982 \ifhmode\spacefactor\@x@sf\fi
4983 \relax
4984 }%

```

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.

```

4985 \@ifpackageloaded{longtable}{%
4986 \CheckCommand*{\LT@p@ftntext}[1]{%
4987 \edef\@tempa{%
4988 \the\LT@p@ftn
4989 \noexpand\footnotetext[\the\c@footnote]%
4990 }%
4991 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
4992 }%
4993 \long\def\LT@p@ftntext#1{%
4994 \edef\@tempa{%
4995 \the\LT@p@ftn
4996 \begingroup
4997 \noexpand\c@footnote=\the\c@footnote\relax
4998 \noexpand\protected@xdef
4999 \noexpand\@thefnmark{\noexpand\thempfn}%
5000 \noexpand\protected@xdef\noexpand\@thefnmark{%
5001 \noexpand\thempfn
5002 }%
5003 \expandafter\expandafter\expandafter\noexpand
5004 \expandafter\expandafter\expandafter\Hy@LT@footnotetext
5005 \expandafter\expandafter\expandafter{%
5006 \expandafter\Hy@footnote@currentHref\expandafter
5007 }\expandafter{\Hy@footnote@currentHlabel}%
5008 }%
5009 \global\LT@p@ftn\expandafter{%
5010 \@tempa{#1}%
5011 \endgroup
5012 }%
5013 }%
5014 \long\def\Hy@LT@footnotetext#1#2#3{%
5015 \H@@footnotetext{%
5016 \ifHy@nesting
5017 \hyper@@anchor{#1}{#3}%
5018 \else
5019 \Hy@raisedlink{%
5020 \hyper@@anchor{#1}{\relax}%
5021 }%
5022 \def\@currentHlabel{#2}%
5023 \def\@currentHref{#1}%
5024 \let\@currentlabelname\@empty
5025 #3%
5026 \fi
5027 }%
5028 }%
5029 }{}%

```

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.

```

5030 \let\HyOrg@maketitle\maketitle
5031 \def\maketitle{%
5032   \let\Hy@saved@footnotemark\@footnotemark
5033   \let\Hy@saved@footnotetext\@footnotetext
5034   \let\@footnotemark\H@@footnotemark
5035   \let\@footnotetext\H@@footnotetext
5036   \ifnextchar[\Hy@maketitle@optarg{% ]
5037     \HyOrg@maketitle
5038     \Hy@maketitle@end
5039   }%
5040 }%
5041 \def\Hy@maketitle@optarg[#1]{%
5042   \HyOrg@maketitle[#{#1}]%
5043   \Hy@maketitle@end
5044 }%
5045 \def\Hy@maketitle@end{%
5046   \ifx\@footnotemark\H@@footnotemark
5047     \let\@footnotemark\Hy@saved@footnotemark
5048     \fi
5049   \ifx\@footnotetext\H@@footnotetext
5050     \let\@footnotetext\Hy@saved@footnotetext
5051     \fi
5052 }%
```

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

```

5053 \def\realfootnote{%
5054   \ifnextchar[\@xfootnote{%
5055     \stepcounter{\@mpfn}%
5056     \protected@xdef\@thefnmark{\thempfn}%
5057     \H@@footnotemark\H@@footnotetext
5058   }%
5059 }%

5060 \fi
5061 \Hy@DisableOption{hyperfootnotes}

5062 \</package>
5063 \<check>
5064 \checklatex
5065 \checkcommand\def\@xfootnotenext[#1]{%
5066   \begingroup
5067     \csname c@\@mpfn\endcsname #1\relax
5068     \unrestored@protected@xdef\@thefnmark{\thempfn}%
5069   \endgroup
5070   \@footnotetext
5071 }
5072 \checkcommand\def\@xfootnotemark[#1]{%
5073   \begingroup
5074     \c@footnote #1\relax
5075     \unrestored@protected@xdef\@thefnmark{\thefnmark}%
5076   \endgroup
5077   \@footnotemark
5078 }
5079 \checkcommand\def\@footnotemark{%
5080   \leavevmode
5081   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
```

```

5082 \@makefnmark
5083 \ifhmode\spacefactor\@x@sf\fi
5084 \relax
5085 }
5086 </check>
5087 <*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.

```

5088 \def\caption{%
5089   \ifx\@captype\@undefined
5090     \@latex@error{\noexpand\caption outside float}\@ehd
5091     \expandafter\@gobble
5092   \else
5093     \H@refstepcounter\@captype
5094     \let\Hy@tempa\@caption
5095     \ifundefined{float@caption}{%
5096       {%
5097         \expandafter\ifx\csname @float@c@\@captype\endcsname\float@caption
5098           \let\Hy@tempa\Hy@float@caption
5099         \fi
5100       }%
5101       \expandafter\@firstofone
5102     \fi
5103     {\@dblarg{\Hy@tempa\@captype}}%
5104 }
5105 \long\def\caption#1[#2]#3{%
5106   \expandafter\ifx\csname if@capstart\expandafter\endcsname
5107     \csname iftrue\endcsname
5108     \global\let\@currentHref\hc@currentHref
5109   \else
5110     \hyper@makecurrent{\@captype}%
5111   \fi
5112   \def\@currentlabelname{#2}%
5113   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
5114     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
5115   }%
5116   \begingroup
5117     \@parboxrestore
5118     \if@minipage
5119       \setminipage
5120     \fi
5121     \normalsize
5122     \expandafter\ifx\csname if@capstart\expandafter\endcsname
5123       \csname iftrue\endcsname
5124       \global\@capstartfalse
5125       \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
5126     \else
5127       \@makecaption{\csname fnum@#1\endcsname}{%
5128         \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

5129     \ifHy@nesting
5130     \hyper@@anchor{\@currentHref}{#3}%

```

```

5131         \else
5132             \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
5133         \fi
5134     }%
5135 \fi
5136 \par
5137 \endgroup
5138 }

```

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.

```

5139 \let\Hy@float@caption\@caption
5140 \ifpackageloaded{float}{%
5141     \def\Hy@float@caption{%
5142         \ifx\Hy@float@currentHref\@undefined
5143             \hyper@makecurrent{\@capttype}%
5144             \global\let\Hy@float@currentHref\@currentHref
5145         \else
5146             \let\@currentHref\Hy@float@currentHref
5147         \fi
5148         \float@caption
5149     }%
5150     \let\HyOrg@float@makebox\float@makebox
5151     \renewcommand{\float@makebox}[1]{%
5152         \HyOrg@float@makebox{%
5153             #1\relax
5154             \ifx\Hy@float@currentHref\@undefined
5155                 \else
5156                     \hyper@@anchor{\Hy@float@currentHref}{\relax}%
5157                 \global\let\Hy@float@currentHref\@undefined
5158             \fi
5159         }%
5160     }%
5161 }{}

5162 \</package>
5163 \<check>
5164 \checklatex[1999/06/01 - 2000/06/01]
5165 \checkcommand\def\caption{%
5166     \ifx\@capttype\@undefined
5167         \@latex@error{\noexpand\caption outside float}\@ehd
5168         \expandafter\@gobble
5169     \else
5170         \refstepcounter\@capttype
5171         \expandafter\@firstofone
5172     \fi
5173     {\@dblarg{\@caption\@capttype}}}%
5174 }

5175 \checkcommand\long\def\@caption#1[#2]#3{%
5176     \par
5177     \addcontentsline{\csname ext@#1\endcsname}{#1}%
5178     {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
5179     \begingroup
5180         \@parboxrestore
5181         \if@minipage
5182             \setminipage
5183         \fi
5184         \normalsize

```

```

5185 \makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
5186 \endgroup
5187 }
5188 </check>
5189 <*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, let's make an attempt to get *natbib* right, because that's a powerful, important package. Patrick Daly ([daly@linmpi.mpg.de](mailto:daly@linmpi.mpg.de)) has provided hooks for us, so all we need to do is activate them.

```

5190 \def\hyper@natlinkstart#1{%
5191   \Hy@backout{#1}%
5192   \hyper@linkstart{cite}{cite.#1}%
5193   \def\hyper@nat@current{#1}%
5194 }
5195 \def\hyper@natlinkend{%
5196   \hyper@linkend
5197 }
5198 \def\hyper@natlinkbreak#1#2{%
5199   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
5200 }
5201 \def\hyper@natanchorstart#1{%
5202   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
5203 }
5204 \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.

```

5205 \@ifundefined{NAT@parse}{%
5206   \providecommand*\@extra@binfo{}%
5207   \providecommand*\@extra@b@citeb{}%
5208   \def\bibcite#1#2{%
5209     \newl@bel{b}{#1\@extra@binfo}%
5210     \hyper@link[cite]{}{cite.#1\@extra@b@citeb}{#2}%
5211   }%
5212 }%
5213 \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.”.

```

5214 \let\Hy@bibcite\bibcite
5215 \begingroup
5216   \@ifundefined{bbl@cite@choice}{%
5217     \g@addto@macro\bbl@cite@choice{%
5218       \let\bibcite\Hy@bibcite
5219     }%
5220   }%
5221 \endgroup

```

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

```

5222 \providecommand*{\@BIBLABEL}{\@biblabel}%
5223 \def\@lbibitem[#1]#2{%
5224     \skiphyperreftrue
5225     \H@item[%
5226         \ifx\Hy@raisedlink\@empty
5227             \hyper@anchorstart{cite.#2\@extra@b@citeb}%
5228             \@BIBLABEL{#1}%
5229             \hyper@anchorend
5230         \else
5231             \Hy@raisedlink{%
5232                 \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
5233             }%
5234             \@BIBLABEL{#1}%
5235         \fi
5236         \hfill
5237     ]%
5238     \skiphyperreffalse
5239     \if@filesw
5240         \begingroup
5241             \let\protect\noexpand
5242             \immediate\write\@auxout{%
5243                 \string\bibcite{#2}{#1}%
5244             }%
5245         \endgroup
5246     \fi
5247     \ignorespaces
5248 }%
```

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

```

5249 \def\@bibitem#1{%
5250     \skiphyperreftrue\H@item\skiphyperreffalse
5251     \Hy@raisedlink{%
5252         \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
5253     }%
5254     \if@filesw
5255         \begingroup
5256             \let\protect\noexpand
5257             \immediate\write\@auxout{%
5258                 \string\bibcite{#1}{\the\value{\@listctr}}%
5259             }%
5260         \endgroup
5261     \fi
5262     \ignorespaces
5263 }%
5264 }{}

5265 </package>
5266 <*check>
5267 \checklatex
5268 \checkcommand\def\@lbibitem[#1]#2{%
5269     \item[\@biblabel{#1}\hfill]%
5270     \if@filesw
5271     {%
5272         \let\protect\noexpand
5273         \immediate\write\@auxout{%
5274             \string\bibcite{#2}{#1}%

```

```

5275     }%
5276   }%
5277 \fi
5278 \ignorespaces
5279 }
5280 \checkcommand\def\@bibitem#1{%
5281   \item
5282   \if@filesw
5283     \immediate\write\@auxout{%
5284       \string\bibcite{#1}{\the\value{\@listctr}}}%
5285     }%
5286   \fi
5287   \ignorespaces
5288 }
5289 </check>
5290 <*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.

```

5291 \ifclassloaded{revtex}{%
5292   \Hy@Info{*** compatibility with revtex **** }%
5293   \def\revtex@checking#1#2{%
5294     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
5295     \expandafter\def\csname b@#1\endcsname{#2}%
5296     \SetMaxRnhefLabel{#1}%
5297     \expandafter\let\csname b@#1\endcsname\T@temp
5298   }%

```

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

```

5299 \ifundefined{@CITE}{\def\@CITE{\@cite}}{%
5300   \providecommand*{\@extra@b@citeb}{}%
5301   \def\@CITE[#1]#2{%
5302     \let\@citea\@empty
5303     \leavevmode
5304     \unskip
5305     $^{}%
5306     \scriptstyle
5307     \@CITE{%
5308       \@for\@citeb:=#2\do{%
5309         \@citea
5310         \def\@citea{,\penalty\@m\ }%
5311         \edef\@citeb{\expandafter\@firstofone\@citeb}%
5312         \if@filesw
5313           \immediate\write\@auxout{\string\citation{\@citeb}}%
5314         \fi
5315         \ifundefined{b@\@citeb\extra@b@citeb}{%
5316           \mbox{\reset@font\bfseries ?}%
5317           \G@refundefinedtrue
5318           \@latex@warning{%
5319             Citation ‘\@citeb’ on page \thepage \space undefined%
5320           }%
5321         }{%
5322           {\csname b@\@citeb\extra@b@citeb\endcsname}%
5323         }%
5324       }%
5325     }{#1}%

```



```

5326    }$%
5327    }%

```

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.

```

5328    \def\@citex[#1]#2{%
5329        \let\@citea\@empty
5330        \@cite{%
5331            \@for\@citeb:=#2\do{%
5332                \@citea
5333                \def\@citea{,\penalty\@m\ }%
5334                \edef\@citeb{\expandafter\@firstofone\@citeb}%
5335                \if@filesw
5336                    \immediate\write\@auxout{\string\citation{\@citeb}}%
5337                \fi
5338                \@ifundefined{b@\@citeb\@extra@b@citeb}{%
5339                    \mbox{\reset@font\bfseries ?}%
5340                    \G@refundefinedtrue
5341                    \@latex@warning{%
5342                        Citation ‘\@citeb’ on page \thepage \space undefined%
5343                    }%
5344                }{%
5345                    \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
5346                }%
5347            }%
5348        }{#1}%
5349    }%
5350 }{}

```

### 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.

```

5351 \@ifpackageloaded{harvard}{%
5352     \AtBeginDocument{%
5353         \Hy@Info{*** compatibility with harvard *** }%
5354         \Hy@raiselinksfalse
5355         \def\harvardcite#1#2#3#4{%
5356             \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{\cite.#1}{#2}}%
5357             \global\@namedef{HAR@an@#1}{\hyper@link[cite]{\cite.#1}{#3}}%
5358             \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{\cite.#1}{#4}}%
5359             \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
5360         }%
5361         \def\HAR@citetoaux#1{%
5362             \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
5363             \ifHy@backref
5364                 \ifx\@empty\@currentlabel
5365                 \else
5366                     \@bsphack
5367                     \if@filesw
5368                         \protected@write\@auxout{}{%
5369                             \string\writefile{brf}{%
5370                                 \string\backcite{#1}{%

```

```

5371         {\thepage}{\@currentlabel}{\@currentHref}%
5372     }%
5373 }%
5374 }%
5375 \fi
5376 \@esphack
5377 \fi
5378 \fi
5379 }%
5380 \def\harvarditem{%
5381     \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
5382 }%
5383 \def\@harvarditem[#1]#2#3#4#5\par{%
5384     \item[]%
5385     \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
5386     \if@filesw
5387         \begingroup
5388         \def\protect##1{\string ##1\space}%
5389         \ifthenelse{\equal{#1}{\null}}%
5390             {\def\next{{#4}{#2}{#3}}}%
5391             {\def\next{{#4}{#2}{#1}{#3}}}%
5392         \immediate\write\@auxout{\string\harvardcite\codeof\next}%
5393     \endgroup
5394 \fi
5395 \protect\hspace*{-\labelwidth}%
5396 \protect\hspace*{-\labelsep}%
5397 \ignorespaces
5398 #5%
5399 \ifHy@backref
5400     \newblock
5401     \backref{\csname br@#4\endcsname}%
5402 \fi
5403 \par
5404 }%

```

\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:

```

5405 \long\def\HAR@checkcitations#1#2#3#4{%
5406     \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
5407     \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
5408         \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
5409         \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
5410             \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
5411             \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
5412                 \else
5413                     \@tempswatrue
5414                 \fi
5415             \else
5416                 \@tempswatrue
5417             \fi
5418         \else
5419             \@tempswatrue
5420         \fi
5421     }%
5422 }%
5423 }{}

```

## 37.2 Package chicago

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

```
5424 \@ifpackageloaded{chicago}{%
```

```
\citeN
```

```
5425 \def\citeN{%
5426   \def\@citesepen{-1000}%
5427   \def\@cite##1##2{##1}%
5428   \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
5429   \@citedata@opt
5430 }%
```

```
\shortciteN
```

```
5431 \def\shortciteN{%
5432   \def\@citesepen{-1000}%
5433   \def\@cite##1##2{##1}%
5434   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
5435   \@citedata@opt
5436 }%
```

```
\@citedata@opt
```

```
5437 \def\@citedata@opt{%
5438   \let\@cite@opt\@empty
5439   \@ifnextchar [{%
5440     \@tempwattrue
5441     \@citedatax@opt
5442   }{%
5443     \@tempwafalse
5444     \@citedatax[]%
5445   }%
5446 }%
```

```
\@citedatax@opt
```

```
5447 \def\@citedatax@opt[#1]{%
5448   \def\@cite@opt{, #1}%
5449   \@citedatax[{#1}]%
5450 }%
```

```
5451 }{}
```

## 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.

```
5452 \def\Hy@EveryPageAnchor{%
5453   \Hy@DistillerDestFix
5454   \ifHy@pageanchor
5455     \ifHy@hypertextnames
5456     \ifHy@plainpages
5457       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
```

```

5458     \else
5459         \begingroup
5460             \let\@number\@firstofone
5461             \Hy@unicodedefalse
5462             \pdfstringdef\@the@H@page{\thepage}%
5463         \endgroup
5464         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
5465     \fi
5466 \else
5467     \Hy@GlobalStepCount\Hy@pagecounter
5468     \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}%
5469 \fi
5470 \vbox to 0pt{%
5471     \kern\voffset
5472     \kern\topmargin
5473     \kern-1bp\relax
5474     \hbox to 0pt{%
5475         \kern\hoffset
5476         \kern\ifodd\value{page}%
5477             \oddsidemargin
5478         \else
5479             \evensidemargin
5480         \fi
5481         \kern-1bp\relax
5482         \Hy@TempPageAnchor
5483     \hss
5484 }%
5485 \vss
5486 }%
5487 \fi
5488 }
5489 \g@addto@macro\Hy@EveryPageBoxHook{%
5490     \Hy@EveryPageAnchor
5491 }

```

## 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.

```

5492 \begingroup\expandafter\expandafter\expandafter\endgroup
5493 \expandafter\ifx\csname chapter\endcsname\relax
5494     \def\toclevel@part{0}%
5495 \else
5496     \def\toclevel@part{-1}%
5497 \fi
5498 \def\toclevel@chapter{0}
5499 \def\toclevel@section{1}
5500 \def\toclevel@subsection{2}
5501 \def\toclevel@subsubsection{3}
5502 \def\toclevel@paragraph{4}
5503 \def\toclevel@subparagraph{5}
5504 \def\toclevel@figure{0}
5505 \def\toclevel@table{0}
5506 \@ifpackageloaded{listings}{%
5507     \providecommand*\theHlstlisting{\thelstlisting}%

```

```

5508 \providecommand*\toclevel@lstlisting{0}%
5509 }{}
5510 \@ifpackageloaded{listing}{%
5511 \providecommand*\theHlisting{\thelisting}%
5512 \providecommand*\toclevel@listing{0}%
5513 }{}
5514 \def\addcontentsline#1#2#3{% toc extension, type, tag
5515 \begingroup
5516 \let\label\@gobble
5517 \let\textlatin\@firstofone
5518 \ifx\@currentHref\@empty
5519 \Hy@Warning{%
5520 No destination for bookmark of \string\addcontentsline,%
5521 \MessageBreak destination is added%
5522 }%
5523 \phantomsection
5524 \fi
5525 \expandafter\ifx\csname toclevel@#2\endcsname\relax
5526 \begingroup
5527 \def\Hy@tempa{#1}%
5528 \ifx\Hy@tempa\Hy@bookmarkstype
5529 \Hy@WarningNoLine{bookmark level for unknown #2 defaults to 0}%
5530 \else
5531 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
5532 \fi
5533 \endgroup
5534 \expandafter\gdef\csname toclevel@#2\endcsname{0}%
5535 \fi
5536 \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
5537 \Hy@writebookmark{\csname the#2\endcsname}%
5538 {#3}%
5539 {\@currentHref}%
5540 {\Hy@toclevel}%
5541 {#1}%
5542 \ifHy@verbose
5543 \def\Hy@tempa{#3}%
5544 \@onelevel@sanitize\Hy@tempa
5545 \typeout{pdfTeX: bookmark at \the\inputlineno: %
5546 {\csname the#2\endcsname}%
5547 {\Hy@tempa}%
5548 {\@currentHref}%
5549 {\Hy@toclevel}%
5550 {#1}%
5551 }%
5552 \fi
5553 \addtocontents{#1}{%
5554 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
5555 }%
5556 \endgroup
5557 }
5558 \def\contentsline#1#2#3#4{%
5559 \ifx\#4\%
5560 \csname l@#1\endcsname{#2}{#3}%
5561 \else
5562 \ifHy@linktocpage
5563 \csname l@#1\endcsname{#2}{#3}%
5564 \hyper@linkstart{link}{#4}{#3}\hyper@linkend

```

```

5565     }%
5566     \else
5567         \csname l@#1\endcsname{%
5568             \hyper@linkstart{link}{#4}{#2}\hyper@linkend
5569             }{#3}%
5570     \fi
5571 \fi
5572 }

5573 </package>
5574 <*check>
5575 \checklatex
5576 \checkcommand\def\addcontentsline#1#2#3{%
5577     \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
5578 }
5579 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
5580 </check>
5581 <*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.

```

5582 \let\H@definecounter\@definecounter
5583 \def\@definecounter#1{%
5584     \H@definecounter{#1}%
5585     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
5586 }

```

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.

```

5587 \let\H@newctr\@newctr
5588 \def\@newctr#1[#2]{%
5589     \H@newctr#1[#{#2}]%
5590     \expandafter\def\csname theH#1\endcsname{%
5591         \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
5592     }%
5593 }

```

## 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.

```

5594 \let\Hmake@df@tag@@\make@df@tag@@
5595 \def\make@df@tag@@#1{%
5596     \Hmake@df@tag@@{#1}%
5597     \Hy@GlobalStepCount\Hy@linkcounter
5598     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5599     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5600 }
5601 \let\Hmake@df@tag@@@\make@df@tag@@@
5602 \def\make@df@tag@@@#1{%

```

```

5603 \Hmake@df@tag@@@{#1}%
5604 \Hy@GlobalStepCount\Hy@linkcounter
5605 \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5606 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5607 }

```

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

```

5608 \@ifpackagewith{hyperref}{pdfTeX}{%
5609   \let\H@seteqlabel\@seteqlabel
5610   \def\@seteqlabel#1{%
5611     \H@seteqlabel{#1}%
5612     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5613     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5614   }%
5615 }{}

```

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.

```

5616 \let\HyOrg@addtoreset\@addtoreset
5617 \def\@addtoreset#1#2{%
5618   \HyOrg@addtoreset{#1}{#2}%
5619   \expandafter\xdef\csname theH#1\endcsname{%
5620     \expandafter\noexpand
5621       \csname the\@ifundefined{theH#2}{#2}\endcsname
5622     .\noexpand\the\noexpand\value{#1}%
5623   }%
5624 }

```

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

```

5625 </package>
5626 <*check>
5627 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
5628 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
5629   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
5630     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
5631       \@addtoreset{#2}{#3}%
5632       \@xp\xdef\csname the#2\endcsname{%
5633         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
5634       }%
5635     }%
5636   }%
5637 }%
5638 </check>

```

```

5639 <*package>
5640 \ifpackageloaded{amsmath}{%
5641   \ifpackagelater{amsmath}{1999/12/14}{%
5642     \renewcommand*{\numberwithin}[3][\arabic]{%
5643       \ifundefined{c@#2}{\nocounterr{#2}}{%
5644         \ifundefined{c@#3}{\nocnterr{#3}}{%
5645           \HyOrg@addtoreset{#2}{#3}%
5646           \xp\xdef\csname the#2\endcsname{%
5647             \xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
5648           }%
5649           \xp\xdef\csname theH#2\endcsname{%
5650             \xp\@nx
5651             \csname the\ifundefined{theH#3}{H#3\endcsname
5652             .\@nx#1{#2}%
5653           }%
5654         }%
5655       }%
5656     }%
5657   }{%
5658     \Hy@WarningNoLine{%
5659       \string\numberwithin\space of package ‘amsmath’ %
5660       only fixed\MessageBreak
5661       for version 2000/06/06 v2.12 or newer%
5662     }%
5663   }%
5664 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

5665 \ifHy@figures
5666   \let\Hy@Gin@setfile\Gin@setfile
5667   \def\Gin@setfile#1#2#3{%
5668     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
5669   }%
5670 \fi
5671 \Hy@DisableOption{hyperfigures}

```

## 43 hyperindex entries

Internal command names are prefixed with \HyInd@.

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

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

```

5672 \ifHy@hyperindex
5673   \def\HyInd@ParenLeft{({}%
5674   \def\HyInd@ParenRight{)}}%
5675   \Hy@nextfalse
5676   \ifpackageloaded{multind}{\Hy@nexttrue}{}%

```



```

5677 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
5678 \begingroup
5679 \lccode'\l=\expandafter'\HyInd@EncapChar\relax
5680 \lowercase{\endgroup
5681 \ifHy@next
5682 \let\HyInd@org@wrindex\@wrindex
5683 \def\@wrindex#1#2{\HyInd@wrindex{#1}#2||\}%
5684 \def\HyInd@wrindex#1#2|#3|#4\{\%
5685 \ifx\#3\%
5686 \HyInd@org@wrindex{#1}{#2|hyperpage}%
5687 \else
5688 \def\Hy@temp@A{#3}%
5689 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
5690 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
5691 \relax
5692 \HyInd@org@wrindex{#1}{#2|#3}%
5693 \else
5694 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
5695 \fi
5696 \fi
5697 }%
5698 \else
5699 \def\@wrindex#1{\@@wrindex#1||\}%
5700 \def\@@wrindex#1|#2|#3\{\%
5701 \if@filesw
5702 \ifx\#2\%
5703 \protected@write\@indexfile{}\%
5704 \string\indexentry{#1|hyperpage}{\thepage}%
5705 }%
5706 \else
5707 \def\Hy@temp@A{#2}%
5708 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
5709 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
5710 \relax
5711 \protected@write\@indexfile{}\%
5712 \string\indexentry{#1|#2}{\thepage}%
5713 }%
5714 \else
5715 \protected@write\@indexfile{}\%
5716 \string\indexentry{#1|#2hyperpage}{\thepage}%
5717 }%
5718 \fi
5719 \fi
5720 \fi
5721 \endgroup
5722 \esphack
5723 }%
5724 \fi
5725 }%
5726 \fi
5727 \Hy@DisableOption{hyperindex}
5728 \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.

```

5729 \def\hyperpage#1{\@hyperpage#1----\}
5730 \def\@hyperpage#1--#2--#3\{\%
5731 \ifx\#2\%

```

```

5732 \commahyperpage{#1}%
5733 \else
5734 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
5735 \fi
5736 }
5737 \def\commahyperpage#1{\commahyperpage#1, ,\}
5738 \def\commahyperpage#1, #2,#3\{\%
5739 \ifx\#2\%
5740 \HyInd@pagelink{#1}%
5741 \else
5742 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
5743 \fi
5744 }

```

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

```

5745 \def\HyInd@pagelink#1{%
5746 \begingroup
5747 \toks@={}%
5748 \HyInd@removespaces#1 \@nil
5749 \endgroup
5750 }
5751 \def\HyInd@removespaces#1 #2\@nil{%
5752 \toks@=\expandafter{\the\toks@#1}%
5753 \ifx\#2\%
5754 \edef\x{\the\toks@}%
5755 \ifx\x\@empty
5756 \else
5757 \hyperlink{page.\the\toks@}{\the\toks@}%
5758 \fi
5759 \else
5760 \Hy@ReturnAfterFi{%
5761 \HyInd@removespaces#2\@nil
5762 }%
5763 \fi
5764 }

```

## 44 Compatibility with foiltex

```

5765 \@ifclassloaded{foils}{%
5766 \providecommand*\ext@table{lot}%
5767 \providecommand*\ext@figure{lof}%
5768 }{}

```

## 45 Compatibility with seminar slide package

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

```

5769 \@ifclassloaded{seminar}{%
5770 \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}%
5771 }{%
5772 \Hy@seminarslidesfalse
5773 }
5774 \@ifpackageloaded{slidesec}{%
5775 \newcommand\theHslidesection {\arabic{slidesection}}%
5776 \newcommand\theHslidesubsection{%

```

```

5777 \theHslide\section.\arabic{slidesubsection}%
5778 }%
5779 \def\slide@heading[#1]#2{%
5780 \H@refstepcounter{slide\section}%
5781 \addtoreset{slidesubsection}{slide\section}%
5782 \addtocontents{los}{%
5783 \protect\l@slide{\the\c@slide\section}{\ignorespaces#1}%
5784 {\@SCTR}{slideheading.\theslide\section}%
5785 }%
5786 \def\Hy@tempa{#2}%
5787 \ifx\Hy@tempa\@empty
5788 \else
5789 {%
5790 \edef\@currentlabel{%
5791 \csname p@slide\section\endcsname\theslide\section
5792 }%
5793 \makeslideheading{#2}%
5794 }%
5795 \fi
5796 \gdef\theslideheading{#1}%
5797 \gdef\theslidesubheading{}%
5798 \ifHy@bookmarksnumbered
5799 \def\Hy@slidetitle{\theslide\section\space #1}%
5800 \else
5801 \def\Hy@slidetitle{#1}%
5802 \fi
5803 \ifHy@hypertextnames
5804 \ifHy@naturalnames
5805 \hyper@@anchor{slideheading.\theslide\section}{\relax}%
5806 \Hy@writebookmark
5807 {\theslide\section}%
5808 {\Hy@slidetitle}%
5809 {slideheading.\theslide\section}%
5810 {1}%
5811 {toc}%
5812 \else
5813 \hyper@@anchor{slideheading.\theHslide\section}{\relax}%
5814 \Hy@writebookmark
5815 {\theslide\section}%
5816 {\Hy@slidetitle}%
5817 {slideheading.\theHslide\section}%
5818 {1}%
5819 {toc}%
5820 \fi
5821 \else
5822 \Hy@GlobalStepCount\Hy@linkcounter
5823 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
5824 \Hy@writebookmark
5825 {\theslide\section}%
5826 {\Hy@slidetitle}%
5827 {slideheading.\the\Hy@linkcounter}%
5828 {1}%
5829 {toc}%
5830 \fi
5831 }%
5832 \def\slide@subheading[#1]#2{%
5833 \H@refstepcounter{slidesubsection}%

```

```

5834 \addtocontents{los}{%
5835 \protect\l@subslide{\the\c@slidessubsection}{\ignorespaces#1}%
5836 {\@SCTR}{slideheading.\theslidessubsection}%
5837 }%
5838 \def\Hy@tempa{#2}%
5839 \ifx\Hy@tempa\@empty
5840 \else
5841 {%
5842 \edef\@currentlabel{%
5843 \csname p@slidessubsection\endcsname\theslidessubsection
5844 }%
5845 \makeslidesubheading{#2}%
5846 }%
5847 \fi
5848 \gdef\theslidesubheading{#1}%
5849 \ifHy@bookmarksnumbered
5850 \def\Hy@slidetitle{\theslidessubsection\space #1}%
5851 \else
5852 \def\Hy@slidetitle{#1}%
5853 \fi
5854 \ifHy@hypertextnames
5855 \ifHy@naturalnames
5856 \hyper@@anchor{slideheading.\theslidessubsection}{\relax}%
5857 \Hy@writebookmark
5858 {\theslidessubsection}%
5859 {\Hy@slidetitle}%
5860 {slideheading.\theslidessubsection}%
5861 {2}%
5862 {toc}%
5863 \else
5864 \hyper@@anchor{slideheading.\theHslidessubsection}{\relax}%
5865 \Hy@writebookmark
5866 {\theslidessubsection}%
5867 {\Hy@slidetitle}%
5868 {slideheading.\theHslidessubsection}%
5869 {2}%
5870 {toc}%
5871 \fi
5872 \else
5873 \Hy@GlobalStepCount\Hy@linkcounter
5874 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
5875 \Hy@writebookmark
5876 {\theslidessubsection}%
5877 {\Hy@slidetitle}%
5878 {slideheading.\the\Hy@linkcounter}%
5879 {1}%
5880 {toc}%
5881 \fi
5882 }%
5883 \providecommand*\listslidenamelist{List of Slides}%
5884 \def\listofslides{%
5885 \section*{%
5886 \listslidenamelist
5887 \@mkboth{%
5888 \expandafter\MakeUppercase\listslidenamelist
5889 }{%
5890 \expandafter\MakeUppercase\listslidenamelist

```

```

5891     }%
5892 }%
5893 \def\l@slide##1##2##3##4{%
5894   \slide@undottedcline{%
5895     \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
5896   }{}%
5897 }%
5898 \let\l@subslide\l@slide
5899 \@startlos
5900 }%
5901 \def\slide@contents{%
5902   \def\l@slide##1##2##3##4{%
5903     \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
5904   }%
5905   \let\l@subslide\@gobblefour
5906   \@startlos
5907 }%
5908 \def\Slide@contents{%
5909   \def\l@slide##1##2##3##4{%
5910     \ifcase\lslide@flag
5911       \message{##1 ** \the\c@slidesection}%
5912       \ifnum##1>\c@slidesection
5913         \def\lslide@flag{1}%
5914         {%
5915           \large
5916           \slide@ccline{%
5917             \slidenumberline{$\rightarrow\bullet$}%
5918             {\hyperlink{##4}{##2}}}%
5919           }{##3}%
5920         }%
5921       \else
5922         {%
5923           \large
5924           \slide@ccline{%
5925             \slidenumberline{$\surd\;\bullet$}%
5926             {\hyperlink{##4}{##2}}}%
5927           }{##3}%
5928         }%
5929       \fi
5930     \or
5931     \def\lslide@flag{2}%
5932     {%
5933       \large
5934       \slide@ccline{%
5935         \slidenumberline{$\bullet$}%
5936         {\hyperlink{##4}{##2}}}%
5937       }{##3}%
5938     }%
5939     \or
5940     {%
5941       \large
5942       \slide@ccline{%
5943         \slidenumberline{$\bullet$}%
5944         {\hyperlink{##4}{##2}}}%
5945       }{##3}%
5946     }%
5947   \fi

```

```

5948 }%
5949 \def\l@subslide##1##2##3##4{%
5950   \ifnum\lslide@flag=1 %
5951     \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
5952   \fi
5953 }%
5954 \def\lslide@flag{0}%
5955 \@startlos
5956 }%
5957 }{}

```

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.)

```

5958 \ifHy@texht
5959   \expandafter\endinput
5960 \fi
5961 \let\real@setref\@setref
5962 \def\@setref#1#2#3{% csname, extract group, refname
5963   \ifx#1\relax
5964     \protect\G@refundefinedtrue
5965     \nfss@text{\reset@font\bfseries ??}%
5966     \@latex@warning{%
5967       Reference ‘#3’ on page \thepage \space undefined%
5968     }%
5969   \else
5970     \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
5971   \fi
5972 }

```

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

```

5973 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
5974   \begingroup
5975     \toks0={\hyper@@link{#5}{#4}}%
5976     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
5977     \edef\x{\endgroup
5978       \the\toks0 {\the\toks1 }%
5979     }%
5980   \x
5981 }
5982 \def\@pagesetref#1#2#3{% csname, extract macro, ref
5983   \ifx#1\relax
5984     \protect\G@refundefinedtrue
5985     \nfss@text{\reset@font\bfseries ??}%
5986     \@latex@warning{%
5987       Reference ‘#3’ on page \thepage \space undefined%
5988     }%
5989   \else
5990     \protect\hyper@@link
5991       {\expandafter\@fifthoffive#1}%
5992       {page.\expandafter\@secondoffive#1}%
5993       {\expandafter\@secondoffive#1}%
5994   \fi
5995 }
5996 \</package>
5997 \<check>
5998 \checklatex

```

```

5999 \checkcommand\def\@setref#1#2#3{%
6000   \ifx#1\relax
6001     \protect\G@refundefinedtrue
6002     \nfss@text{\reset@font\bfseries ??}%
6003     \@latex@warning{%
6004       Reference ‘#3’ on page \thepage\space undefined%
6005     }%
6006   \else
6007     \expandafter#2#1\null
6008   \fi
6009 }
6010 \</check>
6011 \<*package>

```

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

```

6012 \def\HyRef@StarSetRef#1{%
6013   \begingroup
6014   \Hy@safe@activestrue
6015   \edef\x{#1}%
6016   \@onelevel@sanitize\x
6017   \edef\x{\endgroup
6018     \noexpand\HyRef@@StarSetRef
6019     \expandafter\noexpand\csname r@\x\endcsname{\x}%
6020   }%
6021   \x
6022 }
6023 \def\HyRef@@StarSetRef#1#2#3{%
6024   \ifx#1\@undefined
6025     \let#1\relax
6026   \fi
6027   \real@setref#1#3{#2}%
6028 }
6029 \def\@refstar#1{%
6030   \HyRef@StarSetRef{#1}\@firstoffive
6031 }
6032 \def\@pagerefstar#1{%
6033   \HyRef@StarSetRef{#1}\@secondoffive
6034 }
6035 \AtBeginDocument{%
6036   \ifpackageloaded{varioref}{%
6037     \def\@Refstar#1{%
6038       \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
6039     }%
6040     \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
6041       \MakeUppercase#1%
6042     }%
6043     \DeclareRobustCommand*\Ref}{%
6044       \@ifstar\@Refstar\HyRef@Ref
6045     }%
6046     \def\HyRef@Ref#1{%
6047       \hyperref[#{1}]{\Ref*{#1}}%
6048     }%
6049     \def\Vr@f#1{%
6050       \leavevmode\unskip\vref@space
6051       \hyperref[#{1}]{%
6052         \Ref*{#1}%
6053         \let\vref@space\nobreakspace

```

```

6054         \@vpageref[\unskip]{#1}%
6055     }%
6056 }%
6057 \def\vr@f#1{%
6058     \leavevmode\unskip\vref@space
6059     \begingroup
6060     \let\T@pageref\@pagerefstar
6061     \hyperref[{#1}]{%
6062         \ref*{#1}%
6063         \vpageref[\unskip]{#1}%
6064     }%
6065 \endgroup
6066 }%
6067 }{}%
6068 }
6069 \DeclareRobustCommand*{\autopageref}{%
6070     \@ifstar{%
6071         \HyRef@autopagerefname\pageref*%
6072     }\HyRef@autopageref
6073 }
6074 \def\HyRef@autopageref#1{%
6075     \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
6076 }
6077 \def\HyRef@autopagerefname{%
6078     \@ifundefined{pageautorefname}{%
6079         \@ifundefined{pagename}{%
6080             \Hy@Warning{No autoref name for 'page'}%
6081         }{%
6082             \pagename\nobreakspace
6083         }%
6084     }{%
6085         \pageautorefname\nobreakspace
6086     }%
6087 }
6088 \DeclareRobustCommand*{\autoref}{%
6089     \@ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}%
6090 }
6091 \def\HyRef@autoref#1#2{%
6092     \begingroup
6093     \Hy@safe@activetrue
6094     \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
6095 \endgroup
6096 }
6097 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
6098     \HyRef@ShowKeysRef{#2}%
6099     \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
6100         \edef\HyRef@thisref{\expandafter\@fourthoffive#1\@empty\@empty\@empty}%
6101         \expandafter\HyRef@testreftype\HyRef@thisref.\.%
6102         \Hy@safe@activetrue
6103         #3{%
6104             \expandafter\@fifthoffive#1\@empty\@empty\@empty
6105         }{%
6106             \expandafter\@fourthoffive#1\@empty\@empty\@empty
6107         }{%
6108             \HyRef@currentHtag
6109             \expandafter\@firstoffive#1\@empty\@empty\@empty
6110             \null

```



```

6111 }%
6112 \else
6113   \protect\G@refundefinedtrue
6114   \nfss@text{\reset@font\bfseries ??}%
6115   \latex@warning{%
6116     Reference ‘#2’ on page \thepage\space undefined%
6117   }%
6118 \fi
6119 }
6120 \def\HyRef@testreftype#1.#2\\{%
6121   \@ifundefined{#1autorefname}{%
6122     \@ifundefined{#1name}{%
6123       \HyRef@StripStar#1\\*\\@nil{#1}%
6124       \@ifundefined{\HyRef@name autorefname}{%
6125         \@ifundefined{\HyRef@name name}{%
6126           \def\HyRef@currentHtag{%
6127             \Hy@Warning{No autoref name for ‘#1’}%
6128           }{%
6129             \edef\HyRef@currentHtag{%
6130               \expandafter\noexpand\csname\HyRef@name name\endcsname
6131               \noexpand~%
6132             }%
6133           }%
6134         }{%
6135           \edef\HyRef@currentHtag{%
6136             \expandafter\noexpand\csname\HyRef@name autorefname\endcsname
6137             \noexpand~%
6138           }%
6139         }%
6140       }{%
6141         \edef\HyRef@currentHtag{%
6142           \expandafter\noexpand\csname#1name\endcsname
6143           \noexpand~%
6144         }%
6145       }%
6146     }{%
6147       \edef\HyRef@currentHtag{%
6148         \expandafter\noexpand\csname#1autorefname\endcsname
6149         \noexpand~%
6150       }%
6151     }%
6152 }
6153 \def\HyRef@StripStar#1*\\#2\@nil#3{%
6154   \def\HyRef@name{#2}%
6155   \ifx\HyRef@name\HyRef@CaseStar
6156     \def\HyRef@name{#1}%
6157   \else
6158     \def\HyRef@name{#3}%
6159 \fi
6160 }
6161 \def\HyRef@CaseStar{*\\}
6162 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

6163 \let\HyRef@ShowKeysRef\@gobble
6164 \def\HyRef@ShowKeysInit{%

```

```

6165 \begingroup\expandafter\expandafter\expandafter\endgroup
6166 \expandafter\ifx\csname SK@@label\endcsname\relax
6167 \else
6168 \ifx\SK@ref\@empty
6169 \else
6170 \def\HyRef@ShowKeysRef{%
6171 \SK@\SK@ref
6172 }%
6173 \fi
6174 \fi
6175 }
6176 \@ifpackageloaded{showkeys}{%
6177 \HyRef@ShowKeysInit
6178 }{%
6179 \AtBeginDocument{%
6180 \ifpackageloaded{showkeys}{%
6181 \HyRef@ShowKeysInit
6182 }{}%
6183 }%
6184 }

```

Defaults for the names that `\autoref` uses.

```

6185 \providecommand*\AMSautorefname{\equationautorefname}
6186 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
6187 \providecommand*\Itemautorefname{\itemautorefname}
6188 \providecommand*\itemautorefname{item}
6189 \providecommand*\equationautorefname{Equation}
6190 \providecommand*\footnoteautorefname{footnote}
6191 \providecommand*\itemautorefname{item}
6192 \providecommand*\figureautorefname{Figure}
6193 \providecommand*\tableautorefname{Table}
6194 \providecommand*\partautorefname{Part}
6195 \providecommand*\appendixautorefname{Appendix}
6196 \providecommand*\chapterautorefname{chapter}
6197 \providecommand*\sectionautorefname{section}
6198 \providecommand*\subsectionautorefname{subsection}
6199 \providecommand*\subsubsectionautorefname{subsubsection}
6200 \providecommand*\paragraphautorefname{paragraph}
6201 \providecommand*\subparagraphautorefname{subparagraph}
6202 \providecommand*\FancyVerbLineautorefname{line}
6203 \providecommand*\theoremautorefname{Theorem}
6204 \providecommand*\pageautorefname{page}
6205 </package>

```

## 46 Configuration files

### 46.1 PS/PDF strings

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

`\Hy@pstringdef` Therefore such strings should be passed through `\Hy@pstringdef`. The first argument holds a macro for the result, the second argument is the string that needs protecting. Since version 1.30.0 pdfTeX offers `\pdfescapestring`.

```
6206 <*pdfTeX | dvipdfm | vtex | pdfmarkbase | dviwindo>
```

```

6207 \begingroup\expandafter\expandafter\expandafter\endgroup
6208 \expandafter\ifx\csname pdfescapestring\endcsname\relax
6209   \begingroup
6210     \catcode'\|=0 %
6211     \@makeother\|
6212     \@firstofone{\endgroup
6213       |def|Hy@pstringdef#1#2{%
6214         |edef#1{#2}%
6215         |@onelevel@sanitize#1%
6216         |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
6217         |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
6218         |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
6219       }%
6220       |def|Hy@ExchangeBackslash#1\#2|@nil{%
6221         #1%
6222         |ifx|\#2\|%%
6223         |else
6224           \|
6225           |Hy@ReturnAfterFi{%
6226             |Hy@ExchangeBackslash#2|@nil
6227           }%
6228         |fi
6229       }%
6230     }%
6231     \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
6232       #1%
6233       \ifx\#2\|
6234       \else
6235         \@backslashchar(%
6236         \Hy@ReturnAfterFi{%
6237           \Hy@ExchangeLeftParenthesis#2\@nil
6238         }%
6239       \fi
6240     }%
6241     \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
6242       #1%
6243       \ifx\#2\|
6244       \else
6245         \@backslashchar)%
6246         \Hy@ReturnAfterFi{%
6247           \Hy@ExchangeRightParenthesis#2\@nil
6248         }%
6249       \fi
6250     }%
6251   \else
6252     \def\Hy@pstringdef#1#2{%
6253       \edef#1{\pdfescapestring{#2}}%
6254     }%
6255   \fi
6256 \</pdfTeX | dvipdfm | vtex | pdfmarkbase | dviwindo>

```

## 46.2 pdfTeX

```
6257 \<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.

- pdfTeX 1.10a, 2003-01-16: \pdfoptionpdfminorversion
- pdfTeX 1.30, 2005-08-08: \pdfminorversion

```
6258 \let\Hy@pdfminorversion\relax
6259 \begingroup\expandafter\expandafter\expandafter\endgroup
6260 \expandafter\ifx\csname pdfminorversion\endcsname\relax
6261   \begingroup\expandafter\expandafter\expandafter\endgroup
6262   \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
6263     \else
6264       \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
6265     \fi
6266   \else
6267     \def\Hy@pdfminorversion{\pdfminorversion}%
6268   \fi
6269 \ifundefined{Hy@pdfminorversion}{%
6270   \PackageInfo{hyperref}{%
6271     PDF version is not set, because pdfTeX is too old (<1.10a)%
6272   }%
6273 }{%
6274   \ifHy@setpdfversion
6275     \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
6276   \else
6277     \Hy@pdfminorversion=\Hy@pdfversion\relax
6278   \fi
6279   \PackageInfo{hyperref}{%
6280     \expandafter\string\Hy@pdfminorversion:=\number\Hy@pdfversion\space
6281   }%
6282 \fi
6283 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
6284 \Hy@DisableOption{pdfversion}%
6285 }
```

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

```
6286 \def\setpdflinkmargin#1{\pdflinkmargin#1}
6287 \ifx\pdfstartlink\@undefined% less than version 14
6288   \let\pdfstartlink\pdfannotlink
6289   \let\pdflinkmargin\@tempdima
6290   \let\pdfxform\pdfform
6291   \let\pdflastxform\pdflastform
6292   \let\pdfrefxform\pdfrefform
6293 \else
6294   \pdflinkmargin1pt %
6295 \fi
```

First set up the default linking

```
6296 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```
6297 \def\new@pdflink#1{%
6298   \ifHy@verbose
6299     \typeout{pdftex: define anchor at line \the\inputlineno: #1}%
6300   \fi
6301   \Hy@SaveLastskip
6302   \Hy@pstringdef\Hy@pstringDest{#1}%
6303   \Hy@DestName\Hy@pstringDest\@pdfview
6304   \Hy@RestoreLastskip
6305 }
6306 \let\pdf@endanchor\@empty
```

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

```
6307 \def\Hy@DestName#1#2{%
6308   \pdfdest name{#1}#2\relax
6309 }
```

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.

```
6310 \providecommand*\pdfborder{0 0 1}
6311 \providecommand*\pdfborderstyle{}
6312 \def\Hy@undefinedname{UNDEFINED}
6313 \def\find@pdflink#1#2{%
6314   \leavevmode
6315   \protected@edef\Hy@testname{#2}%
6316   \ifx\Hy@testname\@empty
6317     \let\Hy@testname\Hy@undefinedname
6318   \else
6319     \Hy@pstringdef\Hy@testname\Hy@testname
6320   \fi
6321   \Hy@StartlinkName{%
6322     \Hy@setpdfborder
6323     \ifx\@pdfhighlight\@empty
6324     \else
6325       /H\@pdfhighlight
6326     \fi
6327     \ifx\CurrentBorderColor\relax
6328     \else
6329       /C[\CurrentBorderColor]%
6330     \fi
6331   }\Hy@testname
6332   \expandafter\Hy@colorlink\csname @#1color\endcsname
6333 }
6334 \def\Hy@StartlinkName#1#2{%
6335   \pdfstartlink attr{#1}goto name{#2}\relax
6336 }
6337 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
6338 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
6339 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
6340 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
6341 \def\hyper@linkstart#1#2{%
6342   \@ifundefined{#1bordercolor}{%
6343     \let\CurrentBorderColor\relax
6344   }{%
6345     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6346   }%
6347   \find@pdflink{#1}{#2}%
6348 }
6349 \def\hyper@linkend{\close@pdflink}
6350 \def\hyper@link#1#2#3{%
6351   \@ifundefined{#1bordercolor}{%
6352     \let\CurrentBorderColor\relax
6353   }{%
6354     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6355   }%
6356   \find@pdflink{#1}{#2}#3\close@pdflink
```

```

6357 }
6358 \let\CurrentBorderColor\@linkbordercolor
6359 \def\hyper@linkurl#1#2{%
6360   \begingroup
6361     \Hy@pstringdef\Hy@pstringURI{#2}%
6362     \hyper@chars
6363     \leavevmode
6364     \pdfstartlink
6365     attr{%
6366       \Hy@setpdfborder
6367       \ifx\@pdfhighlight\@empty
6368       \else
6369         /H\@pdfhighlight
6370       \fi
6371       \ifx\@urlbordercolor\relax
6372       \else
6373         /C[\@urlbordercolor]%
6374       \fi
6375     }%
6376     user{%
6377       /Subtype/Link%
6378       /A<<%
6379       /Type/Action%
6380       /S/URI%
6381       /URI(\Hy@pstringURI)%
6382     >>%
6383   }%
6384   \relax
6385   \Hy@colorlink\@urlcolor#1%
6386   \close@pdflink
6387 \endgroup
6388 }
6389 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
6390   \begingroup
6391     \Hy@pstringdef\Hy@pstringF{#2}%
6392     \Hy@pstringdef\Hy@pstringD{#3}%
6393     \leavevmode
6394     \pdfstartlink
6395     attr{%
6396       \Hy@setpdfborder
6397       \ifx\@pdfhighlight\@empty
6398       \else
6399         /H\@pdfhighlight
6400       \fi
6401       \ifx\@filebordercolor\relax
6402       \else
6403         /C[\@filebordercolor]%
6404       \fi
6405     }%
6406     user {%
6407       /Subtype/Link%
6408       /A<<%
6409       /F(\Hy@pstringF)%
6410       /S/GoToR%
6411       \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}

6412      \ifx\#3\%
6413      /D[0 \@pdfstartview]%
6414      \else
6415      /D(\Hy@pstringD)%
6416      \fi
6417      >>%
6418      }%
6419      \relax
6420      \Hy@colorlink\@filecolor#1%
6421      \close@pdflink
6422 \endgroup
6423 }
6424 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
6425 \begingroup
6426 \Hy@pstringdef\Hy@pstringF{#1}%
6427 \Hy@pstringdef\Hy@pstringP{#3}%
6428 \leavevmode
6429 \pdfstartlink
6430 attr{%
6431 \Hy@setpdfborder
6432 \ifx\@pdfhighlight\@empty
6433 \else
6434 /H\@pdfhighlight
6435 \fi
6436 \ifx\@runbordercolor\relax
6437 \else
6438 /C[\@runbordercolor]%
6439 \fi
6440 }%
6441 user {%
6442 /Subtype/Link%
6443 /A<<%
6444 /F(\Hy@pstringF)%
6445 /S/Launch%
6446 \Hy@SetNewWindow
6447 \ifx\#3\%
6448 \else
6449 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
6450 \fi
6451 >>%
6452 }%
6453 \relax
6454 \Hy@colorlink\@runcolor#2%
6455 \close@pdflink
6456 \endgroup
6457 }

\@pdfproducer
6458 \ifx\@pdfproducer\relax

```

```

6459 \def\@pdfproducer{pdfTeX}%
6460 \ifx\@pdfproducer\@undefined
6461 \else
6462   \ifx\@pdfproducer\relax
6463   \else
6464     \ifnum\@pdfversion>0 %
6465       \def\@pdfproducer{pdfTeX}%
6466     \fi
6467   \fi
6468 \fi
6469 \ifx\pdfversion\@undefined
6470 \else
6471   \ifnum\pdfversion<100 %
6472     \edef\@pdfproducer{%
6473       \@pdfproducer
6474       \the\pdfversion.\pdfversion
6475     }%
6476   \else
6477     \ifnum\pdfversion<130 %
6478       \edef\@pdfproducer{%
6479         \@pdfproducer-
6480         \expandafter\@car\the\pdfversion\@empty\@nil.%
6481         \expandafter\@cdr\the\pdfversion\@empty\@nil
6482         \pdfversion
6483       }%
6484     \else
6485       \ifnum\pdfversion<140 %
6486       \else
6487         \def\@pdfproducer{pdfTeX}%
6488       \fi
6489       \edef\@pdfproducer{%
6490         \@pdfproducer-
6491         \expandafter\@car\the\pdfversion\@empty\@nil.%
6492         \expandafter\@cdr\the\pdfversion\@empty\@nil.%
6493         \pdfversion
6494       }%
6495     \fi
6496   \fi
6497 \fi
6498 \fi

```

\PDF@SetupDox

```

6499 \def\PDF@SetupDoc{%
6500   \ifx\@pdfpagescrop\@empty
6501   \else
6502     \edef\process@me{%
6503       \pdfpagesattr={%
6504         /CropBox[\@pdfpagescrop]%
6505         \expandafter\ifx\expandafter\the\pdfpagesattr\the
6506       \else
6507         ^J\the\pdfpagesattr
6508       \fi
6509     }%
6510   }%
6511   \process@me
6512 \fi
6513 \Hy@pstringdef\Hy@pstringB{\@baseurl}%

```



```

6514 \pdfcatalog{%
6515     /PageMode/\@pdfpagemode
6516     \ifx\@baseurl\@empty
6517     \else
6518         /URI<</Base(\Hy@pstringB)>>%
6519     \fi
6520 }%
6521 \ifx\@pdfstartview\@empty
6522 \else
6523     openaction goto page \@pdfstartpage {\@pdfstartview}%
6524 \fi
6525 \edef\Hy@temp{%
6526     \ifHy@toolbar\else /HideToolbar true\fi
6527     \ifHy@menubar\else /HideMenubar true\fi
6528     \ifHy@windowui\else /HideWindowUI true\fi
6529     \ifHy@fitwindow /FitWindow true\fi
6530     \ifHy@centerwindow /CenterWindow true\fi
6531     \ifHy@displaydoctitle /DisplayDocTitle true\fi
6532     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
6533     \Hy@UseNameKey{Direction}\@pdfdirection
6534     \Hy@UseNameKey{ViewArea}\@pdfviewarea
6535     \Hy@UseNameKey{ViewClip}\@pdfviewclip
6536     \Hy@UseNameKey{PrintArea}\@pdfprintarea
6537     \Hy@UseNameKey{PrintClip}\@pdfprintclip
6538     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6539     \Hy@UseNameKey{Duplex}\@pdfduplex
6540     \ifx\@pdfpicktraybypdfsize\@empty
6541     \else
6542         /PickTrayByPDFSize \@pdfpicktraybypdfsize
6543     \fi
6544     \ifx\@pdfprintpagerange\@empty
6545     \else
6546         /PrintPageRange[\@pdfprintpagerange]%
6547     \fi
6548     \ifx\@pdfnumcopies\@empty
6549     \else
6550         /NumCopies \@pdfnumcopies
6551     \fi
6552 }%
6553 \pdfcatalog{%
6554     \ifx\Hy@temp\@empty
6555     \else
6556         /ViewerPreferences<<\Hy@temp>>%
6557     \fi
6558     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
6559     \ifx\@pdflang\@empty
6560     \else
6561         /Lang(\@pdflang)%
6562     \fi
6563 }%
6564 }

```

\PDF@FinishDoc

```

6565 \def\PDF@FinishDoc{%
6566     \Hy@UseMaketitleInfos
6567     \pdfinfo{%
6568         /Author(\@pdfauthor)%

```

```

6569 /Title(\@pdftitle)%
6570 /Subject(\@pdfsubject)%
6571 /Creator(\@pdfcreator)%
6572 \ifx\@pdfcreationdate\@empty
6573 \else
6574 /CreationDate(\@pdfcreationdate)%
6575 \fi
6576 \ifx\@pdfmoddate\@empty
6577 \else
6578 /ModDate(\@pdfmoddate)%
6579 \fi
6580 \ifx\@pdfproducer\relax
6581 \else
6582 /Producer(\@pdfproducer)%
6583 \fi
6584 /Keywords(\@pdfkeywords)%
6585 }%
6586 \Hy@DisableOption{pdfauthor}%
6587 \Hy@DisableOption{pdftitle}%
6588 \Hy@DisableOption{pdfsubject}%
6589 \Hy@DisableOption{pdfcreator}%
6590 \Hy@DisableOption{pdfcreationdate}%
6591 \Hy@DisableOption{pdfmoddate}%
6592 \Hy@DisableOption{pdfproducer}%
6593 \Hy@DisableOption{pdfkeywords}%
6594 }

```

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

```

6595 \def\hyper@pagetransition{%
6596 \ifx\@pdfpagetransition\relax
6597 \else
6598 \expandafter\Hy@RemoveTransPageAttr\the\pdfpageattr^^J/Trans{}}>>\END
6599 \ifx\@pdfpagetransition\@empty
6600 \else
6601 \edef\@processme{%
6602 \global\pdfpageattr{%
6603 \the\pdfpageattr
6604 ^^J/Trans << /S /\@pdfpagetransition\space >>%
6605 }%
6606 }%
6607 \@processme
6608 \fi
6609 \fi
6610 }

```

`\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.

```

6611 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
6612 \ifx\#2\%
6613 \global\pdfpageattr{#1}%
6614 \else
6615 \Hy@RemoveTransPageAttr#1#4\END
6616 \fi

```

6617 }

`\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`.

```

6618 \def\hyper@pageduration{%
6619   \ifx\@pdfpageduration\relax
6620   \else
6621     \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
6622     \ifx\@pdfpageduration\@empty
6623     \else
6624       \edef\@processme{%
6625         \global\pdfpageattr{%
6626           \the\pdfpageattr
6627           ^^J/Dur \@pdfpageduration\space
6628         }%
6629       }%
6630       \@processme
6631     \fi
6632   \fi
6633 }
```

`\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.

```

6634 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
6635   \ifx\#2\%
6636     \global\pdfpageattr{#1}%
6637   \else
6638     \Hy@RemoveDurPageAttr#1#4\END
6639   \fi
6640 }
```

`\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).

```

6641 \def\hyper@pagehidden{%
6642   \ifHy@useHidKey
6643     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
6644     \ifHy@pdfpagehidden
6645     \edef\@processme{%
6646       \global\pdfpageattr{%
6647         \the\pdfpageattr
6648         ^^J/Hid true % SPACE
6649       }%
6650     }%
6651     \@processme
6652   \fi
6653 \fi
6654 }
```

`\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.

```

6655 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
6656   \ifx\#2\%
6657     \global\pdfpageattr{#1}%
6658   \else
6659     \Hy@RemoveHidPageAttr#1#4\END
6660   \fi
6661 }

```

```

6662 \g@addto@macro\Hy@EveryPageHook{%
6663   \hyper@pagetransition
6664   \hyper@pageduration
6665   \hyper@pagehidden
6666 }

```

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.

```

6667 \pdfoutput=1
6668 \pdfcompresslevel=9
6669 \AtBeginDocument{%
6670   \ifHy@setpagesize
6671     \expandafter\@firstofone
6672   \else
6673     \expandafter\@gobble
6674   \fi
6675   {%
6676     \@ifclassloaded{seminar}{%
6677       \setlength{\pdfhorigin}{1truein}%
6678       \setlength{\pdfvorigin}{1truein}%
6679       \ifportrait
6680         \ifdim\paperwidth=\z@
6681         \else
6682           \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
6683         \fi
6684         \ifdim\paperheight=\z@
6685         \else
6686           \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
6687         \fi
6688       \else
6689         \ifdim\paperheight=\z@
6690         \else
6691           \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
6692         \fi
6693         \ifdim\paperwidth=\z@
6694         \else
6695           \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
6696         \fi
6697       \fi
6698     }{%
6699       \@ifundefined{stockwidth}{%
6700         \ifdim\paperwidth=\z@
6701         \else
6702           \setlength{\pdfpagewidth}{\paperwidth}%
6703         \fi
6704         \ifdim\paperheight=\z@
6705         \else
6706           \setlength{\pdfpageheight}{\paperheight}%
6707         \fi
6708       }{%

```

```

6709         \ifdim\stockwidth=\z@
6710         \else
6711             \setlength{\pdfpagewidth}{\stockwidth}%
6712         \fi
6713         \ifdim\stockheight=\z@
6714         \else
6715             \setlength{\pdfpageheight}{\stockheight}%
6716         \fi
6717     }%
6718 }%
6719 }%
6720 \Hy@DisableOption{setpagesize}%
6721 }
6722 \def\Acrobatmenu#1#2{%
6723     \leavevmode
6724     \pdfstartlink
6725     attr{%
6726         \Hy@setpdfborder
6727         \ifx\@pdfhighlight\@empty
6728         \else
6729             /H\@pdfhighlight
6730         \fi
6731         \ifx\@menubordercolor\relax
6732         \else
6733             /C[\@menubordercolor]%
6734         \fi
6735     }%
6736     user{%
6737         /Subtype/Link%
6738         /A<<%
6739         /S/Named/N/#1%
6740     >>%
6741     }%
6742     \relax
6743     \Hy@colorlink\@menucolor#2\close@pdflink
6744 }
6745 </pdfTeX>
6746 <*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.

```

6747 \def\PDF@FinishDoc{}
6748 \def\PDF@SetupDoc{%
6749   \ifx\@baseurl\@empty
6750   \else
6751     \special{html:<base href="\@baseurl">}%
6752   \fi
6753 }
6754 \def\hyper@anchor#1{%
6755   \Hy@SaveLastskip
6756   \begingroup
6757     \let\protect=\string
6758     \hyper@chars
6759     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
6760   \endgroup
6761   \Hy@activeanchortrue
6762   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6763   \special{html:</a>}%
6764   \Hy@activeanchorfalse
6765   \Hy@RestoreLastskip
6766 }
6767 \def\hyper@anchorstart#1{%
6768   \Hy@SaveLastskip
6769   \begingroup
6770     \hyper@chars
6771     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
6772   \endgroup
6773   \Hy@activeanchortrue
6774 }
6775 \def\hyper@anchorend{%
6776   \special{html:</a>}%
6777   \Hy@activeanchorfalse
6778   \Hy@RestoreLastskip
6779 }
6780 \def\@urltype{url}
6781 \def\hyper@linkstart#1#2{%
6782   \expandafter\Hy@colorlink\csname @#1color\endcsname
6783   \def\Hy@tempa{#1}%
6784   \ifx\Hy@tempa\@urltype
6785     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
6786   \else
6787     \begingroup
6788       \hyper@chars

```

```

6789      \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
6790      \endgroup
6791      \fi
6792 }
6793 \def\hyper@linkend{%
6794   \special{html:</a>}%
6795   \Hy@endcolorlink
6796 }
6797 \def\hyper@linkfile#1#2#3{%
6798   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
6799 }
6800 \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why  $\text{\LaTeX}$  constructs make this totally foul up, and make us revert to basic  $\text{\TeX}$ . I do not know.

```

6801   \leavevmode
6802   \ifHy@raiselinks
6803     \setbox\@tempboxa=\color@hbox #1\color@endbox
6804     \@linkdim\dp\@tempboxa
6805     \lower\@linkdim\hbox{%
6806       \hyper@chars
6807       \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
6808     }%
6809     \Hy@colorlink\@urlcolor#1%
6810     \@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).

```

6811     \advance\@linkdim by -6.5\p@
6812     \raise\@linkdim\hbox{\special{html:</a>}}%
6813     \Hy@endcolorlink
6814   \else
6815     \begingroup
6816     \hyper@chars
6817     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
6818     \Hy@colorlink\@urlcolor#1%
6819     \special{html:</a>}}%
6820     \Hy@endcolorlink
6821   \endgroup
6822   \fi
6823 }
6824 \def\hyper@link#1#2#3{%
6825   \hyper@linkurl{#3}{\##2}%
6826 }
6827 \def\hyper@image#1#2{%
6828   \begingroup
6829   \hyper@chars
6830   \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
6831   \endgroup
6832 }
6833 </hypertex>
6834 <*\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.

```
6835 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
6836 \def\hyper@anchor#1{%
6837   \Hy@SaveLastskip
6838   \begingroup
6839     \let\protect=\string
6840     \special{mark: #1}%
6841   \endgroup
6842   \Hy@activeanchortrue
6843   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6844   \Hy@activeanchorfalse
6845   \Hy@RestoreLastskip
6846 }
6847 \def\hyper@anchorstart#1{%
6848   \Hy@SaveLastskip
6849   \special{mark: #1}%
6850   \Hy@activeanchortrue
6851 }
6852 \def\hyper@anchorend{%
6853   \Hy@activeanchorfalse
6854   \Hy@RestoreLastskip
6855 }
6856 \def\hyper@linkstart#1#2{%
6857   \expandafter\Hy@colorlink\csname @#1color\endcsname
6858   \special{button: %
6859     10000000 %
6860     \number\baselineskip\space
6861     #2%
6862   }%
6863 }
6864 \def\hyper@linkend{%
6865   \Hy@endcolorlink
6866 }
6867 \def\hyper@link#1#2#3{%
6868   \setbox\@tempboxa=\color@hbox #3\color@endbox
6869   \leavevmode
6870   \ifHy@raiselinks
6871     \@linkdim\dp\@tempboxa
6872     \lower\@linkdim\hbox{%
6873       \special{button: %
6874         \number\wd\@tempboxa\space
6875         \number\ht\@tempboxa\space
6876         #2%
6877       }%
6878       \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
6879       \Hy@endcolorlink
```



```

6880     }%
6881     \@linkdim\ht\@tempboxa
6882     \advance\@linkdim by -6.5\p@
6883     \raise\@linkdim\hbox{}%
6884 \else
6885     \special{button: %
6886         \number\wd\@tempboxa\space
6887         \number\ht\@tempboxa\space
6888         #2%
6889     }%
6890     \exandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
6891 \fi
6892 }
6893 \def\hyper@linkurl#1#2{%
6894     \begingroup
6895     \hyper@chars
6896     \leavevmode
6897     \setbox\@tempboxa=\color@hbox #1\color@endbox
6898     \ifHy@raiselinks
6899         \@linkdim\dp\@tempboxa
6900         \lower\@linkdim\hbox{%
6901             \special{button: %
6902                 \number\wd\@tempboxa\space
6903                 \number\ht\@tempboxa\space
6904                 launch: \wwwbrowser\space
6905                 #2%
6906             }%
6907             \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6908         }%
6909         \@linkdim\ht\@tempboxa
6910         \advance\@linkdim by -6.5\p@
6911         \raise\@linkdim\hbox{}%
6912     \else
6913         \special{button: %
6914             \number\wd\@tempboxa\space
6915             \number\ht\@tempboxa\space
6916             launch: \wwwbrowser\space
6917             #2%
6918         }%
6919         \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6920     \fi
6921 \endgroup
6922 }
6923 \def\hyper@linkfile#1#2#3{%
6924     \begingroup
6925     \hyper@chars
6926     \leavevmode
6927     \setbox\@tempboxa=\color@hbox #1\color@endbox
6928     \ifHy@raiselinks
6929         \@linkdim\dp\@tempboxa
6930         \lower\@linkdim\hbox{%
6931             \special{button: %
6932                 \number\wd\@tempboxa\space
6933                 \number\ht\@tempboxa\space
6934                 #3,%
6935                 file: #2%
6936             }%

```

```

6937         \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6938     }%
6939     \@linkdim\ht\@tempboxa
6940     \advance\@linkdim by -6.5\p@
6941     \raise\@linkdim\hbox{}}%
6942 \else
6943     \special{button: %
6944         \number\wd\@tempboxa\space
6945         \number\ht\@tempboxa\space
6946         #3,%
6947         file: #2%
6948     }%
6949     \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6950 \fi
6951 \endgroup
6952 }
6953 \ifx\@pdfproducer\relax
6954 \def\@pdfproducer{dviwindo + Distiller}%
6955 \fi
6956 \def\PDF@FinishDoc{%
6957     \Hy@UseMaketitleInfos
6958     \special{PDF: Keywords \@pdfkeywords}%
6959     \special{PDF: Title \@pdftitle}%
6960     \special{PDF: Creator \@pdfcreator}%
6961     \ifx\@pdfcreationdate\@empty
6962     \else
6963         \special{PDF: CreationDate \@pdfcreationdate}%
6964     \fi
6965     \ifx\@pdfmoddate\@empty
6966     \else
6967         \special{PDF: ModDate \@pdfmoddate}%
6968     \fi
6969     \special{PDF: Author \@pdfauthor}%
6970     \ifx\@pdfproducer\relax
6971     \else
6972         \special{PDF: Producer \@pdfproducer}%
6973     \fi
6974     \special{PDF: Subject \@pdfsubject}%
6975     \Hy@DisableOption{pdfauthor}%
6976     \Hy@DisableOption{pdftitle}%
6977     \Hy@DisableOption{pdfsubject}%
6978     \Hy@DisableOption{pdfcreator}%
6979     \Hy@DisableOption{pdfcreationdate}%
6980     \Hy@DisableOption{pdfmoddate}%
6981     \Hy@DisableOption{pdfproducer}%
6982     \Hy@DisableOption{pdfkeywords}%
6983 }
6984 \def\PDF@SetupDoc{%
6985     \ifx\@baseurl\@empty
6986     \else
6987         \special{PDF: Base \@baseurl}%
6988     \fi
6989     \ifx\@pdfpagescrop\@empty\else
6990         \special{PDF: BBox \@pdfpagescrop}%
6991     \fi
6992     \pdfmark{pdfmark=/DOCVIEW,%
6993         Page=\@pdfstartpage,%

```

```

6994     View=\@pdfstartview,%
6995     PageMode=/\@pdfpagemode
6996 }%
6997 \ifx\@pdfpagescrop\@empty
6998 \else
6999     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7000 \fi
7001 \edef\Hy@temp{%
7002     \ifHy@toolbar\else /HideToolbar true\fi
7003     \ifHy@menubar\else /HideMenubar true\fi
7004     \ifHy@windowui\else /HideWindowUI true\fi
7005     \ifHy@fitwindow /FitWindow true\fi
7006     \ifHy@centerwindow /CenterWindow true\fi
7007     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7008     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7009     \Hy@UseNameKey{Direction}\@pdfdirection
7010     \Hy@UseNameKey{ViewArea}\@pdfviewarea
7011     \Hy@UseNameKey{ViewClip}\@pdfviewclip
7012     \Hy@UseNameKey{PrintArea}\@pdfprintarea
7013     \Hy@UseNameKey{PrintClip}\@pdfprintclip
7014     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7015     \Hy@UseNameKey{Duplex}\@pdfduplex
7016     \ifx\@pdfpicktraybypdfsize\@empty
7017     \else
7018         /PickTrayByPDFSize \@pdfpicktraybypdfsize
7019     \fi
7020     \ifx\@pdfprintpagerange\@empty
7021     \else
7022         /PrintPageRange[\@pdfprintpagerange]%
7023     \fi
7024     \ifx\@pdfnumcopies\@empty
7025     \else
7026         /NumCopies \@pdfnumcopies
7027     \fi
7028 }%
7029 \pdfmark{pdfmark=/PUT,%
7030     Raw={%
7031         \string{Catalog\string}<<%
7032         \ifx\Hy@temp\@empty
7033         \else
7034             /ViewerPreferences<<\Hy@temp>>%
7035         \fi
7036         \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7037         \ifx\@pdflang\@empty
7038         \else
7039             /Lang(\@pdflang)%
7040         \fi
7041         >>%
7042     }%
7043 }%
7044 }
7045 </dviwindo>
7046 <*dviPDFm>

```

## 46.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

7047 \newsavebox{\pdfm@box}
7048 \def\@pdfm@mark#1{\special{pdf:#1}}
7049 \def\@pdfm@dest#1{%
7050   \Hy@SaveLastskip
7051   \beginngroup
7052     \Hy@pstringdef\Hy@pstringDest{#1}%
7053     \def\x{XYZ}%
7054     \ifx\x\@pdfview
7055       \def\x{XYZ @xpos @ypos null}%
7056     \else
7057       \def\x{FitH}%
7058       \ifx\x\@pdfview
7059         \def\x{FitH @ypos}%
7060       \else
7061         \def\x{FitBH}%
7062         \ifx\x\@pdfview
7063           \def\x{FitBH @ypos}%
7064         \else
7065           \def\x{FitV}%
7066           \ifx\x\@pdfview
7067             \def\x{FitV @xpos}%
7068           \else
7069             \def\x{FitBV}%
7070             \ifx\x\@pdfview
7071               \def\x{FitBV @xpos}%
7072             \else
7073               \def\x{Fit}%
7074               \ifx\x\@pdfview
7075                 \let\x\@pdfview
7076               \else
7077                 \def\x{FitB}%
7078                 \ifx\x\@pdfview
7079                   \let\x\@pdfview
7080                 \else
7081                   \def\x{FitR}%
7082                   \ifx\x\@pdfview
7083                     \Hy@Warning{'pdfview=FitR' is not supported}%
7084                     \def\x{XYZ @xpos @ypos null}%
7085                   \else
7086                     \@onelevel@sanitize\@pdfview
7087                     \Hy@Warning{Unknown value '\@pdfview' for pdfview}%
7088                     \def\x{XYZ @xpos @ypos null}%
7089                   \fi
7090                 \fi
7091               \fi
7092             \fi
7093           \fi
7094         \fi
7095       \fi
7096     \fi
7097     \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
7098   \endgroup
7099   \Hy@RestoreLastskip
7100 }
7101 \providecommand*\@pdfview{XYZ}
7102 \providecommand*\@pdfborder{0 0 1}
7103 \providecommand*\@pdfborderstyle{}

```

```

7104 \def\hyper@anchor#1{%
7105   \@pdfm@dest{#1}%
7106 }
7107 \def\hyper@anchorstart#1{%
7108   \Hy@activeanchortrue
7109   \@pdfm@dest{#1}%
7110 }
7111 \def\hyper@anchorend{%
7112   \Hy@activeanchorfalse
7113 }
7114 \def\Hy@undefinedname{UNDEFINED}
7115 \def\hyper@linkstart#1#2{%
7116   \protected@edef\Hy@testname{#2}%
7117   \ifx\Hy@testname\@empty
7118     \let\Hy@testname\Hy@undefinedname
7119   \else
7120     \Hy@pstringdef\Hy@testname\Hy@testname
7121   \fi
7122   \@pdfm@mark{%
7123     bann<<%
7124     /Type/Annot%
7125     /Subtype/Link%
7126     \Hy@setpdfborder
7127     \expandafter\ifx\csname @#1bordercolor\endcsname\relax
7128     \else
7129       /C[\csname @#1bordercolor\endcsname]%
7130     \fi
7131     /A<<%
7132     /S/GoTo%
7133     /D(\Hy@testname)%
7134     >>%
7135     >>%
7136   }%
7137   \expandafter\Hy@colorlink\csname @#1color\endcsname
7138 }
7139 \def\hyper@linkend{%
7140   \Hy@endcolorlink
7141   \@pdfm@mark{eann}%
7142 }
7143 \def\hyper@link#1#2#3{%
7144   \hyper@linkstart{#1}{#2}#3\hyper@linkend
7145 }
7146 \def\hyper@linkfile#1#2#3{%
7147   \Hy@pstringdef\Hy@pstringF{#2}%
7148   \Hy@pstringdef\Hy@pstringD{#3}%
7149   \leavevmode
7150   \@pdfm@mark{%
7151     bann<<%
7152     /Type/Annot%
7153     /Subtype/Link%
7154     \Hy@setpdfborder
7155     \ifx\@filebordercolor\relax
7156     \else
7157       /C[\@filebordercolor]%
7158     \fi
7159     /A<<%
7160     /S/GoToR%

```

```

7161         /F(\Hy@pstringF)%
7162         /D\ifx\#3\[0 \@pdfstartview]\else(\Hy@pstringD)\fi
7163         \Hy@SetNewWindow
7164     >>%
7165 >>%
7166 }%
7167 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7168 \@pdfmark{eann}%
7169 }
7170 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
7171 \Hy@pstringdef\Hy@pstringF{#1}%
7172 \Hy@pstringdef\Hy@pstringP{#3}%
7173 \leavevmode
7174 \@pdfmark{%
7175     bann<<%
7176     /Type/Annot%
7177     /Subtype/Link%
7178     \Hy@setpdfborder
7179     \ifx\@runbordercolor\relax
7180     \else
7181         /C[\@runbordercolor]%
7182     \fi
7183     /A<<%
7184     /S/Launch%
7185     /F(\Hy@pstringF)%
7186     \Hy@SetNewWindow
7187     \ifx\#3\%
7188     \else
7189         /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
7190     \fi
7191     >>%
7192 >>%
7193 }%
7194 \Hy@colorlink\@runcolor#2\Hy@endcolorlink
7195 \@pdfmark{eann}%
7196 }
7197 \def\hyper@linkurl#1#2{%
7198 \Hy@pstringdef\Hy@pstringURI{#2}%
7199 \leavevmode
7200 \@pdfmark{%
7201     bann<<%
7202     /Type/Annot%
7203     /Subtype/Link%
7204     \Hy@setpdfborder
7205     \ifx\@urlbordercolor\relax
7206     \else
7207         /C[\@urlbordercolor]%
7208     \fi
7209     /A<<%
7210     /S/URI%
7211     /URI(\Hy@pstringURI)%
7212     >>%
7213 >>%
7214 }%
7215 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7216 \@pdfmark{eann}%
7217 }

```

```

7218 \def\Acrobatmenu#1#2{%
7219   \leavevmode
7220   \@pdfm@mark{%
7221     bann<<%
7222     /Type/Annot%
7223     /Subtype/Link%
7224     /A<<%
7225     /S/Named%
7226     /N/#1%
7227     >>%
7228     \Hy@setpdfborder
7229     \ifx\@menubordercolor\relax
7230       \relax
7231       /C[\@menubordercolor]%
7232     \fi
7233     >>%
7234   }%
7235   \Hy@colorlink\@menucolor#2\Hy@endcolorlink
7236   \@pdfm@mark{eann}%
7237 }
7238 \ifx\@pdfproducer\relax
7239   \def\@pdfproducer{dvipdfm}%
7240 \fi
7241 \def\PDF@FinishDoc{%
7242   \Hy@UseMaketitleInfos
7243   \@pdfm@mark{%
7244     docinfo<<%
7245     /Title(\@pdftitle)%
7246     /Subject(\@pdfsubject)%
7247     /Creator(\@pdfcreator)%
7248     \ifx\@pdfcreationdate\@empty
7249       \else
7250         /CreationDate(\@pdfcreationdate)%
7251       \fi
7252     \ifx\@pdfmoddate\@empty
7253       \else
7254         /ModDate(\@pdfmoddate)%
7255       \fi
7256     /Author(\@pdfauthor)%
7257     \ifx\@pdfproducer\relax
7258       \else
7259         /Producer(\@pdfproducer)%
7260       \fi
7261     /Keywords(\@pdfkeywords)%
7262     >>%
7263   }%
7264   \Hy@DisableOption{pdfauthor}%
7265   \Hy@DisableOption{pdftitle}%
7266   \Hy@DisableOption{pdfsubject}%
7267   \Hy@DisableOption{pdfcreator}%
7268   \Hy@DisableOption{pdfcreationdate}%
7269   \Hy@DisableOption{pdfmoddate}%
7270   \Hy@DisableOption{pdfproducer}%
7271   \Hy@DisableOption{pdfkeywords}%
7272 }
7273 \def\PDF@SetupDoc{%
7274   \edef\Hy@temp{%

```

```

7275 \ifHy@toolbar\else /HideToolbar true\fi
7276 \ifHy@menubar\else /HideMenubar true\fi
7277 \ifHy@windowui\else /HideWindowUI true\fi
7278 \ifHy@fitwindow /FitWindow true\fi
7279 \ifHy@centerwindow /CenterWindow true\fi
7280 \ifHy@displaydoctitle /DisplayDocTitle true\fi
7281 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7282 \Hy@UseNameKey{Direction}\@pdfdirection
7283 \Hy@UseNameKey{ViewArea}\@pdfviewarea
7284 \Hy@UseNameKey{ViewClip}\@pdfviewclip
7285 \Hy@UseNameKey{PrintArea}\@pdfprintarea
7286 \Hy@UseNameKey{PrintClip}\@pdfprintclip
7287 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7288 \Hy@UseNameKey{Duplex}\@pdfduplex
7289 \ifx\@pdfpicktraybypdfsize\@empty
7290 \else
7291 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7292 \fi
7293 \ifx\@pdfprintpagerange\@empty
7294 \else
7295 /PrintPageRange[\@pdfprintpagerange]%
7296 \fi
7297 \ifx\@pdfnumcopies\@empty
7298 \else
7299 /NumCopies \@pdfnumcopies
7300 \fi
7301 }%
7302 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7303 \@pdfm@mark{%
7304 docview<<%
7305 \ifx\@pdfstartview\@empty
7306 \else
7307 /OpenAction[\@page\@pdfstartpage\@pdfstartview]%
7308 \fi
7309 \ifx\@baseurl\@empty
7310 \else
7311 /URI<</Base(\Hy@pstringB)>>%
7312 \fi
7313 /PageMode/\@pdfpagemode
7314 \ifx\Hy@temp\@empty
7315 \else
7316 /ViewerPreferences<<\Hy@temp>>%
7317 \fi
7318 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7319 \ifx\@pdflang\@empty
7320 \else
7321 /Lang(\@pdflang)%
7322 \fi
7323 >>%
7324 }%
7325 \ifx\@pdfpagescrop\@empty
7326 \else
7327 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
7328 \fi
7329 }
7330 </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.

```
7331 \*vtexhtml
7332 \RequirePackage{vtexhtml}
7333 \newif\if@Localurl
7334 \def\PDF@FinishDoc{}
7335 \def\PDF@SetupDoc{%
7336   \ifx\@baseurl\@empty
7337   \else
7338     \special{!direct <base href="\@baseurl">}%
7339   \fi
7340 }
7341 \def\@urltype{url}
7342 \def\hyper@link#1#2#3{%
7343   \leavevmode
7344   \special{!direct <a href=\hyper@quote\hyper@hash#2\hyper@quote>}%
7345   #3%
7346   \special{!direct </a>}%
7347 }
7348 \def\hyper@linkurl#1#2{%
7349   \begingroup
7350     \hyper@chars
7351     \leavevmode
7352     \MathBSuppress=1\relax
7353     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
7354     #1%
7355     \MathBSuppress=0\relax
7356     \special{!direct </a>}%
7357   \endgroup
7358 }
7359 \def\hyper@linkfile#1#2#3{%
7360   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
7361 }
7362 \def\hyper@linkstart#1#2{%
7363   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
7364     \@Localurltrue
7365     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
7366   \else
7367     \@Localurlfalse
7368     \begingroup
7369       \hyper@chars
7370       \special{!aref #2}%
7371     \endgroup
7372   \fi
7373 }
7374 \def\hyper@linkend{%
7375   \if@Localurl
7376     \special{!endaref}%
7377   \else
7378     \special{!direct </a>}%
7379   \fi
7380 }
7381 \def\hyper@anchorstart#1{%
7382   \Hy@SaveLastskip
7383   \begingroup
```

```

7384 \hyper@chars
7385 \special{!aname #1}%
7386 \special{!direct <a name=\hyper@quote#1\hyper@quote>}%
7387 \endgroup
7388 \Hy@activeanchortrue
7389 }
7390 \def\hyper@anchorend{%
7391 \special{!direct </a>}%
7392 \Hy@activeanchorfalse
7393 \Hy@RestoreLastskip
7394 }
7395 \def\hyper@anchor#1{%
7396 \Hy@SaveLastskip
7397 \begingroup
7398 \let\protect=\string
7399 \hyper@chars
7400 \leavevmode
7401 \special{!aname #1}%
7402 \special{!direct <a name=\hyper@quote #1\hyper@quote>}%
7403 \endgroup
7404 \Hy@activeanchortrue
7405 \bgroup\anchor@spot\egroup
7406 \special{!direct </a>}%
7407 \Hy@activeanchorfalse
7408 \Hy@RestoreLastskip
7409 }
7410 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
7411 \def\@endForm{}
7412 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7413 \typeout{Sorry, TeXpider does not yet support FORM gauges}%
7414 }
7415 \def\@TextField[#1]#2{% parameters, label
7416 \typeout{Sorry, TeXpider does not yet support FORM text fields}%
7417 }
7418 \def\@CheckBox[#1]#2{% parameters, label
7419 \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
7420 }
7421 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7422 \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
7423 }
7424 \def\@PushButton[#1]#2{% parameters, label
7425 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
7426 }
7427 \def\@Reset[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
7428 \def\@Submit[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
7429 </vtexhtml>
7430 <*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.

```

7431 \ifx\mediaheight\@undefined
7432 \else
7433 \ifx\mediaheight\relax
7434 \else
7435 \ifHy@setpagesize
7436 \providecommand*{\VTeXInitMediaSize}{%

```

```

7437     \ifundefined{stockwidth}{%
7438         \ifdim\paperheight>0pt %
7439             \setlength\mediaheight\paperheight
7440         \fi
7441         \ifdim\paperheight>0pt %
7442             \setlength\mediawidth\paperwidth
7443         \fi
7444     }{%
7445         \ifdim\stockheight>0pt %
7446             \setlength\mediaheight\stockheight
7447         \fi
7448         \ifdim\stockwidth>0pt %
7449             \setlength\mediawidth\stockwidth
7450         \fi
7451     }%
7452 }%
7453 \AtBeginDocument{\VTeXInitMediaSize}%
7454 \fi
7455 \Hy@DisableOption{setpagesize}%
7456 \fi
7457 \fi

```

Older versions of VTeX require xyz in lower case.

```

7458 \providecommand*\@pdfview{xyz}
7459 \providecommand*\@pdfborder{0 0 1}
7460 \providecommand*\@pdfborderstyle{}
7461 \let\CurrentBorderColor\@linkbordercolor
7462 \def\hyper@anchor#1{%
7463     \Hy@SaveLastskip
7464     \begingroup
7465         \let\protect=\string
7466         \hyper@chars
7467         \special{!aname #1;\@pdfview}%
7468     \endgroup
7469     \Hy@activeanchortrue
7470     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7471     \Hy@activeanchorfalse
7472     \Hy@RestoreLastskip
7473 }
7474 \def\hyper@anchorstart#1{%
7475     \Hy@SaveLastskip
7476     \begingroup
7477         \hyper@chars
7478         \special{!aname #1;\@pdfview}%
7479     \endgroup
7480     \Hy@activeanchortrue
7481 }
7482 \def\hyper@anchorend{%
7483     \Hy@activeanchorfalse
7484     \Hy@RestoreLastskip
7485 }
7486 \def\@urltype{url}
7487 \def\Hy@undefinedname{UNDEFINED}
7488 \def\hyper@linkstart#1#2{%
7489     \Hy@opstringdef\Hy@pstringURI{#2}%
7490     \expandafter\Hy@colorlink\csname @#1color\endcsname
7491     \ifundefined{#@1bordercolor}{%
7492         \let\CurrentBorderColor\relax

```

```

7493 }{%
7494   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
7495 }%
7496 \def\Hy@tempa{#1}%
7497 \ifx\Hy@tempa\@urlltype
7498   \special{!%
7499     aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
7500     a=<%
7501       \Hy@setpdfborder
7502       \ifx\CurrentBorderColor\relax
7503       \else
7504         /C [\CurrentBorderColor]%
7505       \fi
7506     >%
7507   }%
7508 \else
7509   \protected@edef\Hy@testname{#2}%
7510   \ifx\Hy@testname\@empty
7511     \let\Hy@testname\Hy@undefinedname
7512   \fi
7513   \special{!%
7514     aref \Hy@testname;%
7515     a=<%
7516       \Hy@setpdfborder
7517       \ifx\CurrentBorderColor\relax
7518       \else
7519         /C [\CurrentBorderColor]%
7520       \fi
7521     >%
7522   }%
7523   \fi
7524 }
7525 \def\hyper@linkend{%
7526   \special{!endaref}%
7527   \Hy@endcolorlink
7528 }
7529 \def\hyper@linkfile#1#2#3{%
7530   \leavevmode
7531   \special{!%
7532     aref <%
7533     \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
7534     f=#2>#3;%
7535     a=<%
7536       \Hy@setpdfborder
7537       \ifx\@filebordercolor\relax
7538       \else
7539         /C [\@filebordercolor]%
7540       \fi
7541     >%
7542   }%
7543   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7544   \special{!endaref}%
7545 }
7546 \def\hyper@linkurl#1#2{%
7547   \begingroup
7548   \Hy@pstringdef\Hy@pstringURI{#2}%
7549   \hyper@chars

```

```

7550 \leavevmode
7551 \special{!%
7552   aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
7553   a=<%
7554     \Hy@setpdfborder
7555     \ifx\@urlbordercolor\relax
7556     \else
7557       /C [\@urlbordercolor]%
7558     \fi
7559   >%
7560   }%
7561   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7562   \special{!endaref}%
7563 \endgroup
7564 }
7565 \def\hyper@link#1#2#3{%
7566   \@ifundefined{@#1bordercolor}{%
7567     \let\CurrentBorderColor\relax
7568   }{%
7569     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
7570   }%
7571   \leavevmode
7572   \protected@edef\Hy@testname{#2}%
7573   \ifx\Hy@testname\@empty
7574     \let\Hy@testname\Hy@undefinedname
7575   \fi
7576   \special{!%
7577     aref \Hy@testname;%
7578     a=<%
7579       \Hy@setpdfborder
7580       \ifx\CurrentBorderColor\relax
7581       \else
7582         /C [\CurrentBorderColor]%
7583       \fi
7584     >%
7585     }%
7586   \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
7587   \special{!endaref}%
7588 }
7589 \def\hyper@image#1#2{%
7590   \hyper@linkurl{#2}{#1}%
7591 }
7592 \def\@hyper@launch run:#1\#2#3{%
7593   \Hy@pstringdef\Hy@pstringF{#1}%
7594   \Hy@pstringdef\Hy@pstringP{#3}%
7595   \leavevmode
7596   \special{!aref %
7597     <u=%
7598     /Type/Action%
7599     /S/Launch%
7600     /F(\Hy@pstringF)%
7601     \Hy@SetNewWindow
7602     \ifx\#3\@empty /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>\fi%
7603   >;%
7604   a=<%
7605     \Hy@setpdfborder
7606     \ifx\@runbordercolor\relax

```

```

7607     \else
7608         /C[\@runbordercolor]%
7609     \fi
7610 >%
7611 }%
7612 \Hy@colorlink\@runcolor#2\Hy@endcolorlink
7613 \special{!endaref}%
7614 }
7615 \def\Acrobatmenu#1#2{%
7616     \leavevmode
7617     \special{!%
7618         aref <u=/S /Named /N /#1>;%
7619         a=<%
7620             \Hy@setpdfborder
7621             \ifx\@menubordercolor\relax
7622                 \else
7623                     /C[\@menubordercolor]%
7624                 \fi
7625             >%
7626         }%
7627     \Hy@colorlink\@menucolor#2\Hy@endcolorlink
7628     \special{!endaref}%
7629 }

```

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

The code below makes sense for  $\text{\TeX}$  7.02 or later.

Please never use  $\text{\@ifundefined\TeXversion}\{..\}\{..\}$  globally.

```

7630 \ifnum\Hy@TeXversion<702 %
7631 \else
7632     \def\hyper@pagetransition{%
7633         \ifx\@pdfpagetransition\relax
7634         \else
7635             \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

7636     \else
7637         \hvtex@parse@trans\@pdfpagetransition
7638     \fi
7639 \fi
7640 }%

```

I have to write an “honest” parser to convert raw PDF code into  $\text{\TeX}$   $\text{\special}$ .  
(AVK)

Syntax of  $\text{\TeX}$   $\text{\special}\{!trans <transition\_effect>\}$ :

```

<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 | 0
<transition_duration> ::= <number>

```

Transition codes:

```

7641 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
7642 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
7643 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
7644 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
7645 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
7646 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
7647 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

7648 \def\hvtex@par@dimension{/Dm}%
7649 \def\hvtex@par@direction{/Di}%
7650 \def\hvtex@par@duration{/D}%
7651 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

7652 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}%

```

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

```

7653 \def\hvtex@gettoken@#1 #2\@nil{%
7654   \edef\hvtex@token{#1}%
7655   \edef\hvtex@buffer{#2}%
7656 }%
7657 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

7658 \let\hvtex@trans@code\@empty
7659 \let\hvtex@param@dimension\@empty
7660 \let\hvtex@param@direction\@empty
7661 \let\hvtex@param@duration\@empty
7662 \let\hvtex@param@motion\@empty
7663 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

7664 \hvtex@gettoken
7665 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

7666 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

7667 \else
7668 \hvtex@gettoken
7669 \fi
7670 \fi
7671 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

7672 \hvtex@trans@params
7673 }%

```

Reentrant macro to parse optional parameters.

```

7674 \def\hvtex@trans@params{%
7675 \ifx\hvtex@buffer\@empty
7676 \else
7677 \hvtex@gettoken
7678 \let\hvtex@trans@par\hvtex@token
7679 \ifx\hvtex@buffer\@empty

```

```

7680     \else
7681     \hvtex@gettoken
7682     \ifx\hvtex@trans@par\hvtex@par@duration

```

/D is the effect duration in seconds. VTeX special takes it in milliseconds.

```

7683     \let\hvtex@param@duration\hvtex@token
7684     \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

7685     \expandafter\edef\expandafter\hvtex@param@motion
7686     \expandafter{\expandafter\@gobble\hvtex@token}%
7687     \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

7688     \expandafter\edef\expandafter\hvtex@param@dimension
7689     \expandafter{\expandafter\@gobble\hvtex@token}%
7690     \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).

```

7691     \let\hvtex@param@direction\hvtex@token
7692     \fi\fi\fi\fi
7693     \fi
7694     \fi
7695     \ifx\hvtex@buffer\@empty
7696     \let\next\hvtex@produce@trans
7697     \else
7698     \let\next\hvtex@trans@params
7699     \fi
7700     \next
7701 }%

```

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

```

7702 \def\hvtex@produce@trans{%
7703 \let\vtex@trans@special\@empty
7704 \if S\hvtex@trans@code
7705 \edef\vtex@trans@special{\hvtex@trans@code
7706 \hvtex@param@dimension\hvtex@param@motion}%
7707 \else \if B\hvtex@trans@code
7708 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@dimension}%
7709 \else \if X\hvtex@trans@code
7710 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@motion}%
7711 \else \if W\hvtex@trans@code
7712 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
7713 \else \if D\hvtex@trans@code
7714 \let\vtex@trans@special\hvtex@trans@code
7715 \else \if R\hvtex@trans@code
7716 \let\vtex@trans@special\hvtex@trans@code
7717 \else \if G\hvtex@trans@code
7718 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
7719 \fi\fi\fi\fi\fi\fi
7720 \ifx\vtex@trans@special\@empty
7721 \else
7722 \ifx\hvtex@param@duration\@empty
7723 \else
7724 \setlength{\dimen@}{\hvtex@param@duration\p}%

```

I'm not guilty of possible overflow.

```

7725 \multiply\dimen@\@m

```



```

7726         \edef\vtex@trans@special{\vtex@trans@special,\strip@pt\dimen@}%
7727         \fi

And all the mess is just for this.

7728         \special{!trans \vtex@trans@special}%
7729         \fi
7730     }%

7731     \def\hyper@pageduration{%
7732         \ifx\@pdfpageduration\relax
7733         \else
7734             \ifx\@pdfpageduration\@empty
7735                 \special{!duration-}%
7736             \else
7737                 \special{!duration \@pdfpageduration}%
7738             \fi
7739         \fi
7740     }%

7741     \def\hyper@pagehidden{%
7742         \ifHy@useHidKey
7743             \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
7744         \fi
7745     }%

7746     \g@addto@macro\Hy@EveryPageBoxHook{%
7747         \hyper@pagetransition
7748         \hyper@pageduration
7749         \hyper@pagehidden
7750     }%
7751 \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

```

7752 \ifx\@pdfproducer\relax
7753 \def\@pdfproducer{VTeX}%
7754 \ifnum\Hy@VTeXversion>\z@
7755     \count@\VTeXversion
7756     \divide\count@ 100 %
7757     \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
7758     \multiply\count@ -100 %
7759     \advance\count@\VTeXversion
7760     \edef\@pdfproducer{%
7761         \@pdfproducer
7762         .\ifnum\count@<10 0\fi\the\count@
7763     \ifx\VTeXOS\@undefined\else
7764         \ifnum\VTeXOS>0 %
7765             \ifnum\VTeXOS<6 %
7766                 \space(
7767                 \ifcase\VTeXOS
7768                 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
7769                 \fi

```

```

7770         )%
7771     \fi
7772 \fi
7773 \fi
7774 ,\space
7775 \ifnum\OpMode=\@ne PDF\else PS\fi
7776 \space backend%
7777 \ifx\gexmode\@undefined\else
7778     \ifnum\gexmode>\z@\space with GeX\fi
7779 \fi
7780 }%
7781 \fi
7782 \fi

```

Current !pdfinfo key syntax:

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

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

```

7783 \def\PDF@SetupDoc{%
7784 \ifx\@pdfpagescrop\@empty
7785 \else
7786 \special{!pdfinfo b=<\@pdfpagescrop>}%
7787 \fi
7788 \special{!onopen Page\@pdfstartpage}%
7789 \special{!pdfinfo p=</\@pdfpagemode>}%
7790 \ifx\@baseurl\@empty
7791 \else
7792 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
7793 \fi
7794 \special{!pdfinfo v=<<<%
7795 \ifHy@toolbar\else /HideToolbar true\fi
7796 \ifHy@menubar\else /HideMenubar true\fi
7797 \ifHy>windowui\else /HideWindowUI true\fi
7798 \ifHy@fitwindow /FitWindow true\fi
7799 \ifHy@centerwindow /CenterWindow true\fi
7800 \ifHy@displaydoctitle /DisplayDocTitle true\fi
7801 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7802 \Hy@UseNameKey{Direction}\@pdfdirection
7803 \Hy@UseNameKey{ViewArea}\@pdfviewarea
7804 \Hy@UseNameKey{ViewClip}\@pdfviewclip
7805 \Hy@UseNameKey{PrintArea}\@pdfprintarea
7806 \Hy@UseNameKey{PrintClip}\@pdfprintclip
7807 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7808 \Hy@UseNameKey{Duplex}\@pdfduplex
7809 \ifx\@pdfpicktraybypdfsize\@empty
7810 \else
7811 /PickTrayByPDFSize \@pdfpicktraybypdfsize

```

```

7812 \fi
7813 \ifx\@pdfprintpagerange\@empty
7814 \else
7815 /PrintPageRange[\@pdfprintpagerange]%
7816 \fi
7817 \ifx\@pdfnumcopies\@empty
7818 \else
7819 /NumCopies \@pdfnumcopies
7820 \fi
7821 >>>}%
7822 \ifx\@pdfpagelayout\@empty
7823 \else
7824 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
7825 \fi
7826 }%
7827 \def\PDF@FinishDoc{%
7828 \Hy@UseMaketitleInfos
7829 \special{!pdfinfo a=<\@pdfauthor>}%
7830 \special{!pdfinfo t=<\@pdftitle>}%
7831 \special{!pdfinfo s=<\@pdfsubject>}%
7832 \special{!pdfinfo c=<\@pdfcreator>}%
7833 \ifx\@pdfproducer\relax
7834 \else
7835 \special{!pdfinfo r=<\@pdfproducer>}%
7836 \fi
7837 \special{!pdfinfo k=<\@pdfkeywords>}%
7838 \Hy@DisableOption{pdfauthor}%
7839 \Hy@DisableOption{pdftitle}%
7840 \Hy@DisableOption{pdfsubject}%
7841 \Hy@DisableOption{pdfcreator}%
7842 \Hy@DisableOption{pdfcreationdate}%
7843 \Hy@DisableOption{pdfmoddate}%
7844 \Hy@DisableOption{pdfproducer}%
7845 \Hy@DisableOption{pdfkeywords}%
7846 }
7847 \</vtx>

```

## 46.7 Fix for Adobe bug number 466320

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

```

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

```

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

```

7848 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
7849 <package>\providecommand*\Hy@DistillerDestFix{}
7850 <*pdfmark | dviwindo>
7851 \def\Hy@DistillerDestFix{%
7852 \begingroup
7853 \let\x\literalps@out

```

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

```

7854 \ifnum \@ifundefined{OpMode}{0}{%
7855 \@ifundefined{gexmode}{0}{%
7856 \ifnum\gexmode>0 \OpMode\else 0\fi
7857 }>1 %
7858 \def\x##1{%
7859 \immediate\special{!=##1}%
7860 }%
7861 \fi
7862 \x{%
7863 /product where{%
7864 pop %
7865 product(Distiller)search{%
7866 pop pop pop %
7867 version(.)search{%
7868 exch pop exch pop%
7869 (3011)eq{%
7870 gsave %
7871 newpath 0 0 moveto closepath clip%
7872 /Courier findfont 10 scalefont setfont %
7873 72 72 moveto(.)show %
7874 grestore%
7875 }if%
7876 }{pop}ifelse%
7877 }{pop}ifelse%
7878 }if%
7879 }%
7880 \endgroup
7881 }
7882 </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

```

```

7883 <*pdfmark | dvipdf>
7884 \def\hyper@anchor#1{%
7885 \Hy@SaveLastskip
7886 \begingroup
7887 \pdfmark[\anchor@spot]{%
7888 pdfmark=/DEST,%
7889 linktype=anchor,%
7890 View=/\@pdfview \@pdfviewparams,%
7891 DestAnchor={#1}%
7892 }%
7893 \endgroup
7894 \Hy@RestoreLastskip

```

```

7895 }
7896 <*/dvipdf>
7897 \def\hyper@anchorstart#1{\Hy@activeanchortrue}
7898 \def\hyper@anchorend{\Hy@activeanchorfalse}
7899 \def\hyper@linkstart#1#2{%
7900   \expandafter\Hy@colorlink\csname @#1color\endcsname
7901   \xdef\hyper@currentanchor{#2}%
7902 }
7903 \def\hyper@linkend{%
7904   \Hy@endcolorlink
7905 }
7906 </dvipdf>
7907 <*/pdfmark>
7908 \ifundefined{hyper@anchorstart}{-}{\endinput}
7909 \def\hyper@anchorstart#1{%
7910   \Hy@SaveLastskip
7911   \literalps@out{H.S}%
7912   \xdef\hyper@currentanchor{#1}%
7913   \Hy@activeanchortrue
7914 }
7915 \def\hyper@anchorend{%
7916   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
7917   \pdfmark{%
7918     pdfmark=/DEST,%
7919     linktype=anchor,%
7920     View=/\@pdfview \@pdfviewparams,%
7921     DestAnchor=\hyper@currentanchor,%
7922   }%
7923   \Hy@activeanchorfalse
7924   \Hy@RestoreLastskip
7925 }
7926 \def\hyper@linkstart#1#2{%
7927   \ifHy@breaklinks
7928   \else
7929     \leavevmode\hbox\bgroup
7930     \fi
7931     \expandafter\Hy@colorlink\csname @#1color\endcsname
7932     \literalps@out{H.S}%
7933     \xdef\hyper@currentanchor{#2}%
7934     \gdef\hyper@currentlinktype{#1}%
7935 }
7936 \def\hyper@linkend{%
7937   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
7938   \ifundefined{@\hyper@currentlinktype bordercolor}{-}{%
7939     \let\Hy@tempcolor\relax
7940   }{%
7941     \edef\Hy@tempcolor{\csname @\hyper@currentlinktype bordercolor\endcsname}%
7942   }%
7943   \pdfmark{%
7944     pdfmark=/ANN,%
7945     linktype=link,%
7946     Subtype=/Link,%
7947     Dest=\hyper@currentanchor,%
7948     AcroHighlight=\@pdfhighlight,%
7949     Border=\@pdfborder,%
7950     BorderStyle=\@pdfborderstyle,%
7951     Color=\Hy@tempcolor,%

```

```

7952     Raw=H.B%
7953 }%
7954 \Hy@endcolorlink
7955 \ifHy@breaklinks
7956 \else
7957 \egroup
7958 \fi
7959 }

```

```

7960 < *pdfmark >

```

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.

```

7961 \beginngroup
7962 \catcode'P=12 %
7963 \catcode'T=12 %
7964 \lowercase{\endgroup
7965 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
7966 }
7967 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
7968 < /pdfmark >

```

\hyper@pagetransition

```

7969 \def\hyper@pagetransition{%
7970 \ifx\@pdfpagetransition\relax
7971 \else
7972 \ifx\@pdfpagetransition\@empty
7973 % 1. Does an old entry have to be deleted?
7974 % 2. If 1=yes, how to delete?
7975 \else
7976 \pdfmark{%
7977 pdfmark=/PUT,%
7978 Raw={%
7979 \string{ThisPage\string}%
7980 <</Trans << /S /\@pdfpagetransition\space >> >>%
7981 }%
7982 }%
7983 \fi
7984 \fi
7985 }

```

\hyper@pageduration

```

7986 \def\hyper@pageduration{%
7987 \ifx\@pdfpageduration\relax
7988 \else
7989 \ifx\@pdfpageduration\@empty
7990 % 1. Does an old entry have to be deleted?
7991 % 2. If 1=yes, how to delete?
7992 \else
7993 \pdfmark{%
7994 pdfmark=/PUT,%
7995 Raw={%
7996 \string{ThisPage\string}%
7997 <</Dur \@pdfpageduration>>%
7998 }%
7999 }%
8000 \fi

```

```

8001 \fi
8002 }

```

\hyper@pagehidden

```

8003 \def\hyper@pagehidden{%
8004   \ifHy@useHidKey
8005     \pdfmark{%
8006       pdfmark=/PUT,%
8007       Raw={%
8008         \string{ThisPage\string}%
8009         <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
8010       }%
8011     }%
8012   \fi
8013 }

8014 \g@addto@macro\Hy@EveryPageBoxHook{%
8015   \hyper@pagetransition
8016   \hyper@pageduration
8017   \hyper@pagehidden
8018 }

8019 </pdfmark>
8020 \def\hyper@image#1#2{%
8021   \hyper@linkurl{#2}{#1}%
8022 }
8023 \def\Hy@undefinedname{UNDEFINED}
8024 \def\hyper@link#1#2#3{%
8025   \@ifundefined{#1bordercolor}{%
8026     \let\Hy@tempcolor\relax
8027   }{%
8028     \edef\Hy@tempcolor{\csname #1bordercolor\endcsname}%
8029   }%
8030   \begingroup
8031     \protected@edef\Hy@testname{#2}%
8032     \ifx\Hy@testname\@empty
8033       \let\Hy@testname\Hy@undefinedname
8034     \fi
8035   <*dvipdf>
8036     \pdfmark[{#3}]{%
8037       pdfmark=/LNK,%
8038       {#1},%
8039       linktype={#1},%
8040       AcroHighlight=\@pdfhighlight,%
8041       Border=\@pdfborder,%
8042       BorderStyle=\@pdfborderstyle,%
8043       Color=\Hy@tempcolor,%
8044       Dest=\Hy@testname
8045     }%
8046   </dvipdf>
8047   <*pdfmarkbase>
8048     \pdfmark[{#3}]{%
8049       Color=\Hy@tempcolor,%
8050       linktype={#1},%
8051       AcroHighlight=\@pdfhighlight,%
8052       Border=\@pdfborder,%
8053       BorderStyle=\@pdfborderstyle,%
8054       pdfmark=/ANN,%

```

```

8055         Subtype=/Link,%
8056         Dest=\Hy@testname
8057     }%
8058 </pdfmarkbase>
8059 \endgroup
8060 }
8061 \newtoks\pdf@docset
8062 \def\PDF@FinishDoc{%
8063     \Hy@UseMaketitleInfos
8064     \let\Hy@temp\@empty
8065     \ifx\@pdfcreationdate\@empty
8066     \else
8067         \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
8068     \fi
8069     \ifx\@pdfmoddate\@empty
8070     \else
8071         \expandafter\def\expandafter\Hy@temp\expandafter{%
8072             \Hy@temp
8073             ModDate=\@pdfmoddate,%
8074         }%
8075     \fi
8076     \ifx\@pdfproducer\relax
8077     \else
8078         \expandafter\def\expandafter\Hy@temp\expandafter{%
8079             \Hy@temp
8080             Producer=\@pdfproducer,%
8081         }%
8082     \fi
8083     \expandafter
8084     \pdfmark\expandafter{%
8085         \Hy@temp
8086         pdfmark=/DOCINFO,%
8087         Title=\@pdftitle,%
8088         Subject=\@pdfsubject,%
8089         Creator=\@pdfcreator,%
8090         Author=\@pdfauthor,%
8091         Keywords=\@pdfkeywords
8092     }%
8093     \Hy@DisableOption{pdfauthor}%
8094     \Hy@DisableOption{pdftitle}%
8095     \Hy@DisableOption{pdfsubject}%
8096     \Hy@DisableOption{pdfcreator}%
8097     \Hy@DisableOption{pdfcreationdate}%
8098     \Hy@DisableOption{pdfmoddate}%
8099     \Hy@DisableOption{pdfproducer}%
8100     \Hy@DisableOption{pdfkeywords}%
8101 }
8102 \def\PDF@SetupDoc{%
8103     \pdfmark{%
8104         pdfmark=/DOCVIEW,%
8105         Page=\@pdfstartpage,%
8106         View=\@pdfstartview,%
8107         PageMode=/\@pdfpagemode
8108     }%
8109     \ifx\@pdfpagescrop\@empty
8110     \else
8111         \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%

```



```

8112 \fi
8113 \edef\Hy@temp{%
8114   \ifHy@toolbar\else /HideToolbar true\fi
8115   \ifHy@menubar\else /HideMenubar true\fi
8116   \ifHy@windowui\else /HideWindowUI true\fi
8117   \ifHy@fitwindow /FitWindow true\fi
8118   \ifHy@centerwindow /CenterWindow true\fi
8119   \ifHy@displaydoctitle /DisplayDocTitle true\fi
8120   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8121   \Hy@UseNameKey{Direction}\@pdfdirection
8122   \Hy@UseNameKey{ViewArea}\@pdfviewarea
8123   \Hy@UseNameKey{ViewClip}\@pdfviewclip
8124   \Hy@UseNameKey{PrintArea}\@pdfprintarea
8125   \Hy@UseNameKey{PrintClip}\@pdfprintclip
8126   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8127   \Hy@UseNameKey{Duplex}\@pdfduplex
8128   \ifx\@pdfpicktraybypdfsize\@empty
8129   \else
8130     /PickTrayByPDFSize \@pdfpicktraybypdfsize
8131   \fi
8132   \ifx\@pdfprintpagerange\@empty
8133   \else
8134     /PrintPageRange[\@pdfprintpagerange]%
8135   \fi
8136   \ifx\@pdfnumcopies\@empty
8137   \else
8138     /NumCopies \@pdfnumcopies
8139   \fi
8140 }%
8141 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8142 \pdfmark{%
8143   pdfmark=/PUT,%
8144   Raw={%
8145     \string{Catalog\string}<<%
8146     \ifx\Hy@temp\@empty
8147     \else
8148       /ViewerPreferences<<\Hy@temp>>%
8149     \fi
8150     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8151     \ifx\@pdflang\@empty
8152     \else
8153       /Lang(\@pdflang)%
8154     \fi
8155     \ifx\@baseurl\@empty
8156     \else
8157       /URI<</Base(\Hy@pstringB)>>%
8158     \fi
8159   >>%
8160 }%
8161 }%
8162 }
8163 </pdfmark | dvipdf>
8164 <*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.

```

8165 \newif\ifHy@pdfmarkerror
8166 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
8167 \def\pdfmark@[#1]#2{%
8168   \Hy@pdfmarkerrorfalse
8169   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
8170   \@processme
8171   \let\pdf@type\relax
8172   \setkeys{PDF}{#2}%
8173   \ifHy@pdfmarkerror
8174   \else
8175     \ifx\pdf@type\relax
8176       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
8177       \ifx\#1\\\relax\else\pdf@rect{#1}\fi
8178     \else
8179       \ifx\#1\\\relax
8180 \pdfmarkbase) \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark}%
8181 \dvipdf) \literalps@out{/ANN >>}%
8182       \else
8183         \ifundefined{@\pdf@linktype color}{%
8184           \Hy@colorlink\@linkcolor
8185         }{%
8186           \expandafter\Hy@colorlink
8187             \csname @\pdf@linktype color\endcsname
8188         }%
8189         \pdf@rect{#1}%
8190 \pdfmarkbase) \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark}%
8191 \dvipdf) \literalps@out{/ANN >>}%
8192         \Hy@endcolorlink
8193       \fi
8194     \fi
8195   \fi
8196 }

```

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}

```

```

8197 \newsavebox{\pdf@box}
8198 \providecommand*{\Hy@setouterhbox}{\sbox}
8199 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
8200 \def\Hy@DEST{/DEST}
8201 \def\pdf@rect#1{%
8202 \dvipdf) \literalps@out{/ANN \pdf@type\space\the\pdf@toks\space <<#1%
8203   \leavevmode
8204   \ifHy@breaklinks
8205     \Hy@setouterhbox\pdf@box{#1}%
8206   \else
8207     \sbox\pdf@box{#1}%
8208   \fi

```

```

8209 \dimen@ht\pdf@box
8210 \ifdim\dp\pdf@box=\z@
8211 \literalps@out{H.S}%
8212 \else
8213 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
8214 \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...).

```

8215 \ifHy@breaklinks
8216 \expandafter\Hy@breaklinksunhbox
8217 \else
8218 \expandafter\box
8219 \fi
8220 \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

8221 \ifdim\dimen@=\z@
8222 \literalps@out{H.R}%
8223 \else
8224 \raise\dimen@\hbox{\literalps@out{H.R}}%
8225 \fi
8226 \ifx\pdf@type\Hy@DEST
8227 \else
8228 \pdf@addtoksx{H.B}%
8229 \fi
8230 }

```

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.

```

8231 \newtoks\pdf@toks
8232 \newtoks\pdf@defaulttoks
8233 \pdf@defaulttoks={}
8234 \def\pdf@addtoks#1#2{%
8235 \edef\@processme{\pdf@toks{\the\pdf@toks\space /#2 #1}}%
8236 \@processme
8237 }
8238 \def\pdf@addtoksx#1{%
8239 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
8240 \@processme
8241 }
8242 \def\PDFdefaults#1{%
8243 \pdf@defaulttoks={#1}%
8244 }

```

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

```

8245 % what is the type of pdfmark?
8246 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
8247 % what is the link type?
8248 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
8249 \def\pdf@linktype{link}
8250 % parameter is a stream of PDF
8251 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
8252 % parameter is a name

```

```

8253 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
8254 % parameter is a array
8255 \define@key{PDF}{Border}{%
8256   \edef\Hy@temp{#1}%
8257   \ifx\Hy@temp\@empty
8258   \else
8259     \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
8260   \fi
8261 }
8262 \let\Hy@BorderArrayPatch\@empty
8263 % parameter is a dictionary
8264 \define@key{PDF}{BorderStyle}{%
8265   \edef\Hy@temp{#1}%
8266   \ifx\Hy@temp\@empty
8267   \else
8268     \pdf@addtoks{<<#1>>}{BS}%
8269   \fi
8270 }
8271 % parameter is a array
8272 \define@key{PDF}{Color}{%
8273   \ifx\relax#1\relax
8274   \else
8275     \pdf@addtoks{[#1]}{Color}% hash-ok
8276   \fi
8277 }
8278 % parameter is a string
8279 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
8280 % parameter is a integer
8281 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
8282 % parameter is a array
8283 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
8284 % parameter is a string
8285 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
8286 % parameter is a string or file
8287 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
8288 % parameter is a destination
8289 \define@key{PDF}{Dest}{%
8290   \Hy@pstringdef\Hy@pstringDest{#1}%
8291   \ifx\Hy@pstringDest\@empty
8292     \Hy@pdfmarkerrortrue
8293     \Hy@Warning{Destination with empty name ignored}%
8294   \else
8295     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
8296   \fi
8297 }
8298 \define@key{PDF}{DestAnchor}{%
8299   \Hy@pstringdef\Hy@pstringDest{#1}%
8300   \ifx\Hy@pstringDest\@empty
8301     \Hy@pdfmarkerrortrue
8302     \Hy@Warning{Destination with empty name ignored}%
8303   \else
8304     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
8305   \fi
8306 }
8307 % parameter is a string
8308 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
8309 % parameter is a string

```

```

8310 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
8311 % parameter is a int
8312 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
8313 % parameter is a name
8314 \define@key{PDF}{AcroHighlight}{%
8315   \begingroup
8316     \edef\x{#1}%
8317     \expandafter\endgroup\ifx\x\@empty
8318       \else
8319         \pdf@addtoks{#1}{H}%
8320       \fi
8321 }
8322 % parameter is a string
8323 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
8324 % parameter is a string
8325 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
8326 % parameter is a string
8327 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
8328 % parameter is a string
8329 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
8330 % parameter is a Boolean
8331 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
8332 % parameter is a integer or name
8333 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
8334 % parameter is a name
8335 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
8336 % parameter is a string
8337 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
8338 % parameter is a array
8339 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
8340 % parameter is a integer
8341 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
8342 % parameter is a name
8343 \pdfmarkbase\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
8344 \dvi pdf\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{}}
8345 % parameter is a string
8346 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
8347 % parameter is a string
8348 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
8349 % parameter is a string
8350 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
8351 % parameter is an array
8352 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
8353 % parameter is a string
8354 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

8355 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
8356 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
8357 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
8358 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
8359 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
8360 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
8361 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
8362 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
8363 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
8364 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
8365 \pdfmarkbase | dvi pdf

```

```

8366 <*pdfmark | dvipdf>
8367 \def\Acrobatmenu#1#2{%
8368   \pdfmark[{#2}] {%
8369     linktype=menu,%
8370     pdfmark=/ANN,%
8371     AcroHighlight=\@pdfhighlight,%
8372     Border=\@pdfborder,%
8373     BorderStyle=\@pdfborderstyle,%
8374     Action={<< /Subtype /Named /N /#1 >>},%
8375     Subtype=/Link%
8376   }%
8377 }

```

And now for some useful examples:

```

8378 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
8379 \def\PDFNextPage@[#1]#2{%
8380   \pdfmark[{#2}] {%
8381     #1,%
8382     Border=\@pdfborder,%
8383     BorderStyle=\@pdfborderstyle,%
8384     Color=.2 .1 .5,%
8385     pdfmark=/ANN,%
8386     Subtype=/Link,%
8387     Page=/Next%
8388   }%
8389 }
8390 \def\PDFPreviousPage{%
8391   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}]%
8392 }
8393 \def\PDFPreviousPage@[#1]#2{%
8394   \pdfmark[{#2}] {%
8395     #1,%
8396     Border=\@pdfborder,%
8397     BorderStyle=\@pdfborderstyle,%
8398     Color=.4 .4 .1,%
8399     pdfmark=/ANN,%
8400     Subtype=/Link,%
8401     Page=/Prev%
8402   }%
8403 }
8404 \def\PDFOpen#1{%
8405   \pdfmark{#1,pdfmark=/DOCVIEW}%
8406 }

```

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

```

8407 \def\hyper@linkurl#1#2{%
8408   \begingroup
8409     \Hy@pstringdef\Hy@pstringURI{#2}%
8410     \hyper@chars
8411     \leavevmode
8412 <*pdfmarkbase>
8413   \pdfmark[{#1}] {%
8414     pdfmark=/ANN,%
8415     linktype=url,%
8416     AcroHighlight=\@pdfhighlight,%
8417     Border=\@pdfborder,%
8418     BorderStyle=\@pdfborderstyle,%
8419     Color=\@urlbordercolor,%

```

```

8420     Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
8421     Subtype=/Link%
8422   }%
8423 </pdfmarkbase>
8424 <*dvipdf>
8425   \pdfmark[{#1}]{%
8426     pdfmark=/LNK,%
8427     linktype=url,%
8428     AcroHighlight=\@pdfhighlight,%
8429     Border=\@pdfborder,%
8430     BorderStyle=\@pdfborderstyle,%
8431     Color=\@urlbordercolor,%
8432     Action={URI /URI <\Hy@hstringURI>}%
8433   }%
8434 </dvipdf>
8435   \endgroup
8436 }
8437 \def\hyper@linkfile#1#2#3{%
8438   \begingroup
8439   \Hy@pstringdef\Hy@pstringF{#2}%
8440   \Hy@pstringdef\Hy@pstringD{#3}%
8441   \leavevmode
8442 <*pdfmark>
8443   \pdfmark[{#1}]{%
8444     pdfmark=/ANN,%
8445     Subtype=/Link,%
8446     AcroHighlight=\@pdfhighlight,%
8447     Border=\@pdfborder,%
8448     BorderStyle=\@pdfborderstyle,%
8449     linktype=file,%
8450     Color=\@filebordercolor,%
8451     Action={%
8452       <<%
8453         /S/GoToR%
8454         \Hy@SetNewWindow
8455         /F(\Hy@pstringF)%
8456         /D\ifx\#3\@0 \@pdfstartview\else(\Hy@pstringD)cvn\fi
8457       >>%
8458     }%
8459   }%
8460 </pdfmark>
8461 <*dvipdf>
8462   \pdfmark[{#1}]{%
8463     pdfmark=/LNK,%
8464     linktype=file,%
8465     AcroHighlight=\@pdfhighlight,%
8466     Border=\@pdfborder,%
8467     BorderStyle=\@pdfborderstyle,%
8468     Color=\@filebordercolor,%
8469     Action={%
8470       <<%
8471         /S/GoToR%
8472         \Hy@SetNewWindow
8473         /F(\Hy@pstringF)%
8474         /D\ifx\#3\@0 \@pdfstartview\else(\Hy@pstringD)cvn\fi
8475       >>%
8476     }%

```

```

8477     }%
8478 </dvipdf>
8479   \endgroup
8480 }
8481 \def\@hyper@launch run:#1\|#2#3{%
8482   \begingroup
8483     \Hy@pstringdef\Hy@pstringF{#1}%
8484     \Hy@pstringdef\Hy@pstringP{#3}%
8485     \leavevmode
8486 <*pdfmark>
8487   \pdfmark[{#2}]{%
8488     pdfmark=/ANN,%
8489     Subtype=/Link,%
8490     AcroHighlight=\@pdfhighlight,%
8491     Border=\@pdfborder,%
8492     BorderStyle=\@pdfborderstyle,%
8493     linktype=run,%
8494     Color=\@runbordercolor,%
8495     Action={%
8496       <<%
8497         /S/Launch%
8498         \Hy@SetNewWindow
8499         /F(\Hy@pstringF)%
8500         \ifx\|#3\|
8501           \else
8502             /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8503         \fi
8504       >>%
8505     }%
8506   }%
8507 </pdfmark>
8508 <*dvipdf>
8509   \pdfmark[{#2}]{%
8510     pdfmark=/LNK,%
8511     linktype=file,%
8512     AcroHighlight=\@pdfhighlight,%
8513     Border=\@pdfborder,%
8514     BorderStyle=\@pdfborderstyle,%
8515     Color=\@filebordercolor,%
8516     Action={%
8517       <<%
8518         /S/GoToR%
8519         \Hy@SetNewWindow
8520         /F(\Hy@pstringF)%
8521         \ifx\|#3\|
8522           \else
8523             /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8524         \fi
8525       >>%
8526     }%
8527   }%
8528 </dvipdf>
8529   \endgroup
8530 }
8531 </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.

```
8532 <*dvips>
8533 \input{pdfmark.def}%
8534 \ifx\@pdfproducer\relax
8535   \def\@pdfproducer{dvips + Distiller}%
8536 \fi
8537 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
8538 \def\headerps@out#1{\special{! #1}}%
8539 \providecommand*\@pdfborder{0 0 1}
8540 \providecommand*\@pdfborderstyle{}
8541 \providecommand*\@pdfview{XYZ}
8542 \providecommand*\@pdfviewparams{ H.V}
8543 \def\Hy@BorderArrayPatch{BorderArrayPatch}

8544 \AtBeginShipoutFirst{%
8545   \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.

```
8546   /DvipsToPDF{72.27 mul Resolution div} def%
8547   /PDFToDvips{72.27 div Resolution mul} def%
8548   /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.

```
8549   /BorderArrayPatch{%
8550     [exch{%
8551       dup dup type/integertype eq exch type/realtype eq or%
8552       {BPToDvips}if%
8553     }forall]%
8554   }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.

```
8555   /HyperBorder {1 PDFToDvips} def%
8556   /H.V {pdf@hoff pdf@voff null} def%
8557   /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

```
8558   /H.S {%
8559     currentpoint %
8560     HyperBorder add /pdf@lly exch def %
```

```

8561      dup DvipsToPDF 72 add /pdf@hoff exch def %
8562      HyperBorder sub /pdf@llx exch def%
8563  } 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`

```

8564  /H.L {%
8565    2 sub dup%
8566    /HyperBasePt exch def %
8567    PDFToDvips /HyperBaseDvips exch def %
8568    currentpoint %
8569    HyperBaseDvips sub /pdf@ury exch def%
8570    /pdf@urx exch def%
8571  } def%
8572  /H.A {%
8573    H.L %
8574  % |pdf@voff| = the distance from the top of the page to a point
8575  % |\baselineskip| above the current point in PDF coordinates
8576    currentpoint exch pop %
8577    vsize 72 sub exch DvipsToPDF %
8578    HyperBasePt sub % baseline skip
8579    sub /pdf@voff exch def%
8580  } def%
8581  /H.R {%
8582    currentpoint %
8583    HyperBorder sub /pdf@ury exch def %
8584    HyperBorder add /pdf@urx exch def %
8585  % |pdf@voff| = the distance from the top of the page to the current point, in
8586  % PDF coordinates
8587    currentpoint exch pop vsize 72 sub %
8588    exch DvipsToPDF sub /pdf@voff exch def%
8589  } def %
8590  systemdict /pdfmark known%
8591  {%
8592    userdict /?pdfmark systemdict /exec get put%
8593  }{%
8594    userdict /?pdfmark systemdict /pop get put %
8595    userdict /pdfmark systemdict /cleartomark get put%
8596  }%
8597  ifelse%
8598 }%
8599 }
8600 \AfterBeginDocument{%
8601   \ifx\special@paper\@empty\else
8602     \ifHy@setpagesize
8603       \special{papersize=\special@paper}%
8604     \fi
8605     \Hy@DisableOption{setpagesize}%
8606   \fi
8607 }
8608 </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.

```

8609 <*vtexpdfmark>
8610 \input{pdfmark.def}%
8611 \ifx\@pdfproducer\relax
8612   \ifnum\OpMode=\@ne
8613     \def\@pdfproducer{VTeX}%
8614   \else
8615     \def\@pdfproducer{VTeX + Distiller}%
8616   \fi
8617 \fi
8618 \def\literalps@out#1{\special{pS:#1}}%
8619 \def\headerps@out#1{\immediate\special{pS:#1}}%
8620 \providecommand*\@pdfborder{0 0 1}
8621 \providecommand*\@pdfborderstyle{}
8622 \providecommand*\@pdfview{XYZ}
8623 \providecommand*\@pdfviewparams{ H.V}

8624 \AtBeginShipoutFirst{%
8625   \headerps@out{%
8626     /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.

```

8627   /HyperBorder {1} def%
8628   /H.V {pdf@hoff pdf@voff null} def%
8629   /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 =  $X_c - \text{HyperBorder}$

```

8630   /H.S {%
8631     currentpoint %
8632     HyperBorder sub%
8633     /pdf@lly exch def %
8634     dup 72 add /pdf@hoff exch def %
8635     HyperBorder sub%
8636     /pdf@llx exch def%
8637   } def%

```

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

```

8638   /H.L {%
8639     2 sub%
8640     /HyperBasePt exch def %
8641     currentpoint %
8642     HyperBasePt add HyperBorder add%
8643     /pdf@ury exch def %
8644     HyperBorder add%
8645     /pdf@urx exch def%
8646   } def%
8647   /H.A {%
8648     H.L %
8649     currentpoint exch pop %

```

```

8650      vsize 72 sub exch %
8651      HyperBasePt add add%
8652      /pdf@voff exch def%
8653  } def%
pdf@ury =  $Y_c + \text{HyperBorder}$ , pdf@urx =  $X_c + \text{HyperBorder}$ 
8654  /H.R {%
8655      currentpoint %
8656      HyperBorder add%
8657      /pdf@ury exch def %
8658      HyperBorder add%
8659      /pdf@urx exch def %
8660      currentpoint exch pop vsize 72 sub add%
8661      /pdf@voff exch def%
8662  } def %
8663  systemdict /pdfmark known%
8664  {%
8665      userdict /?pdfmark systemdict /exec get put%
8666  }{%
8667      userdict /?pdfmark systemdict /pop get put %
8668      userdict /pdfmark systemdict /cleartomark get put%
8669  }%
8670  ifelse%
8671  }%
8672 }
8673 </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.

```

8674 <*textures>
8675 \begingroup
8676   \obeylines %
8677   \gdef\Hy@ps@CR{\noexpand
8678   }%
8679 \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`.

```

8680 \def\literalps@out#1{%
8681   \special{postscript 0 0 transform}%

```

```

8682 \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
8683 }%
8684 %

```

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.

```

8685 \def\headerps@out#1{%
8686   \special{%
8687     prepostscript TeXdict begin\Hy@ps@CR
8688       #1\Hy@ps@CR
8689     end%
8690   }%
8691 }%
8692 %

```

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.

```

8693 \AtBeginShipoutFirst{%
8694   \headerps@out{%
8695     /betterpdfmark {%
8696       systemdict begin %
8697         dup /BP eq%
8698         {cleartomark gsave nulldevice []}%
8699         {dup /EP eq%
8700           {cleartomark cleartomark grestore}%
8701           {cleartomark}%
8702           ifelse%
8703         }ifelse %
8704       end%
8705     }def\Hy@ps@CR
8706     __pdfmark__ not{/pdfmark /betterpdfmark load def}if %
8707     systemdict /pdfmark known%
8708     {%
8709       userdict /?pdfmark systemdict /load get put%
8710     }{%
8711       userdict /?pdfmark systemdict /pop get put%
8712     }%
8713     ifelse%
8714   }% end of \headerps@out
8715 }% end of \AtBeginShipoutFirst
8716 %
8717 \input{pdfmark.def}%
8718 %
8719 \ifx\@pdfproducer\relax
8720   \def\@pdfproducer{Textures + Distiller}%
8721 \fi
8722 \providecommand*\@pdfborder{0 0 1}
8723 \providecommand*\@pdfborderstyle{}
8724 \providecommand*\@pdfview{XYZ}
8725 \providecommand*\@pdfviewparams{ H.V}
8726 %

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called pdf@llx pdf@lly pdf@urx pdf@ury, which are the coordinates of the bounding rectangle of the link, and pdf@hoff pdf@voff which are the PDF page offsets. The Rect pair are called at the LL and UR corners of a box known to T<sub>E</sub>X.

```

8727 \headerps@out{%

```

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

```

8728 /vsize {\Hy@pageheight} def%
8729 /DvipsToPDF {} def%
8730 /PDFToDvips {} def%
8731 /BPToDvips {} def%
8732 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
8733 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
8734 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
8735 /H.S {%
8736   currentpoint %
8737   HyperBorder add /pdf@lly exch def %
8738   dup DvipsToPDF 72 add /pdf@hoff exch def %
8739   HyperBorder sub /pdf@llx exch def%
8740 } def\Hy@ps@CR
8741 /H.L {%
8742   2 sub %
8743   PDFToDvips /HyperBase exch def %
8744   currentpoint %
8745   HyperBase sub /pdf@ury exch def%
8746   /pdf@urx exch def%
8747 } def\Hy@ps@CR
8748 /H.A {%
8749   H.L %
8750   currentpoint exch pop %
8751   vsize 72 sub exch DvipsToPDF %
8752   HyperBase sub % baseline skip
8753   sub /pdf@voff exch def%
8754 } def\Hy@ps@CR
8755 /H.R {%
8756   currentpoint %
8757   HyperBorder sub /pdf@ury exch def %
8758   HyperBorder add /pdf@urx exch def %
8759   currentpoint exch pop vsize 72 sub %
8760   exch DvipsToPDF sub /pdf@voff exch def%
8761 } def\Hy@ps@CR
8762 }

8763 \AfterBeginDocument{%
8764   \ifHy@colorlinks
8765     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
8766   \fi
8767 }

```

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.

```

8768 \expandafter\let\expandafter\keepPDF@SetupDoc
8769 \csname PDF@SetupDoc\endcsname
8770 \def\PDF@SetupDoc{%
8771   \ifx\@baseurl\@empty
8772   \else
8773     \special{html:<base href="\@baseurl">}%
8774   \fi
8775   \keepPDF@SetupDoc
8776 }
8777 \def\hyper@anchor#1{%
8778   \Hy@SaveLastskip
8779   \begingroup

```

```

8780 \let\protect=\string
8781 \special{html:<a name=\hyper@quote #1\hyper@quote>}%
8782 \endgroup
8783 \Hy@activeanchortrue
8784 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8785 \special{html:</a>}%
8786 \Hy@activeanchorfalse
8787 \Hy@RestoreLastskip
8788 }
8789 \def\hyper@anchorstart#1{%
8790 \Hy@SaveLastskip
8791 \begingroup
8792 \hyper@chars
8793 \special{html:<a name=\hyper@quote#1\hyper@quote>}%
8794 \endgroup
8795 \Hy@activeanchortrue
8796 }
8797 \def\hyper@anchorend{%
8798 \special{html:</a>}%
8799 \Hy@activeanchorfalse
8800 \Hy@RestoreLastskip
8801 }
8802 \def\@urltype{url}
8803 \def\hyper@linkstart#1#2{%
8804 \expandafter\Hy@colorlink\csname @#1color\endcsname
8805 \def\Hy@tempa{#1}%
8806 \ifx\Hy@tempa\@urltype
8807 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
8808 \else
8809 \begingroup
8810 \hyper@chars
8811 \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
8812 \endgroup
8813 \fi
8814 }
8815 \def\hyper@linkend{%
8816 \special{html:</a>}%
8817 \Hy@endcolorlink
8818 }
8819 \def\hyper@linkfile#1#2#3{%
8820 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
8821 }
8822 \def\hyper@linkurl#1#2{%
8823 \leavevmode
8824 \ifHy@raiselinks
8825 \setbox\@tempboxa=\color@hbox #1\color@endbox
8826 \@linkdim\dp\@tempboxa
8827 \lower\@linkdim\hbox{%
8828 \hyper@chars
8829 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
8830 }%
8831 \Hy@colorlink\@urlcolor#1%
8832 \@linkdim\ht\@tempboxa
8833 \advance\@linkdim by -6.5\p@
8834 \raise\@linkdim\hbox{\special{html:</a>}}%
8835 \Hy@endcolorlink
8836 \else

```

```

8837 \begingroup
8838 \hyper@chars
8839 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
8840 \Hy@colorlink\@urlcolor#1%
8841 \special{html:</a>}%
8842 \Hy@endcolorlink
8843 \endgroup
8844 \fi
8845 }
8846 \def\hyper@link#1#2#3{%
8847 \hyper@linkurl{#3}{\##2}%
8848 }
8849 \def\hyper@image#1#2{%
8850 \begingroup
8851 \hyper@chars
8852 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
8853 \endgroup
8854 }
8855 </textures>

```

## 46.12 dvipsone

```

8856 % \subsection{dvipsone driver}
8857 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
8858 % |\special| commands.
8859 <*dvipsone>
8860 \providecommand*\@pdfborder{0 0 1}
8861 \providecommand*\@pdfborderstyle{}
8862 \input{pdfmark.def}%
8863 \ifx\@pdfproducer\relax
8864 \def\@pdfproducer{dvipsone + Distiller}%
8865 \fi
8866 \def\literalps@out#1{\special{ps:#1}}%
8867 \def\headerps@out#1{\special{! #1}}%
8868 \def\PDF@FinishDoc{%
8869 \Hy@UseMaketitleInfos
8870 \special{PDF: Keywords \@pdfkeywords}%
8871 \special{PDF: Title \@pdftitle}%
8872 \special{PDF: Creator \@pdfcreator}%
8873 \ifx\@pdfcreationdate\@empty
8874 \else
8875 \special{PDF: CreationDate \@pdfcreationdate}%
8876 \fi
8877 \ifx\@pdfmoddate\@empty
8878 \else
8879 \special{PDF: ModDate \@pdfmoddate}%
8880 \fi
8881 \special{PDF: Author \@pdfauthor}%
8882 \ifx\@pdfproducer\relax
8883 \else
8884 \special{PDF: Producer \@pdfproducer}%
8885 \fi
8886 \special{PDF: Subject \@pdfsubject}%
8887 \Hy@DisableOption{pdfauthor}%
8888 \Hy@DisableOption{pdftitle}%
8889 \Hy@DisableOption{pdfsubject}%
8890 \Hy@DisableOption{pdfcreator}%

```



```

8891 \Hy@DisableOption{pdfcreationdate}%
8892 \Hy@DisableOption{pdfmoddate}%
8893 \Hy@DisableOption{pdfproducer}%
8894 \Hy@DisableOption{pdfkeywords}%
8895 }
8896 \def\PDF@SetupDoc{%
8897 \pdfmark{%
8898 pdfmark=/DOCVIEW,%
8899 Page=\@pdfstartpage,%
8900 View=\@pdfstartview,%
8901 PageMode=/\@pdfpagemode
8902 }%
8903 \ifx\@pdfpagescrop\@empty
8904 \else
8905 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
8906 \fi
8907 \edef\Hy@temp{%
8908 \ifHy@toolbar\else /HideToolbar true\fi
8909 \ifHy@menubar\else /HideMenubar true\fi
8910 \ifHy>windowui\else /HideWindowUI true\fi
8911 \ifHy@fitwindow /FitWindow true\fi
8912 \ifHy@centerwindow /CenterWindow true\fi
8913 \ifHy@displaydoctitle /DisplayDocTitle true\fi
8914 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8915 \Hy@UseNameKey{Direction}\@pdfdirection
8916 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8917 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8918 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8919 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8920 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8921 \Hy@UseNameKey{Duplex}\@pdfduplex
8922 \ifx\@pdfpicktraybypdfsize\@empty
8923 \else
8924 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8925 \fi
8926 \ifx\@pdfprintpagerange\@empty
8927 \else
8928 /PrintPageRange[\@pdfprintpagerange]%
8929 \fi
8930 \ifx\@pdfnumcopies\@empty
8931 \else
8932 /NumCopies \@pdfnumcopies
8933 \fi
8934 }%
8935 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8936 \pdfmark{%
8937 pdfmark=/PUT,%
8938 Raw={%
8939 \string{Catalog\string}<<%
8940 \ifx\Hy@temp\@empty
8941 \else
8942 /ViewerPreferences<<\Hy@temp>>%
8943 \fi
8944 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8945 \ifx\@pdflang\@empty
8946 \else
8947 /Lang(\@pdflang)%

```

```

8948      \fi
8949      \ifx\@baseurl\@empty
8950      \else
8951          /URI<</Base(\Hy@pstringB)>>%
8952      \fi
8953      >>%
8954  }%
8955 }%
8956 }
8957 \providecommand*\@pdfview{XYZ}
8958 \providecommand*\@pdfviewparams{ %
8959     gsave revscl currentpoint grestore %
8960     72 add exch pop null exch null%
8961 }
8962 \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.

```

8963 \special{headertext=%
dvipsone lives in scaled points; does this mean 65536 or 65781?
8964 /DvipsToPDF { 65781 div } def%
8965 /PDFToDvips { 65781 mul } def%
8966 /BPToDvips{65781 mul}def%
8967 /HyperBorder { 1 PDFToDvips } def%
8968 /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.

```

8969 /BorderArrayPatch{%
8970     [exch{%
8971         dup dup type/integertype eq exch type/realtype eq or%
8972         {BPToDvips}if%
8973     }forall]%
8974 }def%
8975 /H.S {%
8976     currentpoint %
8977     HyperBorder add /pdf@lly exch def %
8978     dup DvipsToPDF 72 add /pdf@hoff exch def %
8979     HyperBorder sub /pdf@llx exch def%
8980 } def%
8981 /H.L {%
8982     2 sub %
8983     PDFToDvips /HyperBase exch def %
8984     currentpoint %
8985     HyperBase sub /pdf@ury exch def%
8986     /pdf@urx exch def%
8987 } def%
8988 /H.A {%
8989     H.L %
8990     currentpoint exch pop %
8991     HyperBase sub % baseline skip
8992     DvipsToPDF /pdf@voff exch def%
8993 } def%
8994 /H.R {%

```

```

8995     currentpoint %
8996     HyperBorder sub /pdf@ury exch def %
8997     HyperBorder add /pdf@urx exch def %
8998     currentpoint exch pop DvipsToPDF /pdf@voff exch def%
8999 } def %
9000 systemdict%
9001 /pdfmark known%
9002 {%
9003     userdict /?pdfmark /exec load put%
9004 }{%
9005     userdict /?pdfmark /pop load put %
9006     userdict /pdfmark systemdict /cleartomark get put%
9007 }%
9008 ifelse%
9009 }
9010 </dvipsone>
9011 <*dvipdf>
9012 \def\literalps@out#1{\special{pdf: #1}}%
9013 \providecommand*\@pdfborder{0 0 1}
9014 \providecommand*\@pdfborderstyle{}
9015 </dvipdf>

```

## 46.13 TeX4ht

```

9016 <*tex4ht>
9017 \ifpackageloaded{tex4ht}{%
9018     \typeout{hyperref tex4ht: tex4ht already loaded}%
9019 }{%
9020     \RequirePackage[htex4ht]{tex4ht}%
9021 }
9022 \hyperlinkfileprefix{}
9023 \def\PDF@FinishDoc{}
9024 \def\PDF@SetupDoc{%
9025     \ifx\@baseurl\@empty
9026     \else
9027         \special{t4ht=<base href="\@baseurl">}%
9028     \fi
9029 }
9030 \def\hyper@anchor#1{%
9031     \Hy@SaveLastskip
9032     \begingroup
9033         \let\protect=\string
9034         \special{t4ht=<a name=\hyper@quote #1\hyper@quote>}%
9035     \endgroup
9036     \Hy@activeanchortrue
9037     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9038     \special{t4ht=</a>}%
9039     \Hy@activeanchorfalse
9040     \Hy@RestoreLastskip
9041 }
9042 \def\hyper@anchorstart#1{%
9043     \Hy@SaveLastskip
9044     \begingroup
9045         \hyper@chars\special{t4ht=<a name=\hyper@quote#1\hyper@quote>}%
9046     \endgroup
9047     \Hy@activeanchortrue
9048 }
9049 \def\hyper@anchorend{%

```

```

9050 \special{t4ht=</a>}}%
9051 \Hy@activeanchorfalse
9052 \Hy@RestoreLastskip
9053 }
9054 \def\@urltype{url}
9055 \def\hyper@linkstart#1#2{%
9056 \expandafter\Hy@colorlink\csname @#1color\endcsname
9057 \def\Hy@tempa{#1}%
9058 \ifx\Hy@tempa\@urltype
9059 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
9060 \else
9061 \begingroup
9062 \hyper@chars
9063 \special{t4ht=<a href=\hyper@quote\##2\hyper@quote>}}%
9064 \endgroup
9065 \fi
9066 }
9067 \def\hyper@linkend{%
9068 \special{t4ht=</a>}}%
9069 \Hy@endcolorlink
9070 }
9071 \def\hyper@linkfile#1#2#3{%
9072 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9073 }
9074 \def\hyper@linkurl#1#2{%
9075 \leavevmode
9076 \ifHy@raiselinks
9077 \setbox\@tempboxa=\color@hbox #1\color@endbox
9078 \@linkdim\dp\@tempboxa
9079 \lower\@linkdim\hbox{%
9080 \begingroup
9081 \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
9082 \endgroup
9083 }%
9084 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9085 \@linkdim\ht\@tempboxa
9086 \advance\@linkdim by -6.5\p@
9087 \raise\@linkdim\hbox{\special{t4ht=</a>}}}%
9088 \else
9089 \begingroup
9090 \hyper@chars
9091 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
9092 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9093 \special{t4ht=</a>}}%
9094 \endgroup
9095 \fi
9096 }
9097 \def\hyper@link#1#2#3{%
9098 \hyper@linkurl{#3}{\##2}%
9099 }
9100 \def\hyper@image#1#2{%
9101 \begingroup
9102 \hyper@chars
9103 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}}%
9104 \endgroup
9105 }
9106 \let\autoref\ref

```

```

9107 \ifx \rEfLiNK \UnDef
9108   \def\rEfLiNK #1#2{#2}%
9109 \fi
9110 \def\backref#1{}
9111 </tex4ht>
9112 <*tex4htcfg>
9113 \IfFileExists{\jobname.cfg}{\endinput}{}
9114 \Preamble{html}
9115   \begin{document}%
9116 \EndPreamble
9117 \def\TeX{TeX}
9118 \def\OMEGA{\Omega}
9119 \def\LaTeX{LaTeX}
9120 \def\LaTeXe{\LaTeX2e}
9121 \def\eTeX{e-TeX}
9122 \def\MF{Metafont}
9123 \def\MP{Metapost}
9124 </tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

9125 <*pdfmark>
9126 \long\def\@Form[#1]{%
9127 \AtBeginShipoutFirst{%
9128   \headerps@out{%
9129 [%
9130   /_objdef{pdfDocEncoding}%
9131   /type/dict%
9132 /OBJ pdfmark%
9133 [%
9134   {pdfDocEncoding}%
9135   <<%
9136     /Type/Encoding%
9137     /Differences[%
9138       24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
9139       39/quotesingle %
9140       96/grave %
9141       128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin/fraction%
9142       /guilsinglleft/guilsinglright/minus/perthousand/quotedblbase%
9143       /quotedblleft/quotedblright/quoteleft/quoteright/quotesinglbase%
9144       /trademark/fi/fl/Lslash/OE/Scaron/Ydieresis/Zcaron/dotlessi%
9145       /lslash/oe/scaron/zcaron164/currency166/brokenbar %
9146       168/dieresis/copyright/ordfeminine %
9147       172/logicalnot/.notdef/registered/macron/degree/plusminus%
9148       /twosuperior/threesuperior/acute/mu %
9149       183/periodcentered/cedilla/onesuperior/ordmasculine %
9150       188/onequarter/onehalf/threequarters %
9151       192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE/Ccedilla%
9152       /Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute/Icircumflex%
9153       /Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex/Otilde/Odieresis%
9154       /multiply/Oslash/Ugrave/Uacute/Ucircumflex/Udieresis/Yacute%
9155       /Thorn/germandbls/agrave/aacute/acircumflex/atilde/adieresis%
9156       /aring/ae/ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
9157       /iacute/icircumflex/idieresis/eth/ntilde/ograve/oacute%
9158       /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
9159       /ucircumflex/udieresis/yacute/thorn/ydieresis%

```

```

9160    ]%
9161    >>%
9162 /PUT pdfmark%
9163 [%
9164    /_objdef{ZaDb}%
9165    /type/dict%
9166 /OBJ pdfmark%
9167 [%
9168    {ZaDb}%
9169    <<%
9170        /Type/Font%
9171        /Subtype/Type1%
9172        /Name/ZaDb%
9173        /BaseFont/ZapfDingbats%
9174    >>%
9175 /PUT pdfmark%
9176 [%
9177    /_objdef {Helv}%
9178    /type/dict%
9179 /OBJ pdfmark%
9180 [%
9181    {Helv}%
9182    <<%
9183        /Type/Font%
9184        /Subtype/Type1%
9185        /Name/Helv%
9186        /BaseFont/Helvetica%
9187        /Encoding{pdfDocEncoding}%
9188    >>%
9189 /PUT pdfmark%
9190 [%
9191    /_objdef {aform}%
9192    /type/dict%
9193 /OBJ pdfmark%
9194 [%
9195    /_objdef{afields}%
9196    /type/array%
9197 /OBJ pdfmark%
9198 {%
9199    [%
9200        /BBox[0 0 100 100]%
9201        /_objdef{Check}%
9202    /BP pdfmark %
9203    1 0 0 setrgbcolor%
9204    /ZapfDingbats 80 selectfont %
9205    20 20 moveto%
9206    (4)show%
9207    [/EP pdfmark%
9208    [%
9209        /BBox[0 0 100 100]%
9210        /_objdef{Cross}%
9211    /BP pdfmark %
9212    1 0 0 setrgbcolor%
9213    /ZapfDingbats 80 selectfont %
9214    20 20 moveto%
9215    (8)show%
9216    [/EP pdfmark%

```

```

9217 [%
9218   /BBox[0 0 250 100]%
9219   /_objdef{Submit}%
9220 /BP pdfmark %
9221 0.6 setgray %
9222 0 0 250 100 rectfill %
9223 1 setgray %
9224 2 2 moveto %
9225 2 98 lineto %
9226 248 98 lineto %
9227 246 96 lineto %
9228 4 96 lineto %
9229 4 4 lineto %
9230 fill %
9231 0.34 setgray %
9232 248 98 moveto %
9233 248 2 lineto %
9234 2 2 lineto %
9235 4 4 lineto %
9236 246 4 lineto %
9237 246 96 lineto %
9238 fill%
9239 /Helvetica 76 selectfont %
9240 0 setgray %
9241 8 22.5 moveto%
9242 (Submit)show%
9243 [/EP pdfmark%
9244 [%
9245   /BBox[0 0 250 100]%
9246   /_objdef{SubmitP}%
9247 /BP pdfmark %
9248 0.6 setgray %
9249 0 0 250 100 rectfill %
9250 0.34 setgray %
9251 2 2 moveto %
9252 2 98 lineto %
9253 248 98 lineto %
9254 246 96 lineto %
9255 4 96 lineto %
9256 4 4 lineto %
9257 fill %
9258 1 setgray %
9259 248 98 moveto %
9260 248 2 lineto %
9261 2 2 lineto %
9262 4 4 lineto %
9263 246 4 lineto %
9264 246 96 lineto %
9265 fill%
9266 /Helvetica 76 selectfont %
9267 0 setgray %
9268 10 20.5 moveto%
9269 (Submit)show%
9270 [/EP pdfmark%
9271 } ?pdfmark%
9272 [%
9273   {aform}%

```

```

9274 <<%
9275   /Fields{afields}%
9276   /DR<<%
9277     /Font<<%
9278       /ZaDb{ZaDb}%
9279       /Helv{Helv}%
9280     >>%
9281   >>%
9282   /DA(/Helv 10 Tf 0 g)%
9283   /CO{corder}%
9284   /NeedAppearances true%
9285 >>%
9286 /PUT pdfmark%
9287 [%
9288   {Catalog}%
9289 <<%
9290   /AcroForm{aform}%
9291 >>%
9292 /PUT pdfmark%
9293 [%
9294   /_objdef{corder}%
9295   /type/array%
9296 /OBJ pdfmark% dps
9297 }]%
9298   \setkeys{Form}{#1}%
9299 }
9300 \def\@endForm{}
9301 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9302   \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
9303 }
9304 \def\@TextField[#1]#2{% parameters, label
9305   \def\Fld@name{#2}%
9306   \def\Fld@default{}%
9307   \let\Fld@value\@empty
9308   \def\Fld@width{\DefaultWidthofText}%
9309   \def\Fld@height{%
9310     \ifFld@multiline
9311       \DefaultHeightofTextMultiline
9312     \else
9313       \DefaultHeightofText
9314     \fi
9315   }%
9316   \begingroup
9317     \Field@toks={ }%
9318     \expandafter\HyField@SetKeys\expandafter{%
9319       \DefaultOptionsofText,#1%
9320     }%
9321     \HyField@FlagsText
9322     \ifFld@hidden\def\Fld@width{1sp}\fi
9323     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
9324     \LayoutTextField{#2}{%
9325       \Hy@escapeform\PDFForm@Text
9326       \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
9327         pdfmark=/ANN,Raw={\PDFForm@Text}%
9328       }%
9329     }%
9330   \endgroup

```



```

9331 }
9332 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9333   \def\Fld@name{#2}%
9334   \let\Fld@default\relax
9335   \let\Fld@value\relax
9336   \def\Fld@width{\DefaultWidthofChoiceMenu}%
9337   \def\Fld@height{\DefaultHeightofChoiceMenu}%
9338   \begingroup
9339     \Fld@menulength=0 %
9340     \@tempdima\z@
9341     \@for\@curropt:=#3\do{%
9342       \expandafter\Fld@checkequals\@curropt==\%
9343       \Hy@StepCount\Fld@menulength
9344       \settowidth{\@tempdimb}{\@currDisplay}%
9345       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
9346     }%
9347     \advance\@tempdima by 15\p@
9348     \Field@toks={ }%
9349     \begingroup
9350       \HyField@SetKeys{#1}%
9351     \edef\x{\endgroup
9352       \noexpand\expandafter
9353       \noexpand\HyField@SetKeys
9354       \noexpand\expandafter{%
9355         \expandafter\noexpand\csname DefaultOptionsof%
9356           \ifFld@radio
9357             Radio%
9358           \else
9359             \ifFld@combo
9360               \ifFld@popdown
9361                 PopdownBox%
9362               \else
9363                 ComboBox%
9364               \fi
9365             \else
9366               ListBox%
9367             \fi
9368           \fi
9369         \endcsname
9370       }%
9371     }\x
9372     \HyField@SetKeys{#1}%
9373     \ifFld@hidden\def\Fld@width{1sp}\fi
9374     \ifx\Fld@value\relax
9375       \let\Fld@value\Fld@default
9376     \fi
9377     \LayoutChoiceField{#2}{%
9378       \ifFld@radio
9379         \HyField@FlagsRadioButton
9380         \@@Radio{#3}%
9381       \else
9382         \begingroup
9383         \HyField@FlagsChoice
9384         \ifdim\Fld@width<\@tempdima
9385           \ifdim\@tempdima<1cm\@tempdima1cm\fi
9386         \edef\Fld@width{\the\@tempdima}%
9387         \fi

```

```

9388         \ifFld@combo
9389         \else
9390             \@tempdima=\the\Fld@menulength\Fld@charsize
9391             \advance\@tempdima by \Fld@borderwidth bp %
9392             \advance\@tempdima by \Fld@borderwidth bp %
9393             \edef\Fld@height{\the\@tempdima}%
9394         \fi
9395         \@@ListBox{#3}%
9396     \endgroup
9397 \fi
9398 }%
9399 \endgroup
9400 }
9401 \def\@@Radio#1{%
9402     \Fld@listcount=0 %
9403     \@for\@curropt:=#1\do{%
9404         \expandafter\Fld@checkequals\@curropt==\\%
9405         \Hy@StepCount\Fld@listcount
9406         \@currDisplay\space
9407         \Hy@escapeform\PDFForm@Radio
9408         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
9409             pdfmark=/ANN,%
9410             Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
9411         } % deliberate space between radio buttons
9412     }%
9413 }
9414 \newcount\Fld@listcount
9415 \def\@@ListBox#1{%
9416     \HyField@PDFChoices{#1}%
9417     \Hy@escapeform\PDFForm@List
9418     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
9419         pdfmark=/ANN,Raw={\PDFForm@List}%
9420     }%
9421 }
9422 \def\@PushButton[#1]#2{% parameters, label
9423     \def\Fld@name{#2}%
9424     \begingroup
9425         \Field@toks={ }%
9426         \expandafter\HyField@SetKeys\expandafter{%
9427             \DefaultOptionsofPushButton,#1%
9428         }%
9429         \HyField@FlagsPushButton
9430         \ifFld@hidden\def\Fld@width{1sp}\fi
9431         \LayoutPushButtonField{%
9432             \Hy@escapeform\PDFForm@Push
9433             \pdfmark[\MakeButtonField{#2}]{%
9434                 pdfmark=/ANN,Raw={\PDFForm@Push}%
9435             }%
9436         }%
9437     \endgroup
9438 }
9439 \def\@Submit[#1]#2{%
9440     \Field@toks={ }%
9441     \def\Fld@width{\DefaultWidthofSubmit}%
9442     \def\Fld@height{\DefaultHeightofSubmit}%
9443     \begingroup
9444         \expandafter\HyField@SetKeys\expandafter{%

```

```

9445     \DefaultOptionsofSubmit,#1%
9446   }%
9447   \HyField@FlagsPushButton
9448   \HyField@FlagsSubmit
9449   \ifFld@hidden\def\Fld@width{1sp}\fi
9450   \Hy@escapeform\PDFForm@Submit
9451   \pdfmark[\MakeButtonField{#2}]{%
9452     pdfmark=/ANN,%
9453     Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
9454   }%
9455   \endgroup
9456 }
9457 \def\@Reset[#1]#2{%
9458   \Field@toks={ }%
9459   \def\Fld@width{\DefaultWidthofReset}%
9460   \def\Fld@height{\DefaultHeightofReset}%
9461   \begingroup
9462     \expandafter\HyField@SetKeys\expandafter{%
9463       \DefaultOptionsofReset,#1%
9464     }%
9465     \HyField@FlagsPushButton
9466     \ifFld@hidden\def\Fld@width{1sp}\fi
9467     \Hy@escapeform\PDFForm@Reset
9468     \pdfmark[\MakeButtonField{#2}]{%
9469       pdfmark=/ANN,Raw={\PDFForm@Reset}%
9470     }%
9471   \endgroup
9472 }
9473 \def\@CheckBox[#1]#2{% parameters, label
9474   \def\Fld@name{#2}%
9475   \def\Fld@default{0}%
9476   \begingroup
9477     \def\Fld@width{\DefaultWidthofCheckBox}%
9478     \def\Fld@height{\DefaultHeightofCheckBox}%
9479     \Field@toks={ }%
9480     \expandafter\HyField@SetKeys\expandafter{%
9481       \DefaultOptionsofCheckBox,#1%
9482     }%
9483     \HyField@FlagsCheckBox
9484     \ifFld@hidden\def\Fld@width{1sp}\fi
9485     \LayoutCheckField{#2}{%
9486       \Hy@escapeform\PDFForm@Check
9487       \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
9488         pdfmark=/ANN,Raw={\PDFForm@Check}%
9489       }%
9490     }%
9491   \endgroup
9492 }
9493 </pdfmark>

```

## 47.2 dvipdf

```

9494 <*dvipdf>
9495 \def\@Form[#1]{\typeout{Sorry, I do not support FORMs}}
9496 \def\@endForm{}
9497 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9498   \typeout{Sorry, dvipdf does not support FORM gauges}%
9499 }

```

```

9500 \def \@TextField[#1]#2{% parameters, label
9501 \typeout{Sorry, dvipdf does not support FORM text fields}%
9502 }
9503 \def \@CheckBox[#1]#2{% parameters, label
9504 \typeout{Sorry, dvipdf does not support FORM checkboxes}%
9505 }
9506 \def \@ChoiceMenu[#1]#2#3{% parameters, label, choices
9507 \typeout{Sorry, dvipdf does not support FORM choice menus}%
9508 }
9509 \def \@PushButton[#1]#2{% parameters, label
9510 \typeout{Sorry, dvipdf does not support FORM pushbuttons}%
9511 }
9512 \def \@Reset[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
9513 \def \@Submit[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
9514 \end{dvipdf}

```

### 47.3 HyperTeX

```

9515 \hypertex
9516 \def \@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
9517 \def \@endForm{}
9518 \def \@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9519 \typeout{Sorry, HyperTeX does not support FORM gauges}%
9520 }
9521 \def \@TextField[#1]#2{% parameters, label
9522 \typeout{Sorry, HyperTeX does not support FORM text fields}%
9523 }
9524 \def \@CheckBox[#1]#2{% parameters, label
9525 \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
9526 }
9527 \def \@ChoiceMenu[#1]#2#3{% parameters, label, choices
9528 \typeout{Sorry, HyperTeX does not support FORM choice menus}%
9529 }
9530 \def \@PushButton[#1]#2{% parameters, label
9531 \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
9532 }
9533 \def \@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
9534 \def \@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
9535 \end{hypertex}

```

### 47.4 TeX4ht

```

9536 \tex4ht
9537 \def \@Form[#1]{%
9538 \setkeys{Form}{#1}%
9539 \HCode{<form action="\Form@action" method="\Form@method">}%
9540 }
9541 \def \@endForm{\HCode{</form>}}
9542 \def \@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9543 \typeout{Sorry, TeX4ht does not support gauges}%
9544 }
9545 \def \@TextField[#1]#2{% parameters, label
9546 \let\Hy@reserved@a\empty
9547 \def\Fld@name{#2}%
9548 \def\Fld@default{}%
9549 \bgroup
9550 \Field@toks={ }%
9551 \setkeys{Field}{#1}%
9552 \HCode{<label for="\Fld@name">#2</label>}%

```

```

9553     \ifFld@password
9554         \@@PasswordField
9555     \else
9556         \@@TextField
9557     \fi
9558 \egroup
9559 }
9560 \def\@@PasswordField{%
9561     \HCode{%
9562         <input type="password" %
9563         id="\Fld@name" %
9564         name="\Fld@name" %
9565         \ifFld@hidden type="hidden" \fi
9566         value="\Fld@default" %
9567         \the\Field@toks
9568     >%
9569 }%
9570 }
9571 \def\@@TextField{%
9572     \ifFld@multiline
9573         \HCode{<textarea %
9574             \ifFld@readonly readonly \fi
9575             id="\Fld@name" %
9576             name="\Fld@name" %
9577             \ifFld@hidden type="hidden" \fi
9578             \the\Field@toks>%
9579         }%
9580         \Fld@default
9581         \HCode{</textarea>}%
9582     \else
9583         \HCode{<input type="text" %
9584             \ifFld@readonly readonly \fi
9585             id="\Fld@name" %
9586             name="\Fld@name" %
9587             \ifFld@hidden type="hidden" \fi
9588             value="\Fld@default" %
9589             \the\Field@toks>%
9590         }%
9591     \fi
9592 }
9593 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9594     \def\Fld@name{#2}%
9595     \def\Fld@default{}%
9596     \let\Hy@reserved@a\relax
9597     \begin{group}
9598         \expandafter\Fld@findlength#3\\%
9599         \Field@toks={ }%
9600         \setkeys{Field}{#1}%
9601         #2%
9602         \ifFld@radio
9603             \expandafter\@@Radio#3\\%
9604         \else
9605             \expandafter\@@Menu#3\\%
9606         \fi
9607     \end{group}
9608 }
9609 \def\Fld@findlength#1\\{%

```

```

9610 \Fld@menulength=0 %
9611 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
9612 }
9613 \def\@@Menu#1\{\%
9614 \HCode{<select size="\the\Fld@menulength" %
9615     name="\Fld@name" %
9616     \the\Field@toks>%
9617 }%
9618 \@for\@curropt:=#1\do{%
9619     \expandafter\Fld@checkequals\@curropt==\%
9620     \HCode{<option %
9621         \ifx\@curropt\Fld@default selected \fi
9622         value="\@currValue">\@currDisplay</option>%
9623     }%
9624 }%
9625 \HCode{</select>}%
9626 }
9627 \def\@@Radio#1\{\%
9628 \@for\@curropt:=#1\do{%
9629     \expandafter\Fld@checkequals\@curropt==\%
9630     \HCode{<input type="radio" %
9631         \ifx\@curropt\Fld@default checked \fi
9632         name="\Fld@name" %
9633         value="\@currValue" %
9634         \the\Field@toks>%
9635     }%
9636     \@currDisplay
9637 }%
9638 }
9639 \def\@PushButton[#1]#2{% parameters, label
9640 \def\Fld@name{#2}%
9641 \bgroup
9642 \Field@toks={ }%
9643 \setkeys{Field}{#1}%
9644 \HCode{<input type="button" %
9645     name="\Fld@name" %
9646     value="#2" %
9647     \the\Field@toks>%
9648 }%
9649 \HCode{</button>}%
9650 \egroup
9651 }
9652 \def\@Submit[#1]#2{%
9653 \HCode{<button type="submit">#2</button>}%
9654 }
9655 \def\@Reset[#1]#2{%
9656 \HCode{<button type="reset">#2</button>}%
9657 }
9658 \def\@CheckBox[#1]#2{% parameters, label
9659 \let\Hy@reserved@a\@empty
9660 \def\Fld@name{#2}%
9661 \def\Fld@default{0}%
9662 \bgroup
9663 \Field@toks={ }%
9664 \setkeys{Field}{#1}%
9665 \HCode{<input type="checkbox" %
9666     \ifFld@checked checked \fi

```

```

9667 \ifFld@disabled disabled \fi
9668 \ifFld@readonly readonly \fi
9669 name="\Fld@name" %
9670 \ifFld@hidden type="hidden" \fi
9671 value="\Fld@default" %
9672 \the\Field@toks>%
9673 #2%
9674 }%
9675 \egroup
9676 }
9677 </tex4ht>

```

## 47.5 pdfTeX

```

9678 <*pdfTeX>
9679 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9680 \typeout{Sorry, pdfTeX does not support FORM gauges}%
9681 }
9682 \def\MakeFieldObject#1#2{\sbox0{#1}%
9683 \immediate\pdfxform0 %
9684 \expandafter\edef\csname #2Object\endcsname{%
9685 \the\pdflastxform\space 0 R%
9686 }%
9687 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
9688 }%
9689 \def\@Form[#1]{%
9690 \ifundefined{textcolor}{\let\textcolor\@gobble}{}}%
9691 \setkeys{Form}{#1}%
9692 \ifnum\pdfTeXversion>13 %
9693 \pdfrefobj\OBJ@pdfdocencoding
9694 \pdfrefobj\OBJ@ZaDb
9695 \pdfrefobj\OBJ@Helv
9696 \pdfrefobj\OBJ@acroform
9697 \fi
9698 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
9699 \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

9700 \begingroup
9701 \fontfamily{pzd}%
9702 \fontencoding{U}%
9703 \fontseries{m}%
9704 \fontshape{n}%
9705 \selectfont
9706 \char123 %
9707 \endgroup
9708 }{Ding}%
9709 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{Submit}}}}{Submit}%
9710 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{SubmitP}}}}{SubmitP}%
9711 }
9712 \def\@endForm{}
9713 \def\@TextField[#1]#2{% parameters, label
9714 \def\Fld@name{#2}%
9715 \def\Fld@default{}%
9716 \let\Fld@value\empty
9717 \def\Fld@width{\DefaultWidthofText}%
9718 \def\Fld@height{%
9719 \ifFld@multiline
9720 \DefaultHeightofTextMultiline

```

```

9721     \else
9722         \DefaultHeightofText
9723     \fi
9724 }%
9725 \begingroup
9726     \Field@toks={ }%
9727     \expandafter\HyField@SetKeys\expandafter{%
9728         \DefaultOptionsofText,#1%
9729     }%
9730     \PDFForm@Name
9731     \HyField@FlagsText
9732     \ifFld@hidden\def\Fld@width{1sp}\fi
9733     \ifx\Fld@value\empty\def\Fld@value{\Fld@default}\fi
9734     \LayoutTextField{#2}{%
9735         \Hy@escapeform\PDFForm@Text
9736         \pdfstartlink user {\PDFForm@Text}\relax
9737         \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
9738     }%
9739 \endgroup
9740 }
9741 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9742     \def\Fld@name{#2}%
9743     \let\Fld@default\relax
9744     \let\Fld@value\relax
9745     \def\Fld@width{\DefaultWidthofChoiceMenu}%
9746     \def\Fld@height{\DefaultHeightofChoiceMenu}%
9747     \begingroup
9748         \Fld@menulength=0 %
9749         \@tempdima\z@
9750         \@for\@curropt:=#3\do{%
9751             \expandafter\Fld@checkequals\@curropt==\%
9752             \Hy@StepCount\Fld@menulength
9753             \settowidth{\@tempdimb}{\@currDisplay}%
9754             \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
9755         }%
9756         \advance\@tempdima by 15\p@
9757         \Field@toks={ }%
9758         \begingroup
9759             \HyField@SetKeys{#1}%
9760         \edef\x{\endgroup
9761             \noexpand\expandafter
9762             \noexpand\HyField@SetKeys
9763             \noexpand\expandafter{%
9764                 \expandafter\noexpand\curname DefaultOptionsof%
9765                 \ifFld@radio
9766                     Radio%
9767                 \else
9768                     \ifFld@combo
9769                         \ifFld@popdown
9770                             PopdownBox%
9771                         \else
9772                             ComboBox%
9773                         \fi
9774                     \else
9775                         ListBox%
9776                     \fi
9777                 \fi

```



```

9778         \endcsname
9779     }%
9780 } \x
9781 \HyField@SetKeys{#1}%
9782 \PDFForm@Name
9783 \ifFld@hidden\def\Fld@width{1sp}\fi
9784 \ifx\Fld@value\relax
9785     \let\Fld@value\Fld@default
9786 \fi
9787 \LayoutChoiceField{#2}{%
9788     \ifFld@radio
9789         \HyField@FlagsRadioButton
9790         \@@Radio{#3}%
9791     \else
9792         \begingroup
9793             \HyField@FlagsChoice
9794             \ifdim\Fld@width<\@tempdima
9795                 \ifdim\@tempdima<1cm\@tempdima1cm\fi
9796                 \edef\Fld@width{\the\@tempdima}%
9797             \fi
9798             \ifFld@combo
9799             \else
9800                 \@tempdima=\the\Fld@menulength\Fld@charsize
9801                 \advance\@tempdima by \Fld@borderwidth bp %
9802                 \advance\@tempdima by \Fld@borderwidth bp %
9803                 \edef\Fld@height{\the\@tempdima}%
9804             \fi
9805             \@@Listbox{#3}%
9806         \endgroup
9807     \fi
9808 }%
9809 \endgroup
9810 }
9811 \def\@@Radio#1{%
9812     \Fld@listcount=0 %
9813     \@for\@curropt:=#1\do{%
9814         \expandafter\Fld@checkequals\@curropt==\%
9815         \Hy@StepCount\Fld@listcount
9816         \@currDisplay\space
9817         \leavevmode
9818         \Hy@escapeform\PDFForm@Radio
9819         \pdfstartlink user {%
9820             \PDFForm@Radio
9821             /AP<<%
9822             /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.

```

9823             /\@currValue\space \DingObject
9824             >>%
9825         >>%
9826     }%
9827     \relax
9828     \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
9829     \space % deliberate space between radio buttons
9830 }%
9831 }

```

```

9832 \newcount\Fld@listcount
9833 \def\@@ListBox#1{%
9834   \HyField@PDFChoices{#1}%
9835   \leavevmode
9836   \Hy@escapeform\PDFForm@List
9837   \pdfstartlink user {\PDFForm@List}\relax
9838   \MakeChoiceField{\Fld@width}{\Fld@height}%
9839   \pdfendlink
9840 }
9841 \def\@PushButton[#1]#2{% parameters, label
9842   \def\Fld@name{#2}%
9843   \begingroup
9844     \Field@toks={ }%
9845     \expandafter\HyField@SetKeys\expandafter{%
9846       \DefaultOptionsofPushButton,#1%
9847     }%
9848     \PDFForm@Name
9849     \HyField@FlagsPushButton
9850     \ifFld@hidden\def\Fld@width{1sp}\fi
9851     \LayoutPushButtonField{%
9852       \leavevmode
9853       \Hy@escapeform\PDFForm@Push
9854       \pdfstartlink user {\PDFForm@Push}\relax
9855       \MakeButtonField{#2}%
9856       \pdfendlink
9857     }%
9858   \endgroup
9859 }
9860 \def\@Submit[#1]#2{%
9861   \Field@toks={ }%
9862   \def\Fld@width{\DefaultWidthofSubmit}%
9863   \def\Fld@height{\DefaultHeightofSubmit}%
9864   \begingroup
9865     \expandafter\HyField@SetKeys\expandafter{%
9866       \DefaultOptionsofSubmit,#1%
9867     }%
9868     \HyField@FlagsPushButton
9869     \HyField@FlagsSubmit
9870     \ifFld@hidden\def\Fld@width{1sp}\fi
9871     \leavevmode
9872     \Hy@escapeform\PDFForm@Submit
9873     \pdfstartlink user {%
9874       \PDFForm@Submit
9875       /AP<</N \SubmitObject/D \SubmitPObject>>%
9876     }%
9877     \relax
9878     \MakeButtonField{#2}%
9879     \pdfendlink
9880   \endgroup
9881 }
9882 \def\@Reset[#1]#2{%
9883   \Field@toks={ }%
9884   \def\Fld@width{\DefaultWidthofReset}%
9885   \def\Fld@height{\DefaultHeightofReset}%
9886   \begingroup
9887     \expandafter\HyField@SetKeys\expandafter{%
9888       \DefaultOptionsofReset,#1%

```

```

9889 }%
9890 \HyField@FlagsPushButton
9891 \ifFld@hidden\def\Fld@width{1sp}\fi
9892 \leavevmode
9893 \Hy@escapeform\PDFForm@Reset
9894 \pdfstartlink user {\PDFForm@Reset}\relax
9895 \MakeButtonField{#2}%
9896 \pdfendlink
9897 \endgroup
9898 }
9899 \def\@CheckBox[#1]#2{% parameters, label
9900 \def\Fld@name{#2}%
9901 \def\Fld@default{0}%
9902 \begingroup
9903 \def\Fld@width{\DefaultWidthofCheckBox}%
9904 \def\Fld@height{\DefaultHeightofCheckBox}%
9905 \Field@toks={ }%
9906 \expandafter\HyField@SetKeys\expandafter{%
9907 \DefaultOptionsofCheckBox,#1%
9908 }%
9909 \PDFForm@Name
9910 \HyField@FlagsCheckBox
9911 \ifFld@hidden\def\Fld@width{1sp}\fi
9912 \LayoutCheckField{#2}{%
9913 \Hy@escapeform\PDFForm@Check
9914 \pdfstartlink user {\PDFForm@Check}\relax
9915 \MakeCheckField{\Fld@width}{\Fld@height}%
9916 \pdfendlink
9917 }%
9918 \endgroup
9919 }
9920 \pdfobj { << /Type /Encoding /Differences [ 24 /breve /caron
9921 /circumflex /dotaccent /hungarumlaut /ogonek /ring /tilde 39
9922 /quotesingle 96 /grave 128 /bullet /dagger /daggerdbl /ellipsis
9923 /emdash /endash /florin /fraction /guilsinglleft /guilsinglright
9924 /minus /perthousand /quotedblbase /quotedblleft /quotedblright
9925 /quoteleft /quoteright /quotesinglbase /trademark /fi /fl /Lslash /OE
9926 /Scaron /Ydieresis /Zcaron /dotlessi /lslash /oe /scaron /zcaron 164
9927 /currency 166 /brokenbar 168 /dieresis /copyright /ordfeminine 172
9928 /logicalnot /.notdef /registered /macron /degree /plusminus
9929 /twosuperior /threesuperior /acute /mu 183 /periodcentered /cedilla
9930 /onesuperior /ordmasculine 188 /onequarter /onehalf /threequarters 192
9931 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE /Ccedilla
9932 /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute /Icircumflex
9933 /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex /Otilde
9934 /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex /Udieresis
9935 /Yacute /Thorn /germandbls /agrave /aacute /acircumflex /atilde
9936 /adieresis /aring /ae /ccedilla /egrave /eacute /ecircumflex
9937 /edieresis /igrave /iacute /icircumflex /idieresis /eth /ntilde
9938 /ograde /oacute /ocircumflex /otilde /odieresis /divide /oslash
9939 /ugrave /uacute /ucircumflex /udieresis /yacute /thorn /ydieresis ] >>
9940 }
9941 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
9942 \pdfobj{%
9943 <<%
9944 /Type/Font%
9945 /Subtype/Type1%

```

```

9946     /Name/ZaDb%
9947     /BaseFont/ZapfDingbats%
9948   >>%
9949 }
9950 \edef\OBJ@ZaDb{\the\pdflastobj}
9951 \pdfobj{%
9952   <<%
9953     /Type/Font%
9954     /Subtype/Type1%
9955     /Name/Helv%
9956     /BaseFont/Helvetica%
9957     /Encoding \OBJ@pdfdocencoding\space 0 R%
9958   >>%
9959 }
9960 \edef\OBJ@Helv{\the\pdflastobj}
9961 \pdfobj{%
9962   <<%
9963     /Fields []%
9964     /DR<<%
9965       /Font<<%
9966         /ZaDb \OBJ@ZaDb\space 0 R%
9967         /Helv \OBJ@Helv\space 0 R%
9968       >>%
9969     >>%
9970     /DA(/Helv 10 Tf 0 g)%
9971     /NeedAppearances true%
9972   >>%
9973 }
9974 \edef\OBJ@acroform{\the\pdflastobj}
9975 \pdfobj{</pdfobj>}

```

## 47.6 dvipdfm

D. P. Story adapted the pdf<sub>TEX</sub> forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```

9976 \def\*dvipdfm

```

\@Gauge

```

9977 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9978   \typeout{Sorry, dvipdfm does not support FORM gauges}%
9979 }

```

\@Form

```

9980 \def\@Form[#1]{%
9981   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
9982   \setkeys{Form}{#1}%
9983   \@pdfm@mark{obj @afields []}%
9984   \@pdfm@mark{obj @corder []}%
9985   \@pdfm@mark{%
9986     obj @aform <<%
9987       /Fields @afields%
9988       /DR<<%
9989       /Font<<%
9990         /ZaDb \OBJ@ZaDb%
9991         /Helv \OBJ@Helv%
9992       >>%
9993     >>%

```

```

9994      /DA(/Helv 10 Tf 0 g)%
9995      /CO @corder%
9996      /NeedAppearances true%
9997      >>%
9998  }%
9999  \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
10000 }

\@endForm

10001 \def\@endForm{}

\dvipdfm@setdim  \dvipdfm@setdim sets dimensions for ann using \pdfm@box.
10002 \def\dvipdfm@setdim{%
10003   height \the\ht\pdfm@box\space
10004   width  \the\wd\pdfm@box\space
10005   depth  \the\dp\pdfm@box\space
10006 }

\HyField@AnnotCount
10007 \newcount\HyField@AnnotCount
10008 \HyField@AnnotCount=\z@

\HyField@AdvanceAnnotCount
10009 \def\HyField@AdvanceAnnotCount{%
10010   \global\advance\HyField@AnnotCount\@ne
10011 }

\HyField@TheAnnotCount
10012 \def\HyField@TheAnnotCount{%
10013   \the\HyField@AnnotCount
10014 }

\@TextField
10015 \def\@TextField[#1]#2{% parameters, label
10016   \def\Fld@name{#2}%
10017   \def\Fld@default{}%
10018   \let\Fld@value\@empty
10019   \def\Fld@width{\DefaultWidthofText}%
10020   \def\Fld@height{%
10021     \ifFld@multiline
10022       \DefaultHeightofTextMultiline
10023     \else
10024       \DefaultHeightofText
10025     \fi
10026   }%
10027   \beginngroup
10028     \Field@toks={ }%
10029     \expandafter\HyField@SetKeys\expandafter{%
10030       \DefaultOptionsofText,#1%
10031     }%
10032     \PDFForm@Name
10033     \HyField@FlagsText
10034     \ifFld@hidden\def\Fld@width{1sp}\fi
10035     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
10036     \setbox\pdfm@box=\hbox{%
10037       \MakeTextField{\Fld@width}{\Fld@height}%

```

```

10038 }%
10039 \HyField@AdvanceAnnotCount
10040 \LayoutTextField{#2}{%
10041   \Hy@escapeform\PDFForm@Text
10042   \@pdfm@mark{%
10043     ann @text\HyField@TheAnnotCount\space
10044     \dvipdfm@setdim << \PDFForm@Text >>%
10045   }%
10046 }%
10047 \unhbox\pdfm@box
10048 \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
10049 % record in @afields array
10050 \endgroup
10051 }

```

\@ChoiceMenu

```

10052 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10053   \def\Fld@name{#2}%
10054   \let\Fld@default\relax
10055   \let\Fld@value\relax
10056   \def\Fld@width{\DefaultWidthofChoiceMenu}%
10057   \def\Fld@height{\DefaultHeightofChoiceMenu}%
10058   \begingroup
10059     \Fld@menulength=0 %
10060     \@tempdima\z@
10061     \@for\@curropt:=#3\do{%
10062       \expandafter\Fld@checkequals\@curropt==\%
10063       \Hy@StepCount\Fld@menulength
10064       \settowidth{\@tempdima}{\@currDisplay}%
10065       \ifdim\@tempdima>\@tempdima\@tempdima\@tempdima\fi
10066     }%
10067     \advance\@tempdima by 15\p@
10068     \Field@toks={ }%
10069     \begingroup
10070       \HyField@SetKeys{#1}%
10071     \edef\x{\endgroup
10072       \noexpand\expandafter
10073       \noexpand\HyField@SetKeys
10074       \noexpand\expandafter{%
10075         \expandafter\noexpand\csname DefaultOptionsof%
10076           \ifFld@radio
10077             Radio%
10078           \else
10079             \ifFld@combo
10080               \ifFld@popdown
10081                 PopdownBox%
10082               \else
10083                 ComboBox%
10084               \fi
10085             \else
10086               ListBox%
10087             \fi
10088           \fi
10089         \endcsname
10090       }%
10091     }\x
10092     \HyField@SetKeys{#1}%

```

```

10093 \PDFForm@Name
10094 \ifFld@hidden\def\Fld@width{1sp}\fi
10095 \ifx\Fld@value\relax
10096 \let\Fld@value\Fld@default
10097 \fi
10098 \LayoutChoiceField{#2}{%
10099 \ifFld@radio
10100 \HyField@FlagsRadioButton
10101 \@@Radio{#3}%
10102 \else
10103 \beginngroup
10104 \HyField@FlagsChoice
10105 \ifdim\Fld@width<\@tempdima
10106 \ifdim\@tempdima<1cm\@tempdima1cm\fi
10107 \edef\Fld@width{\the\@tempdima}%
10108 \fi
10109 \ifFld@combo
10110 \else
10111 \@tempdima=\the\Fld@menulength\Fld@charsize
10112 \advance\@tempdima by \Fld@borderwidth bp %
10113 \advance\@tempdima by \Fld@borderwidth bp %
10114 \edef\Fld@height{\the\@tempdima}%
10115 \fi
10116 \@@ListBox{#3}%
10117 \endgroup
10118 \fi
10119 }%
10120 \endgroup
10121 }

```

\@@Radio

```

10122 \def\@@Radio#1{%
10123 \Fld@listcount=0 %
10124 \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
10125 \@for\@curropt:=#1\do{%
10126 \expandafter\Fld@checkequals\@curropt==\%
10127 \Hy@StepCount\Fld@listcount
10128 \@currDisplay\space
10129 \leavevmode
10130 \Hy@escapeform\PDFForm@Radio
10131 \ifnum\Fld@listcount=1 %
10132 \HyField@AdvanceAnnotCount
10133 \fi
10134 \@pdfm@mark{%
10135 ann \ifnum\Fld@listcount=1 @radio\HyField@TheAnnotCount\space\fi
10136 \dvi pdfm@setdim
10137 <<%
10138 \PDFForm@Radio
10139 /AP<</N<</\@currValue /null>>>>%
10140 >>%
10141 }%
10142 \unhcopy\pdfm@box\space% deliberate space between radio buttons
10143 \ifnum\Fld@listcount=1 %
10144 \@pdfm@mark{put @afields @radio\HyField@TheAnnotCount}%
10145 \fi
10146 }%
10147 }

```

```

\Fld@listcount
10148 \newcount\Fld@listcount

@@@Listbox
10149 \def\@@Listbox#1{%
10150   \HyField@PDFChoices{#1}%
10151   \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
10152   \leavevmode
10153   \Hy@escapeform\PDFForm@List
10154   \HyField@AdvanceAnnotCount
10155   \@pdfm@mark{%
10156     ann @list\HyField@TheAnnotCount\space
10157     \dvipdfm@setdim
10158     <<\PDFForm@List>>%
10159   }%
10160   \unhbox\pdfm@box
10161   \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
10162 }

\@PushButton
10163 \def\@PushButton[#1]#2{% parameters, label
10164   \def\Fld@name{#2}%
10165   \begingroup
10166     \Field@toks={ }%
10167     \expandafter\HyField@SetKeys\expandafter{%
10168       \DefaultOptionsofPushButton,#1%
10169     }%
10170     \PDFForm@Name
10171     \HyField@FlagsPushButton
10172     \ifFld@hidden\def\Fld@width{1sp}\fi
10173     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10174     \HyField@AdvanceAnnotCount
10175     \LayoutPushButtonField{%
10176       \leavevmode
10177       \Hy@escapeform\PDFForm@Push
10178       \@pdfm@mark{%
10179         ann @push\HyField@TheAnnotCount\space
10180         \dvipdfm@setdim
10181         <<\PDFForm@Push>>%
10182       }%
10183     }%
10184     \unhbox\pdfm@box
10185     \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
10186   \endgroup
10187 }

\@Submit
10188 \def\@Submit[#1]#2{%
10189   \Field@toks={ }%
10190   \def\Fld@width{\DefaultWidthofSubmit}%
10191   \def\Fld@height{\DefaultHeightofSubmit}%
10192   \begingroup
10193     \expandafter\HyField@SetKeys\expandafter{%
10194       \DefaultOptionsofSubmit,#1%
10195     }%
10196     \HyField@FlagsPushButton

```



```

10197 \HyField@FlagsSubmit
10198 \ifFld@hidden\def\Fld@width{1sp}\fi
10199 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10200 \leavevmode
10201 \Hy@escapeform\PDFForm@Submit
10202 \HyField@AdvanceAnnotCount
10203 \@pdfm@mark{%
10204     ann @submit\HyField@TheAnnotCount\space
10205     \dvipdfm@setdim
10206     <<\PDFForm@Submit>>%
10207 }%
10208 \unhbox\pdfm@box%
10209 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
10210 \endgroup
10211 }

```

\@Reset

```

10212 \def\@Reset[#1]#2{%
10213     \Field@toks={ }%
10214     \def\Fld@width{\DefaultWidthofReset}%
10215     \def\Fld@height{\DefaultHeightofReset}%
10216     \begingroup
10217         \expandafter\HyField@SetKeys\expandafter{%
10218             \DefaultOptionsofReset,#1%
10219         }%
10220         \HyField@FlagsPushButton
10221         \ifFld@hidden\def\Fld@width{1sp}\fi
10222         \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10223         \leavevmode
10224         \Hy@escapeform\PDFForm@Reset
10225         \HyField@AdvanceAnnotCount
10226         \@pdfm@mark{%
10227             ann @reset\HyField@TheAnnotCount\space
10228             \dvipdfm@setdim
10229             <<\PDFForm@Reset>>%
10230         }%
10231         \unhbox\pdfm@box
10232         \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
10233     \endgroup
10234 }

```

\@CheckBox

```

10235 \def\@CheckBox[#1]#2{% parameters, label
10236     \def\Fld@name{#2}%
10237     \def\Fld@default{0}%
10238     \begingroup
10239         \def\Fld@width{\DefaultWidthofCheckBox}%
10240         \def\Fld@height{\DefaultHeightofCheckBox}%
10241         \Field@toks={ }%
10242         \expandafter\HyField@SetKeys\expandafter{%
10243             \DefaultOptionsofCheckBox,#1%
10244         }%
10245         \PDFForm@Name
10246         \HyField@FlagsCheckBox
10247         \ifFld@hidden\def\Fld@width{1sp}\fi
10248         \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
10249         \HyField@AdvanceAnnotCount

```

```

10250 \LayoutCheckField{#2}{%
10251 \Hy@escapeform\PDFForm@Check
10252 \@pdfm@mark{%
10253 ann @check\HyField@TheAnnotCount\space
10254 \dvipdfm@setdim
10255 <<\PDFForm@Check>>%
10256 }%
10257 \unhbox\pdfm@box
10258 \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
10259 }%
10260 \endgroup
10261 }

10262 \@pdfm@mark{obj @OBJpdfdocencoding%
10263 <<%
10264 /Type/Encoding%
10265 /Differences[%
10266 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
10267 39/quotesingle %
10268 96/grave %
10269 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10270 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
10271 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
10272 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
10273 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
10274 164/currency %
10275 166/brokenbar %
10276 168/dieresis/copyright/ordfeminine %
10277 172/logicalnot/.notdef/registered/macron/degree/plusminus%
10278 /twosuperior/threesuperior/acute/mu %
10279 183/periodcentered/cedilla/onesuperior/ordmasculine %
10280 188/onequarter/onehalf/threequarters %
10281 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
10282 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
10283 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
10284 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
10285 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
10286 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
10287 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
10288 /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
10289 /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
10290 /thorn/ydieresis%
10291 ]%
10292 >>%
10293 }

10294 \@pdfm@mark{obj @OBJZaDb%
10295 <<%
10296 /Type/Font%
10297 /Subtype/Type1%
10298 /Name/ZaDb%
10299 /BaseFont/ZapfDingbats%
10300 >>%
10301 }

10302 \@pdfm@mark{obj @OBJHelv%
10303 <<%
10304 /Type/Font%
10305 /Subtype/Type1%
10306 /Name/Helv%

```

```

10307 /BaseFont/Helvetica%
10308 /Encoding @OBJpdfdocencoding%
10309 >>%
10310 }
10311 </dvipdfm>

```

## 47.7 Common forms part

```
10312 <*pdfform>
```

\Hy@escapestring

```

10313 \begingroup\expandafter\expandafter\expandafter\endgroup
10314 \expandafter\ifx\csname pdfescapestring\endcsname\relax
10315 \let\Hy@escapestring\@firstofone
10316 \def\Hy@escapeform#1{%
10317 \ifHy@escapeform
10318 \def\Hy@escapestring##1{%
10319 \noexpand\Hy@escapestring{\noexpand##1}%
10320 }%
10321 \edef\Hy@temp{#1}%
10322 \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
10323 \def\Hy@escapestring##1{%
10324 \@ifundefined{Hy@esc@\string##1}{%
10325 ##1%
10326 \ThisShouldNotHappen
10327 }{%
10328 \csname Hy@esc@\string##1\endcsname
10329 }%
10330 }%
10331 \else
10332 \let\Hy@escapestring\@firstofone
10333 \fi
10334 }%
10335 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
10336 \ifx\#3\%
10337 \else
10338 \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
10339 \Hy@ReturnAfterFi{%
10340 \Hy@@escapeform#3\@nil
10341 }%
10342 \fi
10343 }%
10344 \else
10345 \def\Hy@escapeform#1{%
10346 \ifHy@escapeform
10347 \let\Hy@escapestring\pdfescapestring
10348 \else
10349 \let\Hy@escapestring\@firstofone
10350 \fi
10351 }%
10352 \Hy@escapeform{}}%
10353 \fi

```

\PDFForm@Name

```

10354 \def\PDFForm@Name{%
10355 \begingroup
10356 \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7

```

```

10357     \ifHy@unicode
10358     \Hy@unicodedefalse
10359     \fi
10360     \fi
10361     \pdfstringdef\Hy@gtemp\Fld@name
10362 \endgroup
10363 \let\Fld@name\Hy@gtemp
10364 }

```

#### \PDFForm@Check

```

10365 \def\PDFForm@Check{%
10366 /Subtype/Widget%
10367 \Fld@annotflags
10368 /T(\Fld@name)%
10369 /FT/Btn%
10370 \Fld@flags
10371 /Q \Fld@align
10372 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
10373 /MK<<%
10374   \ifnum\Fld@rotation=\z@
10375   \else
10376     /R \Fld@rotation
10377   \fi
10378   \ifx\Fld@bordercolor\relax
10379   \else
10380     /BC[\Fld@bordercolor]%
10381   \fi
10382   \ifx\Fld@bcolor\relax
10383   \else
10384     /BG[\Fld@bcolor]%
10385   \fi
10386   /CA(\Hy@escapestring{\Fld@cbsymbol})%
10387 >>%
10388 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
10389   \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10390 /H/P%
10391 \ifFld@checked /V/Yes\else /V/Off\fi
10392 }

```

#### \PDFForm@Push

```

10393 \def\PDFForm@Push{%
10394 /Subtype/Widget%
10395 \Fld@annotflags
10396 /T(\Fld@name)%
10397 /FT/Btn%
10398 \HyField@flags
10399 /H/P%
10400 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10401 /MK<<%
10402   \ifnum\Fld@rotation=\z@
10403   \else
10404     /R \Fld@rotation
10405   \fi
10406   \ifx\Fld@bordercolor\relax
10407   \else
10408     /BC[\Fld@bordercolor]%
10409   \fi

```

```

10410 >>%
10411 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick})>>%
10412 }

```

\Fld@additionalactions

```

10413 \def\Fld@@additionalactions{%

```

**K input (keystroke) format**

```

10414 \ifx\Fld@keystroke@code\@empty
10415 \else
10416 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
10417 \fi

```

**F display format**

```

10418 \ifx\Fld@format@code\@empty
10419 \else
10420 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
10421 \fi

```

**V validation**

```

10422 \ifx\Fld@validate@code\@empty
10423 \else
10424 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
10425 \fi

```

**C calculation**

```

10426 \ifx\Fld@calculate@code\@empty
10427 \else
10428 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
10429 \fi

```

**Fo receiving the input focus**

```

10430 \ifx\Fld@onfocus@code\@empty
10431 \else
10432 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
10433 \fi

```

**Bl loosing the input focus (blurred)**

```

10434 \ifx\Fld@onblur@code\@empty
10435 \else
10436 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
10437 \fi

```

**D pressing the mouse button (down)**

```

10438 \ifx\Fld@onmousedown@code\@empty
10439 \else
10440 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
10441 \fi

```

**U releasing the mouse button (up)**

```

10442 \ifx\Fld@onmouseup@code\@empty
10443 \else
10444 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
10445 \fi

```

**E cursor enters the annotation's active area.**

```

10446 \ifx\Fld@onenter@code\@empty
10447 \else
10448 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
10449 \fi

```

X cursor exits the annotation's active area.

```
10450 \ifx\Fld@onexit@code\@empty
10451 \else
10452 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
10453 \fi
10454 }
10455 \def\Fld@additionalactions{%
10456 \if-\Fld@@additionalactions-%
10457 \else
10458 /AA<<\Fld@@additionalactions>>%
10459 \fi
10460 }
```

\PDFForm@List

```
10461 \def\PDFForm@List{%
10462 /Subtype/Widget%
10463 \Fld@annotflags
10464 /T(\Fld@name)%
10465 /FT/Ch%
10466 \Fld@flags
10467 /Q \Fld@align
10468 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10469 /MK<<%
10470 \ifnum\Fld@rotation=\z@
10471 \else
10472 /R \Fld@rotation
10473 \fi
10474 \ifx\Fld@bordercolor\relax
10475 \else
10476 /BC[\Fld@bordercolor]%
10477 \fi
10478 \ifx\Fld@bcolor\relax
10479 \else
10480 /BG[\Fld@bcolor]%
10481 \fi
10482 >>%
10483 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
10484 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10485 \Fld@choices
10486 \Fld@additionalactions
10487 }
```

\PDFForm@Radio

```
10488 \def\PDFForm@Radio{%
10489 /Subtype/Widget%
10490 \Fld@annotflags
10491 /T(\Fld@name)%
10492 /FT/Btn%
10493 \Fld@flags
10494 /H/P%
10495 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10496 /MK<<%
10497 \ifnum\Fld@rotation=\z@
10498 \else
10499 /R \Fld@rotation
10500 \fi
10501 \ifx\Fld@bordercolor\relax
```

```

10502     \else
10503         /BC[\Fld@bordercolor]%
10504     \fi
10505     \ifx\Fld@bcolor\relax
10506     \else
10507         /BG[\Fld@bcolor]%
10508     \fi
10509     /CA(H)%
10510 >>%
10511 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
10512     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10513 \ifx\@currValue\Fld@default
10514     /V/\Fld@default
10515 \else
10516     /V/Off%
10517 \fi
10518 \Fld@additionalactions
10519 }

```

#### \PDFForm@Text

```

10520 \def\PDFForm@Text{%
10521     /Subtype/Widget%
10522     \Fld@annotflags
10523     /T(\Fld@name)%
10524     /FT/Tx%
10525     \Fld@flags
10526     /Q \Fld@align
10527     /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
10528     /MK<<%
10529         \ifnum\Fld@rotation=\z@
10530         \else
10531             /R \Fld@rotation
10532         \fi
10533         \ifx\Fld@bordercolor\relax
10534         \else
10535             /BC[\Fld@bordercolor]%
10536         \fi
10537         \ifx\Fld@bcolor\relax
10538         \else
10539             /BG[\Fld@bcolor]%
10540         \fi
10541     >>%
10542     /DA(/Helv \strip@pt\Fld@charsize\space Tf%
10543         \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10544     /DV(\Hy@escapestring{\Fld@default})%
10545     /V(\Hy@escapestring{\Fld@value})%
10546     \Fld@additionalactions
10547     \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
10548 }

```

#### \PDFForm@Submit

```

10549 \def\PDFForm@Submit{%
10550     /Subtype/Widget%
10551     \Fld@annotflags
10552     /T(\Fld@name)%
10553     /FT/Btn%
10554     \Fld@flags

```

```

10555 /H/P%
10556 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10557 /MK<<%
10558 \ifnum\Fld@rotation=\z@
10559 \else
10560 /R \Fld@rotation
10561 \fi
10562 \ifx\Fld@bordercolor\relax
10563 \else
10564 /BC[\Fld@bordercolor]%
10565 \fi
10566 >>%
10567 /A<<%
10568 /S/SubmitForm%
10569 /F<<%
10570 /FS/URL%
10571 /F(\Hy@escapestring{\Form@action})%
10572 >>%
10573 \Fld@submitflags
10574 >>%
10575 }

```

`\PDFForm@Reset`

```

10576 \def\PDFForm@Reset{%
10577 /Subtype/Widget%
10578 \Fld@annotflags
10579 /T(\Fld@name)%
10580 /FT/Btn%
10581 \Fld@flags
10582 /H/P%
10583 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
10584 /MK<<%
10585 \ifnum\Fld@rotation=\z@
10586 \else
10587 /R \Fld@rotation
10588 \fi
10589 \ifx\Fld@bordercolor\relax
10590 \else
10591 /BC[\Fld@bordercolor]%
10592 \fi
10593 % /CA (Clear)
10594 % /AC (Done)
10595 >>%
10596 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10597 /A<</S/ResetForm>>%
10598 }

10599 </pdfform>
10600 <*package>

```

## 48 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in  $\text{\LaTeX}$  macros.



To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```
10601 \def\phantomsection{%
10602   \Hy@GlobalStepCount\Hy@linkcounter
10603   \xdef\@currentHref{section*.\the\Hy@linkcounter}%
10604   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
10605 }
10606 \end{package}
```

## 48.1 Bookmarks

```
10607 \*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`.

```
10608 \def\Hy@writebookmark#1#2#3#4#5{% section number, text, label, level, file
10609   \ifx\WriteBookmarks\relax%
10610   \else
10611     \ifnum#4>\Hy@bookmarksdepth\relax
10612     \else
10613       \@writetorep{#1}{#2}{#3}{#4}{#5}%
10614     \fi
10615   \fi
10616 }
10617 \def\Hy@currentbookmarklevel{0}
10618 \def\Hy@numberline#1{#1 }
10619 \def\@writetorep#1#2#3#4#5{%
10620   \begingroup
10621     \edef\Hy@tempa{#5}%
10622     \ifx\Hy@tempa\Hy@bookmarkstype
10623       \edef\Hy@level{#4}%
10624       \ifx\Hy@levelcheck Y%
10625         \@tempcnta\Hy@level\relax
10626         \advance\@tempcnta by -1 %
10627         \ifnum\Hy@currentbookmarklevel<\@tempcnta
10628           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
10629           \advance\@tempcnta by 1 %
10630           \Hy@Warning{%
10631             Difference (\the\@tempcnta) between bookmark levels is %
10632             greater \MessageBreak than one, level fixed%
10633           }%
10634           \@tempcnta\Hy@currentbookmarklevel
10635           \advance\@tempcnta by 1 %
10636           \edef\Hy@level{\the\@tempcnta}%
10637         \fi
10638       \else
10639         \global\let\Hy@levelcheck Y%
10640       \fi
10641       \global\let\Hy@currentbookmarklevel\Hy@level
10642       \@tempcnta\Hy@level\relax
10643       \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%

```

```

10644 \advance\@tempcnta by -1 %
10645 \edef\Hy@tempa{#3}%
10646 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
10647 \ifx\Hy@tempa\Hy@tempb
10648   \Hy@Warning{%
10649     The anchor of a bookmark and its parent's must not%
10650     \MessageBreak be the same. Added a new anchor%
10651   }%
10652   \phantomsection
10653 \fi
10654 \ifHy@bookmarksnumbered
10655   \let\numberline\Hy@numberline
10656   \let\partnumberline\Hy@numberline
10657   \let\chapternumberline\Hy@numberline
10658 \else
10659   \let\numberline\@gobble
10660   \let\partnumberline\@gobble
10661   \let\chapternumberline\@gobble
10662 \fi
10663 \pdfstringdef\Hy@tempa{#2}%
10664 \if@filesw
10665   \protected@write\@outlinefile{}{%
10666     \protect\BOOKMARK
10667       [\Hy@level] [\@bookmarkopenstatus{\Hy@level}] {#3}%
10668     {\Hy@tempa}{\Hy@tempb}%
10669   }%
10670 \fi
10671 \fi
10672 \endgroup
10673 }

```

In the call of \BOOKMARK the braces around #4 are omitted, because it is not likely, that the level number contains ] .

```

10674 \newcommand{\currentpdfbookmark}{%
10675   \pdfbookmark[\Hy@currentbookmarklevel]%
10676 }
10677 \newcommand{\subpdfbookmark}{%
10678   \@tempcnta\Hy@currentbookmarklevel
10679   \Hy@StepCount\@tempcnta
10680   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
10681 }
10682 \newcommand{\belowpdfbookmark}[2]{%
10683   \@tempcnta\Hy@currentbookmarklevel
10684   \Hy@StepCount\@tempcnta
10685   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
10686   \advance\@tempcnta by -1 %
10687   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
10688 }

```

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.

```

10689 \renewcommand\pdfbookmark[3][0]{%
10690   \Hy@writebookmark{}{#2}{#3.#1}{#1}{toc}%
10691   \hyper@anchorstart{#3.#1}\hyper@anchorend
10692 }
10693 \def\BOOKMARK{\@ifnextchar[{\@BOOKMARK}{\@BOOKMARK[1][-]}}
10694 \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@wkamp.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.

10695 \\*vtx

10696 \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.

10697 \begingroup

10698 \catcode'\'=12 %

10699 \ifnum\Hy@VTeXversion<650 %

10700 \catcode'\=12 %

10701 \gdef\hv@pdf@char#1#2#3{%

10702 \char

10703 \ifcase'#1#2#3 %

10704 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%

10705 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%

10706 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%

10707 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%

10708 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%

10709 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%

10710 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%

10711 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%

10712 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%

10713 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%

10714 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%

10715 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%

10716 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%

10717 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%

10718 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%

10719 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%

10720 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%

10721 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%

10722 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%

10723 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%

10724 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%

10725 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%

10726 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%

10727 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%

10728 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%

10729 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%

10730 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%

10731 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%

10732 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%

10733 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%

10734 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%

10735 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%

10736 \fi

10737 }%

10738 \else

10739 \gdef\hv@pdf@char{\char'}%

10740 \fi

10741 \endgroup

\@@BOOKMARK

```
10742 \def\@@BOOKMARK[#1][#2]#3#4#5{%
10743   \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
10744   \edef\@mycount{\the\@serial@counter}%
10745   \Hy@StepCount\@serial@counter
10746   \edef\@parcount{%
10747     \expandafter\ifx\csname @count@#5\endcsname\relax
10748     0%
10749     \else
10750     \csname @count@#5\endcsname
10751     \fi
10752   }%
10753   \immediate\special{!outline #3;p=\@parcount,i=\@mycount,s=\ifx#2-c\else
10754 o\fi,t=#4}%
10755 }
```

\ReadBookmarks

```
10756 \def\ReadBookmarks{%
10757   \begingroup
10758     \def\0{\hv@pdf@char 0}%
10759     \def\1{\hv@pdf@char 1}%
10760     \def\2{\hv@pdf@char 2}%
10761     \def\3{\hv@pdf@char 3}%
10762     \def\({}%
10763     \def\)}%
10764     \def\do##1{%
10765       \ifnum\the\catcode'##1=\active
10766       \@makeother##1%
10767       \fi
10768     }%
10769     \dospecials
10770     \InputIfFileExists{\jobname.out}{-}{-}%
10771   \endgroup
10772   \ifx\WriteBookmarks\relax
10773   \else
10774     \if@filesw
10775       \newwrite\@outlinefile
10776       \immediate\openout\@outlinefile=\jobname.out\relax
10777       \ifHy@typexml
10778       \immediate\write\@outlinefile{<relaxxml>\relax}%
10779       \fi
10780     \fi
10781   \fi
10782 }

10783 </vtex>

10784 <!*vtex>
10785 \def\ReadBookmarks{%
10786   \begingroup
10787     \escapechar='\'%
10788     \let\escapechar\@gobble %
10789     \def\@@BOOKMARK[##1][##2]##3##4##5{\calc@bm@number{##5}}%
10790     \InputIfFileExists{\jobname.out}{-}{-}%
10791     \ifx\WriteBookmarks\relax
10792     \global\let\WriteBookmarks\relax
10793     \fi
10794     \def\@@BOOKMARK[##1][##2]##3##4##5{%
```

```

10795     \def\Hy@temp{##4}%
10796 \< *pdftex>
10797     \Hy@pstringdef\Hy@pstringName{##3}%
10798     \Hy@OutlineName{}\Hy@pstringName{%
10799         ##2\check@bm@number{##3}%
10800     }{%
10801         \expandafter\strip@prefix\meaning\Hy@temp
10802     }%
10803 \< /pdftex>
10804 \< *pdfmark>
10805     \Hy@pstringdef\Hy@pstringName{##3}%
10806     \pdfmark{%
10807         pdfmark=/OUT,%
10808         Count={##2\check@bm@number{##3}},%
10809         Dest={\Hy@pstringName},%
10810         Title=\expandafter\strip@prefix\meaning\Hy@temp
10811     }%
10812 \< /pdfmark>
10813 \< *dvipdfm>
10814     \Hy@pstringdef\Hy@pstringName{##3}%
10815     \@pdfm@mark{%
10816         outline \ifHy@DvipdfmxOutlineOpen
10817             [%
10818             \ifnum##21>\z@
10819             \else
10820             -%
10821             \fi
10822             ] %
10823             \fi
10824             ##1<<%
10825             /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
10826             /A<<%
10827             /S/GoTo%
10828             /D(\Hy@pstringName)%
10829             >>%
10830             >>%
10831         }%
10832 \< /dvipdfm>
10833 }%
10834 {%
10835     \def\WriteBookmarks{0}%
10836     \InputIfFileExists{\jobname.out}{-}{-}%
10837 }%
10838 {%\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}%
10839 \ifx\WriteBookmarks\relax
10840 \else
10841     \if@files
10842         \newwrite\@outlinefile
10843         \immediate\openout\@outlinefile=\jobname.out\relax
10844         \ifHy@typexml
10845             \immediate\write\@outlinefile{<relaxxml>\relax}%
10846         \fi
10847     \fi
10848 \fi
10849 \endgroup
10850 }
10851 \< *pdftex>

```

```

10852 \def\Hy@OutlineName#1#2#3#4{%
10853   \pdfoutline goto name{#2}count#3{#4}%
10854 }
10855 </pdfTeX>
10856 \def\check@bm@number#1{%
10857   \expandafter\ifx\csname B_#1\endcsname\relax
10858     0%
10859   \else
10860     \csname B_#1\endcsname
10861   \fi
10862 }
10863 \def\calc@bm@number#1{%
10864   \@tempcnta=\check@bm@number{#1}\relax
10865   \advance\@tempcnta by 1 %
10866   \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
10867 }
10868 </!vTeX>

10869 \ifHy@implicit
10870 \else
10871   \expandafter\endinput
10872 \fi

10873 </outlines>
10874 <*outlines | hypertex>

10875 \let\H@old@ssect\@ssect
10876 \def\@ssect#1#2#3#4#5{%
10877   \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
10878   \phantomsection
10879 }
10880 \let\H@old@schapter\@schapter
10881 \def\@schapter#1{%
10882   \H@old@schapter{#1}%
10883   \begingroup
10884     \let\mkboth\@gobbletwo
10885     \Hy@GlobalStepCount\Hy@linkcounter
10886     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
10887     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
10888   \endgroup
10889 }

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:

10890 \@ifundefined{@chapter}{-}{%
10891   \let\Hy@org@chapter\@chapter
10892   \def\@chapter{%
10893     \def\Hy@next{%
10894       \Hy@GlobalStepCount\Hy@linkcounter
10895       \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
10896       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
10897     }%
10898     \ifnum\c@secnumdepth>\m@ne
10899       \@ifundefined{if@mainmatter}%
10900       \iftrue{\csname if@mainmatter\endcsname}%
10901       \let\Hy@next\relax
10902     \fi
10903   \fi

```

```

10904 \Hy@next
10905 \Hy@org@chapter
10906 }%
10907 }

10908 \let\H@old@part\@part
10909 \begingroup\expandafter\expandafter\expandafter\endgroup
10910 \expandafter\ifx\csname chapter\endcsname\relax
10911 \let\Hy@secnum@part\z@
10912 \else
10913 \let\Hy@secnum@part\m@ne
10914 \fi
10915 \def\@part{%
10916 \ifnum\Hy@secnum@part>\c@secnumdepth
10917 \phantomsection
10918 \fi
10919 \H@old@part
10920 }

10921 \let\H@old@spart\@spart
10922 \def\@spart#1{%
10923 \H@old@spart{#1}%
10924 \Hy@GlobalStepCount\Hy@linkcounter
10925 \xdef\@currentHref{part*.\the\Hy@linkcounter}%
10926 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
10927 }

10928 \let\H@old@sect\@sect
10929 \def\@sect#1#2#3#4#5#6[#7]#8{%
10930 \ifnum #2>\c@secnumdepth
10931 \Hy@GlobalStepCount\Hy@linkcounter
10932 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
10933 \fi
10934 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}%
10935 \ifnum #2>\c@secnumdepth
10936 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
10937 \fi
10938 }

10939 </outlines | hypertex>
10940 <*outlines>

10941 \expandafter\def\csname Parent-4\endcsname{}
10942 \expandafter\def\csname Parent-3\endcsname{}
10943 \expandafter\def\csname Parent-2\endcsname{}
10944 \expandafter\def\csname Parent-1\endcsname{}
10945 \expandafter\def\csname Parent0\endcsname{}
10946 \expandafter\def\csname Parent1\endcsname{}
10947 \expandafter\def\csname Parent2\endcsname{}
10948 \expandafter\def\csname Parent3\endcsname{}
10949 \expandafter\def\csname Parent4\endcsname{}

10950 </outlines>

```

## 49 Compatibility with koma-script classes

```
10951 <*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.

```

10952 \def\Hy@tempa{%
10953   \def\@addchap[##1]##2{%
10954     \typeout{##2}%
10955     \if@twoside
10956       \@mkboth{##1}{}%
10957     \else
10958       \@mkboth{}{##1}%
10959     \fi
10960     \addtocontents{lof}{\protect\addvspace{10\p@}}%
10961     \addtocontents{lot}{\protect\addvspace{10\p@}}%
10962     \Hy@GlobalStepCount\Hy@linkcounter
10963     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
10964     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
10965     \if@twocolumn
10966       \@topnewpage[\@makeschapterhead{##2}]%
10967     \else
10968       \@makeschapterhead{##2}%
10969       \@afterheading
10970     \fi
10971     \addcontentsline{toc}{chapter}{##1}%
10972   }%
10973 }
10974 \@ifclassloaded{scrbook}{%
10975   \@ifclasslater{scrbook}{2001/01/01}{%
10976     \let\Hy@tempa\@empty
10977   }{}%
10978 }{%
10979   \@ifclassloaded{scrreprt}{%
10980     \@ifclasslater{scrreprt}{2001/01/01}{%
10981       \let\Hy@tempa\@empty
10982     }{}%
10983   }{%
10984     \let\Hy@tempa\@empty
10985   }%
10986 }%
10987 \Hy@tempa
10988 </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

```

10989 <*pd1enc>
10990 \DeclareFontEncoding{PD1}{}{}

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

10991 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
10992 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
10993 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
10994 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
10995 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed

```

Accents

```

10996 \DeclareTextAccent{\'}{PD1}{\textgrave}
10997 \DeclareTextAccent{\'}{PD1}{\textacute}
10998 \DeclareTextAccent{\^}{PD1}{\textcircumflex}

```



```

10999 \DeclareTextAccent{\~}{PD1}{\texttilde}
11000 \DeclareTextAccent{"}{PD1}{\textdieresis}
11001 \DeclareTextAccent{\r}{PD1}{\textring}
11002 \DeclareTextAccent{\v}{PD1}{\textcaron}
11003 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
11004 \DeclareTextAccent{\c}{PD1}{\textcedilla}
11005 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textgrave}
11006 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textacute}
11007 \DeclareTextCompositeCommand{\^}{PD1}{\@empty}{\textcircumflex}
11008 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
11009 \DeclareTextCompositeCommand{"}{PD1}{\@empty}{\textdieresis}
11010 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
11011 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}
11012 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
11013 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
11014 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}

Accent glyph names
11015 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve
11016 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
11017 \DeclareTextCommand{\textcircumflex}{PD1}{\032} % circumflex
11018 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
11019 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
11020 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
11021 \DeclareTextCommand{\textring}{PD1}{\036} % ring
11022 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde

\040: space
\041: exclam
11023 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042
11024 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign
11025 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar
11026 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent
11027 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand

\047: quotesingle
11028 \DeclareTextCommand{\textparenleft}{PD1}{\string\({} % parenleft \050
11029 \DeclareTextCommand{\textparenright}{PD1}{\string\)} % parenright \051

\052: asterisk
\053: plus
\054: comma
\055: hyphen
\056: period
\057: slash
\060... \071: 0...9
\072: colon
\073: semicolon
11030 \DeclareTextCommand{\textless}{PD1}{<} % less \074

\075: equal
11031 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076

\077: question
\100: at
\101... \132: A...Z
\133: bracketleft
11032 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash
\135: bracketright
11033 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum

```

```

11034 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
11035 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave
\141... \172: a...z
11036 \DeclareTextCompositeCommand{\.}{PD1}{i}{i} % i
11037 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
11038 \DeclareTextCommand{\textbar}{PD1}{|} % bar
11039 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
11040 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde

```

No glyph \177 in PDFDocEncoding.

```

11041 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
11042 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
11043 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl
11044 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis
11045 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
11046 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
11047 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
11048 \DeclareTextCommand{\textfractionmark}{PD1}{\207} % fraction, \207
11049 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft
11050 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
11051 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
11052 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
11053 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
11054 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
11055 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright
11056 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
11057 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
11058 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
11059 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark
11060 \DeclareTextCommand{\textfi}{PD1}{\223} % fi ?? \223
11061 \DeclareTextCommand{\textfl}{PD1}{\224} % fl ?? \224
11062 \DeclareTextCommand{\L}{PD1}{\225} % Lslash, \225
11063 \DeclareTextCommand{\OE}{PD1}{\226} % OE
11064 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron
11065 \DeclareTextCompositeCommand{\"}{PD1}{Y}{\230} % Ydieresis
11066 \DeclareTextCommand{\IJ}{PD1}{\230}
11067 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231} % Zcaron, \231
11068 \DeclareTextCommand{\i}{PD1}{\232} % dotlessi, \232
11069 \DeclareTextCommand{\l}{PD1}{\233} % lslash, \233
11070 \DeclareTextCommand{\oe}{PD1}{\234} % oe
11071 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
11072 \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.

```

11073 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
11074 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown
11075 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
11076 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
11077 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
11078 \DeclareTextCommand{\textyen}{PD1}{\245} % yen
11079 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
11080 \DeclareTextCommand{\textsection}{PD1}{\247} % section
11081 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
11082 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
11083 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
11084 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
11085 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

```

No glyph \255 in PDFDocEncoding.

```
11086 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
11087 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
11088 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
11089 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
11090 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
11091 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
11092 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
11093 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
11094 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
11095 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
11096 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
11097 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior
11098 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine
11099 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright
11100 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter
11101 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf
11102 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters
11103 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown
11104 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300} % Agrave
11105 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301} % Aacute
11106 \DeclareTextCompositeCommand{\`}{PD1}{A}{\302} % Acircumflex
11107 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303} % Atilde
11108 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304} % Adieresis
11109 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring
11110 \DeclareTextCommand{\AE}{PD1}{\306} % AE
11111 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla
11112 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310} % Egrave
11113 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311} % Eacute
11114 \DeclareTextCompositeCommand{\`}{PD1}{E}{\312} % Ecircumflex
11115 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313} % Edieresis
11116 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314} % Igrave
11117 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315} % Iacute
11118 \DeclareTextCompositeCommand{\`}{PD1}{I}{\316} % Icircumflex
11119 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317} % Idieresis
11120 \DeclareTextCommand{\DH}{PD1}{\320} % Eth
11121 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth
11122 \DeclareTextCompositeCommand{\`}{PD1}{N}{\321} % Ntilde
11123 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322} % Ograve
11124 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323} % Oacute
11125 \DeclareTextCompositeCommand{\`}{PD1}{O}{\324} % Ocircumflex
11126 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325} % Otilde
11127 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326} % Odieresis
11128 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply
11129 \DeclareTextCommand{\O}{PD1}{\330} % Oslash
11130 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331} % Ugrave
11131 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute
11132 \DeclareTextCompositeCommand{\`}{PD1}{U}{\333} % Ucircumflex
11133 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis
11134 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335} % Yacute
11135 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn
11136 \DeclareTextCommand{\ss}{PD1}{\337} % germandbls
11137 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340} % agrave
11138 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute
11139 \DeclareTextCompositeCommand{\`}{PD1}{a}{\342} % acircumflex
11140 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343} % atilde
11141 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344} % adieresis
```

```

11142 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring
11143 \DeclareTextCommand{\ae}{PD1}{\346} % ae
11144 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla
11145 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350} % egrave
11146 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute
11147 \DeclareTextCompositeCommand{\`}{PD1}{e}{\352} % ecircumflex
11148 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353} % edieresis
11149 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354} % igrave
11150 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354} % igrave
11151 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
11152 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
11153 \DeclareTextCompositeCommand{\`}{PD1}{i}{\356} % icircumflex
11154 \DeclareTextCompositeCommand{\`}{PD1}{i}{\356} % icircumflex
11155 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
11156 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
11157 \DeclareTextCommand{\dh}{PD1}{\360} % eth
11158 \DeclareTextCompositeCommand{\`}{PD1}{n}{\361} % ntilde
11159 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362} % ograve
11160 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363} % oacute
11161 \DeclareTextCompositeCommand{\`}{PD1}{o}{\364} % ocircumflex
11162 \DeclareTextCompositeCommand{\`}{PD1}{o}{\365} % otilde
11163 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366} % odieresis
11164 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
11165 \DeclareTextCommand{\o}{PD1}{\370} % oslash
11166 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371} % ugrave
11167 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372} % uacute
11168 \DeclareTextCompositeCommand{\`}{PD1}{u}{\373} % ucircumflex
11169 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374} % udieresis
11170 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375} % yacute
11171 \DeclareTextCommand{\th}{PD1}{\376} % thorn
11172 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377} % ydieresis
11173 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

11174 \DeclareTextCommand{\SS}{PD1}{SS}
11175 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

11176 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
11177 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
11178 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
11179 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
11180 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
11181 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
11182 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
11183 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

11184 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
11185 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
11186 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
11187 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
11188 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
11189 \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;

```

11190 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
11191 \DeclareTextCompositeCommand{\'}{PD1}{c}{c} % cacute
11192 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek

```

```

11193 \DeclareTextCompositeCommand{\'}{PD1}{n}{n} % nacute
11194 \DeclareTextCompositeCommand{\'}{PD1}{s}{s} % sacute
11195 \DeclareTextCompositeCommand{\'}{PD1}{z}{z} % zacute
11196 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot
11197 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
11198 \DeclareTextCompositeCommand{\'}{PD1}{C}{C} % Cacute
11199 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
11200 \DeclareTextCompositeCommand{\'}{PD1}{N}{N} % Nacute
11201 \DeclareTextCompositeCommand{\'}{PD1}{S}{S} % Sacute
11202 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z} % Zacute
11203 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot
11204 </pd1enc>

```

## 50.2 PU encoding

```

11205 <*puenc>
11206 \DeclareFontEncoding{PU}{-}{-}

```

### 50.2.1 Basic Latin

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

11207 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
11208 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
11209 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
11210 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
11211 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed

```

#### Accents

```

11212 \DeclareTextAccent{\'}{PU}{\textgrave}
11213 \DeclareTextAccent{\'}{PU}{\textacute}
11214 \DeclareTextAccent{\`}{PU}{\textcircumflex}
11215 \DeclareTextAccent{\~}{PU}{\texttilde}
11216 \DeclareTextAccent{\"}{PU}{\textdieresis}
11217 \DeclareTextAccent{\r}{PU}{\textring}
11218 \DeclareTextAccent{\v}{PU}{\textcaron}
11219 \DeclareTextAccent{\.}{PU}{\textdotaccent}
11220 \DeclareTextAccent{\c}{PU}{\textcedilla}
11221 \DeclareTextAccent{\U}{PU}{\textbreve}
11222 \DeclareTextAccent{\C}{PU}{\textdoublegrave}
11223 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textgrave}
11224 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
11225 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textcircumflex}
11226 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
11227 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textdieresis}
11228 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
11229 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
11230 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
11231 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
11232 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
11233 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}
11234 \DeclareTextCommand{\=}{PU}[1]{\TextSymbolUnavailable{\=#1}}#1}
11235 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
11236 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
11237 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}

```

#### Accent glyph names

```

11238 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
11239 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
11240 \DeclareTextCommand{\textcircumflex}{PU}{\80\032} % circumflex

```

```

11241 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
11242 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
11243 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
11244 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
11245 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
11246 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave

\040: space
\041: exclam

11247 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
11248 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
11249 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
11250 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
11251 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand

\047: quotesingle

11252 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft
11253 \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

11254 \DeclareTextCommand{\textless}{PU}{<} % less \80\074

\075: equal

11255 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076

\077: question
\100: at
\101... \132: A...Z
\133: bracketleft

11256 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash

\135: bracketright

11257 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum
11258 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore
11259 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave

\141... \172: a...z

11260 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % i
11261 \DeclareTextCommand{\j}{PU}{j} % jdotless
11262 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft
11263 \DeclareTextCommand{\textbar}{PU}{|} % bar
11264 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright
11265 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde

No glyph \177 in PDFDocEncoding.

```

## 50.2.2 Latin-1 Supplement

```

11266 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212
11267 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223
11268 \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, testbmasc, testbmzc, and testbmyi for details. Problematic are all positions, but especially \OE, \oe, and \i.

```
11269 \DeclareTextCommand{\OE}{PU}{OE} % OE
11270 \DeclareTextCommand{\oe}{PU}{oe} % oe
```

The euro \240 is inserted in version 1.3 of the pdf specification.

```
11271 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown
11272 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent
11273 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling
11274 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency
11275 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen
11276 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar
11277 \DeclareTextCommand{\textsection}{PU}{\80\247} % section
11278 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis
11279 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright
11280 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine
11281 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft
11282 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot
```

No glyph \255 in PDFDocEncoding.

```
11283 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered
11284 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron
11285 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree
11286 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus
11287 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior
11288 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior
11289 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute
11290 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu
11291 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph
11292 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered
11293 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla
11294 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior
11295 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine
11296 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright
11297 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter
11298 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf
11299 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters
11300 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown
11301 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300} % Agrave
11302 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute
11303 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302} % Acircumflex
11304 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303} % Atilde
11305 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis
11306 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring
11307 \DeclareTextCommand{\AE}{PU}{\80\306} % AE
11308 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla
11309 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310} % Egrave
11310 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311} % Eacute
11311 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312} % Ecircumflex
11312 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis
11313 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314} % Igrave
11314 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315} % Iacute
11315 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316} % Icircumflex
11316 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317} % Idieresis
11317 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth
11318 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321} % Ntilde
11319 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322} % Ograve
11320 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323} % Oacute
```

```

11321 \DeclareTextCompositeCommand{\`}{PU}{0}{\80\324} % Ocircumflex
11322 \DeclareTextCompositeCommand{\~}{PU}{0}{\80\325} % Otilde
11323 \DeclareTextCompositeCommand{\"}{PU}{0}{\80\326} % Odieresis
11324 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply
11325 \DeclareTextCommand{\0}{PU}{\80\330} % Oslash
11326 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331} % Ugrave
11327 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332} % Uacute
11328 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333} % Ucircumflex
11329 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334} % Udieresis
11330 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335} % Yacute
11331 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn
11332 \DeclareTextCommand{\ss}{PU}{\80\337} % germanbls
11333 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340} % agrave
11334 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341} % aacute
11335 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342} % acircumflex
11336 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343} % atilde
11337 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344} % adieresis
11338 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
11339 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
11340 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
11341 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350} % egrave
11342 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351} % eacute
11343 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352} % ecircumflex
11344 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353} % edieresis
11345 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave
11346 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave
11347 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
11348 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
11349 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
11350 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
11351 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
11352 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
11353 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
11354 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361} % ntilde
11355 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362} % ograve
11356 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363} % oacute
11357 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364} % ocircumflex
11358 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365} % otilde
11359 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366} % odieresis
11360 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
11361 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
11362 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371} % ugrave
11363 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372} % uacute
11364 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373} % ucircumflex
11365 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374} % udieresis
11366 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375} % yacute
11367 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
11368 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377} % ydieresis
11369 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```
11370 \DeclareTextCommand{\SS}{PU}{SS}
```

Aliases (german.sty)

```

11371 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
11372 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
11373 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
11374 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
11375 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}

```



```

11376 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
11377 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
11378 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

11379 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
11380 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
11381 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
11382 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
11383 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

### 50.2.3 Latin Extended-A

```

11384 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% Amacron
11385 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% amacron
11386 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% Abreve
11387 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% abreve
11388 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% Aogonek
11389 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% aogonek
11390 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% Cacute
11391 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% cacute
11392 \DeclareTextCompositeCommand{\~}{PU}{C}{\81\010}% Ccircumflex
11393 \DeclareTextCompositeCommand{\~}{PU}{c}{\81\011}% ccircumflex
11394 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% Cdot
11395 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% cdot
11396 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% Ccaron
11397 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% ccaron
11398 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% Dcaron
11399 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% dcaron
11400 \DeclareTextCommand{\DJ}{PU}{\81\020}% Dslash
11401 \DeclareTextCommand{\dj}{PU}{\81\021}% dslash
11402 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% Emacron
11403 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% emacron
11404 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% Ebreve
11405 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% ebreve
11406 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% Edot
11407 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% edot
11408 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% Eogonek
11409 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% eogonek
11410 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% Ecaron
11411 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% ecaron
11412 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% Gcircumflex
11413 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% gcircumflex
11414 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% Gbreve
11415 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% gbreve
11416 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% Gdot
11417 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% gdot
11418 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% Gcedilla
11419 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% gcedilla
11420 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% Hcircumflex
11421 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% hcircumflex
11422 \DeclareTextCommand{\textHslash}{PU}{\81\046}% Hslash
11423 \DeclareTextCommand{\textHslash}{PU}{\81\047}% hslash
11424 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% Itilde
11425 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% itilde
11426 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% itilde
11427 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% Imacron
11428 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% imacron
11429 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% imacron

```

```

11430 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054} % Ibreve
11431 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
11432 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
11433 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056} % Iogonek
11434 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
11435 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
11436 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060} % Idot
11437 \DeclareTextCommand{\i}{PU}{\81\061} % idotless
11438 % IJlig
11439 % ijlig
11440 \DeclareTextCompositeCommand{\`}{PU}{J}{\81\064} % Jcircumflex
11441 \DeclareTextCompositeCommand{\`}{PU}{j}{\81\065} % jcircumflex
11442 \DeclareTextCompositeCommand{\`}{PU}{j}{\81\065} % jcircumflex
11443 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
11444 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
11445 % kgreen
11446 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
11447 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
11448 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
11449 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
11450 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
11451 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
11452 % L middle dot
11453 % l middle dot
11454 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
11455 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
11456 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute
11457 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
11458 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
11459 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
11460 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
11461 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
11462 % n apostrophe
11463 \DeclareTextCommand{\NG}{PU}{\81\112} % NG
11464 \DeclareTextCommand{\ng}{PU}{\81\113} % ng
11465 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114} % Omacron
11466 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115} % omacron
11467 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve
11468 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
11469 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
11470 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
11471 \DeclareTextCommand{\OE}{PU}{\81\122} % OE
11472 \DeclareTextCommand{\oe}{PU}{\81\123} % oe
11473 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
11474 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
11475 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
11476 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
11477 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
11478 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
11479 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
11480 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
11481 \DeclareTextCompositeCommand{\`}{PU}{S}{\81\134} % Scircumflex
11482 \DeclareTextCompositeCommand{\`}{PU}{s}{\81\135} % scircumflex
11483 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
11484 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
11485 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
11486 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron

```

```

11487 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
11488 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
11489 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
11490 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
11491 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
11492 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
11493 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150} % Utilde
11494 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151} % utilde
11495 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152} % Umacron
11496 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153} % umacron
11497 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
11498 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
11499 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring
11500 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
11501 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
11502 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute
11503 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Ugonek
11504 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % ugonek
11505 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164} % Wcircumflex
11506 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165} % wcircumflex
11507 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166} % Ycircumflex
11508 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167} % ycircumflex
11509 \DeclareTextCompositeCommand{"}{PU}{Y}{\81\170} % Ydieresis
11510 \DeclareTextCommand{IJ}{PU}{\81\170}
11511 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
11512 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
11513 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
11514 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
11515 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
11516 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

```

## 50.2.4 Latin Extended-B

```

11517 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
11518 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
11519 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
11520 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
11521 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
11522 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
11523 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
11524 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
11525 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
11526 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
11527 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
11528 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
11529 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
11530 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
11531 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
11532 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
11533 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Ogonek
11534 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % ogonek

```

## 50.2.5 Greek

```

11535 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}
11536 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}
11537 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
11538 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
11539 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}

```

```

11540 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
11541 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
11542 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
11543 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
11544 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
11545 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}
11546 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
11547 \DeclareTextCommand{\textBeta}{PU}{\83\222}
11548 \DeclareTextCommand{\textGamma}{PU}{\83\223}
11549 \DeclareTextCommand{\textDelta}{PU}{\83\224}
11550 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
11551 \DeclareTextCommand{\textZeta}{PU}{\83\226}
11552 \DeclareTextCommand{\textEta}{PU}{\83\227}
11553 \DeclareTextCommand{\textTheta}{PU}{\83\230}
11554 \DeclareTextCommand{\textIota}{PU}{\83\231}
11555 \DeclareTextCommand{\textKappa}{PU}{\83\232}
11556 \DeclareTextCommand{\textLambda}{PU}{\83\233}
11557 \DeclareTextCommand{\textMu}{PU}{\83\234}
11558 \DeclareTextCommand{\textNu}{PU}{\83\235}
11559 \DeclareTextCommand{\textXi}{PU}{\83\236}
11560 \DeclareTextCommand{\textOmicron}{PU}{\83\237}
11561 \DeclareTextCommand{\textPi}{PU}{\83\240}
11562 \DeclareTextCommand{\textRho}{PU}{\83\241}
11563 \DeclareTextCommand{\textSigma}{PU}{\83\243}
11564 \DeclareTextCommand{\textTau}{PU}{\83\244}
11565 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}
11566 \DeclareTextCommand{\textPhi}{PU}{\83\246}
11567 \DeclareTextCommand{\textChi}{PU}{\83\247}
11568 \DeclareTextCommand{\textPsi}{PU}{\83\250}
11569 \DeclareTextCommand{\textOmega}{PU}{\83\251}
11570 \DeclareTextCompositeCommand{\"}{PU}{\textIota}{\83\252}
11571 \DeclareTextCompositeCommand{\"}{PU}{\textUpsilon}{\83\253}
11572 \DeclareTextCompositeCommand{\'}{PU}{\textalpha}{\83\254}
11573 \DeclareTextCompositeCommand{\'}{PU}{\textepsilon}{\83\255}
11574 \DeclareTextCompositeCommand{\'}{PU}{\texteta}{\83\256}
11575 \DeclareTextCompositeCommand{\'}{PU}{\textiota}{\83\257}
11576 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}
11577 \DeclareTextCompositeCommand{\"}{PU}{\textupsilonacute}{\83\260}
11578 \DeclareTextCommand{\textalpha}{PU}{\83\261}
11579 \DeclareTextCommand{\textbeta}{PU}{\83\262}
11580 \DeclareTextCommand{\textgamma}{PU}{\83\263}
11581 \DeclareTextCommand{\textdelta}{PU}{\83\264}
11582 \DeclareTextCommand{\textepsilon}{PU}{\83\265}
11583 \DeclareTextCommand{\textzeta}{PU}{\83\266}
11584 \DeclareTextCommand{\texteta}{PU}{\83\267}
11585 \DeclareTextCommand{\texttheta}{PU}{\83\270}
11586 \DeclareTextCommand{\textiota}{PU}{\83\271}
11587 \DeclareTextCommand{\textkappa}{PU}{\83\272}
11588 \DeclareTextCommand{\textlambda}{PU}{\83\273}
11589 \DeclareTextCommand{\textmu}{PU}{\83\274}
11590 \DeclareTextCommand{\textnu}{PU}{\83\275}
11591 \DeclareTextCommand{\textxi}{PU}{\83\276}
11592 \DeclareTextCommand{\textomicron}{PU}{\83\277}
11593 \DeclareTextCommand{\textpi}{PU}{\83\300}
11594 \DeclareTextCommand{\textrho}{PU}{\83\301}
11595 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
11596 \DeclareTextCommand{\textsigma}{PU}{\83\303}

```

```

11597 \DeclareTextCommand{\texttau}{PU}{\83\304}
11598 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
11599 \DeclareTextCommand{\textphi}{PU}{\83\306}
11600 \DeclareTextCommand{\textchi}{PU}{\83\307}
11601 \DeclareTextCommand{\textpsi}{PU}{\83\310}
11602 \DeclareTextCommand{\textomega}{PU}{\83\311}
11603 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}
11604 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}
11605 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}
11606 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}
11607 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}
11608 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}
11609 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}
11610 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}
11611 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}
11612 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}
11613 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}
11614 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}
11615 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}
11616 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}
11617 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}
11618 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}
11619 %\DeclareTextCommand{\textvarkappa}{PU}{\83\360}
11620 %\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.

```

11621 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
11622 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}%
11623 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
11624 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% GJE
11625 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
11626 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
11627 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
11628 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI
11629 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
11630 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
11631 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE
11632 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
11633 \DeclareTextCompositeCommand{'}{PU}{\CYRK}{\84\014}% KJE
11634 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
11635 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
11636 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A
11637 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
11638 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
11639 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
11640 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
11641 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
11642 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
11643 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
11644 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I
11645 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
11646 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}%
11647 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
11648 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
11649 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM

```

11650 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN  
11651 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O  
11652 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE  
11653 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER  
11654 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES  
11655 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE  
11656 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U  
11657 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF  
11658 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA  
11659 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE  
11660 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE  
11661 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA  
11662 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA  
11663 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN  
11664 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU  
11665 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN  
11666 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E  
11667 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU  
11668 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA  
11669 \DeclareTextCommand{\cyra}{PU}{\84\060}% a  
11670 \DeclareTextCommand{\cyrb}{PU}{\84\061}% be  
11671 \DeclareTextCommand{\cyrv}{PU}{\84\062}% ve  
11672 \DeclareTextCommand{\cyrg}{PU}{\84\063}% ghe  
11673 \DeclareTextCommand{\cyrd}{PU}{\84\064}% de  
11674 \DeclareTextCommand{\cyre}{PU}{\84\065}% ie  
11675 \DeclareTextCommand{\cyrz}{PU}{\84\066}% zhe  
11676 \DeclareTextCommand{\cyrz}{PU}{\84\067}% ze  
11677 \DeclareTextCommand{\cyri}{PU}{\84\070}% i  
11678 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i  
11679 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}%  
11680 \DeclareTextCommand{\cyrk}{PU}{\84\072}% ka  
11681 \DeclareTextCommand{\cyr1}{PU}{\84\073}% el  
11682 \DeclareTextCommand{\cyrn}{PU}{\84\074}% em  
11683 \DeclareTextCommand{\cyrn}{PU}{\84\075}% en  
11684 \DeclareTextCommand{\cyro}{PU}{\84\076}% o  
11685 \DeclareTextCommand{\cyrp}{PU}{\84\077}% pe  
11686 \DeclareTextCommand{\cyrr}{PU}{\84\100}% er  
11687 \DeclareTextCommand{\cyrs}{PU}{\84\101}% es  
11688 \DeclareTextCommand{\cyrt}{PU}{\84\102}% te  
11689 \DeclareTextCommand{\cyru}{PU}{\84\103}% u  
11690 \DeclareTextCommand{\cyrf}{PU}{\84\104}% ef  
11691 \DeclareTextCommand{\cyrh}{PU}{\84\105}% ha  
11692 \DeclareTextCommand{\cyrc}{PU}{\84\106}% tse  
11693 \DeclareTextCommand{\cyrch}{PU}{\84\107}% che  
11694 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% sha  
11695 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% shcha  
11696 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% hard sign  
11697 \DeclareTextCommand{\cyrery}{PU}{\84\113}% yeru  
11698 \DeclareTextCommand{\cyrsftsn}{PU}{\84\114}% soft sign  
11699 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% e  
11700 \DeclareTextCommand{\cyryu}{PU}{\84\116}% yu  
11701 \DeclareTextCommand{\cyrya}{PU}{\84\117}% ya  
11702 \DeclareTextCommand{\cyryo}{PU}{\84\121}% io  
11703 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}%  
11704 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% dje  
11705 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% gje  
11706 \DeclareTextCommand{\cyrie}{PU}{\84\124}% ukrainian ie

11707 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% dze  
11708 \DeclareTextCommand{\cyrrii}{PU}{\84\126}% byelorussian-ukrainian i  
11709 \DeclareTextCommand{\cyrji}{PU}{\84\127}% yi  
11710 \DeclareTextCommand{\cyrje}{PU}{\84\130}% je  
11711 \DeclareTextCommand{\cyrlje}{PU}{\84\131}%lje  
11712 \DeclareTextCommand{\cyrnje}{PU}{\84\132}%nje  
11713 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% tshe  
11714 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% kje  
11715 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% short u  
11716 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% dzhe  
11717 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA  
11718 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega  
11719 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT  
11720 \DeclareTextCommand{\cyrjat}{PU}{\84\143}% yat  
11721 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E  
11722 \DeclareTextCommand{\cyriote}{PU}{\84\145}% iotified e  
11723 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS  
11724 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% little yus  
11725 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS  
11726 \DeclareTextCommand{\cyrriotlyus}{PU}{\84\151}% iotified little yus  
11727 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS  
11728 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% big yus  
11729 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS  
11730 \DeclareTextCommand{\cyrriotbyus}{PU}{\84\155}% iotified big yus  
11731 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI  
11732 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% ksi  
11733 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI  
11734 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi  
11735 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA  
11736 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita  
11737 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA  
11738 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa  
11739 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave  
11740 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave  
11741 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK  
11742 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk  
11743 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA  
11744 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega  
11745 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo  
11746 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo  
11747 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT  
11748 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot  
11749 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA  
11750 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa  
11751 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign  
11752 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO  
11753 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION  
11754 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA  
11755 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA  
11756 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn  
11757 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn  
11758 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke  
11759 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke  
11760 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook  
11761 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook  
11762 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender  
11763 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender

11764 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender  
11765 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender  
11766 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender  
11767 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% ka descender  
11768 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke  
11769 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke  
11770 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke  
11771 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% ka stroke  
11772 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA  
11773 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka  
11774 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender  
11775 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender  
11776 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE  
11777 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe  
11778 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook  
11779 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook  
11780 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA  
11781 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha  
11782 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender  
11783 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% es descender  
11784 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender  
11785 \DeclareTextCommand{\cyrttdsc}{PU}{\84\255}% te descender  
11786 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U  
11787 \DeclareTextCommand{\cyr}{PU}{\84\257}% straight u  
11788 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke  
11789 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% straight u stroke  
11790 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender  
11791 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% ha descender  
11792 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE  
11793 \DeclareTextCommand{\cyrtdetse}{PU}{\84\265}% ligature te tse  
11794 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender  
11795 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender  
11796 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke  
11797 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% che vertical stroke  
11798 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA  
11799 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha  
11800 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhasian CHE  
11801 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhasian che  
11802 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% abkhasian CHE descender  
11803 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhasian che descender  
11804 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% palochka  
11805 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve  
11806 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% zhe breve  
11807 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook  
11808 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% ka hook  
11809 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook  
11810 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% en hook  
11811 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE  
11812 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che  
11813 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve  
11814 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve  
11815 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% A diaeresis  
11816 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% a diaeresis  
11817 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE  
11818 \DeclareTextCommand{\cyrcae}{PU}{\84\325}% ligature a ie  
11819 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve  
11820 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve



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11821 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA
11822 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% schwa
11823 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis
11824 \DeclareTextCompositeCommand{"}{PU}{\cyrswa}{\84\333}% schwa diaeresis
11825 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% ZHE diaeresis
11826 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% zhe diaeresis
11827 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% ZE diaeresis
11828 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% ze diaeresis
11829 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhasian DZE
11830 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhasian dze
11831 \DeclareTextCompositeCommand{=}{PU}{\CYRI}{\84\342}% I macron
11832 \DeclareTextCompositeCommand{=}{PU}{\cyri}{\84\343}% i macron
11833 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% I diaeresis
11834 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% i diaeresis
11835 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% O diaeresis
11836 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% o diaeresis
11837 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O
11838 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% barred o
11839 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% barred O diaeresis
11840 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% barred o diaeresis
11841 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U macron
11842 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% u macron
11843 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U diaeresis
11844 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% u diaeresis
11845 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U double acute
11846 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% u double acute
11847 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% CHE diaeresis
11848 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% che diaeresis
11849 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% YERU diaeresis
11850 \DeclareTextCompositeCommand{"}{PU}{\cyrery}{\84\371}% yeru diaeresis

```

## 50.2.7 Symbols

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11851 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash
11852 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash
11853 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030} % quoteleft
11854 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright
11855 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase
11856 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
11857 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
11858 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
11859 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
11860 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
11861 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet
11862 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
11863 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
11864 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
11865 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
11866 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
11867 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
11868 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
11869 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}
11870 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
11871 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
11872 %\DeclareTextCommand{\cyrlangle}{PU}{\9043\051}
11873 %\DeclareTextCommand{\cyrangle}{PU}{\9043\052}
11874 </puenc>

```

### 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```
11875 \langle *puvncenc\rangle
11876 \DeclareTextCommand{\abreve}{PU}{\81\003}
11877 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
11878 \DeclareTextCommand{\dj}{PU}{\81\021}
11879 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
11880 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
11881 \DeclareTextCommand{\ohorn}{PU}{\81\241}
11882 \DeclareTextCommand{\uhorn}{PU}{\81\260}
11883 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
11884 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
11885 \DeclareTextCommand{\DJ}{PU}{\81\020}
11886 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
11887 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
11888 \DeclareTextCommand{\OHORN}{PU}{\81\240}
11889 \DeclareTextCommand{\UHORN}{PU}{\81\257}

11890 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
11891 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
11892 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
11893 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
11894 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
11895 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
11896 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
11897 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
11898 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
11899 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
11900 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
11901 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
11902 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
11903 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}
11904 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}
11905 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}
11906 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}
11907 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}
11908 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}
11909 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}
11910 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}
11911 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}
11912 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}
11913 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}
11914 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}
11915 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}
11916 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}
11917 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}
11918 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}
11919 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}
11920 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}
11921 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}
11922 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}
11923 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}
11924 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}
11925 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}
11926 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}
11927 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}
11928 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}
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11929 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
11930 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
11931 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
11932 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
11933 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
11934 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
11935 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
11936 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
11937 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
11938 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
11939 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
11940 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
11941 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
11942 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
11943 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
11944 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
11945 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
11946 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
11947 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
11948 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
11949 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
11950 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
11951 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
11952 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
11953 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
11954 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
11955 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
11956 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
11957 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
11958 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
11959 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}  
11960 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}  
11961 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}  
11962 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}  
11963 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}  
11964 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}  
11965 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}  
11966 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}  
11967 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}  
11968 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}  
11969 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}  
11970 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}  
11971 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}  
11972 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}  
11973 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}  
11974 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}  
11975 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}  
11976 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}  
11977 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}  
11978 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}  
11979 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}  
11980 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}  
11981 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}  
11982 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}  
11983 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}  
11984 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}  
11985 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}

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11986 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}
11987 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}
11988 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}
11989 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}
11990 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}
11991 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}
11992 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}
11993 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}
11994 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
11995 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
11996 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
11997 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}
11998 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
11999 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
12000 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}
12001 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
12002 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
12003 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
12004 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
12005 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}
12006 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
12007 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
12008 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
12009 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
12010 </puvnenc>

```

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```
12011 <*puarenc>
```

```

12012 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LETTER HAMZA
12013 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADDA A
12014 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA A
12015 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afii57412;ARABIC LETTER WAW WITH HAMZA A
12016 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HA
12017 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
12018 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF
12019 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH
12020 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA
12021 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH
12022 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH
12023 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM
12024 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH
12025 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH
12026 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL
12027 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL
12028 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH
12029 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN
12030 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN
12031 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN
12032 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD
12033 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD
12034 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH
12035 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH
12036 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN
12037 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN

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12038 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEL
12039 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afii57441;ARABIC LETTER FEH
12040 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF
12041 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF
12042 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM
12043 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LETTER MEEM
12044 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON
12045 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH
12046 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afii57448;ARABIC LETTER WAW
12047 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afii57449;ARABIC LETTER ALEF MAKSURA
12048 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afii57450;ARABIC LETTER YEH

12049 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afii57451;ARABIC FATHATAN
12050 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afii57452;ARABIC DAMMATAN
12051 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN
12052 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afii57454;ARABIC FATHA
12053 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afii57455;ARABIC DAMMA
12054 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA
12055 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA
12056 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afii57458;ARABIC SUKUN

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## Farsi

```

12057 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afii57506;ARABIC LETTER PEH
12058 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afii57507;ARABIC LETTER TCHEH
12059 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afii57508;ARABIC LETTER JEH
12060 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afii????;FARSI LETTER KAF
12061 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF
12062 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afii????;FARSI LETTER YEH

12063 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
12064 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ
12065 </puarenc>

```

## 51 End of file hycheck.tex

```

12066 < *check>
12067 \typeout{}
12068 \begin{document}
12069 \end{document}
12070 </check>

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