

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

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## 1 Documentation overview for hyperref

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

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

**README** Here information is collected that is not yet in the manual: new features, package compatibility, limitations, known problems, ...

**ChangeLog** This file records the version history.

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

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

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

Source code documentation:

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

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

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

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### 3 File hycheck.tex

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

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

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

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

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

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

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

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

`\HyC@checkPackage`

```
18 \def\HyC@checkPackage{%
19  \typeout{}
20  \begingroup
21    \edef\x{\endgroup
22      \noexpand\RequirePackage{\HyC@package}%
23      \ifx\HyC@date\@empty\relax\else[\HyC@date]\fi%
24    }%
25  \x
26  \typeout{}%
27  \typeout{%
28    * Package '\HyC@package'%
29    \ifx\HyC@date\@empty
30      \else
31        \space\HyC@date
32      \fi
33  }%
34  \@ifundefined{ver@\HyC@package.sty}{%
35  }{%
36    \typeout{%
37      \space\space Loaded: '\HyC@package' %
38      \csname ver@\HyC@package.sty\endcsname
39    }%
40  }%
41 }
```

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

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

161 % *****
162 </check>
163 <*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.

```

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

```

\Hy@SetCatcodes

```

180 \def\Hy@SetCatcodes{%
181   \@makeother\‘%
182   \@makeother\=%
183   \catcode\‘\$=3
184   \catcode\&=4
185   \catcode\^=7
186   \catcode\_ =8
187   \@makeother\|%
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 }

```

\Hy@RestoreCatcodes

```

204 \begingroup
205   \def\x#1{\catcode\‘\noexpand#1=\the\catcode\‘#1\relax}%
206   \xdef\Hy@RestoreCatcodes{%
207     \the\toks@
208     \x\$%
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 }%
229 \endgroup

```

```
230 \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!

```

231 \RequirePackage{keyval}[1997/11/10]
232 \def\Hy@Warning#1{\PackageWarning{hyperref}{#1}}
233 \def\Hy@WarningNoLine#1{\PackageWarningNoLine{hyperref}{#1}}
234 \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`.

```

235 \@ifundefined{AfterBeginDocument}{%
236 \def\AfterBeginDocument{\AtBeginDocument}%
237 }{}%

```

## 4.3 Switches

```

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

```

```

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

```

Defaults for the switches are now set.

```

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

```

```

311 \Hy@verbosefalse
312 \Hy>windowuitrue
313 \Hy@displaydoctitlefalse

```

## 5 Common help macros

`\Hy@StepCount`

```

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

```

`\Hy@GlobalStepCount`

```

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

316 \newdimen\@linkdim
317 \let\Hy@driver\@empty
318 \let\MaybeStopEarly\relax
319 \newcount\Hy@linkcounter
320 \newcount\Hy@pagecounter
321 \Hy@linkcounter0
322 \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.

```

323 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
324 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

```

### 5.2 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`

```
325 \begingroup\expandafter\expandafter\expandafter\endgroup
326 \expandafter\ifx\csname dimexpr\endcsname\relax
327   \def\hypercalcbpdef#1#2{%
328     \begingroup
329       \toks@{%
330         \HyCal@scan#2\hypercalcbp\@nil
331       }
332       \expandafter\def\expandafter#1\expandafter{\the\toks@}%
333   }
334   \def\HyCal@scan#1\hypercalcbp#2\@nil{%
335     \toks@\expandafter{\the\toks@ #1}%
336     \ifx\#2\%
337       \else
338         \Hy@ReturnAfterFi{%
339           \HyCal@do#2\@nil
340         }%
341       \fi
342   }
343   \def\HyCal@do#1#2\@nil{%
344     \@ifpackageloaded{calc}{}{%
345       \Hy@Warning{%
346         For calculations \string\hypercalcbp\space needs\MessageBreak
347         package calc or e-TeX%
348       }%
349     }%
350     \setlength{\dimen@}{#1}%
351     \setlength{\dimen@}{0.99626401\dimen@}%
352     \edef\x{%
353       \toks@{%
354         \the\toks@
355         \strip@pt\dimen@
356       }%
357     }\x
358     \HyCal@scan#2\@nil
359   }
360 \else
361   \def\hypercalcbp#1{%
362     \strip@pt\dimexpr 0.99626401\dimexpr #1\relax\relax
363   }
364 \def\hypercalcbpdef{\def}
365 \fi
```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

### 6.1 Description of PDF strings

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

- They are surrounded by parentheses. The hexadecimal form is not supported.

- Like PostScript language strings they use the same escaping mechanism:
 

<code>\\</code>	the backslash itself
<code>\), \((</code>	unbalanced parentheses
<code>\n, \r, \t, \b, \f</code>	special white space escape sequences
<code>\ddd</code>	octal character code <i>ddd</i>
- Strings are stored either in PDFDocEncoding, which is a superset of ISO Latin1 and is compatible with Unicode with character codes below 256, or in Unicode.

## 6.2 Definition of `\pdfstringdef`

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

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

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

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

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

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

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

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

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

```
367 \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  $\text{\TeX}$  escape character indeed prints as a normal backslash. Eventually this line can be removed, because this is standard  $\text{\LaTeX}$  behaviour.

```
368 \escapechar'\%
```

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

```

369 \edef\0{\string\0}%
370 \edef\1{\string\1}%
371 \edef\2{\string\2}%
372 \edef\3{\string\3}%

```

**Setting font encoding.** The unicode encoding uses  $\backslash 8$  and  $\backslash 9$  as marker for the higher byte.  $\backslash 8$  is an abbreviation for the higher bytes 0 until 7 that can be expressed by one digit.  $\backslash 8$  will be converted to  $\backslash 00$ . However  $\backslash 9$  only marks the next three digits as higher byte and will be removed later.

The encoding is set by  $\backslash \text{enc@update}$  for optimizing reasons.

```

373 \ifHy@unicode
374 \edef\8{\string\8}%
375 \edef\9{\string\9}%
376 \fontencoding{PU}%
377 \HyPsd@UTFviii
378 \else
379 \fontencoding{PD1}%
380 \fi
381 \enc@update

```

**Internal encoding commands.**  $\backslash \text{pdfstringdef}$  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  $\backslash @\text{inmathwarn}$  will be disabled (see below).

```

382 \@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 ( $\backslash \text{edef}$ ), so that the assignments of  $\backslash @\text{changed@cmd}$  don't take place. To patch this behaviour I only found  $\backslash @\text{inmathwarn}$  as a usable hook. While an  $\backslash \text{edef}$  a warning message by  $\backslash @\text{inmathwarn}$  or  $\backslash \text{TextSymbolUnavailable}$  cannot be give out, so  $\backslash @\text{inmathwarn}$  should be disabled. And with the help of it the assignments in  $\backslash @\text{changed@cmd}$  can easily be caught (see below).

```

383 \let\@inmathwarn\HyPsd@inmathwarn

```

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

```

384 \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.

```

385 \let\{\textbraceleft
386 \let\}\textbraceright
387 \let\\\textbackslash
388 \let\#\textnumbersign
389 \let\$\textdollar
390 \let\%\textpercent
391 \let\&\textampersand

```



```

392 % \let\~\textasciitilde
393 \let\_ \textunderscore
394 \let\P\textparagraph
395 \let\ldots\textellipsis
396 \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.

```

397 \def\{\pdfstringdefWarn\}%
398 \def\newline{\pdfstringdefWarn\newline}%

```

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

```

399 \def\TeX{\TeX}%
400 \def\LaTeX{La\TeX}%
401 \def\LaTeXe{LaTeX2e}%
402 \def\TeXe{e-\TeX}%
403 \def\MF{Metafont}%
404 \def\MP{Metapost}%

```

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

```

405 \let\emph\@firstofone
406 \let\textbf\@firstofone
407 \let\textit\@firstofone
408 \let\textmd\@firstofone
409 \let\textnormal\@firstofone
410 \let\textrm\@firstofone
411 \let\textsc\@firstofone
412 \let\textsf\@firstofone
413 \let\textsl\@firstofone
414 \let\texttt\@firstofone
415 \let\textup\@firstofone
416 \let\ttfamily\@empty
417 \let\sffamily\@empty
418 \let\itshape\@empty
419 \let\upshape\@empty
420 \let\bfseries\@empty
421 \let\rm\@empty
422 \let\Huge\@empty
423 \let\LARGE\@empty
424 \let\Large\@empty
425 \let\footnotesize\@empty
426 \let\huge\@empty
427 \let\large\@empty
428 \let\normalsize\@empty

```

```

429 \let\scriptsize\@empty
430 \let\small\@empty
431 \let\tiny\@empty

```

### Package color.

```

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

```

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

```

433 \let\textlatin\@firstofone
434 \ifundefined{language@group}{\}%
435 \csname HyPsd@babel@\language@group\endcsname
436 }%
437 \let\@safe@activetrue\relax
438 \let\@safe@activesfalse\relax

```

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

```

439 \let\cyr\relax

```

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

```

440 \let\es@roman\@Roman

```

### Package german.

```

441 \let\glqq\textglqq
442 \let\grqq\textgrqq
443 \let\glq\textglq
444 \let\grq\textgrq
445 \let\flqq\textflqq
446 \let\frqq\textfrqq
447 \let\flq\textflq
448 \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}
449 \let\if@mid@expandable\@firstoftwo

```

### AMS classes.

```

450 \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.

```

451 \let\hspace\HyPsd@hspace

```

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

```
452 \let\label@gobble
453 \let\index@gobble
454 \let\glossary@gobble
455 \let\href@secondoftwo
```

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

```
456 \let\ref\HyPsd@ref
457 \let\pageref\HyPsd@pageref
```

Also we need an expandable form of  $\autoref$ . Babel's shorthands are not supported inside the reference label.

```
458 \def\HyPsd@ar@get##1.##2\@nil{##1}%
459 \def\HyPsd@ar@tmp##1{%
460   \expandafter\expandafter\expandafter\HyPsd@ar@get
461   \expandafter\@fourthoffive##1\@empty\@empty.\@nil
462 }%
463 \def\auto@setref##1##2##3{%
464   \ifx##1\relax
465   \else
466     \csname\HyPsd@ar@tmp{##1}%
467     \expandafter\ifx\csname\HyPsd@ar@tmp{##1}\autorefname\endcsname
468     \relax
469   \else
470     \autoref%
471   \fi
472   name%
473 \endcsname
474 \space
475 \expandafter##2##1\@empty\@empty
476 \fi
477 }%
```

**Miscellaneous commands.**

```
478 \let\leavevmode\@empty
479 \let\mbox\@empty
```

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

```
480 \def\halign{\pdfstringdefWarn\halign\@gobble}%
```

**Patch for cjk bookmarks.**

```
481 \ifHy@CJKbookmarks
482 \HyPsd@CJKhook
483 \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  $\renewcommand$ ).

```
484 \Hy@pdfstringtrue
485 \pdfstringdefPreHook
```

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

```

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

```

**Package xspace.**

```

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

```

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

```

498 \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:

```

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

```

## 6.2.2 Expansion

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

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

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

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

the PDF1 encoding. Because the protecting mechanism of L<sup>A</sup>T<sub>E</sub>X doesn't work within an `\edef`, there are situations thinkable where code can break. For example, assignments and definitions aren't performed and so undefined command errors or argument parsing errors can occur. But this is only a compatibility problem with old texts. Now there are possibilities to write code that gives correct PDF strings (see `\texorpdfstring`). In the most cases unexpandable commands and tokens (math shift, grouping characters) remains. They don't cause an error like with `\csname`. However a PDF reader isn't T<sub>E</sub>X, 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).

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

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

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

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

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

### 6.2.3 Postprocessing

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

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

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

- T<sub>E</sub>X does not accept a space as an undelimited argument, it cancels space tokens while looking for an undelimited argument. Therefore we must protect the spaces now.

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

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

```

521      \HyPsd@ProtectSpaces#1%
522      \let\HyPsd@String\@empty
523      \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
524      \global\let#1\HyPsd@String

```

**Check tokens.** After removing the spaces and the grouping characters the string now should only consists of the following tokens/catcodes:

- 0 command names with start with an escape character.
- 3 math shift
- 4 alignment tabs
- 6 parameter, but this is unlikely.
- 7 superscript
- 8 subscript
- 11 letter
- 12 other
- 13 commands that are active characters.

After \HyPsd@CheckCatcodes the command \HyPsd@RemoveMask is reused to remove the group protection character |. This character is needed to ensure that the string at least consists of one token if \HyPsd@CheckCatcodes is called.

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

```

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

```

\HyPsd@CheckCatcodes should no have removed the tokens with catcode 3, 4, 7, and 8. Because a parameter token (6) would cause to many errors before, there should now be only tokens with catcodes 11 or 12. So I think there is no need for a safety step like:

```
\xdef#1{\expandafter\strip@prefix\meaning#1}%
```

**Looking for wrong glyphs.** The case that glyphs aren't defined in the PD1 encoding is caught above in such a way, that the glyph name and a marker is inserted into the string. Now we can safely scan the string for this marker and provide a descriptive warning.

```

533      \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
534      \let\HyPsd@String\@empty
535      \expandafter\HyPsd@GlyphProcess#1\relax\@empty
536      \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.

```
537      \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.

```
538      \ifHy@unicode
539      \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
540      \HyPsd@SPACEOPTI#1%
541      \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
542      \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
543      {\HyPsd@SPACEOPTI\80\273}\#1%
544    \else
545      \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
546      \expandafter\HyPsd@Subst\expandafter{%
547        \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
548        \string\273}\HyPsd@SPACEOPTI\273}\#1%
549    \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.

```
550      \ifHy@unicode
551      \HyPsd@StringSubst{\}){\80\051}\#1%
552      \HyPsd@Subst){\80\051}\#1%
553      \let\HyPsd@empty\relax
554      \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
555      {\HyPsd@empty\80\051}\#1%
556    \else
557      \HyPsd@StringSubst{\}){\051}\#1%
558      \HyPsd@Subst){\051}\#1%
559      \let\HyPsd@empty\relax
560      \HyPsd@StringSubst{\051}\HyPsd@empty\string\}){\#1%
561    \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`.

```

562     \expandafter\HyPsd@Subst\expandafter{\}\HyPsd@empty#1%
563     \@ifundefined{xspace}{%
564     }{%
565     \let\HyPsd@xspace\relax
566     \expandafter\HyPsd@Subst\expandafter
567     {\HyPsd@XSPACE}\HyPsd@xspace#1%
568     \let\HyPsd@xspace\HyPsd@doxspace
569     }%
570     \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.

```

571 %     \HyPsd@Subst{---}\textemdash#1%
572 %     \HyPsd@Subst{--}\textendash#1%
573 %     \HyPsd@Subst{fi}\textfi#1%
574 %     \HyPsd@Subst{fl}\textfl#1%
575 %     \HyPsd@Subst{!'}\texttexclamdown#1%
576 %     \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

577     \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.

```

578     \ifHy@unicode
579     \HyPsd@StringSubst\(\textparenleft#1%
580     \HyPsd@Subst(\textparenleft#1%
581     \else
582     \HyPsd@StringSubst\({\050}#1%
583     \HyPsd@Subst({\050}#1%
584     \HyPsd@StringSubst{\050}{\string\()}#1%
585     \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.

```

586     \ifHy@unicode
587     \edef\HyPsd@SPACEOPTI{\80\040}%
588     \else
589     \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
590     \fi
591     \xdef#1{#1\@empty}%
592     \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.

```
593 \ifHy@unicode
594 \HyPsd@ConvertToUnicode#1%
595 \fi
```

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

```
596 \pdfstringdefPostHook#1%
597 \endgroup
598 }
```

## 6.3 Encodings

### 6.3.1 PD1 encoding

The PD1 encoding implements the PDFDocEncoding for use with L<sup>A</sup>T<sub>ε</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.

```
599 \@ifundefined{T@PD1}{\input{pd1enc.def}}{}
600 \DeclareFontFamily{PD1}{pdf}{}
601 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
602 \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>ε</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.

```
603 \def\HyPsd@InitUnicode{%
604 \ifundefined{T@PU}{\input{puenc.def}}{}%
605 \DeclareFontFamily{PU}{pdf}{}%
606 \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
607 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
608 \let\HyPsd@InitUnicode\relax
609 }
```

## 6.4 Additional user commands

### 6.4.1 \texorpdfstring

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

```
610 \newcommand*{\texorpdfstring}{%
611 \ifHy@pdfstring
612 \expandafter\@secondoftwo
```

```

613 \else
614 \expandafter\@firstoftwo
615 \fi
616 }

```

#### 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`.

```

617 \@ifundefined{pdfstringdefPreHook}{%
618 \let\pdfstringdefPreHook\@empty
619 }{}
620 \@ifundefined{pdfstringdefPostHook}{%
621 \let\pdfstringdefPostHook\@gobble
622 }{}

```

`\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`.

```

623 \def\pdfstringdefDisableCommands{%
624 \begingroup
625 \makeatletter
626 \HyPsd@DisableCommands
627 }

```

`\HyPsd@DisableCommands`

```

628 \long\def\HyPsd@DisableCommands#1{%
629 \toks0=\expandafter{\pdfstringdefPreHook}%
630 \toks1={#1}%
631 \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
632 \endgroup
633 }

```

`\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`.

```

634 \def\pdfstringdefWarn#1{%
635 \expandafter\noexpand\csname\<>-string#1\endcsname
636 }

```

## 6.5 Help macros for expansion

### 6.5.1 Babel languages

```
637 \newif\ifHy@next
    Nothing to do for english.
638 \@ifpackagewith{babel}{danish}{%
639   \def\HyPsd@babel@danish{%
640     \declare@shorthand{danish}{"}{|}%
641     \declare@shorthand{danish}{"}{~}{-}%
642   }%
643 }{}
644 \Hy@nextfalse
645 \@ifpackagewith{babel}{dutch}{\Hy@nexttrue}{}%
646 \@ifpackagewith{babel}{afrikaans}{\Hy@nexttrue}{}%
647 \ifHy@next
648   \def\HyPsd@babel@dutch{%
649     \declare@shorthand{dutch}{"}{|}%
650     \declare@shorthand{dutch}{"}{~}{-}%
651   }%
652 \fi
653 \@ifpackagewith{babel}{finnish}{%
654   \def\HyPsd@babel@finnish{%
655     \declare@shorthand{finnish}{"}{|}%
656   }%
657 }{}
658 \Hy@nextfalse
659 \@ifpackagewith{babel}{frenchb}{\Hy@nexttrue}{%
660 \@ifpackagewith{babel}{français}{\Hy@nexttrue}{%
661 \ifHy@next
662   \def\HyPsd@babel@frenchb{%
663     \def\guill@spacing{ }%
664   }%
665 \fi
666 \Hy@nextfalse
667 \@ifpackagewith{babel}{german}{\Hy@nexttrue}{}%
668 \@ifpackagewith{babel}{germanb}{\Hy@nexttrue}{}%
669 \@ifpackagewith{babel}{austrian}{\Hy@nexttrue}{}%
670 \ifHy@next
671   \def\HyPsd@babel@german{%
672     \declare@shorthand{german}{"}{f}{f}%
673     \declare@shorthand{german}{"}{|}%
674     \declare@shorthand{german}{"}{~}{-}%
675   }%
676 \fi
677 \Hy@nextfalse
678 \@ifpackagewith{babel}{ngerman}{\Hy@nexttrue}{}%
679 \@ifpackagewith{babel}{ngermanb}{\Hy@nexttrue}{}%
680 \@ifpackagewith{babel}{naustrian}{\Hy@nexttrue}{}%
681 \ifHy@next
682   \def\HyPsd@babel@ngerman{%
683     \declare@shorthand{german}{"}{|}%
684     \declare@shorthand{german}{"}{~}{-}%
685   }%
686 \fi
687 \Hy@nextfalse
688 \@ifpackagewith{babel}{usorbian}{\Hy@nexttrue}{}%
689 \@ifpackagewith{babel}{upperisorbian}{\Hy@nexttrue}{}%
```

```

690 \ifHy@next
691   \def\HyPsd@babel@usorbian{%
692     \declare@shorthand{usorbian}{f}{f}%
693     \declare@shorthand{usorbian}{|}{|}%
694   }%
695 \fi
696 \Hy@nextfalse
697 \@ifpackagewith{babel}{brazil}{\Hy@nexttrue}{}%
698 \@ifpackagewith{babel}{brazilian}{\Hy@nexttrue}{}%
699 \@ifpackagewith{babel}{portuges}{\Hy@nexttrue}{}%
700 \@ifpackagewith{babel}{portuguese}{\Hy@nexttrue}{}%
701 \ifHy@next
702   \def\HyPsd@babel@portuges{%
703     \declare@shorthand{portuges}{|}{|}%
704   }%
705 \fi
706 \Hy@nextfalse
707 \@ifpackagewith{babel}{russian}{\Hy@nexttrue}{}%
708 \@ifpackagewith{babel}{russianb}{\Hy@nexttrue}{}%
709 \ifHy@next
710   \def\HyPsd@babel@russian{%
711     \declare@shorthand{russian}{|}{|}%
712     \declare@shorthand{russian}{~}{~}%
713   }%
714 \fi
715 \Hy@nextfalse
716 \@ifpackagewith{babel}{ukrainian}{\Hy@nexttrue}{}%
717 \@ifpackagewith{babel}{ukraineb}{\Hy@nexttrue}{}%
718 \ifHy@next
719   \def\HyPsd@babel@ukrainian{%
720     \declare@shorthand{ukrainian}{|}{|}%
721     \declare@shorthand{ukrainian}{~}{~}%
722   }%
723 \fi
724 \@ifpackagewith{babel}{macedonian}{%
725   \def\HyPsd@babel@macedonian{%
726     \declare@shorthand{macedonian}{|}{|}%
727     \declare@shorthand{macedonian}{~}{~}%
728   }%
729 }{}
730 \@ifpackagewith{babel}{slovene}{%
731   \def\HyPsd@babel@slovene{%
732     \declare@shorthand{slovene}{|}{|}%
733   }%
734 }{}
735 \@ifpackagewith{babel}{swedish}{%
736   \def\HyPsd@babel@swedish{%
737     \declare@shorthand{swedish}{|}{|}%
738     \declare@shorthand{swedish}{~}{~}%
739   }%
740 }{}

```

### 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 char-

acter 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 ( $\geq 0x40$ ).

```

741 \begingroup
742 \catcode"7F=\active
743 \toks@{%
744   \let\CJK@ignorespaces\empty
745   \def\CJK@char#1{\@gobbletwo}%
746   \let\CJK@charx\@gobblefour
747   \let\CJK@punctchar\@gobblefour
748   \def\CJK@punctcharx#1{\@gobblefour}%
749   \catcode"7F=\active
750   \def^^7f#1^^7f#2^^7f{%
751     \string #1\HyPsd@DecimalToOctal{#2}%
752   }%
753   % ... ?
754   \ifHy@unicode
755     \def\Hy@cjkpu{\80}%
756   \else
757     \let\Hy@cjkpu\@empty
758   \fi
759   \HyPsd@CJKActiveChars
760 }%
761 \count@=127
762 \@whilenum\count@<255 \do{%
763   \advance\count@ by 1
764   \lccode'\~= \count@
765   \lowercase{%
766     \toks@\expandafter{\the\toks@ ~}%
767   }%
768 }%
769 \toks@\expandafter{\the\toks@ !}%
770 \xdef\HyPsd@CJKhook{\the\toks@}%
771 \endgroup

```

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

```

772 \def\HyPsd@CJKActiveChars#1{%
773   \ifx#1!%
774     \let\HyPsd@CJKActiveChars\relax
775   \else
776     \edef#1{\noexpand\Hy@cjkpu\string#1}%
777   \fi
778   \HyPsd@CJKActiveChars
779 }

```

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

```

780 \def\HyPsd@DecimalToOctal#1{%
781   \ifcase #1 %
782     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
783     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
784     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
785     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
786     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%

```

```

787 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
788 \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
789 \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
790 \or @\or A\or B\or C\or D\or E\or F\or G%
791 \or H\or I\or J\or K\or L\or M\or N\or O%
792 \or P\or Q\or R\or S\or T\or U\or V\or W%
793 \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
794 \or \140\or a\or b\or c\or d\or e\or f\or g%
795 \or h\or i\or j\or k\or l\or m\or n\or o%
796 \or p\or q\or r\or s\or t\or u\or v\or w%
797 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
798 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
799 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
800 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
801 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
802 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
803 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
804 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
805 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
806 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
807 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
808 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
809 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
810 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
811 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
812 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
813 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
814 \fi
815 }

```

### 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 L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> 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 (L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> release [1998/12/01]). In the normal case \pdfstringdef is executed in a context where \protect has the meaning of \@typesetprotect (=relax).

```

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

```

```

\csname ?\string#1\endcsname
\fi
\csname\cf@encoding\string#1%
\expandafter\endcsname
\else
\noexpand#1%
\fi}
\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}

816 \def\HyPsd@inmathwarn#1#2{%
817 \ifx#2\expandafter
818 \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
819 \HyPsd@GLYPHERR
820 \expandafter\@gobble\string#1%
821 >%
822 \expandafter\expandafter\expandafter\HyPsd@EndWithElse
823 \else
824 \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
825 \fi
826 \else
827 \expandafter#2%
828 \fi
829 }
830 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
831 \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

832 \def\HyPsd@add@accent#1#2{%
833 \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
834 #2%
835 }%

```

#### 6.5.5 Unexpandable spaces

\HyPsd@LetUnexpandableSpace In \HyPsd@@ProtectSpaces the space tokens are replaced by not expandable commands, that work like spaces:

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

These properties are used in \HyPsd@CheckCatcodes.

```

836 \def\HyPsd@LetUnexpandableSpace#1{%
837 \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
838 }

```

`\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.

```
839 \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.

```
840 \edef\HyPsd@XSPACE{\string#\string X}
841 \edef\HyPsd@ITALCORR{\string#\string I}
842 \edef\HyPsd@GLYPHERR{\string#\string G}
```

### 6.5.7 `\hspace` fix

`\HyPsd@hspace`

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

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

```
844 \def\HyPsd@@hspace#1*#2\END{%
845   \ifx\#2\%
846     \HyPsd@hspacetest{#1}%
847   \else
848     \expandafter\HyPsd@hspacetest
849   \fi
850 }
```

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

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

### 6.5.8 Fix for AMS classes

```
852 \@ifundefined{tocsection}{%
853   \let\HyPSD@AMSclassfix\relax
854 }{%
855   \def\HyPSD@AMSclassfix{%
856     \let\tocpart\HyPSD@tocsection
857     \let\tocchapter\HyPSD@tocsection
858     \let\tocappendix\HyPSD@tocsection
859     \let\tocsection\HyPSD@tocsection
860     \let\tocsubsection\HyPSD@tocsection
861     \let\tocsubsubsection\HyPSD@tocsection
862     \let\tocparagraph\HyPSD@tocsection
863   }%
864   \def\HyPSD@tocsection#1#2#3{%
865     \if @#2@ \else \if @#1@ \else #1 \fi #2. \fi
866     #3%
867   }%
868 }
```

### 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.



```

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

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

870 \def\HyPsd@@ref#1*#2\END{%
871   \ifx\#2\%
872     \HyPsd@@@ref{#1}%
873   \else
874     \expandafter\HyPsd@@@ref
875   \fi
876 }%

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

877 \def\HyPsd@@@ref#1{%
878   \expandafter\ifx\csname r@#1\endcsname\relax
879     ??%
880   \else
881     \expandafter\expandafter\expandafter\@car\csname r@#1\endcsname\@nil
882   \fi
883 }

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

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

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

885 \def\HyPsd@@pageref#1*#2\END{%
886   \ifx\#2\%
887     \HyPsd@@@pageref{#1}%
888   \else
889     \expandafter\HyPsd@@@pageref
890   \fi
891 }

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

892 \def\HyPsd@@@pageref#1{%
893   \expandafter\ifx\csname r@#1\endcsname\relax
894     ??%
895   \else
896     \expandafter\expandafter\expandafter\expandafter
897     \expandafter\expandafter\expandafter\@car
898     \expandafter\expandafter\expandafter\@gobble
899     \csname r@#1\endcsname\@nil
900   \fi
901 }

```

### 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 causes 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 don'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 unmached `\if...tokens`, the cases `\let\if...\iftrue` and `\let\if...\iffalse` are checked and ignored.

```
\HyPsd@DefCommand
\HyPsd@LetCommand
902 \begingroup
903   \def\x#1#2{%
904     \endgroup
905     \let#1\def
906     \def\HyPsd@DefCommand##1##2##{%
907       #1%
908       \expandafter\noexpand
909       \csname\expandafter@gobble\string##1\@empty\endcsname
910       \@gobble
911     }%
912     \let#2\let
913     \def\HyPsd@@LetCommand##1{%
914       \expandafter\ifx\csname##1\expandafter\endcsname
915         \csname iftrue\endcsname
916         \pdfstringdefWarn\let
917         \expandafter@gobble
918       \else
919         \expandafter\ifx\csname##1\expandafter\endcsname
920           \csname iffalse\endcsname
921           \pdfstringdefWarn\let
922           \expandafter\expandafter\expandafter@gobble
923         \else
924           #2%
925           \expandafter\noexpand
926           \csname##1\expandafter\expandafter\expandafter\endcsname
927         \fi
928       \fi
929     }%
930   }%
931   \expandafter\x\csname <def>-command\expandafter\endcsname
932     \csname <let>-command\endcsname
933   \def\HyPsd@LetCommand#1{%
934     \expandafter\expandafter\expandafter\HyPsd@@LetCommand
935     \expandafter\expandafter\expandafter{%
936       \expandafter@gobble\string#1\@empty
```

```

937 }%
938 }

```

### 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.

```

939 \def\HyPsd@ifnextchar{%
940   \pdfstringdefWarn\@ifnextchar
941   \expandafter\@gobbletwo\@gobble
942 }

```

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

```

943 \def\HyPsd@new@ifnextchar{%
944   \pdfstringdefWarn\new@ifnextchar
945   \expandafter\@gobbletwo\@gobble
946 }

```

### 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`.

```

947 \def\HyPsd@protected@testopt#1{%
948   \pdfstringdefWarn#1%
949   \@gobbletwo
950 }

```

## 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:

```

951 \def\HyPsd@Warning#1{%
952   \begingroup
953     \def\space{ }%
954     \Hy@Warning{#1}%
955   \endgroup
956 }

```

### 6.6.2 Protecting spaces

`\HyPsd@ProtectSpaces` `\HyPsd@ProtectSpaces` calls with the expanded string `\HyPsd@@ProtectSpaces`. 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@@ProtectSpaces`.

```

957 \def\HyPsd@ProtectSpaces#1{%
958   \expandafter\HyPsd@@ProtectSpaces
959   \expandafter|\expandafter\@empty#1| \HyPsd@End#1%

```

960 }

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

```

961 \def\HyPsd@@ProtectSpaces#1 #2\HyPsd@End#3{%
962   \ifx\scrollmode#2\scrollmode
963     \HyPsd@RemoveMask#1\HyPsd@End#3%
964   \else
965     \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
966     \Hy@ReturnAfterFi{%
967       \expandafter\HyPsd@@ProtectSpaces#3\HyPsd@End#3%
968     }%
969   \fi
970 }
```

### Remove mask.

`\HyPsd@RemoveMask` `\HyPsd@RemoveMask` removes the protecting |. It is used by `\HyPsd@@ProtectSpaces` and by the code in `\pdfstringdef` that removes the grouping characters.

```

971 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
972   \toks@\expandafter{#1}%
973   \xdef#2{\the\toks@}%
974 }
```

### 6.6.3 Remove grouping braces

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

```

975 \def\HyPsd@RemoveBraces#1{%
976   \ifx\scrollmode#1\scrollmode
977   \else
978     \Hy@ReturnAfterFi{%
979       \HyPsd@@RemoveBraces#1\HyPsd@End{#1}%
980     }%
981   \fi
982 }
```

`\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`.

```

983 \def\HyPsd@@RemoveBraces#1#2\HyPsd@End#3{%
984   \def\Hy@temp@A{#1#2}%
985   \def\Hy@temp@B{#3}%
986   \ifx\Hy@temp@A\Hy@temp@B
987     \expandafter\def\expandafter\HyPsd@String\expandafter{%
988       \HyPsd@String#1%
989     }%
990     \Hy@ReturnAfterElseFi{%
991       \ifx\scrollmode#2\scrollmode
992       \else
993         \Hy@ReturnAfterFi{%
```

```

994         \HyPsd@RemoveBraces{#2}%
995     }%
996 \fi
997 }%
998 \else
999     \def\Hy@temp@A{#1}%
1000     \HyPsd@AppendItalcorr\HyPsd@String
1001     \Hy@ReturnAfterFi{%
1002         \ifx\Hy@temp@A\@empty
1003             \Hy@ReturnAfterElseFi{%
1004                 \HyPsd@RemoveBraces{#2}%
1005             }%
1006         \else
1007             \Hy@ReturnAfterFi{%
1008                 \HyPsd@ProtectSpaces\Hy@temp@A
1009                 \HyPsd@AppendItalcorr\Hy@temp@A
1010                 \expandafter\HyPsd@RemoveBraces\expandafter
1011                 {\Hy@temp@A#2}%
1012             }%
1013         \fi
1014     }%
1015 \fi
1016 }

```

\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.

```

1017 \def\HyPsd@AppendItalcorr#1{%
1018     \expandafter\HyPsd@@AppendItalcorr\expandafter{/}#1%
1019 }
1020 \def\HyPsd@@AppendItalcorr#1#2{%
1021     \expandafter\def\expandafter#2\expandafter{#2#1}%
1022 }

```

#### 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).

```

1023 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1024     \global\let\HyPsd@Rest\relax
1025     \ifcat\relax\noexpand#1\relax
1026         \ifx#1\protect
1027         \else
1028             \ifx#1\penalty
1029                 \setbox\z@=\hbox{%
1030                     \afterassignment\HyPsd@AfterCountRemove
1031                     \count@=#2\HyPsd@End
1032                 }%

```

```

1033     \else
1034     \ifx#1\kern
1035     \setbox\z@=\hbox{%
1036     \afterassignment\HyPsd@AfterDimenRemove
1037     \dimen@=#2\HyPsd@End
1038     }%
1039     \else
1040     \ifx#1\hskip
1041     \setbox\z@=\hbox{%
1042     \afterassignment\HyPsd@AfterSkipRemove
1043     \skip@=#2\HyPsd@End
1044     }%
1045     \else
1046     \HyPsd@CatcodeWarning{#1}%
1047     \fi
1048     \fi
1049     \fi
1050     \fi
1051     \else
1052     \ifcat#1 %SPACE
1053     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1054     \HyPsd@String\HyPsd@SPACEOPTI
1055     }%
1056     \else
1057     \ifcat$#1%
1058     \HyPsd@CatcodeWarning{math shift}%
1059     \else
1060     \ifcat&#1%
1061     \HyPsd@CatcodeWarning{alignment tab}%
1062     \else
1063     \ifcat^#1%
1064     \HyPsd@CatcodeWarning{superscript}%
1065     \else
1066     \ifcat_#1%
1067     \HyPsd@CatcodeWarning{subscript}%
1068     \else
1069     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1070     \HyPsd@String#1%
1071     }%
1072     \fi
1073     \fi
1074     \fi
1075     \fi
1076     \fi
1077     \fi
1078     \ifx\HyPsd@Rest\relax
1079     \Hy@ReturnAfterElseFi{%
1080     \ifx\scrollmode#2\scrollmode
1081     \else
1082     \Hy@ReturnAfterFi{%
1083     \HyPsd@CheckCatcodes#2\HyPsd@End
1084     }%
1085     \fi
1086     }%
1087     \else
1088     \Hy@ReturnAfterFi{%
1089     \ifx\HyPsd@Rest\@empty

```

```

1090     \else
1091     \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@end
1092     \fi
1093   }%
1094 \fi
1095 }

```

### Remove counts, dimens, skips.

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

```

1096 \def\HyPsd@AfterCountRemove#1\HyPsd@end{%
1097   \gdef\HyPsd@Rest{#1}%
1098 }

```

`\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.

```

1099 \def\HyPsd@AfterDimenRemove#1\HyPsd@end{%
1100   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@ \fi > 1ex
1101     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1102     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1103   \else
1104     \ifdim\dimen@=\z@
1105       \else
1106         \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1107       \fi
1108     \gdef\HyPsd@Rest{#1}%
1109   \fi
1110 }

```

`\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).

```

1111 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1112   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@ \fi > 1ex
1113     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1114     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1115   \else
1116     \ifdim\skip@=\z@
1117       \else
1118         \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1119       \fi
1120     \gdef\HyPsd@Rest{#1}%
1121   \fi
1122 }

```

### Catcode warnings.

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

```

1123 \def\HyPsd@CatcodeWarning#1{%
1124   \HyPsd@Warning{%
1125     Token not allowed in a PDFDocEncoded string,%
1126     \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1127   }%
1128 }
1129 \begingroup

```

```

1130 \catcode'\|=0
1131 \catcode'\|=12
1132 |gdef|HyPsd@RemoveCmdPrefix#1{%
1133     |expandafter|HyPsd@@RemoveCmdPrefix
1134     |string#1|@empty\<>-|@empty|@empty
1135 }%
1136 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1137 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

1138 \def\HyPsd@RemoveSpaceWarning#1{%
1139     \HyPsd@Warning{%
1140         Token not allowed in a PDFDocEncoded string:%
1141         \MessageBreak #1\MessageBreak
1142         removed%
1143     }%
1144 }

```

\HyPsd@ReplaceSpaceWarning

```

1145 \def\HyPsd@ReplaceSpaceWarning#1{%
1146     \HyPsd@Warning{%
1147         Token not allowed in a PDFDocEncoded string:%
1148         \MessageBreak #1\MessageBreak
1149         replaced by space%
1150     }%
1151 }

```

### 6.6.5 Check for wrong glyphs

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

```

1152 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1153     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1154         \HyPsd@String#1%
1155     }%
1156     \ifx\#2\%
1157     \else
1158         \Hy@ReturnAfterFi{%
1159             \HyPsd@GlyphProcessWarning#2\@empty
1160         }%
1161     \fi
1162 }
1163 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1164     \HyPsd@Warning{%
1165         Glyph not defined in %
1166         P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1167         removing '@backslashchar#1'%
1168     }%
1169     \HyPsd@GlyphProcess#2\@empty
1170 }

```

### 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.



```

1171 \def\HyPsd@spaceopti#1{ % first space
1172   \ifx\HyPsd@spaceopti#1%
1173     \040%
1174   \else
1175     #1%
1176   \fi
1177 }%

```

### 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.

```

1178 \def\HyPsd@Subst#1#2#3{%
1179   \def\HyPsd@@Replace##1#1##2\END{%
1180     ##1%
1181     \ifx\##2\%
1182     \else
1183       #2%
1184       \Hy@ReturnAfterFi{%
1185         \HyPsd@@Replace##2\END
1186       }%
1187     \fi
1188   }%
1189   \xdef#3{%
1190     \expandafter\HyPsd@@Replace#3#1\END
1191   }%
1192 }

```

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

```

1193 \def\HyPsd@StringSubst#1{%
1194   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1195 }

```

### 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.

```

1196 \def\HyPsd@doxspace#1{%
1197   \ifx#1\relax\else
1198     \ifx#1.\else
1199       \ifx#1:\else
1200         \ifx#1,\else
1201         \ifx#1;\else
1202         \ifx#1!\else
1203         \ifx#1?\else
1204         \ifx#1/\else
1205         \ifx#1-\else
1206         \ifx#1'\else
1207           \HyPsd@SPACEOPTI
1208         \fi
1209       \fi

```

```

1210         \fi
1211         \fi
1212     \fi
1213     \fi
1214     \fi
1215     \fi
1216     \fi
1217     \fi
1218     #1%
1219 }%

```

## 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.

```

1220 \begingroup
1221   \catcode'\|=0
1222   \catcode'\=12

```

\HyPsd@ConvertToUnicode

```

1223 |gdef|HyPsd@ConvertToUnicode#1{%
1224   |xdef#1{%
1225     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1226   }%
1227   |xdef#1{%
1228     |ifx#1|@empty
1229     |else
1230       \376\377%
1231       #1%
1232     |fi
1233   }%
1234 }

```

\HyPsd@DoConvert

```

1235 |gdef|HyPsd@DoConvert#1{%
1236   |ifx#1|@empty
1237   |else
1238     |Hy@ReturnAfterFi{%
1239       |ifx#1\%
1240       \%
1241       |expandafter|HyPsd@DoEscape
1242     |else
1243       \000#1%
1244       |expandafter|HyPsd@DoConvert
1245     |fi
1246   }%
1247   |fi
1248 }

```

\HyPsd@DoEscape

```

1249 |gdef|HyPsd@DoEscape#1{%
1250   |ifx#19%
1251   |expandafter|HyPsd@GetTwoBytes
1252   |else
1253     |Hy@ReturnAfterFi{%

```

```

1254         |ifx#18%
1255         00%
1256         |expandafter|HyPsd@GetTwoBytes
1257     |else
1258         #1%
1259         |expandafter|HyPsd@GetOneByte
1260     |fi
1261 }%
1262 |fi
1263 }

```

`\HyPsd@GetTwoBytes`

```

1264 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1265     #1\#2#3#4%
1266     |HyPsd@DoConvert
1267 }

```

`\HyPsd@GetOneByte`

```

1268 |gdef|HyPsd@GetOneByte#1#2{%
1269     #1#2%
1270     |HyPsd@DoConvert
1271 }
1272 |endgroup

```

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

```

1273 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1274     \xdef#4{#4#1#2}%
1275     \HyPsd@@ConvertToUnicode#3\END#4%
1276 }

```

### 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`

```

1277 \begingroup\expandafter\expandafter\expandafter\endgroup
1278 \expandafter\ifx\csname numexpr\endcsname\relax
1279     \let\HyPsd@UTFviii\relax
1280 \else
1281     \def\HyPsd@UTFviii{%
1282         \let\UTFviii@two@octets\HyPsd@UTFviii@two
1283         \let\UTFviii@three@octets\HyPsd@UTFviii@three
1284         \let\unichar\HyPsd@unichar
1285     }%

```

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.

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

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

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

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

$$(5)$$

```

1286 \def\HyPsd@UTFviii@two#1#2{%
1287   \expandafter\HyPsd@UTFviii@@two
1288   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
1289   \number'#1\expandafter|
1290   \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|
1291   \number'#2 \@nil
1292 }%
1293 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
1294   \expandafter\8%
1295   \number\numexpr #1-48\expandafter\relax
1296   \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1297   \number\numexpr #3-8*%
1298   \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1299   \number\numexpr #4-8*#3\relax
1300 }%
```

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

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

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

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

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

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

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

$$(12)$$

```

1301 \def\HyPsd@UTFviii@three#1#2#3{%
1302   \expandafter\HyPsd@UTFviii@@three
1303   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
1304   \number'#1\expandafter|
1305   \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter|
1306   \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|
1307   \number'#2\expandafter|
1308   \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|
1309   \number'#3 \@nil
1310 }%
1311 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1312   \expandafter\9%
1313   \number\numexpr #1-56\expandafter\relax
1314   \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1315   \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1316   \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1317   \number\numexpr #6-16\expandafter\relax
1318   \number\numexpr #7-8*#6\relax
1319 }%
```

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

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

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

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

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

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

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

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

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

$$(21)$$

```

1320 \def\HyPsd@UTFviii@four#1{%
1321   \expandafter\HyPsd@UTFviii@@four\number'#1|%
1322 }%
1323 \def\HyPsd@UTFviii@@four#1|#2|#3|#4{%
1324   \expandafter\HyPsd@UTFviii@@@four\number#1\expandafter|%
1325   \number'#2\expandafter|
1326   \number\dimexpr.03125\dimexpr'#2sp\expandafter|%
1327   \number'#3\expandafter|%
1328   \number\dimexpr.03125\dimexpr'#3sp\expandafter|%
1329   \number'#4\expandafter|%
1330   \number\dimexpr.125\dimexpr'#4|%
1331 }%
1332 \def\HyPsd@UTFviii@@@four#1|#2|#3|#4|#5|#6|#7|{%
1333   \931%
1334   \number\numexpr\dimexpr.5\dimexpr#1sp\relax\relax -120\relax
1335   \csname\number\numexpr\ifodd#1 2\else 0\fi +#3-4\relax\endcsname
1336   \number\dimexpr.25\dimexpr #2sp - 32\dimexpr#3sp\relax\relax\relax
1337   % ...
1338 }%
```

Input encoding utf8x of package ucs uses macro \uchar. It takes a macro name as argument. Then name obeys the following structure:

\u8-<first byte as decimal number>-[continuation byte]+

```

1339 \def\HyPsd@uchar#1{%
1340   \expandafter\HyPsd@@uchar\string#1\@empty\@empty\@empty\@nil
1341 }%
1342 \def\HyPsd@@uchar #1-#2-#3#4#5#6\@nil{%
1343   \ifnum#2>191 %
1344     \ifnum#2<224 %
1345       \expandafter\HyPsd@UTFviii@@two
1346       \number\dimexpr.25\dimexpr#2sp\expandafter\relax\expandafter|%
1347       \number#2\expandafter|%
1348       \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|%
1349       \number'#3 \@nil
1350     \else
1351       \ifnum#2<240 %
1352         \expandafter\HyPsd@UTFviii@@three
1353         \number\dimexpr.25\dimexpr#2sp\expandafter\relax\expandafter|%
1354         \number#2\expandafter|%
1355         \number\ifnum\numexpr'#3-128\relax <32 0\else 1\fi\expandafter|%
```

```

1356         \number\dimexpr.25\dimexpr'#3sp\expandafter\relax\expandafter|{%
1357         \number'#3\expandafter|{%
1358         \number\dimexpr.125\dimexpr'#4sp\expandafter\relax\expandafter|{%
1359         \number'#4 \@nil
1360     \else
1361         ?% unsupported
1362     \fi
1363 \fi
1364 \fi
1365 }%
1366 \fi

```

## 7 Support of other packages

### 7.1 Package subfigure

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

```

1367 \@ifpackageloaded{subfigure}{%
1368   \@ifundefined{sub@label}{%
1369     \Hy@hypertextnamesfalse
1370   }{%
1371     \renewcommand*{\sub@label}[1]{%
1372       \@bsphack
1373       \subfig@oldlabel{#1}%
1374       \if@filesw
1375         \begingroup
1376           \edef\@currentlabstr{%
1377             \expandafter\strip@prefix\meaning\@currentlabelname
1378           }%
1379           \protected@write\@auxout{}{%
1380             \string\newlabel{sub@#1}{%
1381               {\@nameuse{@@thesub}\@capytype}}%
1382             {\thepage}%
1383             {\expandafter\strip@period\@currentlabstr\relax.\relax\@@@}%
1384             {\@currentHref}%
1385             {}%
1386           }%
1387         }%
1388       \endgroup
1389     \fi
1390     \@esphack
1391   }%
1392   \@ifpackagelater{subfigure}{2002/03/26}{%
1393     \providecommand*{\toclevel@subfigure}{1}%
1394     \providecommand*{\toclevel@subtable}{1}%
1395   }%
1396 }%
1397 }{}

```

### 7.2 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:

```

1398 \@ifundefined{XR@addURL}{%
1399 }{%

```

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.

```

1400 \def\XR@addURL#1{\XR@dURL#1{}{}{}{}}%
1401 \def\XR@dURL#1#2#3#4#5\{%
1402   {#1}{#2}%
1403   \if!#4!%
1404   \else
1405     {#3}{#4}{\XR@URL}%
1406   \fi
1407 }%
1408 }

1409 \def\Hy@true{true}
1410 \def\Hy@false{false}

```

Providing dummy definitions.

```

1411 \let\literalps@out@gobble
1412 \newcommand\pdfbookmark[3][]{ }
1413 \let\Acrobatmenu@gobble
1414 \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

```

1415 \let\HyperRaiseLinkLength\@tempdima
1416 \let\HyperRaiseLinkHook\@empty
1417 \def\HyperRaiseLinkDefault{\baselineskip}

```

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

```

1418 \def\Hy@raisedlink#1{%
1419   \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1420   \HyperRaiseLinkHook
1421   \ifvmode
1422     #1%
1423   \else
1424     \penalty\@M
1425     \smash{\raise\HyperRaiseLinkLength\hbox{#1}}%
1426   \fi
1427 }

```

<code>\Hy@SaveLastskip</code> <code>\Hy@RestoreLastskip</code>	Inserting a <code>\special</code> command to set a destination destroys the <code>\lastskip</code> value.
---	---

```

1428 \def\Hy@SaveLastskip{%
1429   \let\Hy@RestoreLastskip\relax
1430   \ifvmode
1431     \ifdim\lastskip=\z@
1432       \let\Hy@RestoreLastskip\nobreak

```

```

1433 \else
1434 \begingroup
1435 \skip@=-\lastskip
1436 \edef\x{%
1437 \endgroup
1438 \def\noexpand\Hy@RestoreLastskip{%
1439 \noexpand\ifvmode
1440 \noexpand\nobreak
1441 \vskip\the\skip@
1442 \vskip\the\lastskip\relax
1443 \noexpand\fi
1444 }%
1445 }%
1446 \x
1447 \fi
1448 \else
1449 \ifhmode
1450 \ifdim\lastskip=\z@
1451 \let\Hy@RestoreLastskip\nobreak
1452 \else
1453 \begingroup
1454 \skip@=-\lastskip
1455 \edef\x{%
1456 \endgroup
1457 \def\noexpand\Hy@RestoreLastskip{%
1458 \noexpand\ifhmode
1459 \noexpand\nobreak
1460 \hskip\the\skip@
1461 \hskip\the\lastskip\relax
1462 \noexpand\fi
1463 }%
1464 }%
1465 \x
1466 \fi
1467 \fi
1468 \fi
1469 }%

```

## 9 Options

### 9.1 Help macros

\Hy@boolkey

```

1470 \def\Hy@boolkey{\@dblarg\Hy@boolkey}
1471 \def\Hy@boolkey[#1]#2#3{%
1472 \lowercase{\def\Hy@tempa{#3}}%
1473 \ifx\Hy@tempa\@empty
1474 \let\Hy@tempa\Hy@true
1475 \fi
1476 \ifx\Hy@tempa\Hy@true
1477 \else
1478 \ifx\Hy@tempa\Hy@false
1479 \else
1480 \let\Hy@tempa\relax
1481 \fi
1482 \fi

```



```

1483 \ifx\Hy@tempa\relax
1484   \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1485 \else
1486   \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1487   \csname Hy@#2\Hy@tempa\endcsname
1488 \fi
1489 }

```

\Hy@WarnOptionValue

```

1490 \def\Hy@WarnOptionValue#1#2#3{%
1491   \Hy@Warning{%
1492     Unexpected value ‘#1’\MessageBreak
1493     of option ‘#2’ instead of\MessageBreak
1494     #3%
1495   }
1496 }

```

\Hy@DisableOption

```

1497 \def\Hy@DisableOption#1{%
1498   \@ifundefined{KV@Hyp@#1@default}{%
1499     \define@key{Hyp}{#1}%
1500   }{%
1501     \define@key{Hyp}{#1}[]%
1502   }%
1503   {\Hy@WarnOptionDisabled{#1}}%
1504 }

```

\Hy@WarnOptionDisabled

```

1505 \def\Hy@WarnOptionDisabled#1{%
1506   \Hy@Warning{%
1507     Option ‘#1’ has already been used,\MessageBreak
1508     setting the option has no effect%
1509   }%
1510 }

```

## 9.2 Defining the options

```

1511 \define@key{Hyp}{implicit}[true]{%
1512   \Hy@boolkey{implicit}{#1}%
1513 }
1514 \define@key{Hyp}{draft}[true]{%
1515   \Hy@boolkey{draft}{#1}%
1516 }
1517 \define@key{Hyp}{final}[true]{%
1518   \Hy@boolkey{final}{#1}%
1519 }
1520 \let\KV@Hyp@nolinks\KV@Hyp@draft
1521 \define@key{Hyp}{a4paper}[true]{%
1522   \def\special@paper{210mm,297mm}%
1523   \def\Hy@pageheight{842}%
1524 }
1525 \define@key{Hyp}{a5paper}[true]{%
1526   \def\special@paper{148mm,210mm}%
1527   \def\Hy@pageheight{595}%
1528 }
1529 \define@key{Hyp}{b5paper}[true]{%
1530   \def\special@paper{176mm,250mm}%

```

```

1531 \def\Hy@pageheight{709}%
1532 }
1533 \define@key{Hyp}{letterpaper}[true]{%
1534 \def\special@paper{8.5in,11in}%
1535 \def\Hy@pageheight{792}%
1536 }
1537 \define@key{Hyp}{legalpaper}[true]{%
1538 \def\special@paper{8.5in,14in}%
1539 \def\Hy@pageheight{1008}%
1540 }
1541 \define@key{Hyp}{executivepaper}[true]{%
1542 \def\special@paper{7.25in,10.5in}%
1543 \def\Hy@pageheight{720}%
1544 }
1545 \define@key{Hyp}{setpagesize}[true]{%
1546 \Hy@boolkey{setpagesize}{#1}%
1547 }
1548 \define@key{Hyp}{debug}[true]{%
1549 \Hy@boolkey[debug]{verbose}{#1}%
1550 }
1551 \define@key{Hyp}{linktopage}[true]{%
1552 \Hy@boolkey{linktopage}{#1}%
1553 }
1554 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1555 \def\XR@ext{dvi}
1556 \define@key{Hyp}{verbose}[true]{%
1557 \Hy@boolkey{verbose}{#1}%
1558 }
1559 \define@key{Hyp}{typexml}[true]{%
1560 \Hy@boolkey{typexml}{#1}%
1561 }

```

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.

```

1562 \define@key{Hyp}{raiselinks}[true]{%
1563 \Hy@boolkey{raiselinks}{#1}%
1564 }

```

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

```

1565 \define@key{Hyp}{breaklinks}[true]{%
1566 \Hy@boolkey{breaklinks}{#1}%
1567 }

```

Determines whether an automatic anchor is put on each page

```

1568 \define@key{Hyp}{pageanchor}[true]{%
1569 \Hy@boolkey{pageanchor}{#1}%
1570 }

```

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.

```

1571 \define@key{Hyp}{plainpages}[true]{%
1572 \Hy@boolkey{plainpages}{#1}%
1573 }

```

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

```

1574 \define@key{Hyp}{naturalnames}[true]{%
1575 \Hy@boolkey{naturalnames}{#1}%

```

```
1576 }
```

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

```
1577 \define@key{Hyp}{hypertexnames}[true]{%
1578   \Hy@boolkey{hypertexnames}{#1}%
1579 }
```

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

```
1580 \define@key{Hyp}{nesting}[true]{%
1581   \Hy@boolkey{nesting}{#1}%
1582 }

1583 \define@key{Hyp}{unicode}[true]{%
1584   \Hy@boolkey{unicode}{#1}%
1585   \HyPsd@InitUnicode
1586 }
```

## 10 Options for different drivers

```
1587 \define@key{Hyp}{hyperref}[true]{%
1588 \define@key{Hyp}{tex4ht}[true]{%
1589   \def\XR@ext{html}%
1590   \Hy@texhttrue
1591   \def\Hy@raisedlink{}%
1592   \setkeys{Hyp}{colorlinks=true}%
1593   \def\BeforeTeXIVht{\usepackage{color}}%
1594   \def\Hy@driver{htex4ht}%
1595   \def\MaybeStopEarly{%
1596     \typeout{Hyperref stopped early}%
1597     \AfterBeginDocument{\PDF@FinishDoc}%
1598     \endinput
1599   }%
1600 }

1601 \define@key{Hyp}{pdftex}[true]{%
1602   \def\Hy@driver{hpdftex}%
1603   \def\XR@ext{pdf}%
1604   \PassOptionsToPackage{pdftex}{color}%
1605   \Hy@breaklinkstrue
1606 }

1607 \define@key{Hyp}{dvipdf}[true]{%
1608   \Hy@WarningNoLine{%
1609     Option 'dvipdf' is deprecated.\MessageBreak
1610     See the user manual for available driver options%
1611   }%
1612 }

1613 \define@key{Hyp}{nativepdf}[true]{%
1614   \def\Hy@driver{hdvips}%
1615   \def\Hy@raisedlink{}%
1616   \def\XR@ext{pdf}%
1617 }

1618 \define@key{Hyp}{dvipdfm}[true]{%
1619   \def\Hy@driver{hdvipdfm}%
1620   \def\XR@ext{pdf}%
1621   \Hy@breaklinkstrue
1622 }

1623 \define@key{Hyp}{pdfmark}[true]{%
1624   \def\Hy@driver{hdvips}%
1625   \def\Hy@raisedlink{}%
```

```

1626 \def\XR@ext{pdf}%
1627 }
1628 \define@key{Hyp}{dvips}[true]{%
1629 \def\Hy@driver{hdvips}%
1630 \def\Hy@raisedlink{}%
1631 \def\XR@ext{pdf}%
1632 }
1633 \define@key{Hyp}{hypertex}[true]{%
1634 \def\Hy@driver{hypertex}%
1635 }
1636 \let\Hy@MaybeStopNow\relax
1637 \define@key{Hyp}{vtex}[true]{%
1638 \begingroup\expandafter\expandafter\expandafter\endgroup
1639 \expandafter\ifx\csname OpMode\endcsname\relax
1640 \latex@error{Non-VTeX processor}{}%
1641 \global\let\Hy@MaybeStopNow\endinput
1642 \endinput
1643 \else
1644 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1645 \def\XR@ext{pdf}%
1646 \def\Hy@driver{hvtex}%
1647 \else
1648 \ifnum\OpMode=10\relax
1649 \def\XR@ext{htm}%
1650 \def\Hy@driver{hvtexhtm}%
1651 \def\MaybeStopEarly{%
1652 \typeout{Hyperref stopped early}%
1653 \AfterBeginDocument{\PDF@FinishDoc}%
1654 \endinput
1655 }%
1656 \else
1657 \latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1658 \global\let\Hy@MaybeStopNow\endinput
1659 \endinput
1660 \fi
1661 \fi
1662 \fi
1663 }
1664 \define@key{Hyp}{vtexpdfmark}[true]{%
1665 \begingroup\expandafter\expandafter\expandafter\endgroup
1666 \expandafter\ifx\csname OpMode\endcsname\relax
1667 \latex@error{Non-VTeX processor}{}%
1668 \let\Hy@MaybeStopNow\endinput
1669 \endinput
1670 \else
1671 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1672 \def\XR@ext{pdf}%
1673 \def\Hy@driver{hvtexmrk}%
1674 \def\Hy@raisedlink{}%
1675 \else
1676 \latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1677 \let\Hy@MaybeStopNow\endinput
1678 \endinput
1679 \fi
1680 \fi
1681 }
1682 \define@key{Hyp}{dviwindo}[true]{%

```

```

1683 \def\Hy@driver{hdviwind}%
1684 \setkeys{Hyp}{colorlinks}%
1685 \PassOptionsToPackage{dviwindo}{color}%
1686 }
1687 \define@key{Hyp}{dvipsone}[true]{%
1688 \def\XR@ext{pdf}%
1689 \def\Hy@driver{hdvipson}%
1690 \def\Hy@raisedlink{}%
1691 }
1692 \define@key{Hyp}{textures}[true]{%
1693 \def\XR@ext{pdf}%
1694 \def\Hy@driver{htexture}%
1695 }
1696 \define@key{Hyp}{latex2html}[true]{%
1697 \AtBeginDocument{\@latextohtmlX}%
1698 }

```

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

```

1699 \define@key{Hyp}{ps2pdf}[true]{%
1700 \def\Hy@driver{hdvips}%
1701 \def\Hy@raisedlink{}%
1702 \providecommand\@pdfborder{0 0 1}%
1703 }

```

## 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.

```

1704 \define@key{Hyp}{hyperfigures}[true]{%
1705 \Hy@boolkey[hyperfigures]{figures}{#1}%
1706 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

1707 \define@key{Hyp}{hyperfootnotes}[true]{%
1708 \Hy@boolkey[hyperfootnotes]{#1}%
1709 }

```

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

```

1710 \def\back@none{none}
1711 \def\back@section{section}
1712 \def\back@page{page}
1713 \def\back@slide{slide}
1714 \define@key{Hyp}{backref}[section]{%
1715 \lowercase{\def\Hy@tempa{#1}}%
1716 \ifx\Hy@tempa\@empty
1717 \let\Hy@tempa\back@section
1718 \fi
1719 \ifx\Hy@tempa\Hy@false
1720 \let\Hy@tempa\back@none
1721 \fi
1722 \ifx\Hy@tempa\back@slide
1723 \let\Hy@tempa\back@section
1724 \fi
1725 \ifx\Hy@tempa\back@page
1726 \PassOptionsToPackage{hyperpageref}{backref}%
1727 \Hy@backreftrue
1728 \else
1729 \ifx\Hy@tempa\back@section

```

```

1730     \PassOptionsToPackage{hyperref}{backref}%
1731     \Hy@backreftrue
1732   \else
1733     \ifx\Hy@tempa\back@none
1734       \Hy@backreffalse
1735     \else
1736       \Hy@WarnOptionValue{#1}{backref}{%
1737         'section', 'slide', 'page', 'none', \MessageBreak
1738         or 'false'}%
1739     \fi
1740   \fi
1741 \fi
1742 }
1743 \define@key{Hyp}{pagebackref}[true]{%
1744   \lowercase{\def\Hy@tempa{#1}}%
1745   \ifx\Hy@tempa\@empty
1746     \let\Hy@tempa\Hy@true
1747   \fi
1748   \ifx\Hy@tempa\Hy@true
1749     \PassOptionsToPackage{hyperpageref}{backref}%
1750     \Hy@backreftrue
1751   \else
1752     \ifx\Hy@tempa\Hy@false
1753       \Hy@backreffalse
1754     \else
1755       \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
1756     \fi
1757   \fi
1758 }

```

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

```

1759 \define@key{Hyp}{hyperindex}[true]{%
1760   \Hy@boolkey{hyperindex}{#1}%
1761 }

```

Configuration of encap char.

```

1762 \define@key{Hyp}{encap}[\l]{%
1763   \def\HyInd@EncapChar{#1}%
1764 }

```

## 12 Language options

The `\autoref` feature depends on the language.

```

1765 \def\HyLang@english{%
1766   \def\equationautorefname{Equation}%
1767   \def\footnoteautorefname{footnote}%
1768   \def\itemautorefname{item}%
1769   \def\figureautorefname{Figure}%
1770   \def\tableautorefname{Table}%
1771   \def\partautorefname{Part}%
1772   \def\appendixautorefname{Appendix}%
1773   \def\chapterautorefname{chapter}%
1774   \def\sectionautorefname{section}%
1775   \def\subsectionautorefname{subsection}%
1776   \def\subsubsectionautorefname{subsubsection}%
1777   \def\paragraphautorefname{paragraph}%

```

```

1778 \def\subparagraphautorefname{subparagraph}%
1779 \def\FancyVerbLineautorefname{line}%
1780 \def\theoremautorefname{Theorem}%
1781 }
1782 \def\HyLang@german{%
1783 \def\equationautorefname{Gleichung}%
1784 \def\footnoteautorefname{Fu\ss note}%
1785 \def\itemautorefname{Punkt}%
1786 \def\figureautorefname{Abbildung}%
1787 \def\tableautorefname{Tabelle}%
1788 \def\partautorefname{Teil}%
1789 \def\appendixautorefname{Anhang}%
1790 \def\chapterautorefname{Kapitel}%
1791 \def\sectionautorefname{Abschnitt}%
1792 \def\subsectionautorefname{Unterabschnitt}%
1793 \def\subsubsectionautorefname{Unterunterabschnitt}%
1794 \def\paragraphautorefname{Absatz}%
1795 \def\subparagraphautorefname{Unterabsatz}%
1796 \def\FancyVerbLineautorefname{Zeile}%
1797 \def\theoremautorefname{Theorem}%
1798 }
1799 \def\HyLang@portuges{%
1800 \def\equationautorefname{Equa\c c\~ao}%
1801 \def\footnoteautorefname{Nota de rodap\~e}%
1802 \def\itemautorefname{Item}%
1803 \def\figureautorefname{Figura}%
1804 \def\tableautorefname{Tabela}%
1805 \def\partautorefname{Parte}%
1806 \def\appendixautorefname{Ap\~endice}%
1807 \def\chapterautorefname{Cap\~itulo}%
1808 \def\sectionautorefname{Se\c c\~ao}%
1809 \def\subsectionautorefname{Subse\c c\~ao}%
1810 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
1811 \def\paragraphautorefname{par\~agrafo}%
1812 \def\subparagraphautorefname{subpar\~agrafo}%
1813 \def\FancyVerbLineautorefname{linha}%
1814 \def\theoremautorefname{Teorema}%
1815 }
1816 \def\HyLang@spanish{%
1817 \def\equationautorefname{Ecuaci\~on}%
1818 \def\footnoteautorefname{Nota a pie de p\~agina}%
1819 \def\itemautorefname{Elemento}%
1820 \def\figureautorefname{Figura}%
1821 \def\tableautorefname{Tabla}%
1822 \def\partautorefname{Parte}%
1823 \def\appendixautorefname{Ap\~endice}%
1824 \def\chapterautorefname{Cap\~itulo}%
1825 \def\sectionautorefname{Secci\~on}%
1826 \def\subsectionautorefname{Subsecci\~on}%
1827 \def\subsubsectionautorefname{Subsubsecci\~on}%
1828 \def\paragraphautorefname{P\~arrafo}%
1829 \def\subparagraphautorefname{Subp\~arrafo}%
1830 \def\FancyVerbLineautorefname{L\~inea}%
1831 \def\theoremautorefname{Teorema}%
1832 }
1833 \def\HyLang@afrikaans{%
1834 \def\equationautorefname{Vergelyking}%

```

```

1835 \def\footnoteautorefname{Voetnota}%
1836 \def\itemautorefname{Item}%
1837 \def\figureautorefname{Figuur}%
1838 \def\tableautorefname{Tabel}%
1839 \def\partautorefname{Deel}%
1840 \def\appendixautorefname{Bylae}%
1841 \def\chapterautorefname{Hoofstuk}%
1842 \def\sectionautorefname{Afdeling}%
1843 \def\subsectionautorefname{Subafdeling}%
1844 \def\subsubsectionautorefname{Subsubafdeling}%
1845 \def\paragraphautorefname{Paragraaf}%
1846 \def\subparagraphautorefname{Subparagraaf}%
1847 \def\FancyVerbLineautorefname{Lyn}%
1848 \def\theoremautorefname{Teorema}%
1849 }
1850 \def\HyLang@french{%
1851 \def\equationautorefname{'Equation}%
1852 \def\footnoteautorefname{note}%
1853 \def\itemautorefname{item}%
1854 \def\figureautorefname{Figure}%
1855 \def\tableautorefname{Tableau}%
1856 \def\partautorefname{Partie}%
1857 \def\appendixautorefname{Appendice}%
1858 \def\chapterautorefname{chapitre}%
1859 \def\sectionautorefname{section}%
1860 \def\subsectionautorefname{sous-section}%
1861 \def\subsubsectionautorefname{sous-sous-section}%
1862 \def\paragraphautorefname{paragraphe}%
1863 \def\subparagraphautorefname{sous-paragraphe}%
1864 \def\FancyVerbLineautorefname{ligne}%
1865 \def\theoremautorefname{Th'eor'eme}%
1866 }
1867 \def\HyLang@vietnamese{%
1868 \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr'inh}%
1869 \def\footnoteautorefname{Ch'u th'ich}%
1870 \def\itemautorefname{m\du{c}}%
1871 \def\figureautorefname{H'inh}%
1872 \def\tableautorefname{B\h{a}ng}%
1873 \def\partautorefname{Ph'\acircumflex{n}}%
1874 \def\appendixautorefname{Ph\du{ } l\du{c}}%
1875 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
1876 \def\sectionautorefname{m\du{c}}%
1877 \def\subsectionautorefname{m\du{c}}%
1878 \def\subsubsectionautorefname{m\du{c}}%
1879 \def\paragraphautorefname{dj{o\du{a}n}}%
1880 \def\subparagraphautorefname{dj{o\du{a}n}}%
1881 \def\FancyVerbLineautorefname{d'ong}%
1882 \def\theoremautorefname{DJ\du{inh} l'y}%
1883 }

```

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

```

1884 \def\HyLang@addto#1#2{%
1885 #2%
1886 \@temptokena{#2}%
1887 \ifx#1\relax
1888 \let#1\@empty
1889 \fi

```



```

1890 \ifx#1\undefined
1891   \edef#1{\the\@temptokena}%
1892 \else
1893   \toks@\expandafter{#1}%
1894   \edef#1{\the\toks@\the\@temptokena}%
1895 \fi
1896 \@temptokena{}\toks@\@temptokena
1897 }

1898 \def\HyLang@DeclareLang#1#2{%
1899   \begingroup
1900   \edef\x##1##2{%
1901     \noexpand\ifx##2\relax
1902       \errmessage{No definitions for language #2' found!}%
1903     \noexpand\fi
1904   \endgroup
1905   \noexpand\define@key{Hyp}{#1}[]{%
1906     \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
1907   }%
1908 }%
1909 \expandafter\x\csname extras#1\expandafter\endcsname
1910   \csname HyLang@#2\endcsname
1911 }

1912 \HyLang@DeclareLang{english}{english}
1913 \HyLang@DeclareLang{UKenglish}{english}
1914 \HyLang@DeclareLang{british}{english}
1915 \HyLang@DeclareLang{USenglish}{english}
1916 \HyLang@DeclareLang{american}{english}
1917 \HyLang@DeclareLang{german}{german}
1918 \HyLang@DeclareLang{austrian}{german}
1919 \HyLang@DeclareLang{ngerman}{german}
1920 \HyLang@DeclareLang{naustrian}{german}
1921 \HyLang@DeclareLang{brazil}{portuges}
1922 \HyLang@DeclareLang{brazilian}{portuges}
1923 \HyLang@DeclareLang{portuguese}{portuges}
1924 \HyLang@DeclareLang{spanish}{spanish}
1925 \HyLang@DeclareLang{afrikaans}{afrikaans}
1926 \HyLang@DeclareLang{french}{french}
1927 \HyLang@DeclareLang{frenchb}{french}
1928 \HyLang@DeclareLang{francais}{french}
1929 \HyLang@DeclareLang{acadian}{french}
1930 \HyLang@DeclareLang{canadien}{french}

```

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

```

1931 \define@key{Hyp}{vietnamese}[]{%
1932   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
1933   \AtEndOfPackage{%
1934     \ifundefined{T@PU}{-}{%
1935       \input{puvnenc.def}%
1936     }%
1937   }%
1938 }

1939 \define@key{Hyp}{vietnam}[]{%
1940   \HyLang@addto\extrasvietnam\HyLang@vietnamese
1941   \AtEndOfPackage{%
1942     \ifundefined{T@PU}{-}{%
1943       \input{puvnenc.def}%
1944     }%

```

```

1945 }%
1946 }

```

## 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.

```

1947 \define@key{Hyp}{colorlinks}[true]{%
1948   \Hy@boolkey{colorlinks}{#1}%
1949   \ifHy@colorlinks
1950     \def\pdfborder{0 0 0}%
1951   \fi
1952 }
1953 \define@key{Hyp}{frenchlinks}[true]{%
1954   \Hy@boolkey{frenchlinks}{#1}%
1955 }

```

## 14 Bookmarking

```

1956 \define@key{Hyp}{bookmarks}[true]{%
1957   \Hy@boolkey{bookmarks}{#1}%
1958 }
1959 \define@key{Hyp}{bookmarksopen}[true]{%
1960   \Hy@boolkey{bookmarksopen}{#1}%
1961 }

```

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.

```

1962 \let\Hy@bookmarksdepth\c@tocdepth
1963 \define@key{Hyp}{bookmarksdepth}[]{%
1964   \begingroup
1965     \edef\x{#1}%
1966     \ifx\x\empty
1967       \global\let\Hy@bookmarksdepth\c@tocdepth
1968     \else
1969       \ifundefined{toclevel@\x}{%
1970         \@onelevel@sanitize\x
1971         \edef\y{\expandafter\@car\x\@nil}%
1972         \ifcase 0\expandafter\ifx\y-1\fi
1973           \expandafter\ifnum\expandafter'\y>47 %
1974             \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
1975           \Hy@Warning{Unknown document division name (\x)}%
1976         \else
1977           \setbox\z@=\hbox{%
1978             \count@=\x
1979             \xdef\Hy@bookmarksdepth{\the\count@}%
1980           }%

```

```

1981      \fi
1982    }{%
1983      \setbox\z@=\hbox{%
1984        \count@=\csname toplevel@\x\endcsname
1985        \xdef\Hy@bookmarksdepth{\the\count@}%
1986      }%
1987    }%
1988  \fi
1989 \endgroup
1990 }

```

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

```

1991 \define@key{Hyp}{bookmarksopenlevel}{%
1992   \def\@bookmarksopenlevel{#1}%
1993 }
1994 \def\@bookmarksopenlevel{\maxdimen}
1995 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
1996 \define@key{Hyp}{bookmarkstype}{%
1997   \def\Hy@bookmarkstype{#1}%
1998 }
1999 \def\Hy@bookmarkstype{toc}

```

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

```

2000 \define@key{Hyp}{bookmarksnumbered}[true]{%
2001   \Hy@boolkey{bookmarksnumbered}{#1}%
2002 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2003 \define@key{Hyp}{CJKbookmarks}[true]{%
2004   \Hy@boolkey{CJKbookmarks}{#1}%
2005 }
2006 \define@key{Hyp}{linkcolor}{\def\@linkcolor{#1}}
2007 \define@key{Hyp}{anchorcolor}{\def\@anchorcolor{#1}}
2008 \define@key{Hyp}{citecolor}{\def\@citecolor{#1}}
2009 \define@key{Hyp}{urlcolor}{\def\@urlcolor{#1}}
2010 \define@key{Hyp}{menucolor}{\def\@menucolor{#1}}
2011 \define@key{Hyp}{filecolor}{\def\@filecolor{#1}}
2012 \define@key{Hyp}{pagecolor}{\def\@pagecolor{#1}}

```

Default values:

```

2013 \def\@linkcolor{red}
2014 \def\@anchorcolor{black}
2015 \def\@citecolor{green}
2016 \def\@filecolor{cyan}
2017 \def\@urlcolor{magenta}
2018 \def\@menucolor{red}
2019 \def\@pagecolor{red}
2020 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2021 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2022 \let\@baseurl\empty
2023 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2024 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2025 \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.

```
2026 \let\pdfpagetransition\relax
2027 \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.

```
2028 \let\pdfpageduration\relax
2029 \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.

```
2030 \newif\ifHy@useHidKey
2031 \Hy@useHidKeyfalse
2032 \define@key{Hyp}{pdfpagehidden}[true]{%
2033   \Hy@boolkey{pdfpagehidden}{#1}%
2034   \ifHy@pdfpagehidden
2035     \global\Hy@useHidKeytrue
2036   \fi
2037 }
```

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).

```
2038 \def\Hy@ColorList{cite,file,link,menu,page,run,url}
2039 \@for\Hy@temp:=\Hy@ColorList\do{%
2040   \edef\Hy@temp{%
2041     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2042       \noexpand\Hy@bordercolor{\Hy@temp}{##1}{ }%
2043     }%
2044   }%
2045   \Hy@temp
2046 }
2047 \def\Hy@bordercolor#1#2#3{%
2048   \begingroup
2049     \csname @safe@activetrue\endcsname
2050     \@ifundefined{XC@edef}{\edef}{\XC@edef}\x{#2}%
2051     \expandafter\Hy@CheckColorSpec\x{#3}\@nil{#1}{#2}%
2052   }
2053 \def\Hy@CheckColorSpec#1 #2 #3\@nil#4#5{%
2054   \ifx\#3\%
2055     \@ifundefined{XC@bordercolor}{%
2056       \Hy@Warning{%
2057         Unsupported color specification (#4bordercolor).\MessageBreak
2058         Load package 'xcolor' (version >= 1.11) first.\MessageBreak
2059         Ignoring color specification%
2060       }%
2061     \endgroup
2062   }{%
```

```

2063     \endgroup
2064     \XC@bordercolor{#4}{#5}%
2065   }%
2066 \else
2067   \endgroup
2068   \@namedef{@#4bordercolor}{#5}%
2069 \fi
2070 }

2071 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2072 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2073 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2074 \def\Hy@setpdfborder{%
2075   \ifx\@pdfborder\@empty
2076   \else
2077     /Border[\@pdfborder]%
2078   \fi
2079   \ifx\@pdfborderstyle\@empty
2080   \else
2081     /BS<<\@pdfborderstyle>>%
2082   \fi
2083 }
2084 \define@key{Hyp}{pdfpagemode}{%
2085   \def\Hy@tempa{#1}%
2086   \ifx\Hy@tempa\@empty
2087     \let\@pdfpagemode\@empty
2088   \else
2089     \def\@pdfpagemode{/#1 }%
2090   \fi
2091 }
2092 \define@key{Hyp}{pdfnonfullscreenpagemode}{%
2093   \def\Hy@tempa{#1}%
2094   \ifx\Hy@tempa\@empty
2095     \let\@pdfnonfullscreenpagemode\@empty
2096   \else
2097     \def\@pdfnonfullscreenpagemode{/#1 }%
2098   \fi
2099 }
2100 \define@key{Hyp}{pdfusetitle}[true]{%
2101   \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2102 }
2103 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2104 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2105 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2106 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2107 \define@key{Hyp}{pdfcreationdate}{\pdfstringdef\@pdfcreationdate{#1}}
2108 \define@key{Hyp}{pdfmoddate}{\pdfstringdef\@pdfmoddate{#1}}
2109 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2110 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2111 \define@key{Hyp}{pdfview}{\calculatepdfview#1 \\\}
2112 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2113 \let\setpdflinkmargin\@gobble
2114 \def\calculatepdfview#1 #2\\{%
2115   \def\@pdfview{#1}%
2116   \ifx\@#2\\%
2117     \def\@pdfviewparams{ -32768}%
2118   \else
2119     \def\@pdfviewparams{ #2}%

```

```

2120 \fi
2121 }
2122 \define@key{Hyp}{pdfstartpage}{\def\pdfstartpage{#1}}
2123 \define@key{Hyp}{pdfstartview}{%
2124 \ifx\#1\%
2125 \def\pdfstartview{}%
2126 \else
2127 \hypercalcbpdef\pdfstartview{ /#1 }%
2128 \fi
2129 }
2130 \define@key{Hyp}{pdfpagescrop}{\edef\pdfpagescrop{#1}}
2131 \define@key{Hyp}{pdftoolbar}[true]{%
2132 \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2133 }
2134 \define@key{Hyp}{pdfmenubar}[true]{%
2135 \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2136 }
2137 \define@key{Hyp}{pdfwindowui}[true]{%
2138 \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2139 }
2140 \define@key{Hyp}{pdffitwindow}[true]{%
2141 \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2142 }
2143 \define@key{Hyp}{pdfcenterwindow}[true]{%
2144 \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2145 }
2146 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2147 \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2148 }
2149 \define@key{Hyp}{pdfnewwindow}[true]{%
2150 \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2151 }
2152 \define@key{Hyp}{pdfpagelayout}{\def\pdfpagelayout{#1}}
2153 \def\pdfpagelayout{}
2154 \define@key{Hyp}{pdfpagelabels}[true]{%
2155 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2156 }
2157 \define@key{Hyp}{pdfescapeform}[true]{%
2158 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2159 }

```

Default values:

```

2160 \def\@linkbordercolor{1 0 0}
2161 \def\@urlbordercolor{0 1 1}
2162 \def\@menubordercolor{1 0 0}
2163 \def\@filebordercolor{0 .5 .5}
2164 \def\@runbordercolor{0 .7 .7}
2165 \def\@citebordercolor{0 1 0}
2166 \def\@pagebordercolor{1 1 0}
2167 \def\@pdfhighlight{/I}
2168 \def\@pdfpagemode{}
2169 \def\@pdfnonfullscreenpagemode{}
2170 \def\@pdftitle{}
2171 \def\@pdfauthor{}
2172 \let\@pdfproducer\relax
2173 \def\@pdfcreator{LaTeX with hyperref package}
2174 \def\@pdfcreationdate{}
2175 \def\@pdfmoddate{}

```

```

2176 \def\@pdfsubject{}
2177 \def\@pdfkeywords{}
2178 \def\@pdfpagescrop{}
2179 \def\@pdfstartview{ /Fit }
2180 \def\@pdfstartpage{1}
2181 \let\PDF@SetupDoc\@empty
2182 \let\PDF@FinishDoc\@empty
2183 \let\phantomsection\@empty
2184 \@ifundefined{stockwidth}{%
2185   \edef\special@paper{\the\paperwidth,\the\paperheight}
2186 }{%
2187   \edef\special@paper{\the\stockwidth,\the\stockheight}
2188 }
2189 \begingroup
2190   \dimen@=\@ifundefined{stockheight}{\paperheight}{\stockheight}\relax
2191   \dimen@=0.99626401\dimen@
2192   \xdef\Hy@pageheight{\strip@pt\dimen@}
2193 \endgroup
2194 \def\HyInd@EncapChar{||}
2195 \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.

```

2196 \let\hyper@normalise\ExecuteOptions
2197 \let\ExecuteOptions\hypersetup
2198 \Hy@RestoreCatcodes
2199 \InputIfFileExists{hyperref.cfg}{-}{-}
2200 \Hy@SetCatcodes
2201 \let\ExecuteOptions\hyper@normalise
2202 \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`.

```

2203 \RequirePackage{kvoptions}[2006/08/17]

```

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

```

2204 \@ifpackageloaded{tex4ht}{%
2205   \@ifpackagewith{hyperref}{tex4ht}{-}{%
2206     \PassOptionsToPackage{tex4ht}{hyperref}%
2207   }%
2208 }{-}

2209 \let\ReadBookmarks\relax
2210 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2211 \AtBeginDocument{%
2212   \ifHy@draft
2213     \let\hyper@@anchor\@gobble
2214     \gdef\hyper@link#1#2#3{#3}%
2215     \let\hyper@anchorstart\@gobble
2216     \let\hyper@anchorend\@empty
2217     \let\hyper@linkstart\@gobbletwo
2218     \let\hyper@linkend\@empty
2219     \def\hyper@linkurl#1#2{#1}%

```

```

2220 \def\hyper@linkfile#1#2#3{#1}%
2221 \def\Acrobatmenu#1#2{#2}%
2222 \let\PDF@SetupDoc\@empty
2223 \let\PDF@FinishDoc\@empty
2224 \let\@fifthoffive\@secondoftwo
2225 \let\@secondoffive\@secondoftwo
2226 \let\ReadBookmarks\relax
2227 \let\WriteBookmarks\relax
2228 \Hy@WarningNoLine{ draft mode on}%
2229 \fi
2230 \Hy@DisableOption{draft}%
2231 \Hy@DisableOption{nolinks}%
2232 \Hy@DisableOption{final}%
2233 }%

```

If option unicode is already processed, then the command `\HyPsd@InitUnicode` is cleared after execution. Then the option code only sets the meaning of the switch `\ifHy@unicode`.

```

2234 \ifx\HyPsd@InitUnicode\relax
2235 \define@key{Hyp}{unicode}[true]{%
2236 \Hy@boolkey{unicode}{#1}%
2237 }
2238 \else
2239 \define@key{Hyp}{unicode}[true]{%
2240 \Hy@boolkey{unicode}{#1}%
2241 \ifHy@unicode
2242 \Hy@WarningNoLine{Set package option 'unicode' first\MessageBreak
2243 in order to load unicode support%
2244 }%
2245 \Hy@unicodedefalse
2246 \fi
2247 }
2248 \fi

```

The macro `\HyPsd@InitUnicode` is no longer needed.

```

2249 \let\HyPsd@InitUnicode\@undefined

```

## 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.

```

2250 \Hy@nextfalse
2251 \@ifpackagewith{babel}{spanish}{\Hy@nexttrue}{}
2252 \@ifpackagewith{babel}{galician}{\Hy@nexttrue}{}
2253 \@ifpackagewith{babel}{estonian}{\Hy@nexttrue}{}
2254 \ifHy@next
2255 \let\texttilde\~%
2256 \fi
2257 \ifHy@figures
2258 \Hy@Info{Hyper figures ON}
2259 \else
2260 \Hy@Info{Hyper figures OFF}
2261 \fi
2262 \ifHy@nesting
2263 \Hy@Info{Link nesting ON}
2264 \else
2265 \Hy@Info{Link nesting OFF}

```



```

2266 \fi
2267 \ifHy@hyperindex
2268   \Hy@Info{Hyper index ON}
2269 \else
2270   \Hy@Info{Hyper index OFF}
2271 \fi
2272 \ifHy@plainpages
2273   \Hy@Info{Plain pages ON}
2274 \else
2275   \Hy@Info{Plain pages OFF}
2276 \fi
2277 \ifHy@backref
2278   \Hy@Info{Backreferencing ON}
2279 \else
2280   \Hy@Info{Backreferencing OFF}
2281 \fi
2282 \ifHy@typexml
2283   \AtEndOfPackage{\RequirePackage{color}\RequirePackage{nameref}}
2284 \fi
2285 \Hy@DisableOption{typexml}
2286 \ifHy@implicit
2287   \typeout{Implicit mode ON; LaTeX internals redefined}%
2288 \else
2289   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
2290   \def\MaybeStopEarly{%
2291     \typeout{Hyperref stopped early}%
2292     \AfterBeginDocument{\PDF@FinishDoc}%
2293     \endinput
2294   }%
2295   \AtBeginDocument{%
2296     \let\autoref\ref
2297     \ifx\@pdfpagemode\@empty
2298       \gdef\@pdfpagemode{/UseNone}%
2299     \fi
2300     \global\Hy@backreffalse
2301   }%
2302   \AtEndOfPackage{%
2303     \global\let\ReadBookmarks\relax
2304     \global\let\WriteBookmarks\relax
2305   }%
2306 \fi
2307 \Hy@DisableOption{implicit}

```

### 15.1.1 Driver loading

```

2308 \AtEndOfPackage{%
2309   \@ifpackageloaded{tex4ht}{%
2310     \def\Hy@driver{htex4ht}%
2311     \Hy@texhttrue
2312   }{}%
2313   \ifx\Hy@driver\@empty
2314     \providecommand*{\Hy@defaultdriver}{hypertex}%
2315     \begingroup\expandafter\expandafter\expandafter\endgroup
2316     \expandafter\ifx\csname pdfoutput\endcsname\relax
2317       \begingroup\expandafter\expandafter\expandafter\endgroup
2318       \expandafter\ifx\csname OpMode\endcsname\relax
2319         \let\Hy@driver\Hy@defaultdriver

```

```

2320 \else
2321 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2322 \def\Hy@driver{hvtex}%
2323 \def\XR@ext{pdf}%
2324 \else
2325 \ifnum\OpMode=10\relax
2326 \def\XR@ext{htm}%
2327 \def\Hy@driver{hvtexhtm}%
2328 \def\MaybeStopEarly{%
2329 \typeout{Hyperref stopped early}%
2330 \AfterBeginDocument{\PDF@FinishDoc}%
2331 \endinginput
2332 }%
2333 \else
2334 \let\Hy@driver\Hy@defaultdriver
2335 \fi
2336 \fi
2337 \fi
2338 \else
2339 \ifnum\pdfoutput<1 %
2340 \let\Hy@driver\Hy@defaultdriver
2341 \else
2342 \def\Hy@driver{hpdftex}%
2343 \def\XR@ext{pdf}%
2344 \PassOptionsToPackage{pdftex}{color}%
2345 \Hy@breaklinkstrue
2346 \fi
2347 \fi
2348 \ifx\Hy@driver\Hy@defaultdriver
2349 \def\Hy@temp{hdvips}%
2350 \ifx\Hy@temp\Hy@driver
2351 \def\Hy@raisedlink{}%
2352 \def\XR@ext{pdf}%
2353 \fi
2354 \def\Hy@temp{hdvipdfm}%
2355 \ifx\Hy@temp\Hy@driver
2356 \def\XR@ext{pdf}%
2357 \Hy@breaklinkstrue
2358 \fi
2359 \def\Hy@temp{hdviwind}%
2360 \ifx\Hy@temp\Hy@driver
2361 \setkeys{Hyp}{colorlinks}%
2362 \PassOptionsToPackage{dviwindo}{color}%
2363 \fi
2364 \def\Hy@temp{hdvipson}%
2365 \ifx\Hy@temp\Hy@driver
2366 \def\XR@ext{pdf}%
2367 \def\Hy@raisedlink{}%
2368 \fi
2369 \def\Hy@temp{textures}%
2370 \ifx\Hy@temp\Hy@driver
2371 \def\XR@ext{pdf}%
2372 \fi
2373 \fi
2374 \typeout{*hyperref using default driver \Hy@driver*}%
2375 \else
2376 \typeout{*hyperref using driver \Hy@driver*}%

```

```

2377 \fi
2378 \input{\Hy@driver.def}%
2379 \let\@unprocessedoptions\relax
2380 \Hy@RestoreCatcodes
2381 }
2382 \Hy@DisableOption{tex4ht}
2383 \Hy@DisableOption{pdftex}
2384 \Hy@DisableOption{dvipdf}
2385 \Hy@DisableOption{nativepdf}
2386 \Hy@DisableOption{dvipdfm}
2387 \Hy@DisableOption{pdfmark}
2388 \Hy@DisableOption{dvips}
2389 \Hy@DisableOption{hypertex}
2390 \Hy@DisableOption{vtex}
2391 \Hy@DisableOption{vtexpdfmark}
2392 \Hy@DisableOption{dviwindo}
2393 \Hy@DisableOption{dvipsone}
2394 \Hy@DisableOption{textures}
2395 \Hy@DisableOption{latex2html}
2396 \Hy@DisableOption{ps2pdf}

```

### 15.1.2 Bookmarks

```

2397 \def\WriteBookmarks{0}
2398 \def\@bookmarkopenstatus#1{%
2399   \ifHy@bookmarksopen

```

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

```

2400   \ifnum#1<\expandafter\@firstofone\expandafter
2401     {\number\@bookmarkopenlevel} % explicit space
2402   \else
2403     -%
2404   \fi
2405 \else
2406   -%
2407 \fi
2408 }
2409 \ifHy@bookmarks
2410   \Hy@Info{Bookmarks ON}%
2411   \ifx\@pdfpagemode\@empty
2412     \def\@pdfpagemode{/UseOutlines }%
2413   \fi
2414 \else
2415   \def\@bookmarkopenstatus#1{%
2416     \Hy@Info{Bookmarks OFF}%
2417     \AtEndOfPackage{%
2418       \global\let\ReadBookmarks\relax
2419       \global\let\WriteBookmarks\relax
2420     }
2421     \ifx\@pdfpagemode\@empty
2422       \def\@pdfpagemode{/UseNone}%
2423     \fi
2424   \fi
2425 \Hy@DisableOption{bookmarks}

```

`\Hy@colorlink` expects a macro as argument. It contains the color specification.

```

2426 \AtBeginDocument{%
2427   \ifHy@colorlinks

```

```

2428 \ifHy@typexml\else\RequirePackage{color}\fi
2429 \def\Hy@colorlink#1{%
2430 \begingroup
2431 \expandafter\Hy@colorscan\expandafter#1#1\@nil%
2432 }%
2433 \def\Hy@colorscan#1{%
2434 \@ifnextchar[% ]
2435 {%
2436 \Hy@@colorscan
2437 }{%
2438 \expandafter\color\expandafter#1\@car{}}%
2439 }%
2440 }%
2441 \def\Hy@@colorscan#1\@nil{\color#1}%
2442 \def\Hy@endcolorlink{\endgroup}%
2443 \Hy@Info{Link coloring ON}%
2444 \else
2445 \ifHy@frenchlinks
2446 \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
2447 \def\Hy@endcolorlink{\endgroup}%
2448 \Hy@Info{French linking ON}%
2449 \else
for grouping consistency:
2450 \def\Hy@colorlink#1{\begingroup}%
2451 \def\Hy@endcolorlink{\endgroup}%
2452 \Hy@Info{Link coloring OFF}%
2453 \fi
2454 \fi
2455 \Hy@DisableOption{colorlinks}%
2456 \Hy@DisableOption{frenchlinks}%
2457 \ifHy@texht
2458 \long\def\@firstoffive#1#2#3#4#5{#1}%
2459 \long\def\@secondoffive#1#2#3#4#5{#2}%
2460 \long\def\@thirdoffive#1#2#3#4#5{#3}%
2461 \long\def\@fourthoffive#1#2#3#4#5{#4}%
2462 \long\def\@fifthoffive#1#2#3#4#5{#5}%
2463 \providecommand*\@safe@activestruer{}%
2464 \providecommand*\@safe@activesfalse{}%
2465 \def\T@ref#1{%
2466 \@safe@activestruer
2467 \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
2468 \@safe@activesfalse
2469 }%
2470 \def\T@pageref#1{%
2471 \@safe@activestruer
2472 \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
2473 \@safe@activesfalse
2474 }%
2475 \else
2476 \ifHy@typexml\else\RequirePackage{nameref}\fi
2477 \fi
2478 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
2479 \DeclareRobustCommand\pageref{%
2480 \@ifstar\@pagerefstar\T@pageref
2481 }%
2482 }
2483 \AfterBeginDocument{%

```

```

2484 \ifHy@texht
2485 \else
2486   \ReadBookmarks
2487 \fi
2488 }

2489 \ifHy@backref
2490   \RequirePackage{backref}
2491 \else
2492   \let\Hy@backout\@gobble
2493 \fi
2494 \Hy@DisableOption{backref}
2495 \Hy@DisableOption{pagebackref}

2496 \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.

```

2497 \begingroup
2498   \endlinechar=-1
2499   \catcode'\^M\active
2500   \catcode'\%\active
2501   \catcode'\#\active
2502   \catcode'\_\active
2503   \catcode'\$\active
2504   \gdef\hyper@normalise{
2505     \begingroup
2506     \catcode'\^M\active
2507     \def^M{ }
2508     \catcode'\%\active
2509     \let%\@percentchar
2510     \let\%\@percentchar
2511     \catcode'\#\active
2512     \def#{\hyper@hash}
2513     \def#{\hyper@hash}
2514     \@makeother\&
2515     \edef\textunderscore{\string_}
2516     \let\_ \textunderscore
2517     \catcode'\_\active
2518     \let\_ \textunderscore
2519     \let~\hyper@tilde
2520     \let~\hyper@tilde
2521     \let\textasciitilde\hyper@tilde
2522     \let\\\@backslashchar
2523     \edef$\{\string$\}
2524     \ifx\@safe@activetrue\@undefined\else\@safe@activetrue\fi
2525     \hyper@n@rmalise
2526   }
2527   \catcode'\#=6
2528   \gdef\hyper@n@rmalise#1#2{
2529     \edef\Hy@tempa{
2530       \endgroup

```

```

2531 \noexpand#1{\Hy@RemovePercentCr#2%^~M\@nil}
2532 }
2533 \Hy@tempa
2534 }
2535 \gdef\Hy@RemovePercentCr#1%^~M#2\@nil{
2536 #1
2537 \ifx\limits#2\limits
2538 \else
2539 \Hy@ReturnAfterFi{
2540 \Hy@RemovePercentCr #2\@nil
2541 }
2542 \fi
2543 }
2544 \endgroup
2545 \providecommand\hyper@chars{%
2546 \let\#\hyper@hash
2547 \let%\@percentchar
2548 }

2549 \def\hyperlink#1#2{%
2550 \hyper@link{#1}{#2}%
2551 }

2552 \DeclareRobustCommand*\href{\hyper@normalise\href@}
2553 \begingroup
2554 \catcode'\$=6
2555 \catcode'\#=12
2556 \gdef\href@#1{\expandafter\href@split$1##\}
2557 \gdef\href@split$1#$2#$3\{\%
2558 \hyper@link{$1}{$2}%
2559 }
2560 \endgroup

```

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

```

2561 \RequirePackage{url}
2562 \let\HyOrg@url\url
2563 \def\Hurl{\begingroup \Url}
2564 \let\nolinkurl\Hurl
2565 \DeclareRobustCommand*\url{\hyper@normalise\url@}
2566 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

2567 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
2568 \providecommand\hyper@image[2]{#2}

2569 \def\hypertarget#1#2{%
2570 \ifHy@nesting
2571 \hyper@@anchor{#1}{#2}%
2572 \else
2573 \hyper@@anchor{#1}{\relax}#2%
2574 \fi
2575 }

```

`\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.

```

2576 \DeclareRobustCommand*\hyperref{\%
2577 \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref

```

```

2578 }
2579 \def\Hy@babelnormalise#1[#2]{%
2580   \begingroup
2581     \csname @safe@activetrue\endcsname
2582     \edef\Hy@tempa{%
2583       \endgroup
2584       \noexpand#1[#2]}%
2585   }%
2586   \Hy@tempa
2587 }
2588 \def\@hyperref{\hyper@normalise\@hyperref}
2589 \def\@hyperref#1#2#3{%
2590   \edef\ref@one{\ifx\#2\\\else#2.\fi#3}%
2591   \expandafter\tryhyper@link\ref@one\{#1}%
2592 }
2593 \def\tryhyper@link#1\#2{%
2594   \hyper@@link{#2}{#1}%
2595 }
2596 \def\hyperdef{\@ifnextchar[\{\label@hyperdef\}\@hyperdef}}
2597 \def\@hyperdef#1#2#3{%, category, name, text
2598   \ifHy@nesting
2599     \hyper@@anchor{#1.#2}{#3}%
2600   \else
2601     \hyper@@anchor{#1.#2}{\relax}#3%
2602   \fi
2603 }

```

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

```

2604 \def\label@hyperref[#1]{%
2605   \expandafter\label@\@hyperref\csname r@#1\endcsname{#1}%
2606 }%
2607 \def\label@\@hyperref#1#2#3{%
2608   \ifx#1\relax
2609     \protect\G@refundefinedtrue
2610     \@latex@warning{%
2611       Hyper reference ‘#2’ on page \thepage \space undefined%
2612     }%
2613     \hyper@@link{}{??}{#3}%
2614   \else
2615     \hyper@@link{\expandafter\@fifthoffive#1}%
2616     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
2617   \fi
2618 }
2619 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
2620                               % anchor text
2621   \@bsphack
2622   \if@files@
2623     \protected@write\@auxout{%
2624       {\string\newlabel{#1}{\{#\}\}\}\#2.#3}}%
2625   \fi
2626   \@esphack
2627   \ifHy@nesting
2628     \hyper@@anchor{#2.#3}{#4}%
2629   \else
2630     \hyper@@anchor{#2.#3}{\relax}#4%
2631   \fi

```

2632 }

## 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.

```
2633 \def\hyper@link{\let\Hy@reserved@a\relax
2634 \ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
2635 }
2636 \def\hyper@link@[#1]#2#3#4{%
2637 \begingroup
2638 \protected@edef\Hy@tempa{#2}%
2639 \csname @safe@activestrue\endcsname
2640 \edef\x{#3}%
2641 \ifx\Hy@tempa\@empty
2642 \toks0{\hyper@link{#1}}%
2643 \else
2644 \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
2645 \fi
2646 \toks1{#4}%
2647 \edef\x{\endgroup
2648 \the\toks0 \x\the\toks1 }
2649 }%
2650 \x
2651 }
```

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.

```
2652 \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.

```
2653 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
2654 }
```

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

```
2655 \def\@pdftempwordfile{file}%
2656 \def\@pdftempwordrun{run}%
2657 \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:

```

2658 \ifx\#6\%
2659 \expandafter\@hyper@linkfile file:#7\#{3}{#2}%
2660 \else
2661 \ifx\#4\%
2662 \expandafter\@hyper@linkfile file:#7\#{3}{#2}%
2663 \else

```

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

```

2664 \def\@pdftempa{#4}%
2665 \ifx\@pdftempa\@pdftempwordfile
2666 \expandafter\@hyper@linkfile#7\#{3}{#2}%
2667 \else

```

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

```

2668 \ifx\@pdftempa\@pdftempwordrun
2669 \expandafter\@hyper@launch#7\#{3}{#2}%
2670 \else

```

otherwise its a URL

```

2671 \hyper@linkurl{#3}{#7\ifx\#2\else\hyper@hash#2\fi}%
2672 \fi
2673 \fi
2674 \fi
2675 \fi
2676 }

```

By default, turn run: into file:

```

2677 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
2678 \hyper@linkurl{#2}{\Hy@linkfileprefix#1\ifx\#3\else\hyper@hash#3\fi}%
2679 }

```

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

```

2680 \def\@hyper@linkfile file:#1\#2#3{%
2681 %file url,link string, name
2682 \filename@parse{#1}%
2683 \ifx\filename@ext\relax
2684 \edef\filename@ext{\XR@ext}%
2685 \fi
2686 \def\use@file{\filename@area\filename@base.\filename@ext}%
2687 \ifx\filename@ext\XR@ext
2688 \hyper@linkfile{#2}{\use@file}{#3}%
2689 \else
2690 \ifx\@baseurl\@empty
2691 \hyper@linkurl{#2}{%
2692 \Hy@linkfileprefix\use@file\ifx\#3\else\hyper@hash#3\fi
2693 }%
2694 \else
2695 \hyper@linkurl{#2}{\use@file\ifx\#3\else\hyper@hash#3\fi}%
2696 \fi
2697 \fi
2698 }

```

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.

```

2699 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
2700 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
2701   \ifx\#1\%
2702     #2\Hy@WarningNoLine{empty link? #1: #2#3}%
2703   \else
2704     \def\anchor@spot{#2#3}%
2705     \let\put@me@back\@empty
2706     \ifx\relax#2\relax
2707     \else
2708       \ifHy@nesting
2709       \else
2710         \ifcat a\noexpand#2\relax
2711         \else
2712           \ifcat 0\noexpand#2 \relax
2713           \else
2714             \typeout{Anchor start is not alphanumeric %
2715             on input line\the\inputlineno%
2716             }%
2717             \let\anchor@spot\@empty
2718             \def\put@me@back{#2#3}%
2719           \fi
2720         \fi
2721       \fi
2722     \ifHy@activeanchor
2723       \anchor@spot
2724     \else
2725       \hyper@anchor{#1}%
2726     \fi
2727   \expandafter\put@me@back
2728 \fi
2729 \let\anchor@spot\@empty
2730 }
2731 }
```

## 18 Compatibility with the *LT<sub>ε</sub>X2html* package

Map our macro names on to Nikos', so that documents prepared for that system will work without change.

Note, however, that the whole complicated structure for segmenting documents is not supported; it is assumed that the user will load `html.sty` first, and then `hyperref.sty`, so that the definitions in `html.sty` take effect, and are then overridden in a few circumstances by this package.

```

2732 \let\htmladding\hyperimage
2733 \def\htmladdnormallink#1#2{\href{#2}{#1}}
2734 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
2735 \def\htmlref#1#2{% anchor text, label
2736   \label@hyperref[{#2}]{#1}%
2737 }
```

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.

```

2738 \def\@@latexhtmlX{%
2739   \let\hhyperref\hyperref
2740   \def\hyperref##1##2##3##4{% anchor text for HTML
2741                               % text to print before label in print
2742                               % label
2743                               % post-label text in print
2744     ##2\ref{##4}##3%
2745   }%
2746 }
```

## 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 could not have started this without the encouragement of T V Raman.

```

2747 \newif\ifFld@checked
2748 \newif\ifFld@hidden
2749 \newif\ifFld@multiline
2750 \newif\ifFld@readonly
2751 \newif\ifFld@disabled
2752 \newif\ifFld@password
2753 \newif\ifFld@radio
2754 \newif\ifFld@combo
2755 \newif\ifFld@popdown
2756 \Fld@multilinefalse
2757 \Fld@checkedfalse
2758 \Fld@hiddenfalse
2759 \Fld@readonlyfalse
2760 \Fld@disabledfalse
2761 \Fld@radiofalse
2762 \Fld@combofalse
2763 \Fld@popdownfalse
2764 \Fld@passwordfalse
2765 \newcount\Fld@menulength
2766 \newdimen\Fld@Width
2767 \newdimen\Fld@charsize
2768 \Fld@charsize=10\p@
2769 \def\Fld@maxlen{0}
2770 \def\Fld@align{0}
2771 \def\Fld@color{0 0 0}
2772 \def\Fld@bcolor{1 1 1}
2773 \def\Fld@bordercolor{1 0 0}
2774 \def\Fld@bordersep{1\p@}
2775 \def\Fld@borderwidth{1}
2776 \def\Fld@borderstyle{S}
2777 \def\Fld@cbsymbol{4}
2778 \newtoks\Choice@toks
2779 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
2780 \def\endForm{\@endForm}
2781 \newif\ifForm@html
2782 \Form@htmlfalse
```

```

2783 \def\Form@boolkey#1#2{%
2784   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2785 }
2786 \define@key{Form}{action}{%
2787   \hyper@normalise\Hy@DefFormAction{#1}%
2788 }
2789 \def\Hy@DefFormAction{\def\Form@action}
2790 \def\enc@html{html}
2791 \define@key{Form}{encoding}{%
2792   \def\Hy@tempa{#1}%
2793   \ifx\Hy@tempa\enc@html
2794     \Form@htmltrue
2795   \else
2796     \typeout{hyperref: form 'encoding' key set to #1 %
2797       -- unknown type%
2798     }%
2799     \Form@htmlfalse
2800   \fi
2801 }
2802 \define@key{Form}{method}{%
2803   \def\Form@method{#1}%
2804 }
2805 \def\Form@method{}
2806 \def\Field@boolkey#1#2{%
2807   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2808 }
2809 \newtoks\Field@toks
2810 \Field@toks={ }%
2811 \def\Field@addtoks#1#2{%
2812   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
2813   \@processme
2814 }
2815 \def\Fld@checkequals#1=#2=#3\\{%
2816   \def\@currDisplay{#1}%
2817   \ifx\\#2\\%
2818     \def\@currValue{#1}%
2819   \else
2820     \def\@currValue{#2}%
2821   \fi
2822 }
2823 \define@key{Field}{loc}{%
2824   \def\Fld@loc{#1}%
2825 }
2826 \define@key{Field}{multiline}[true]{%
2827   \lowercase{\Field@boolkey{#1}}{multiline}%
2828 }
2829 \define@key{Field}{checked}[true]{%
2830   \lowercase{\Field@boolkey{#1}}{checked}%
2831 }
2832 \define@key{Field}{hidden}[true]{%
2833   \lowercase{\Field@boolkey{#1}}{hidden}%
2834 }
2835 \define@key{Field}{readonly}[true]{%
2836   \lowercase{\Field@boolkey{#1}}{readonly}%
2837 }
2838 \define@key{Field}{disabled}[true]{%
2839   \lowercase{\Field@boolkey{#1}}{disabled}%

```

```

2840 }
2841 \define@key{Field}{password}[true]{%
2842   \lowercase{\Field@boolkey{#1}}{password}%
2843 }
2844 \define@key{Field}{radio}[true]{%
2845   \lowercase{\Field@boolkey{#1}}{radio}%
2846 }
2847 \define@key{Field}{combo}[true]{%
2848   \lowercase{\Field@boolkey{#1}}{combo}%
2849 }
2850 \define@key{Field}{popdown}[true]{%
2851   \lowercase{\Field@boolkey{#1}}{popdown}%
2852 }
2853 \define@key{Field}{accesskey}{%
2854   \Field@addtoks{accesskey}{#1}%
2855 }
2856 \define@key{Field}{tabkey}{%
2857   \Field@addtoks{tabkey}{#1}%
2858 }
2859 \define@key{Field}{name}{%
2860   \def\Fld@name{#1}%
2861 }
2862 \define@key{Field}{width}{%
2863   \def\Fld@width{#1}%
2864   \Field@Width#1\setbox0=\hbox{m}%
2865 }
2866 \define@key{Field}{maxlen}{%
2867   \def\Fld@maxlen{#1}%
2868 }
2869 \define@key{Field}{menulength}{%
2870   \Fld@menulength=#1\relax
2871 }
2872 \define@key{Field}{height}{%
2873   \def\Fld@height{#1}%
2874 }
2875 \define@key{Field}{charsize}{%
2876   \Fld@charsize#1%
2877 }
2878 \define@key{Field}{fillcolor}{%
2879   \def\Fld@fillcolor{#1}%
2880 }
2881 \define@key{Field}{bordercolor}{%
2882   \def\Fld@bordercolor{#1}%
2883 }
2884 \define@key{Field}{color}{%
2885   \def\Fld@color{#1}%
2886 }
2887 \define@key{Field}{borderwidth}{%
2888   \def\Fld@borderwidth{#1}%
2889 }
2890 \define@key{Field}{borderstyle}{%
2891   \def\Fld@borderstyle{#1}%
2892 }
2893 \define@key{Field}{bordersep}{%
2894   \def\Fld@bordersep{#1}%
2895 }
2896 \define@key{Field}{default}{%

```

```

2897 \def\Fld@default{#1}%
2898 }
2899 \define@key{Field}{align}{%
2900 \def\Fld@align{#1}%
2901 }
2902 \define@key{Field}{value}{%
2903 \def\Fld@value{#1}%
2904 }
2905 \define@key{Field}{backgroundcolor}{%
2906 \def\Fld@bcolor{#1}%
2907 }
2908 \define@key{Field}{checkboxsymbol}{%
2909 \def\Fld@cbsymbol{#1}%
2910 }
2911 \def\Fld@format@code{}
2912 \def\Fld@validate@code{}
2913 \def\Fld@calculate@code{}
2914 \def\Fld@keystroke@code{}
2915 \def\Fld@onfocus@code{}
2916 \def\Fld@onblur@code{}
2917 \def\Fld@onmousedown@code{}
2918 \def\Fld@onmouseup@code{}
2919 \def\Fld@onenter@code{}
2920 \def\Fld@onexit@code{}
2921 \define@key{Field}{keystroke}{%
2922 \def\Fld@keystroke@code{#1}%
2923 }
2924 \define@key{Field}{format}{%
2925 \def\Fld@format@code{#1}%
2926 }
2927 \define@key{Field}{validate}{%
2928 \def\Fld@validate@code{#1}%
2929 }
2930 \define@key{Field}{calculate}{%
2931 \def\Fld@calculate@code{#1}%
2932 }
2933 \define@key{Field}{onfocus}{%
2934 \def\Fld@onfocus@code{#1}%
2935 }
2936 \define@key{Field}{onblur}{%
2937 \def\Fld@onblur@code{#1}%
2938 }
2939 \define@key{Field}{onenter}{%
2940 \def\Fld@onenter@code{#1}%
2941 }
2942 \define@key{Field}{onexit}{%
2943 \def\Fld@onexit@code{#1}%
2944 }
2945 \define@key{Field}{onselect}{%
2946 \Field@addtoks{onselect}{#1}%
2947 }
2948 \define@key{Field}{onchange}{%
2949 \Field@addtoks{onchange}{#1}%
2950 }
2951 \define@key{Field}{onclick}{%
2952 \def\Fld@onclick{#1}%
2953 \Field@addtoks{onclick}{#1}%

```

```

2954 }
2955 \define@key{Field}{ondblclick}{%
2956   \Field@addtoks{ondblclick}{#1}%
2957 }
2958 \define@key{Field}{onmousedown}{%
2959   \Field@addtoks{onmousedown}{#1}%
2960 }
2961 \define@key{Field}{onmouseup}{%
2962   \Field@addtoks{onmouseup}{#1}%
2963 }
2964 \define@key{Field}{onmouseover}{%
2965   \Field@addtoks{onmouseover}{#1}%
2966 }
2967 \define@key{Field}{onmousemove}{%
2968   \Field@addtoks{onmousemove}{#1}%
2969 }
2970 \define@key{Field}{onmouseout}{%
2971   \Field@addtoks{onmouseout}{#1}%
2972 }
2973 \define@key{Field}{onkeypress}{%
2974   \Field@addtoks{onkeypress}{#1}%
2975 }
2976 \define@key{Field}{onkeydown}{%
2977   \Field@addtoks{onkeydown}{#1}%
2978 }
2979 \define@key{Field}{onkeyup}{%
2980   \Field@addtoks{onkeyup}{#1}%
2981 }
2982 %
2983 \DeclareRobustCommand\TextField{%
2984   \@ifnextchar[{\@TextField}{\@TextField[]}%
2985 }
2986 \DeclareRobustCommand\ChoiceMenu{%
2987   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
2988 }
2989 \DeclareRobustCommand\CheckBox{%
2990   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
2991 }
2992 \DeclareRobustCommand\PushButton{%
2993   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
2994 }
2995 \DeclareRobustCommand\Gauge{%
2996   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
2997 }
2998 \DeclareRobustCommand\Submit{%
2999   \@ifnextchar[{\@Submit}{\@Submit[]}%
3000 }
3001 \DeclareRobustCommand\Reset{%
3002   \@ifnextchar[{\@Reset}{\@Reset[]}%
3003 }
3004 \def\LayoutTextField#1#2{% label, field
3005   #1 #2%
3006 }
3007 \def\LayoutChoiceField#1#2{% label, field
3008   #1 #2%
3009 }
3010 \def\LayoutCheckField#1#2{% label, field

```

```

3011 #1 #2%
3012 }
3013 \def\LayoutPushButtonField#1{% button
3014 #1%
3015 }
3016 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3017 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3018 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3019 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3020 \def\MakeButtonField#1{%
3021 \sbox0{%
3022 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
3023 }%
3024 \@tempdima\ht0
3025 \advance\@tempdima by \Fld@borderwidth bp
3026 \advance\@tempdima by \Fld@borderwidth bp
3027 \ht0\@tempdima
3028 \@tempdima\dp0
3029 \advance\@tempdima by \Fld@borderwidth bp
3030 \advance\@tempdima by \Fld@borderwidth bp
3031 \dp0\@tempdima
3032 \box0\relax
3033 }
3034 \def\DefaultHeightofSubmit{14pt}
3035 \def\DefaultWidthofSubmit{2cm}
3036 \def\DefaultHeightofReset{14pt}
3037 \def\DefaultWidthofReset{2cm}
3038 \def\DefaultHeightofCheckBox{\baselineskip}
3039 \def\DefaultWidthofCheckBox{\baselineskip}
3040 \def\DefaultHeightofChoiceMenu{\baselineskip}
3041 \def\DefaultWidthofChoiceMenu{\baselineskip}
3042 \def\DefaultHeightofText{\baselineskip}
3043 \def\DefaultWidthofText{3cm}

```

## 20 Setup

```

3044 \ifHy@figures
3045 \Hy@Info{Hyper figures ON}
3046 \else
3047 \Hy@Info{Hyper figures OFF}
3048 \fi
3049 \ifHy@nesting
3050 \Hy@Info{Link nesting ON}
3051 \else
3052 \Hy@Info{Link nesting OFF}
3053 \fi
3054 \ifHy@hyperindex
3055 \Hy@Info{Hyper index ON}
3056 \else
3057 \Hy@Info{Hyper index OFF}
3058 \fi
3059 \ifHy@backref
3060 \Hy@Info{backreferencing ON}
3061 \else
3062 \Hy@Info{backreferencing OFF}
3063 \fi

```



```

3064 \ifHy@colorlinks
3065   \Hy@Info{Link coloring ON}
3066 \else
3067   \Hy@Info{Link coloring OFF}
3068 \fi

```

## 21 Low-level utility macros

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

```

3069 \edef\hyper@hash{\string#}
3070 \edef\hyper@tilde{\string~}
3071 \edef\hyper@quote{\string"}
3072 \let\@currentHref\@empty
3073 \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.

```

3074 \AfterBeginDocument{%
3075   \Hy@pdfstringtrue
3076   \PDF@SetupDoc
3077   \let\PDF@SetupDoc\@empty
3078   \Hy@DisableOption{pdfpagescrop}%
3079   \Hy@DisableOption{pdfpagemode}%
3080   \Hy@DisableOption{pdfnonfullscreenpagemode}%
3081   \Hy@DisableOption{pdfstartview}%
3082   \Hy@DisableOption{pdfstartpage}%
3083   \Hy@DisableOption{pdftoolbar}%
3084   \Hy@DisableOption{pdfmenubar}%
3085   \Hy@DisableOption{pdfwindowui}%
3086   \Hy@DisableOption{pdf-fitwindow}%
3087   \Hy@DisableOption{pdf-centerwindow}%
3088   \Hy@DisableOption{pdfdisplaydoctitle}%
3089   \Hy@DisableOption{pdfpagelayout}%
3090   \Hy@DisableOption{baseurl}%
3091   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
3092   \Hy@pdfstringfalse
3093 }

```

## 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.

```

3094 \def\NoHyper{%
3095   \def\hyper@link@{##1}##2##3##4{##4}%
3096   \def\hyper@@anchor##1{%
3097     \global\let\hyper@livelink\hyper@link
3098     \gdef\hyper@link##1##2##3{##3}%
3099     \def\hyper@anchorstart##1{%
3100       \let\hyper@anchorend\@empty
3101       \def\hyper@linkstart##1##2{%
3102         \let\hyper@linkend\@empty
3103         \def\hyper@linkurl##1##2{##1}%
3104         \def\hyper@linkfile##1##2##3{##1}%
3105         \let\Hy@backout\@gobble

```

```

3106 }
3107 \def\stop@hyper{%
3108   \def\hyper@link@{##1}##2##3##4{##4}%
3109   \let\Hy@backout\@gobble
3110   \def\hyper@@anchor##1{%
3111     \def\hyper@link##1##2##3{##3}%
3112     \def\hyper@anchorstart##1{%
3113       \let\hyper@anchorend\@empty
3114       \def\hyper@linkstart##1##2{%
3115         \let\hyper@linkend\@empty
3116         \def\hyper@linkurl##1##2{##1}%
3117         \def\hyper@linkfile##1##2##3{##1}%
3118       }
3119       \def\endNoHyper{%
3120         \global\let\hyper@link\hyper@livelink
3121       }
3122     }/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:

```

3123 <*nohyperref>
3124 \let\hyper@@anchor\@gobble
3125 \def\hyper@link#1#2#3{##3}%
3126 \let\hyper@anchorstart\@gobble
3127 \let\hyper@anchorend\@empty
3128 \let\hyper@linkstart\@gobbletwo
3129 \let\hyper@linkend\@empty
3130 \def\hyper@linkurl#1#2{##1}%
3131 \def\hyper@linkfile#1#2#3{##1}%
3132 \let\PDF@SetupDoc\@empty
3133 \let\PDF@FinishDoc\@empty

```

Some top-level commands:

```

3134 \let\Acrobatmenu\@gobble
3135 \let\pdfstringdefDisableCommands\@gobbletwo
3136 \let\texorpdfstring\@firstoftwo
3137 \let\pdfbookmark\@undefined
3138 \newcommand\pdfbookmark[3][]{ }
3139 \let\phantomsection\@empty
3140 \let\hypersetup\@gobble
3141 \let\hyperbaseurl\@gobble
3142 \let\href\@gobble
3143 \let\hyperdef\@gobbletwo
3144 \let\hyperlink\@gobble
3145 \let\hypertarget\@gobble
3146 \def\hyperref{\@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}}
3147 \long\def\@gobbleopt[#1]{ }
3148 \let\hyperpage\@empty
3149 </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}`

```
3150 <*package>
3151 \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.

```
3152 \if@filesw
3153   \ifHy@typexml
3154     \immediate\closeout\@mainaux
3155     \immediate\openout\@mainaux\jobname.aux
3156     \immediate\write\@auxout{<relaxxml>\relax}%
3157   \fi
3158   \immediate\write\@auxout{%
3159     \string\ifx\string\hyper@anchor\string\@undefined^^J%
3160     \global\let\string\oldcontentsline\string\contentsline^^J%
3161     \gdef\string\contentsline%
3162       \string#1\string#2\string#3\string#4{%
3163       \string\oldcontentsline%
3164       {\string#1}{\string#2}{\string#3}}^^J%
3165     \global\let\string\oldnewlabel\string\newlabel^^J%
3166     \gdef\string\newlabel\string#1\string#2{%
3167     \string\newlabelxx{\string#1}\string#2^^J%
3168     \gdef\string\newlabelxx%
3169     \string#1\string#2\string#3\string#4\string#5\string#6{%
3170     \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.

```
3171   \string\AtEndDocument{%
3172     \let\string\contentsline\string\oldcontentsline^^J%
3173     \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.

```
3174   \string\else^^J%
3175   \global\let\string\hyper@last\relax^^J%
3176   \string\fi^^J%
3177 }%
3178 \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.

```
3179 \ifx\hyper@last\@undefined
3180   \def\@starttoc#1{%
3181     \begingroup
3182     \makeatletter
3183     \IfFileExists{\jobname.#1}{%
3184       \Hy@WarningNoLine{%
3185         old #1 file detected, not used; run LaTeX again%
```

```

3186         }%
3187     }{}%
3188     \if@filesw
3189         \expandafter\newwrite\csname tf@#1\endcsname
3190         \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
3191     \fi
3192     \@nobreakfalse
3193 \endgroup
3194 }%
3195 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
3196 \fi
3197 }

```

## 25 Title strings

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

```

3198 \ifHy@usetitle
3199   \let\HyOrg@title\title
3200   \let\HyOrg@author\author
3201   \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
3202   \def\Hy@scanopttitle[#1]{%
3203     \gdef\Hy@title{#1}%
3204     \HyOrg@title[{#1}]%
3205   }%
3206   \def\Hy@scantitle#1{%
3207     \gdef\Hy@title{#1}%
3208     \HyOrg@title{#1}%
3209   }
3210   \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
3211   \def\Hy@scanoptauthor[#1]{%
3212     \gdef\Hy@author{#1}%
3213     \HyOrg@author[{#1}]%
3214   }%
3215   \def\Hy@scanauthor#1{%
3216     \gdef\Hy@author{#1}%
3217     \HyOrg@author{#1}%
3218   }

```

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

```

3219 \begingroup
3220   \def\process@me#1\@nil#2{%
3221     \expandafter\let\expandafter\x\csname @#2\endcsname
3222     \edef\y{\expandafter\strip@prefix\meaning\x}%
3223     \def\c##1##2\@nil{%
3224       \ifx\\##1\\%
3225         \else
3226           \expandafter\gdef\csname Hy@#2\endcsname
3227             \expandafter{x}%
3228         \fi
3229       }%
3230       \expandafter\c\y\relax#1\@nil
3231     }%
3232     \expandafter\process@me\string\@latex@\@nil{title}%
3233     \expandafter\process@me\string\@latex@\@nil{author}%

```

```

3234 \endgroup
3235 \fi
3236 \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.

```

3237 \def\Hy@UseMaketitleString#1{%
3238   \ifundefined{Hy@#1}{}%
3239   \begingroup
3240     \let\Hy@saved@hook\pdfstringdefPreHook
3241     \pdfstringdefDisableCommands{%
3242       \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
3243       \let\newline\\%
3244     }%
3245     \expandafter\ifx\csname @pdf#1\endcsname\@empty
3246       \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
3247         \csname Hy@#1\endcsname\@empty
3248       }%
3249     \fi
3250     \global\let\pdfstringdefPreHook\Hy@saved@hook
3251   \endgroup
3252 }%
3253 }
3254 \def\Hy@newline@title#1{ #1}
3255 \def\Hy@newline@author#1{, #1}
3256 \def\Hy@UseMaketitleInfos{%
3257   \Hy@UseMaketitleString{title}%
3258   \Hy@UseMaketitleString{author}%
3259 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

### 26.1 PDF /PageLabels

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

```

3260 \ifHy@pagelabels

```

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

```

3261 \def\thispdfpagelabel#1{%
3262   \gdef\HyPL@thisLabel{#1}%
3263 }
3264 \global\let\HyPL@thisLabel\relax

```

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

```

3265 \def\HyPL@Labels{}

```

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

```
3266 \newcount\Hy@abspage
3267 \Hy@abspage=0
```

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

```
3268 \def\HyPL@LastType{init}%
3269 \def\HyPL@LastNumber{0}%
3270 \def\HyPL@LastPrefix{}
```

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

```
3271 \def\HyPL@arabic{D}%
3272 \def\HyPL@Roman{R}%
3273 \def\HyPL@roman{r}%
3274 \def\HyPL@Alph{A}%
3275 \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.

```
3276 \def\HyPL@EveryPage{%
3277   \begingroup
3278   \ifx\HyPL@thisLabel\relax
3279     \let\HyPL@page\thepage
3280   \else
3281     \let\HyPL@page\HyPL@thisLabel
3282     \global\let\HyPL@thisLabel\relax
3283   \fi
3284   \let\HyPL@Type\relax
3285   \ifnum\the\c@page>0
3286     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
3287   \fi
3288   \let\Hy@temp Y%
3289   \ifx\HyPL@Type\HyPL@LastType
3290   \else
3291     \let\Hy@temp N%
3292   \fi
3293   \ifx\HyPL@Type\relax
3294     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
3295   \else
3296     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
3297   \fi
3298   \ifx\HyPL@Prefix\HyPL@LastPrefix
3299   \else
3300     \let\Hy@temp N%
3301   \fi
3302   \if Y\Hy@temp
3303     \advance\c@page by -1
3304     \ifnum\HyPL@LastNumber=\the\c@page\relax
3305     \else
3306       \let\Hy@temp N%
3307     \fi
3308     \Hy@StepCount\c@page
3309   \fi
3310   \if N\Hy@temp
3311     \ifx\HyPL@Type\relax
3312       \HyPL@StorePageLabel{/P (\HyPL@Prefix)}%
3313     \else
3314       \HyPL@StorePageLabel{%
```

```

3315         \ifx\HyPL@Prefix\@empty
3316         \else
3317             /P (\HyPL@Prefix)
3318         \fi
3319         /S /\csname HyPL\HyPL@Type\endcsname
3320         \ifnum\the\c@page=1
3321         \else
3322             \space/St \the\c@page
3323         \fi
3324     }%
3325 \fi
3326 \fi
3327 \xdef\HyPL@LastNumber{\the\c@page}%
3328 \global\let\HyPL@LastType\HyPL@Type
3329 \global\let\HyPL@LastPrefix\HyPL@Prefix
3330 \endgroup
3331 \Hy@GlobalStepCount\Hy@abspage
3332 }

```

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

```

3333 \def\HyPL@CheckThePage#1\@nil{%
3334     \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
3335 }

```

`\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`.

```

3336 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
3337     \def\Hy@tempa{#4}%
3338     \def\Hy@tempb{\csname\endcsname\c@page}%
3339     \ifx\Hy@tempa\Hy@tempb
3340         \expandafter\ifx\csname HyPL#3\endcsname\relax
3341         \else
3342             \def\HyPL@Type{#3}%
3343             \def\HyPL@Prefix{#2}%
3344         \fi
3345     \else
3346         \begingroup
3347             \let\Hy@next\endgroup
3348             \let\HyPL@found\@undefined
3349             \def\arabic{\HyPL@Format{arabic}}%
3350             \def\Roman{\HyPL@Format{Roman}}%
3351             \def\roman{\HyPL@Format{roman}}%
3352             \def\Alph{\HyPL@Format{Alph}}%
3353             \def\alph{\HyPL@Format{alph}}%
3354             \protected@edef\Hy@temp{#1}%
3355             \ifx\HyPL@found\relax
3356                 \toks@\expandafter{\Hy@temp}%
3357                 \edef\Hy@next{\endgroup
3358                     \noexpand\HyPL@@CheckThePage\the\toks@
3359                     \noexpand\HyPL@found\relax\noexpand\@nil
3360                 }%
3361             \fi
3362         \Hy@next
3363     \fi
3364 }

```

`\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`.

```

3365 \def\HyPL@Format#1#2{%
3366   \ifx\HyPL@found\@undefined
3367     \expandafter\ifx\csname c@#2\endcsname\c@page
3368       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
3369     \else
3370       \expandafter\noexpand\csname#1\endcsname{#2}%
3371     \fi
3372   \else
3373     \expandafter\noexpand\csname#1\endcsname{#2}%
3374   \fi
3375 }
```

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

```

3376 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
3377   \def\Hy@tempa{#3}%
3378   \def\Hy@tempb{\HyPL@found\relax}%
3379   \ifx\Hy@tempa\Hy@tempb
3380     \def\HyPL@Type{#2}%
3381     \def\HyPL@Prefix{#1}%
3382   \fi
3383 }
```

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

```

3384 \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`.

```

3385 \def\HyPL@Useless{0 << /S /D >> }%
3386 \@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.

```

3387 \def\HyPL@SetPageLabels{%
3388   \@onelevel@sanitize\HyPL@Labels
3389   \ifx\HyPL@Labels\@empty
3390   \else
3391     \ifx\HyPL@Labels\HyPL@Useless
3392     \else
3393       \Hy@PutCatalog{/PageLabels << /Nums [\HyPL@Labels] >>}%
3394     \fi
3395   \fi
3396 }
```

`\HyPL@EveryPage` Without option ‘pdfpagelabels’ we need a dummy for `\HyPL@EveryPage`.

```

3397 \else
3398   \let\HyPL@EveryPage\@empty
3399 \fi
```

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

```

3400 \Hy@DisableOption{pdfpagelabels}
3401 </package>
```



### 26.1.1 pdfTeX and VTeX

Because of pdfTeX's `\pdfcatalog` command the `/PageLabels` entry can set at end of document in the first run.

`\Hy@PutCatalog`

```
3402 <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.

```
3403 <*vTeX>
3404 \edef\Hy@VTeXversion{%
3405   \ifx\VTeXversion\undefined
3406     \z@
3407   \else
3408     \ifx\VTeXversion\relax
3409       \z@
3410     \else
3411       \VTeXversion
3412     \fi
3413   \fi
3414 }
3415 \begingroup
3416   \ifnum\Hy@VTeXversion<660 %
3417     \gdef\Hy@PutCatalog#1{%
3418       \Hy@WarningNoLine{%
3419         VTeX 6.59g or above required for pdfpagelabels%
3420       }%
3421     }
3422   \else
3423     \gdef\Hy@PutCatalog#1{%
3424       \Hy@vt@PutCatalog#1/PageLabels <<>>\@nil
3425     }
3426     \gdef\Hy@vt@PutCatalog#1/PageLabels <<#2>>#3\@nil{%
3427       \ifx\#2\%
3428         \else
3429           \immediate\special{!pdfpagelabels #2}%
3430         \fi
3431       }
3432     \fi
3433 \endgroup
3434 </vTeX>

3435 <*pdfTeX | vTeX>
```

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

```
3436 \ifHy@pagelabels
3437   \def\HyPL@StorePageLabel#1{%
3438     \toks@\expandafter{\HyPL@Labels}%
3439     \xdef\HyPL@Labels{%
3440       \the\toks@
3441       \the\Hy@abspage\space<< #1 >> %
3442     }%
3443   }
```

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.

```
3444 \AtEndDocument{\clearpage\HyPL@SetPageLabels}
3445 \fi
3446 \pdfTeX | vtex\
```

## 26.1.2 pdfmarkbase, dvipdfm

`\Hy@PutCatalog`

```
3447 \dvipdfm\def\Hy@PutCatalog#1{\pdfmark{docview << #1 >>}}
3448 \pdfmarkbase
3449 \def\Hy@PutCatalog#1{%
3450 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
3451 }
3452 \pdfmarkbase
3453 \pdfmarkbase | dvipdfm
3454 \ifHy@pagelabels
```

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

```
3455 \def\HyPL@StorePageLabel#1{%
3456 \if@filesw
3457 \begingroup
3458 \edef\Hy@tempa{\the\Hy@abspage\space<< #1 >> }%
3459 \immediate\write\@mainaux{%
3460 \string\HyPL@Entry{\Hy@tempa}%
3461 }%
3462 \endgroup
3463 \fi
3464 }
```

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.

```
3465 \AfterBeginDocument{%
3466 \if@filesw
3467 \immediate\write\@mainaux{%
3468 \string\providecommand\string*\string\HyPL@Entry[1]{}%
3469 }%
3470 \fi
3471 \ifx\HyPL@Labels\@empty
3472 \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
3473 \else
3474 \HyPL@SetPageLabels
3475 \fi
3476 \let\HyPL@Entry\@gobble
3477 }%
```

`\HyPL@Entry`

```
3478 \def\HyPL@Entry#1{%
3479 \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
3480 \HyPL@Labels
3481 #1%
3482 }%
3483 }
```

```

3484 \fi
3485 \pdfmarkbase | dvipdfm)
3486 \*package)
3487 \MaybeStopEarly

```

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

Anything which can be referenced advances some counter; we overload this to put in a hypertext starting point (with no visible anchor), and make a note of that for later use in `\label`. This will fail badly if `\theH<name>` does not expand to a sensible reference. This means that classes or package which introduce new elements need to define an equivalent `\theH<name>` for every `\the<name>`. We do make a trap to make `\theH<name>` be the same as `\arabic{<name>}`, if `\theH<name>` is not defined, but this is not necessarily a good idea. Alternatively, the ‘naturalnames’ option uses whatever L<sup>A</sup>T<sub>E</sub>X provides, which may be useable. But then it's 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

```

3488 \newcommand\theHequation{\theHsection.\arabic{equation}}
3489 \@ifundefined{thepart}{\newcommand\theHpart{\arabic{part}}}{%
3490 \@ifundefined{thechapter}{%
3491   \newcommand\theHsection    {\arabic{section}}
3492   \newcommand\theHfigure    {\arabic{figure}}
3493   \newcommand\theHtable     {\arabic{table}}
3494 }{%
3495   \newcommand\theHchapter    {\arabic{chapter}}
3496   \newcommand\theHfigure     {\theHchapter.\arabic{figure}}
3497   \newcommand\theHtable      {\theHchapter.\arabic{table}}
3498   \newcommand\theHsection    {\theHchapter.\arabic{section}}
3499 }
3500 \newcommand\theHsubsection   {\theHsection.\arabic{subsection}}
3501 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
3502 \newcommand\theHparagraph    {\theHsubsubsection.\arabic{paragraph}}
3503 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
3504 \newcommand\theHtheorem      {\theHsection.\arabic{theorem}}
3505 \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 it's a real `\item` before incrementing counters.

```

3506 \let\H@item\item
3507 \newcounter{Item}
3508 \def\theHItem{\arabic{Item}}
3509 \def\item{%
3510   \@hyper@itemfalse
3511   \if@nmbbrlist\@hyper@itemtrue\fi
3512   \H@item
3513 }

```

```

3514 \newcommand\theHenumi      {\theHItem}
3515 \newcommand\theHenumii     {\theHItem}
3516 \newcommand\theHenumiii    {\theHItem}
3517 \newcommand\theHenumiv     {\theHItem}
3518 \newcommand\theHHfootnote  {\arabic{Hfootnote}}
3519 \newcommand\theHmpfootnote {\arabic{mpfootnote}}
3520 \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.

```

3521 \let\H@refstepcounter\refstepcounter
3522 \edef\name@of@eq{equation}%
3523 \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.

```

3524 \newif\if@hyper@item
3525 \newif\if@skiphyperref
3526 \@hyper@itemfalse
3527 \@skiphyperreffalse
3528 \def\refstepcounter#1{%
3529   \H@refstepcounter{#1}%
3530   \edef\This@name{#1}%
3531   \ifx\This@name\name@of@slide
3532   \else
3533     \if@skiphyperref
3534     \else
3535       \if@hyper@item
3536         \stepcounter{Item}%
3537         \hyper@refstepcounter{Item}%
3538       \else
3539         \hyper@refstepcounter{#1}%
3540       \fi
3541     \fi
3542   \fi
3543 }

```

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

```

3544 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

3545 \def\hyper@refstepcounter#1{%
3546   \edef\This@name{#1}%
3547   \ifx\This@name\name@of@eq
3548     \make@stripped@name{\theequation}%
3549     \let\theHequation\newname
3550   \fi
3551   \@ifundefined{theH#1}{%
3552     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
3553   }{}%
3554   \hyper@makecurrent{#1}%
3555   \ifmeasuring@
3556   \else
3557     \Hy@raisedlink{%

```

```

3558     \hyper@anchorstart{\@currentHref}\hyper@anchorend
3559   }%
3560 \fi
3561 }

```

After \appendix “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.

```

3562 \def\Hy@chapterstring{chapter}
3563 \def\Hy@appendixstring{appendix}
3564 \def\Hy@chapapp{\Hy@chapterstring}
3565 \let\HyOrg@appendix\appendix
3566 \def\appendix{%
3567   \@ifundefined{chapter}%
3568     {\gdef\theHsection{\Alph{section}}}%
3569     {\gdef\theHchapter{\Alph{chapter}}}%
3570   \xdef\Hy@chapapp{\Hy@appendixstring}%
3571   \HyOrg@appendix
3572 }

```

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

```

3573 \def\hyper@makecurrent#1{%
3574   \begingroup
3575     \edef\Hy@param{#1}%
3576     \ifx\Hy@param\Hy@chapterstring
3577       \let\Hy@param\Hy@chapapp
3578     \fi
3579     \ifHy@hypertextnames
3580       \let\@number\@firstofone
3581       \ifHy@naturalnames
3582         \let\textlatin\@firstofone
3583         \xdef\@currentHlabel{\csname the#1\endcsname}%
3584       \else
3585         \xdef\@currentHlabel{\csname theH#1\endcsname}%
3586       \fi
3587       \xdef\@currentHref{%
3588         \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
3589       }%
3590     \else
3591       \Hy@GlobalStepCount\Hy@linkcounter
3592       \xdef\@currentHref{\Hy@param.the\Hy@linkcounter}%
3593     \fi
3594   \endgroup
3595 }

3596 \@ifpackageloaded{fancyvrb}{%
3597   \def\FV@StepLineNo{%
3598     \FV@SetLineNo
3599     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
3600     \FV@StepLineNo
3601   }%
3602 }{}

```

## 28 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 `hyper-  
texnames` and `plainpages`) is used to get the page anchor name as in `\@hyperfixhead` (see sec. 37). The link will not work if option `pageanchor` is set to false.

`\lastpage@putlabel`

```

3603 \AtBeginDocument{%
3604   \@ifpackageloaded{lastpage}{%
3605     \ifHy@pageanchor
3606     \else
3607       \Hy@WarningNoLine{%
3608         The \string\pageref{LastPage} link doesn't work\MessageBreak
3609         with disabled option 'pageanchor'%
3610       }%
3611     \fi
3612     \def\lastpage@putlabel{%
3613       \addtocounter{page}{-1}%
3614       \if@filesw
3615         \begingroup
3616           \let\@number\@firstofone
3617           \ifHy@pageanchor
3618             \ifHy@hypertexnames
3619               \ifHy@plainpages
3620                 \def\Hy@temp{\arabic{page}}%
3621               \else
3622                 \Hy@unicodetrue
3623                 \pdfstringdef\Hy@temp{\thepage}%
3624               \fi
3625             \else
3626               \def\Hy@temp{\the\Hy@pagecounter}%
3627             \fi
3628           \fi
3629           \immediate\write\@auxout{%
3630             \string\newlabel
3631             {LastPage}{\thepage}{\thepage}%
3632             \ifHy@pageanchor page.\Hy@temp\fi}%
3633           }%
3634         \endgroup
3635       \fi
3636       \addtocounter{page}{1}%
3637     }%
3638   }{}%
3639 }
3640 \endpackage
3641 \if@check
3642 \checkpackage{lastpage}[1994/06/25]
3643 \checkcommand\def\lastpage@putlabel{%
3644   \addtocounter{page}{-1}%
3645   \immediate\write\@auxout{%
3646     \string\newlabel{LastPage}{\thepage}%
3647   }%
3648   \addtocounter{page}{1}%
3649 }
```

```

3650 </check>
3651 <*package>

```

## 29 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.

```

3652 \def\hypergetref#1{\getrefbykeydefault{#1}{-}{??}}
3653 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

## 30 Package titlesec and titletoc support

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

Package titlesec support:

```

3654 \@ifpackageloaded{titlesec}{%
3655   \def\ttl@Hy@steplink#1{%
3656     \Hy@GlobalStepCount\Hy@linkcounter
3657     \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
3658     \def\ttl@Hy@saveanchor{%
3659       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
3660     }%
3661   }%
3662   \def\ttl@Hy@refstepcounter#1{%
3663     \let\ttl@b\Hy@raisedlink
3664     \def\Hy@raisedlink##1{\def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}}%
3665     \refstepcounter{#1}%
3666     \let\Hy@raisedlink\ttl@b
3667   }%
3668 }{}

```

Package titletoc support:

```

3669 \@ifpackageloaded{titletoc}{%
3670   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
3671 }{}

```

## 31 Package varioref support

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

```

3672 \def\Hy@varioref@undefined{{???}{??}{-}{-}}
3673 \@ifpackageloaded{varioref}{%
3674   \def\vref@pagenum#1#2{%
3675     \ifundefined{r@#2}{%
3676       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
3677     }{}%
3678     \edef#1{\getpagerefnumber{#2}}%
3679   }%
3680 }{}

```

## 32 Package longtable support

Sometimes the anchor of the longtable goes to the previous page. Thus the following patch separates the anchor setting and counter incrementation by hyperref's `\refstepcounter` and the anchor setting is moved after `\vskip\LTpre`.

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

```

3681 \ifpackageloaded{longtable}{%
3682   \begingroup
3683     \def\y{\LT@array}%
3684     \@ifundefined{scr@LT@array}{}{\def\y{\scr@LT@array}}%
3685     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
3686       \expandafter\endgroup
3687       \expandafter\def\y[##1]##2{%
3688         \H@refstepcounter{#1}%
3689         \hyper@makecurrent{table}%
3690         #2\@sharp####4%
3691       }%
3692     }%
3693   \expandafter\expandafter\expandafter\x\y[#1]{#2}\@nil

```

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

```

3694   \begingroup
3695     \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
3696       \endgroup
3697       \def\LT@start{%
3698         #1%
3699         \hyper@refstepcounter{table}%
3700         \ifvoid\LT@firsthead\copy
3701         #2%
3702       }%
3703     }%
3704   \expandafter\x\LT@start\@nil
3705 }{}

```

## 33 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 40). 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.

```

3706 \let\new@refstepcounter\refstepcounter
3707 \let\H@equation\equation
3708 \let\H@endequation\endequation
3709 \ifpackageloaded{amsmath}{%
3710   \long\def\Hy@temp{%
3711     \incr@eqnum
3712     \mathdisplay@push
3713     \st@rredfalse \global\@eqnswtrue
3714     \mathdisplay{equation}%
3715   }%
3716   \ifx\Hy@temp\equation
3717     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
3718       \csname iftrue\endcsname

```



```

3719     \else
3720         \long\def\equation{%
3721             \mathdisplay@push
3722             \st@rredfalse \global\@eqnswtrue
3723             \mathdisplay{equation}%
3724             \incr@eqnum
3725         }%
3726     \fi
3727 \fi
3728 }{%
3729 \def\equation{%
3730     \let\refstepcounter\H@refstepcounter
3731     \H@equation
3732     \make@stripped@name{\theequation}%
3733     \let\theHequation\newname
3734     \hyper@makecurrent{equation}%
3735     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
3736     \let\refstepcounter\new@refstepcounter
3737 }%
3738 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
3739 }

```

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.

```

3740 \newif\if@eqnstar
3741 \@eqnstarfalse
3742 \let\H@eqnarray\eqnarray
3743 \let\H@endeqnarray\endeqnarray
3744 \def\eqnarray{%
3745     \let\Hy@reserved@a\relax
3746     \def\@currentHref{}%
3747     \H@eqnarray
3748     \if@eqnstar
3749     \else
3750         \ifx\\\@currentHref\\%
3751         \else
3752             \make@stripped@name{\theequation}%
3753             \let\theHequation\newname
3754             \hyper@makecurrent{equation}%
3755             \hyper@anchorstart{\@currentHref}{\hyper@anchorend
3756         \fi
3757     \fi
3758 }
3759 \def\endeqnarray{%
3760     \H@endeqnarray
3761 }

```

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.

```

3762 \@namedef{eqnarray*}{%
3763     \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
3764 }
3765 \@namedef{endeqnarray*}{%
3766     \nonumber\endeqnarray\@eqnstarfalse
3767 }

```

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

```

3768 \ifundefined{subeqnarray}{-}{%
3769   \let\H@subeqnarray\subeqnarray
3770   \let\H@endsubeqnarray\endsubeqnarray
3771   \def\subeqnarray{%
3772     \let\Hy@reserved@a\relax
3773     \H@subeqnarray
3774     \make@stripped@name{\theequation}%
3775     \let\theHequation\newname
3776     \hyper@makecurrent{equation}%
3777     \hyper@anchorstart{\@currentHref}{-}\hyper@anchorend
3778   }%
3779   \def\endsubeqnarray{%
3780     \H@endsubeqnarray
3781   }%
3782   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
3783 }
```

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

```

3784 \def\make@stripped@name#1{%
3785   \begingroup
3786     \escapechar\m@ne
3787     \global\let\newname\@empty
3788     \protected@edef\Hy@tempa{#1}%
3789     \edef\@tempb{%
3790       \noexpand\@tfor\noexpand\Hy@tempa:=%
3791       \expandafter\strip@prefix\meaning\Hy@tempa
3792     }%
3793     \@tempb\do{%
3794       \if\Hy@tempa\else
3795         \if}\Hy@tempa\else
3796           \xdef\newname{\newname\Hy@tempa}%
3797         \fi
3798       \fi
3799     }%
3800   \endgroup
3801 }
```

## 34 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.

```

3802 \ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{-}
3803 \ifHy@hyperfootnotes
3804   \newcounter{Hfootnote}
3805   \let\H@@footnotetext\@footnotetext
3806   \let\H@@footnotemark\@footnotemark
3807   \def\@xfootnotenext[#1]{%
3808     \begingroup
3809     \csname c@\@mpfn\endcsname #1\relax
3810     \unrestored@protected\xdef\@thefnmark{\thempfn}%
3811   \endgroup
}
```

```

3812 \ifx\@footnotetext\@mpfootnotetext
3813 \expandafter\H@\mpfootnotetext
3814 \else
3815 \expandafter\H@\footnotetext
3816 \fi
3817 }%
3818 \def\@xfootnotemark[#1]{%
3819 \begingroup
3820 \c@footnote #1\relax
3821 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
3822 \endgroup
3823 \H@\@footnotemark
3824 }%
3825 \let\H@\mpfootnotetext\@mpfootnotetext
3826 \long\def\@mpfootnotetext#1{%
3827 \H@\mpfootnotetext{%
3828 \ifHy@nesting
3829 \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
3830 \else
3831 \Hy@raisedlink{%
3832 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
3833 }#1%
3834 \fi
3835 }%
3836 }%
3837 \long\def\@footnotetext#1{%
3838 \H@\@footnotetext{%
3839 \ifHy@nesting
3840 \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
3841 \else
3842 \Hy@raisedlink{%
3843 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
3844 }%
3845 \let\@currentHlabel\Hy@footnote@currentHlabel
3846 \let\@currentHref\Hy@footnote@currentHref
3847 \let\@currentlabelname\@empty
3848 #1%
3849 \fi
3850 }%
3851 }%

```

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.

```

3852 \def\@footnotemark{%
3853 \leavevmode
3854 \ifhmode\edef\@x@sff{\the\spacefactor}\nobreak\fi
3855 \stepcounter{Hfootnote}%
3856 \global\let\Hy@saved@currentHlabel\@currentHlabel
3857 \global\let\Hy@saved@currentHref\@currentHref
3858 \hyper@makecurrent{Hfootnote}%
3859 \global\let\Hy@footnote@currentHlabel\@currentHlabel
3860 \global\let\Hy@footnote@currentHref\@currentHref
3861 \global\let\@currentHlabel\Hy@saved@currentHlabel
3862 \global\let\@currentHref\Hy@saved@currentHref
3863 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
3864 \@makefnmark

```

```

3865 \hyper@linkend
3866 \ifhmode\spacefactor\@x@sf\fi
3867 \relax
3868 }%

```

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.

```

3869 \@ifpackageloaded{longtable}{%
3870 \CheckCommand*{\LT@p@ftntext}[1]{%
3871 \edef\@tempa{%
3872 \the\LT@p@ftn
3873 \noexpand\footnotetext[\the\c@footnote]%
3874 }%
3875 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
3876 }%
3877 \long\def\LT@p@ftntext#1{%
3878 \edef\@tempa{%
3879 \the\LT@p@ftn
3880 \begingroup
3881 \noexpand\c@footnote=\the\c@footnote\relax
3882 \noexpand\protected@xdef
3883 \noexpand\@thefnmark{\noexpand\thempfn}%
3884 \noexpand\protected@xdef\noexpand\@thefnmark{%
3885 \noexpand\thempfn
3886 }%
3887 \expandafter\expandafter\expandafter\noexpand
3888 \expandafter\expandafter\expandafter\Hy@LT@footnotetext
3889 \expandafter\expandafter\expandafter{%
3890 \expandafter\Hy@footnote@currentHref\expandafter
3891 }\expandafter{\Hy@footnote@currentHlabel}%
3892 }%
3893 \global\LT@p@ftn\expandafter{%
3894 \@tempa{#1}%
3895 \endgroup
3896 }%
3897 }%
3898 \long\def\Hy@LT@footnotetext#1#2#3{%
3899 \H@@footnotetext{%
3900 \ifHy@nesting
3901 \hyper@@anchor{#1}{#3}%
3902 \else
3903 \Hy@raisedlink{%
3904 \hyper@@anchor{#1}{\relax}%
3905 }%
3906 \def\@currentHlabel{#2}%
3907 \def\@currentHref{#1}%
3908 \let\@currentlabelname\@empty
3909 #3%
3910 \fi
3911 }%
3912 }%
3913 }{}%

```

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.

```

3914 \let\HyOrg@maketitle\maketitle

```

```

3915 \def\maketitle{%
3916   \let\Hy@saved@footnotemark\@footnotemark
3917   \let\Hy@saved@footnotetext\@footnotetext
3918   \let\@footnotemark\H@@footnotemark
3919   \let\@footnotetext\H@@footnotetext
3920   \@ifnextchar[\Hy@maketitle@optarg{% ]
3921     \HyOrg@maketitle
3922     \Hy@maketitle@end
3923   }%
3924 }%
3925 \def\Hy@maketitle@optarg[#1]{%
3926   \HyOrg@maketitle[#{#1}]%
3927   \Hy@maketitle@end
3928 }%
3929 \def\Hy@maketitle@end{%
3930   \ifx\@footnotemark\H@@footnotemark
3931     \let\@footnotemark\Hy@saved@footnotemark
3932   \fi
3933   \ifx\@footnotetext\H@@footnotetext
3934     \let\@footnotetext\Hy@saved@footnotetext
3935   \fi
3936 }%

```

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

```

3937 \def\realfootnote{%
3938   \@ifnextchar[\@xfootnote{%
3939     \stepcounter{\@mpfn}%
3940     \protected@xdef\@thefnmark{\thempfn}%
3941     \H@@footnotemark\H@@footnotetext
3942   }%
3943 }%

3944 \fi
3945 \Hy@DisableOption{hyperfootnotes}

3946 </package>
3947 <*check>
3948 \checklatex
3949 \checkcommand\def\@xfootnotenext[#1]{%
3950   \begingroup
3951     \csname c@\@mpfn\endcsname #1\relax
3952     \unrestored@protected@xdef\@thefnmark{\thempfn}%
3953   \endgroup
3954   \@footnotetext
3955 }
3956 \checkcommand\def\@xfootnotemark[#1]{%
3957   \begingroup
3958     \c@footnote #1\relax
3959     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
3960   \endgroup
3961   \@footnotemark
3962 }
3963 \checkcommand\def\@footnotemark{%
3964   \leavevmode
3965   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
3966   \@makefnmark
3967   \ifhmode\spacefactor\@x@sf\fi
3968   \relax

```

```

3969 }
3970 </check>
3971 <*package>

```

## 35 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.

```

3972 \def\caption{%
3973   \ifx\@capttype\@undefined
3974     \latex@error{\noexpand\caption outside float}\@ehd
3975     \expandafter\@gobble
3976   \else
3977     \H@refstepcounter\@capttype
3978     \@ifundefined{fst@\@capttype}{%
3979       \let\Hy@tempa\@caption
3980     }{%
3981       \let\Hy@tempa\Hy@float@caption
3982     }%
3983     \expandafter\@firstofone
3984   \fi
3985   {\@dblarg{\Hy@tempa\@capttype}}%
3986 }
3987 \long\def\@caption#1[#2]#3{%
3988   \hyper@makecurrent{\@capttype}%
3989   \def\@currentlabelname{#2}%
3990   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
3991     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
3992   }%
3993   \begingroup
3994     \@parboxrestore
3995     \if@minipage
3996       \setminipage
3997     \fi
3998     \normalsize
3999     \@makecaption{\csname fnum@#1\endcsname}{%
4000       \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

4001     \ifHy@nesting
4002       \hyper@@anchor{\@currentHref}{#3}%
4003     \else
4004       \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
4005     \fi
4006   }%
4007   \par
4008 \endgroup
4009 }

```

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.

```

4010 \let\Hy@float@caption\@caption
4011 \ifpackageloaded{float}{%
4012   \def\Hy@float@caption{%
4013     \hyper@makecurrent{\@capttype}%
4014     \float@caption
4015   }

```

```

4016 \let\HyOrg@float@makebox\float@makebox
4017 \renewcommand{\float@makebox}[1]{%
4018   \HyOrg@float@makebox{%
4019     #1\relax
4020     \begingroup
4021       \hyper@makecurrent{\@cuptype}%
4022       \hyper@@anchor{\@currentHref}{\relax}%
4023     \endgroup
4024   }%
4025 }%
4026 }{}

4027 \end{package}
4028 \end{check}
4029 \checklatex[1999/06/01 - 2000/06/01]
4030 \checkcommand\def\caption{%
4031   \ifx\@cuptype\undefined
4032     \latex@error{\noexpand\caption outside float}\@ehd
4033     \expandafter\@gobble
4034   \else
4035     \refstepcounter{\@cuptype}
4036     \expandafter\@firstofone
4037   \fi
4038   {\@dblarg{\@caption\@cuptype}}%
4039 }
4040 \checkcommand\long\def\@caption#1[#2]#3{%
4041   \par
4042   \addcontentsline{csname ext@#1\endcsname}{#1}%
4043     {\protect\numberline{csname the#1\endcsname}{\ignorespaces #2}}%
4044   \begingroup
4045     \@parboxrestore
4046     \if@minipage
4047       \setminipage
4048     \fi
4049     \normalsize
4050     \makecaption{csname fnum@#1\endcsname}{\ignorespaces #3}\par
4051   \endgroup
4052 }
4053 \end{check}
4054 \end{package}

```

## 36 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*, *chapterbib*, 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) has provided hooks for us, so all we need to do is activate them.

```

4055 \def\hyper@natlinkstart#1{%
4056   \Hy@backout{#1}%
4057   \hyper@linkstart{cite}{cite.#1}%
4058   \def\hyper@nat@current{#1}%
4059 }

```

```

4060 \def\hyper@natlinkend{%
4061   \hyper@linkend
4062 }
4063 \def\hyper@natlinkbreak#1#2{%
4064   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
4065 }
4066 \def\hyper@natanchorstart#1{%
4067   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
4068 }
4069 \def\hyper@natanchorend{\hyper@anchorend}

```

Do not play games if we have natbib support. Macro extra@binfo added for chapterbib support.

```

4070 \@ifundefined{NAT@parse}{%
4071   \def\bibcite#1#2{%
4072     \newl@bel{b}{#1}\@extra@binfo{\hyper@link[ cite ]{}{cite.#1}{#2}}%
4073   }%
4074   \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.”.

```

4075   \let\Hy@bibcite\bibcite
4076   \begingroup
4077     \@ifundefined{bbl@cite@choice}{}%
4078     \g@addto@macro\bbl@cite@choice{%
4079       \let\bibcite\Hy@bibcite
4080     }%
4081   }%
4082   \endgroup

```

\@BIBLABEL is working around a ‘feature’ of RevT<sub>E</sub>X.

```

4083   \providecommand*{\@BIBLABEL}{\@biblabel}%
4084   \def\@lbibitem[#1]#2{%
4085     \@skiphyperreftrue
4086     \H@item[%
4087       \ifx\Hy@raisedlink\@empty
4088         \hyper@anchorstart{cite.#2}\@BIBLABEL{#1}\hyper@anchorend
4089       \else
4090         \Hy@raisedlink{\hyper@anchorstart{cite.#2}\hyper@anchorend}%
4091         \@BIBLABEL{#1}%
4092       \fi
4093       \hfill
4094     ]%
4095     \@skiphyperreffalse
4096     \if@filesw
4097       \begingroup
4098         \let\protect\noexpand
4099         \immediate\write\@auxout{%
4100           \string\bibcite{#2}{#1}%
4101         }%
4102       \endgroup
4103     \fi
4104     \ignorespaces
4105   }%

```

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

```

4106   \def\@bibitem#1{%
4107     \@skiphyperreftrue\H@item\@skiphyperreffalse

```



```

4108 \Hy@raisedlink{\hyper@anchorstart{cite.#1}\relax\hyper@anchorend}%
4109 \if@filesw
4110 \begingroup
4111 \let\protect\noexpand
4112 \immediate\write\@auxout{%
4113 \string\bibcite{#1}{\the\value{\@listctr}}}%
4114 }%
4115 \endgroup
4116 \fi
4117 \ignorespaces
4118 }%
4119 }{}

4120 \end{package}
4121 \check
4122 \checklatex
4123 \checkcommand\def\@lbibitem[#1]#2{%
4124 \item[\@biblabel{#1}\hfill]%
4125 \if@filesw
4126 {%
4127 \let\protect\noexpand
4128 \immediate\write\@auxout{%
4129 \string\bibcite{#2}{#1}%
4130 }%
4131 }%
4132 \fi
4133 \ignorespaces
4134 }
4135 \checkcommand\def\@bibitem#1{%
4136 \item
4137 \if@filesw
4138 \immediate\write\@auxout{%
4139 \string\bibcite{#1}{\the\value{\@listctr}}}%
4140 }%
4141 \fi
4142 \ignorespaces
4143 }
4144 \end{check}
4145 \end{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.

```

4146 \@ifclassloaded{revtex}{%
4147 \Hy@Info{*** compatibility with revtex **** }%
4148 \def\revtex@checking#1#2{%
4149 \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
4150 \expandafter\def\csname b@#1\endcsname{#2}%
4151 \@SetMaxRnhefLabel{#1}%
4152 \expandafter\let\csname b@#1\endcsname\T@temp
4153 }%

```

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

```

4154 \@ifundefined{CITE}{\def\CITE{\cite}}{}%
4155 \providecommand*\extra@b@citeb{}%
4156 \def\CITE[#1]#2{%
4157 \let\citea\empty

```

```

4158 \leavevmode
4159 \unskip
4160 $~{%
4161 \scriptstyle
4162 \@CITE{%
4163 \for\@citeb:=#2\do{%
4164 \citea
4165 \def\@citea{\penalty\@m\ }%
4166 \edef\@citeb{\expandafter\@firstofone\@citeb}%
4167 \if@filesw
4168 \immediate\write\@auxout{\string\citation{\@citeb}}%
4169 \fi
4170 \@ifundefined{b@\@citeb\extra@b@citeb}{%
4171 \mbox{\reset@font\bfseries ?}%
4172 \G@refundefinedtrue
4173 \@latex@warning{%
4174 Citation '\@citeb' on page \thepage \space undefined%
4175 }%
4176 }{%
4177 {\csname b@\@citeb\extra@b@citeb\endcsname}%
4178 }%
4179 }%
4180 }{#1}%
4181 }$%
4182 }%

```

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.

```

4183 \def\@citex[#1]#2{%
4184 \let\@citea\@empty
4185 \@cite{%
4186 \for\@citeb:=#2\do{%
4187 \citea
4188 \def\@citea{\penalty\@m\ }%
4189 \edef\@citeb{\expandafter\@firstofone\@citeb}%
4190 \if@filesw
4191 \immediate\write\@auxout{\string\citation{\@citeb}}%
4192 \fi
4193 \@ifundefined{b@\@citeb\extra@b@citeb}{%
4194 \mbox{\reset@font\bfseries ?}%
4195 \G@refundefinedtrue
4196 \@latex@warning{%
4197 Citation '\@citeb' on page \thepage \space undefined%
4198 }%
4199 }{%
4200 \hbox{\csname b@\@citeb\extra@b@citeb\endcsname}%
4201 }%
4202 }%
4203 }{#1}%
4204 }%
4205 }{}

```

### 36.1 Package harvard

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

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

```

4206 \ifpackageloaded{harvard}{%
4207   \AtBeginDocument{%
4208     \Hy@Info{*** compatibility with harvard *** }%
4209     \Hy@raiselinksfalse
4210     \def\harvardcite#1#2#3#4{%
4211       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{\cite.#1}{#2}}%
4212       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{\cite.#1}{#3}}%
4213       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{\cite.#1}{#4}}%
4214       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
4215     }%
4216     \def\HAR@citetoaux#1{%
4217       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
4218       \ifHy@backref
4219         \ifx\@empty\@currentlabel
4220           \else
4221             \@bsphack
4222             \if@filesw
4223               \protected@write\@auxout{}{%
4224                 \string\writefile{brf}{%
4225                   \string\backcite{#1}{%
4226                     {\thepage}{\@currentlabel}{\@currentHref}%
4227                   }%
4228                 }%
4229               \fi
4230             \fi
4231             \esphack
4232           \fi
4233         \fi
4234       }%
4235     \def\harvarditem{%
4236       \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
4237     }%
4238     \def\@harvarditem[#1]#2#3#4#5\par{%
4239       \item[]%
4240       \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
4241       \if@filesw
4242         \begingroup
4243           \def\protect##1{\string ##1\space}%
4244           \ifthenelse{\equal{#1}{\null}}{%
4245             {\def\next{#4}{#2}{#3}}%
4246             {\def\next{#4}{#2}{#1}{#3}}%
4247           \immediate\write\@auxout{\string\harvardcite\codeof\next}%
4248         \endgroup
4249       \fi
4250       \protect\hspace*{-\labelwidth}%
4251       \protect\hspace*{-\labelsep}%
4252       \ignorespaces
4253       #5%
4254       \ifHy@backref
4255         \newblock
4256         \backref{\csname br@#4\endcsname}%
4257       \fi
4258     \par
4259   }%

```

`\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`:

```

4260 \long\def\HAR@checkcitations#1#2#3#4{%
4261 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
4262 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
4263 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
4264 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
4265 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
4266 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
4267 \else
4268 \@tempswatrue
4269 \fi
4270 \else
4271 \@tempswatrue
4272 \fi
4273 \else
4274 \@tempswatrue
4275 \fi
4276 }%
4277 }%
4278 }{}

```

## 36.2 Package chicago

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

```

4279 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

4280 \def\citeN{%
4281 \def\@citesep{-1000}%
4282 \def\@cite##1##2{##1}%
4283 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}}%
4284 \@citedata@opt
4285 }%

```

`\shortciteN`

```

4286 \def\shortciteN{%
4287 \def\@citesep{-1000}%
4288 \def\@cite##1##2{##1}%
4289 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}}%
4290 \@citedata@opt
4291 }%

```

`\@citedata@opt`

```

4292 \def\@citedata@opt{%
4293 \let\@cite@opt\@empty
4294 \@ifnextchar [{%
4295 \@tempswatrue
4296 \@citedatax@opt
4297 }{%
4298 \@tempswafalse
4299 \@citedatax[]%
4300 }%
4301 }%

```

\@citedatax@opt

```
4302 \def\@citedatax@opt[#1]{%
4303   \def\@cite@opt{, #1}%
4304   \@citedatax[#1]}%
4305 }

4306 }{}
```

## 37 Page numbers

Give every page an automatic number anchor. This involves, sigh, overloading  $\LaTeX$ 's output bits and pieces, which must be dangerous. This used to be `\@shipoutsetup`, now `\@begindvi`. We cannot even overload this, as it sets itself to null. SIGH.

```
4307 \def\@begindvi{%
4308   \unvbox \@begindvibox
4309   \Hy@begindvi
4310   \global\let\@begindvi\Hy@begindvi
4311 }
4312 \def\Hy@begindvi{%
4313   \@hyperfixhead
4314   \HyPL@EveryPage
4315 }
4316 \def\pagenumbering#1{%
4317   \global\c@page \@ne
4318   \gdef\thepage{\csname @#1\endcsname\c@page}%
4319 }
```

This is needed for some unremembered reason...

```
4320 \let\HYPERPAGEANCHOR\hyperpageanchor
```

Macro `\@hyperfixhead` calls `\hyper@pagetransition` and `\hyper@pageduration`. Therefore empty definitions are provided for drivers that do not define these macros.

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`.

```
4321 \providecommand\hyper@pagetransition{}
4322 \providecommand\hyper@pageduration{}
4323 \providecommand\hyper@pagehidden{}
```

This where we supply a destination for each page. Test to see if there is some sort of header. The test used to be `\expandafter\ifx\expandafter\@empty\H@old@thehead`.

\@hyperfixhead

```
4324 \def\@hyperfixhead{%
4325   \Hy@DistillerDestFix
4326   \ifHy@pageanchor
4327     \ifHy@hypertextnames
4328     \ifHy@plainpages
4329       \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
4330     \else
4331       \begingroup
4332       \let\@number\@firstofone
4333       \Hy@unicodedefalse
4334       \pdfstringdef\@theH@page{\thepage}%

```

```

4335         \endgroup
4336         \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\@theH@page}}}%
4337     \fi
4338     \else
4339         \Hy@GlobalStepCount\Hy@pagecounter
4340         \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}}%
4341     \fi
4342     \else
4343         \let\Hy@TempPageAnchor\@empty
4344     \fi
4345     \let\H@old@thehead\@thehead
4346     \if~\@thehead~%
4347         \def\H@old@thehead{\hfil}%
4348     \fi
4349     \ifHy@texht
4350         \def\@thehead{}%
4351     \else
4352         \ifHy@seminarslides
4353             \begingroup
4354                 \let\leavevmode\relax
4355                 \Hy@TempPageAnchor\relax
4356                 \hyper@pagetransition
4357                 \hyper@pageduration
4358                 \hyper@pagehidden
4359             \endgroup
4360         \else
4361             \def\@thehead{%
4362                 \Hy@TempPageAnchor\relax
4363                 \hyper@pagetransition
4364                 \hyper@pageduration
4365                 \hyper@pagehidden
4366                 \H@old@thehead
4367             }%
4368         \fi
4369     \fi
4370     \ifx\PDF@FinishDoc\@empty
4371     \else
4372         \PDF@FinishDoc
4373         \gdef\PDF@FinishDoc{}%
4374     \fi
4375 }

```

## 38 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.

```

4376 \begingroup\expandafter\expandafter\expandafter\endgroup
4377 \expandafter\ifx\csname chapter\endcsname\relax
4378     \def\toclevel@part{0}
4379 \else
4380     \def\toclevel@part{-1}
4381 \fi
4382 \def\toclevel@chapter{0}
4383 \def\toclevel@section{1}
4384 \def\toclevel@subsection{2}

```

```

4385 \def\toclevel@subsubsection{3}
4386 \def\toclevel@paragraph{4}
4387 \def\toclevel@subparagraph{5}
4388 \def\toclevel@figure{0}
4389 \def\toclevel@table{0}
4390 \@ifpackageloaded{listings}{%
4391   \providecommand*\theHlstlisting{\thelstlisting}%
4392   \providecommand*\toclevel@lstlisting{0}%
4393 }{}
4394 \@ifpackageloaded{listing}{%
4395   \providecommand*\theHlisting{\thelisting}%
4396   \providecommand*\toclevel@listing{0}%
4397 }{}
4398 \def\addcontentsline#1#2#3{% toc extension, type, tag
4399   \begingroup
4400     \let\label\@gobble
4401     \let\textlatin\@firstofone
4402     \ifx\@currentHref\@empty
4403       \Hy@Warning{%
4404         No destination for bookmark of \string\addcontentsline,%
4405         \MessageBreak destination is added%
4406       }%
4407     \phantomsection
4408   \fi
4409   \expandafter\ifx\csname toclevel@#2\endcsname\relax
4410     \begingroup
4411       \def\Hy@tempa{#1}%
4412       \ifx\Hy@tempa\Hy@bookmarkstype
4413         \Hy@WarningNoLine{bookmark level for unknown #2 defaults to 0}%
4414       \else
4415         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
4416       \fi
4417     \endgroup
4418     \expandafter\gdef\csname toclevel@#2\endcsname{0}%
4419   \fi
4420   \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
4421   \Hy@writebookmark{\csname the#2\endcsname}%
4422     {#3}%
4423     {\@currentHref}%
4424     {\Hy@toclevel}%
4425     {#1}%
4426   \ifHy@verbose
4427     \def\Hy@tempa{#3}%
4428     \@onelevel@sanitize\Hy@tempa
4429     \typeout{pdftex: bookmark at \the\inputlineno:
4430       {\csname the#2\endcsname}
4431       {\Hy@tempa}
4432       {\@currentHref}%
4433       {\Hy@toclevel}%
4434       {#1}%
4435     }%
4436   \fi
4437   \addtocontents{#1}{%
4438     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
4439   }%
4440 \endgroup
4441 }

```

```

4442 \def\contentsline#1#2#3#4{%
4443   \ifx\#4\%
4444     \csname l@#1\endcsname{#2}{#3}%
4445   \else
4446     \ifHy@linktocpage
4447       \csname l@#1\endcsname{#2}{#3}%
4448       \hyper@linkstart{link}{#4}{#3}\hyper@linkend
4449     }%
4450   \else
4451     \csname l@#1\endcsname{%
4452       \hyper@linkstart{link}{#4}{#2}\hyper@linkend
4453     }{#3}%
4454   \fi
4455 \fi
4456 }

4457 \</package>
4458 \<*check>
4459 \checklatex
4460 \checkcommand\def\addcontentsline#1#2#3{%
4461   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
4462 }
4463 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
4464 \</check>
4465 \<*package>

```

## 39 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.

```

4466 \let\H@definecounter\@definecounter
4467 \def\@definecounter#1{%
4468   \H@definecounter{#1}%
4469   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
4470 }

```

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.

```

4471 \let\H@newctr\@newctr
4472 \def\@newctr#1[#2]{%
4473   \H@newctr#1[#2]%
4474   \expandafter\def\csname theH#1\endcsname{%
4475     \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
4476   }%
4477 }

```

## 40 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.

```

4478 \let\Hmake@df@tag@@\make@df@tag@@
4479 \def\make@df@tag@@#1{%

```



```

4480 \Hmake@df@tag@@{#1}%
4481 \Hy@GlobalStepCount\Hy@linkcounter
4482 \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4483 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4484 }
4485 \let\Hmake@df@tag@@\make@df@tag@@
4486 \def\make@df@tag@@#1{%
4487 \Hmake@df@tag@@{#1}%
4488 \Hy@GlobalStepCount\Hy@linkcounter
4489 \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4490 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4491 }

```

Only play with `\seteqlebal` if we are using pdf<sub>tex</sub>. Other drivers cause problems; requested by Michael Downes (AMS).

```

4492 \@ifpackagewith{hyperref}{pdftex}{%
4493 \let\H@seteqlabel\@seteqlabel
4494 \def\@seteqlabel#1{%
4495 \H@seteqlabel{#1}%
4496 \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4497 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4498 }%
4499 }{}

```

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}}}

```

#### 40.1 `\@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.

```

4500 \let\HyOrg@addtoreset\@addtoreset
4501 \def\@addtoreset#1#2{%
4502 \HyOrg@addtoreset{#1}{#2}%
4503 \expandafter\xdef\csname theH#1\endcsname{%
4504 \expandafter\noexpand
4505 \csname the\ifundefined{theH#2}{H#2}\endcsname
4506 .\noexpand\the\noexpand\value{#1}%
4507 }%
4508 }

```

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

```

4509 </package>
4510 <*check>
4511 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
4512 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
4513 \ifundefined{c@#2}{\nocounterr{#2}}{%
4514 \ifundefined{c@#3}{\nocnterr{#3}}{%
4515 \@addtoreset{#2}{#3}%

```

```

4516 \exp\edef\csname the#2\endcsname{%
4517 \exp\@nx\csname the#3\endcsname .\@nx#1{#2}%
4518 }%
4519 }%
4520 }%
4521 }%
4522 \check)
4523 \*package)
4524 \ifpackageloaded{amsmath}{%
4525 \ifpackagelater{amsmath}{1999/12/14}{%
4526 \renewcommand*{\numberwithin}[3][\arabic]{%
4527 \ifundefined{c@#2}{\nocounterr{#2}}{%
4528 \ifundefined{c@#3}{\nocnterr{#3}}{%
4529 \HyOrg@addtoreset{#2}{#3}%
4530 \exp\edef\csname the#2\endcsname{%
4531 \exp\@nx\csname the#3\endcsname .\@nx#1{#2}%
4532 }%
4533 \exp\edef\csname theH#2\endcsname{%
4534 \exp\@nx
4535 \csname the\ifundefined{theH#3}{H#3\endcsname
4536 .\@nx#1{#2}%
4537 }%
4538 }%
4539 }%
4540 }%
4541 }{%
4542 \Hy@WarningNoLine{%
4543 \string\numberwithin\space of package ‘amsmath’
4544 only fixed\MessageBreak
4545 for version 2000/06/06 v2.12 or newer%
4546 }%
4547 }
4548 }{}

```

## 41 Included figures

Simply intercept the low level graphics package macro.

```

4549 \ifHy@figures
4550 \let\Hy@Gin@setfile\Gin@setfile
4551 \def\Gin@setfile#1#2#3{%
4552 \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
4553 }
4554 \fi
4555 \Hy@DisableOption{hyperfigures}

```

## 42 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.

```

4556 \ifHy@hyperindex
4557   \def\HyInd@ParenLeft{()}%
4558   \def\HyInd@ParenRight{()}%
4559   \Hy@nextfalse
4560   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
4561   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
4562   \begingroup
4563     \lccode'\|=\expandafter'\HyInd@EncapChar\relax
4564   \lowercase{\endgroup
4565     \ifHy@next
4566       \let\HyInd@org@wrindex\@wrindex
4567       \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
4568       \def\HyInd@@wrindex#1#2|#3|#4\{\%
4569         \ifx\|#3\%
4570           \HyInd@org@wrindex{#1}{#2|hyperpage}%
4571         \else
4572           \def\Hy@temp@A{#3}%
4573           \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4574             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4575             \relax
4576           \HyInd@org@wrindex{#1}{#2|#3}%
4577         \else
4578           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
4579         \fi
4580       \fi
4581     }%
4582   \else
4583     \def\@wrindex#1{\@@wrindex#1||\}%
4584     \def\@@wrindex#1|#2|#3\{\%
4585       \if@files
4586         \ifx\|#2\%
4587           \protected@write\@indexfile{}\%
4588             \string\indexentry{#1|hyperpage}{\thepage}%
4589           }%
4590       \else
4591         \def\Hy@temp@A{#2}%
4592         \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4593           \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4594           \relax
4595         \protected@write\@indexfile{}\%
4596           \string\indexentry{#1|#2}{\thepage}%
4597         }%
4598       \else
4599         \protected@write\@indexfile{}\%
4600           \string\indexentry{#1|#2hyperpage}{\thepage}%
4601         }%
4602       \fi
4603     \fi
4604   \fi
4605   \endgroup
4606   \@esphack
4607 }%
4608 \fi
4609 }%
4610 \fi

```

```

4611 \Hy@DisableOption{hyperindex}
4612 \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.

```

4613 \def\hyperpage#1{\@hyperpage#1----\}
4614 \def\@hyperpage#1--#2--#3\{\%
4615   \ifx\#2\%
4616     \@commahyperpage{#1}%
4617   \else
4618     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
4619   \fi
4620 }
4621 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
4622 \def\@commahyperpage#1, #2,#3\{\%
4623   \ifx\#2\%
4624     \HyInd@pagelink{#1}%
4625   \else
4626     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
4627   \fi
4628 }

```

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

```

4629 \def\HyInd@pagelink#1{\%
4630   \begingroup
4631     \toks@={}%
4632     \HyInd@removespaces#1 \@nil
4633   \endgroup
4634 }
4635 \def\HyInd@removespaces#1 #2\@nil{\%
4636   \toks@=\expandafter{\the\toks@#1}%
4637   \ifx\#2\%
4638     \edef\x{\the\toks@}%
4639     \ifx\x\@empty
4640     \else
4641       \hyperlink{page.\the\toks@}{\the\toks@}%
4642     \fi
4643   \else
4644     \Hy@ReturnAfterFi{\%
4645       \HyInd@removespaces#2\@nil
4646     }%
4647   \fi
4648 }

```

## 43 Compatibility with foiltex

```

4649 \@ifclassloaded{foils}{\%
4650   \providecommand*\ext@table{lot}%
4651   \providecommand*\ext@figure{lof}%
4652 }{}

```

## 44 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)).

```

4653 \@ifclassloaded{seminar}{\%

```

```

4654 \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}%
4655 }{%
4656 \Hy@seminarslidesfalse
4657 }
4658 \@ifpackageloaded{slidesec}{%
4659 \newcommand\theHslidesection {\arabic{slidesection}}%
4660 \newcommand\theHslidesubsection{%
4661 \theHslidesection.\arabic{slidesubsection}}%
4662 }%
4663 \def\slide@heading[#1]#2{%
4664 \H@refstepcounter{slidesection}%
4665 \@addtoreset{slidesubsection}{slidesection}%
4666 \addtocontents{los}{%
4667 \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
4668 {\@SCTR}{slideheading.\theslide\theslide\theslide}}%
4669 }%
4670 \def\Hy@tempa{#2}%
4671 \ifx\Hy@tempa\@empty
4672 \else
4673 {%
4674 \edef\@currentlabel{%
4675 \csname p@slidesection\endcsname\theslide\theslide\theslide}
4676 }%
4677 \makeslideheading{#2}%
4678 }%
4679 \fi
4680 \gdef\theslideheading{#1}%
4681 \gdef\theslidesubheading{}%
4682 \ifHy@bookmarksnumbered
4683 \def\Hy@slidetitle{\theslide\theslide\theslide\space #1}%
4684 \else
4685 \def\Hy@slidetitle{#1}%
4686 \fi
4687 \ifHy@hypertextnames
4688 \ifHy@naturalnames
4689 \hyper@@anchor{slideheading.\theslide\theslide\theslide}{\relax}%
4690 \Hy@writebookmark
4691 {\theslide\theslide\theslide}%
4692 {\Hy@slidetitle}%
4693 {slideheading.\theslide\theslide\theslide}%
4694 {1}%
4695 {toc}%
4696 \else
4697 \hyper@@anchor{slideheading.\theHslide\theslide\theslide}{\relax}%
4698 \Hy@writebookmark
4699 {\theslide\theslide\theslide}%
4700 {\Hy@slidetitle}%
4701 {slideheading.\theHslide\theslide\theslide}%
4702 {1}%
4703 {toc}%
4704 \fi
4705 \else
4706 \Hy@GlobalStepCount\Hy@linkcounter
4707 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
4708 \Hy@writebookmark
4709 {\theslide\theslide\theslide}%
4710 {\Hy@slidetitle}%

```

```

4711         {slideheading.\the\Hy@linkcounter}%
4712         {1}%
4713         {toc}%
4714     \fi
4715 }%
4716 \def\slide@subheading[#1]#2{%
4717     \H@refstepcounter{slidesubsection}%
4718     \addtocontents{los}{%
4719         \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
4720         {\@SCTR}{slideheading.\theslidesubsection}%
4721     }%
4722     \def\Hy@tempa{#2}%
4723     \ifx\Hy@tempa\@empty
4724     \else
4725     {%
4726         \edef\@currentlabel{%
4727             \csname p@slidesubsection\endcsname\theslidesubsection
4728         }%
4729         \makeslidesubheading{#2}%
4730     }%
4731     \fi
4732     \gdef\theslidesubheading{#1}%
4733     \ifHy@bookmarksnumbered
4734         \def\Hy@slidetitle{\theslidesubsection\space #1}%
4735     \else
4736         \def\Hy@slidetitle{#1}%
4737     \fi
4738     \ifHy@hypertextnames
4739         \ifHy@naturalnames
4740             \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
4741             \Hy@writebookmark
4742                 {\theslidesubsection}%
4743                 {\Hy@slidetitle}%
4744                 {slideheading.\theslidesubsection}%
4745                 {2}%
4746                 {toc}%
4747         \else
4748             \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
4749             \Hy@writebookmark
4750                 {\theslidesubsection}%
4751                 {\Hy@slidetitle}%
4752                 {slideheading.\theHslidesubsection}%
4753                 {2}%
4754                 {toc}%
4755         \fi
4756     \else
4757         \Hy@GlobalStepCount\Hy@linkcounter
4758         \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
4759         \Hy@writebookmark
4760             {\theslidesubsection}%
4761             {\Hy@slidetitle}%
4762             {slideheading.\the\Hy@linkcounter}%
4763             {1}%
4764             {toc}%
4765     \fi
4766 }%
4767 \providecommand*{\listslidenam}{List of Slides}%

```

```

4768 \def\listofslides{%
4769   \section*{%
4770     \listslideiname
4771     \@mkboth{%
4772       \expandafter\MakeUppercase\listslideiname
4773     }{%
4774       \expandafter\MakeUppercase\listslideiname
4775     }%
4776   }%
4777   \def\l@slide##1##2##3##4{%
4778     \slide@undottedcline{%
4779       \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
4780     }{%
4781     }%
4782     \let\l@subslide\l@slide
4783     \@startlos
4784   }%
4785   \def\slide@contents{%
4786     \def\l@slide##1##2##3##4{%
4787       \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
4788     }%
4789     \let\l@subslide\@gobblefour
4790     \@startlos
4791   }%
4792   \def\Slide@contents{%
4793     \def\l@slide##1##2##3##4{%
4794       \ifcase\lslide@flag
4795         \message{##1 ** \the\c@slidesection}%
4796         \ifnum##1>\c@slidesection
4797           \def\lslide@flag{1}%
4798           {%
4799             \large
4800             \slide@ccline{%
4801               \slidenumberline{$\rightarrow\bullet$}%
4802               {\hyperlink{##4}{##2}}}%
4803             }{##3}%
4804           }%
4805         \else
4806           {%
4807             \large
4808             \slide@ccline{%
4809               \slidenumberline{$\surd\;\bullet$}%
4810               {\hyperlink{##4}{##2}}}%
4811             }{##3}%
4812           }%
4813         \fi
4814       \or
4815       \def\lslide@flag{2}%
4816       {%
4817         \large
4818         \slide@ccline{%
4819           \slidenumberline{$\bullet$}%
4820           {\hyperlink{##4}{##2}}}%
4821         }{##3}%
4822       }%
4823     \or
4824     {%

```

```

4825         \large
4826         \slide@ccline{%
4827             \slidenumberline{$\bullet$}%
4828             {\hyperlink{##4}{##2}}%
4829         }{##3}%
4830     }%
4831     \fi
4832 }%
4833 \def\l@subslide##1##2##3##4{%
4834     \ifnum\lslide@flag=1
4835         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
4836     \fi
4837 }%
4838 \def\lslide@flag{0}%
4839 \@startlos
4840 }%
4841 }{}

```

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.)

```

4842 \ifHy@texht
4843     \expandafter\endinput
4844 \fi
4845 \let\real@setref\@setref
4846 \def\@setref#1#2#3{% csname, extract group, refname
4847     \ifx#1\relax
4848         \protect\G@refundefinedtrue
4849         \nfss@text{\reset@font\bfseries ??}%
4850         \@latex@warning{%
4851             Reference ‘#3’ on page \thepage \space undefined%
4852         }%
4853     \else
4854         \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
4855     \fi
4856 }

```

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

```

4857 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
4858     \begingroup
4859     \toks0={\hyper@@link{#5}{#4}}%
4860     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
4861     \edef\x{\endgroup
4862         \the\toks0 {\the\toks1 }%
4863     }%
4864     \x
4865 }
4866 \def\@pagesetref#1#2#3{% csname, extract macro, ref
4867     \ifx#1\relax
4868         \protect\G@refundefinedtrue
4869         \nfss@text{\reset@font\bfseries ??}%
4870         \@latex@warning{%
4871             Reference ‘#3’ on page \thepage \space undefined%
4872         }%
4873     \else
4874         \protect\hyper@@link
4875         {\expandafter\@fifthoffive#1}%

```



```

4876     {page.\expandafter\@secondoffive#1}%
4877     {\expandafter\@secondoffive#1}%
4878   \fi
4879 }

4880 \</package>
4881 \<*check>
4882 \checklatex
4883 \checkcommand\def\@setref#1#2#3{%
4884   \ifx#1\relax
4885     \protect\G@refundefinedtrue
4886     \nfss@text{\reset@font\bfseries ??}%
4887     \@latex@warning{%
4888       Reference ‘#3’ on page \thepage\space undefined%
4889     }%
4890   \else
4891     \expandafter#2#1\null
4892   \fi
4893 }
4894 \</check>
4895 \<*package>

```

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

```

4896 \def\@refstar#1{%
4897   \@safe@activestru
4898   \expandafter\real@setref\csname r@#1\endcsname\@firstoffive{#1}%
4899   \@safe@activesfalse
4900 }
4901 \def\@pagerefstar#1{%
4902   \@safe@activestru
4903   \expandafter\real@setref\csname r@#1\endcsname\@secondoffive{#1}%
4904   \@safe@activesfalse
4905 }
4906 \DeclareRobustCommand\autoref[1]{%
4907   \@safe@activestru
4908   \expandafter\auto@setref\csname r@#1\endcsname\@firstoffive{#1}%
4909   \@safe@activesfalse
4910 }
4911 \def\auto@setref#1#2#3{% csname, extract group, refname
4912   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
4913     \edef\@thisref{\expandafter\@fourthoffive#1\@empty\@empty}%
4914     \expandafter\test@reftype\@thisref\%
4915     \hyper@link
4916     {\expandafter\@fifthoffive#1}%
4917     {\expandafter\@fourthoffive#1\@empty\@empty}%
4918     {\@currentHtag\expandafter#2#1\@empty\@empty\null}%
4919   \else
4920     \protect\G@refundefinedtrue
4921     \nfss@text{\reset@font\bfseries ??}%
4922     \@latex@warning{%
4923       Reference ‘#3’ on page \thepage \space undefined%
4924     }%
4925   \fi
4926 }
4927 \def\test@reftype#1.#2\{%
4928   \@ifundefined{#1autorefname}{%
4929     \@ifundefined{#1name}{%

```

```

4930     \def\@currentHtag{}%
4931     \@latex@warning{no tag name for #1 at \the\inputlineno}%
4932   }{%
4933     \def\@currentHtag{\csname#1name\endcsname~}%
4934   }%
4935 }{%
4936   \def\@currentHtag{\csname#1autorefname\endcsname~}%
4937 }%
4938 }
4939 \def\@currentHtag{}

Defaults for the names that \autoref uses.

4940 \providecommand\AMSautorefname{\equationautorefname}
4941 \providecommand\Hfootnoteautorefname{\footnoteautorefname}
4942 \providecommand\Itemautorefname{\itemautorefname}
4943 \providecommand\itemautorefname{item}
4944 \providecommand\equationautorefname{Equation}
4945 \providecommand\footnoteautorefname{footnote}
4946 \providecommand\itemautorefname{item}
4947 \providecommand\figureautorefname{Figure}
4948 \providecommand\tableautorefname{Table}
4949 \providecommand\partautorefname{Part}
4950 \providecommand\appendixautorefname{Appendix}
4951 \providecommand\chapterautorefname{chapter}
4952 \providecommand\sectionautorefname{section}
4953 \providecommand\subsectionautorefname{subsection}
4954 \providecommand\subsubsectionautorefname{subsubsection}
4955 \providecommand\paragraphautorefname{paragraph}
4956 \providecommand\subparagraphautorefname{subparagraph}
4957 \providecommand\FancyVerbLineautorefname{line}
4958 \providecommand\theoremautorefname{Theorem}
4959 </package>

```

## 45 Configuration files

### 45.1 PS/PDF strings

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

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

```

4960 <*pdfTex | dvipdfm | vtex | pdfmarkbase | dviwindo>
4961 \begingroup\expandafter\expandafter\expandafter\endgroup
4962 \expandafter\ifx\csname pdfescapestring\endcsname\relax
4963   \begingroup
4964     \catcode'\|=0 %
4965     \makeother\| %
4966   \@firstofone{ \endgroup
4967     |def|Hy@pstringdef#1#2{%
4968       |edef#1{#2}%
4969       |@onelevel@sanitize#1%
4970       |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
4971       |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil)%

```

```

4972     |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
4973   }%
4974   |def|Hy@ExchangeBackslash#1\#2|@nil{%
4975     #1%
4976     |ifx|\#2|\%
4977     |else
4978       \\\%
4979       |Hy@ReturnAfterFi{%
4980       |Hy@ExchangeBackslash#2|@nil
4981     }%
4982   |fi
4983 }%
4984 }
4985 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
4986   #1%
4987   \ifx\\#2\\%
4988   \else
4989     \@backslashchar(%
4990     \Hy@ReturnAfterFi{%
4991     \Hy@ExchangeLeftParenthesis#2\@nil
4992   }%
4993   \fi
4994 }
4995 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
4996   #1%
4997   \ifx\\#2\\%
4998   \else
4999     \@backslashchar)%
5000     \Hy@ReturnAfterFi{%
5001     \Hy@ExchangeRightParenthesis#2\@nil
5002   }%
5003   \fi
5004 }
5005 \else
5006   \def\Hy@pstringdef#1#2{%
5007     \edef#1{\pdfescapestring{#2}}%
5008   }%
5009 \fi
5010 </pdfTeX | dvipdfm | vtex | pdfmarkbase | dviwindo>

```

## 45.2 pdfTeX

```
5011 <*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.

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

```

5012 \def\setpdflinkmargin#1{\pdflinkmargin#1}
5013 \ifx\pdfstartlink\@undefined% less than version 14
5014   \let\pdfstartlink\pdfannotlink
5015   \let\pdflinkmargin\@tempdima
5016   \let\pdfxform\pdfform
5017   \let\pdflastxform\pdfastform
5018   \let\pdfrefxform\pdfrefform
5019 \else
5020   \pdflinkmargin1pt

```

5021 \fi

First set up the default linking

5022 \providecommand\@pdfview{XYZ}

First define the anchors:

5023 \def\new@pdflink#1{%

5024 \ifHy@verbose

5025 \typeout{pdftex: define anchor at line \the\inputlineno: #1}%

5026 \fi

5027 \Hy@SaveLastskip

5028 \Hy@pstringdef\Hy@pstringDest{#1}%

5029 \Hy@DestName\Hy@pstringDest\@pdfview

5030 \Hy@RestoreLastskip

5031 }

5032 \let\pdf@endanchor\@empty

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

5033 \def\Hy@DestName#1#2{%

5034 \pdfdest name{#1}#2\relax

5035 }

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.

5036 \providecommand\@pdfborder{0 0 1}

5037 \providecommand\*\@pdfborderstyle{}

5038 \def\Hy@undefinedname{UNDEFINED}

5039 \def\find@pdflink#1#2{%

5040 \leavevmode

5041 \protected@edef\Hy@testname{#2}%

5042 \ifx\Hy@testname\@empty

5043 \let\Hy@testname\Hy@undefinedname

5044 \else

5045 \Hy@pstringdef\Hy@testname\Hy@testname

5046 \fi

5047 \Hy@StartlinkName{%

5048 \Hy@setpdfborder

5049 /H\@pdfhighlight

5050 /C[\CurrentBorderColor]%

5051 }\Hy@testname

5052 \expandafter\Hy@colorlink\csname @#1color\endcsname

5053 }

5054 \def\Hy@StartlinkName#1#2{%

5055 \pdfstartlink attr{#1}goto name{#2}\relax

5056 }

5057 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}

5058 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}

5059 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}

5060 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}

5061 \def\hyper@linkstart#1#2{%

5062 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%

5063 \find@pdflink{#1}{#2}}

5064 \def\hyper@linkend{\close@pdflink}

5065 \def\hyper@link#1#2#3{%

5066 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%

5067 \find@pdflink{#1}{#2}#3\close@pdflink

```

5068 }
5069 \def\CurrentBorderColor{\@linkbordercolor}
5070 \def\hyper@linkurl#1#2{%
5071   \begingroup
5072     \Hy@pstringdef\Hy@pstringURI{#2}%
5073     \hyper@chars
5074     \leavevmode
5075     \pdfstartlink
5076     attr{%
5077       \Hy@setpdfborder
5078       /H\@pdfhighlight
5079       /C[\@urlbordercolor]%
5080     }%
5081     user{%
5082       /Subtype/Link%
5083       /A<<%
5084       /Type/Action%
5085       /S/URI%
5086       /URI(\Hy@pstringURI)%
5087     >>%
5088     }%
5089     \relax
5090     \Hy@colorlink\@urlcolor#1%
5091     \close@pdflink
5092   \endgroup
5093 }
5094 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
5095   \begingroup
5096     \Hy@pstringdef\Hy@pstringF{#2}%
5097     \Hy@pstringdef\Hy@pstringD{#3}%
5098     \leavevmode
5099     \pdfstartlink
5100     attr{%
5101       \Hy@setpdfborder
5102       /H\@pdfhighlight
5103       /C[\@filebordercolor]%
5104     }%
5105     user {%
5106       /Subtype/Link%
5107       /A<<%
5108       /F(\Hy@pstringF)%
5109       /S/GoToR%
5110       \ifHy@newwindow /NewWindow true\fi

```

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}

```

```

5111     \ifx\#3\%
5112       /D[0 \@pdfstartview]%
5113     \else

```

```

5114         /D(\Hy@pstringD)%
5115     \fi
5116     >>%
5117 }%
5118 \relax
5119 \Hy@colorlink\@filecolor#1%
5120 \close@pdflink
5121 \endgroup
5122 }
5123 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
5124 \begingroup
5125 \Hy@pstringdef\Hy@pstringF{#1}%
5126 \Hy@pstringdef\Hy@pstringP{#3}%
5127 \leavevmode
5128 \pdfstartlink
5129 attr{%
5130 \Hy@setpdfborder
5131 /H\@pdfhighlight
5132 /C[\@runbordercolor]%
5133 }%
5134 user {%
5135 /Subtype/Link%
5136 /A<<%
5137 /F(\Hy@pstringF)%
5138 /S/Launch%
5139 \ifHy@newwindow /NewWindow true\fi
5140 \ifx\#3\%
5141 \else
5142 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
5143 \fi
5144 >>%
5145 }%
5146 \relax
5147 \Hy@colorlink\@filecolor#2%
5148 \close@pdflink
5149 \endgroup
5150 }

```

\@pdfproducer

```

5151 \ifx\@pdfproducer\relax
5152 \def\@pdfproducer{pdfTeX}
5153 \ifx\@pdfproducer\@undefined
5154 \else
5155 \ifx\@pdfproducer\relax
5156 \else
5157 \ifnum\@pdfproducer>0 %
5158 \def\@pdfproducer{pdfTeX}
5159 \fi
5160 \fi
5161 \fi
5162 \ifx\@pdfproducer\@undefined
5163 \else
5164 \ifnum\@pdfproducer<100 %
5165 \edef\@pdfproducer{%
5166 \@pdfproducer
5167 \the\@pdfproducer.\@pdfproducerrevision
5168 }

```

```

5169 \else
5170 \ifnum\pdfTeXversion<130 %
5171 \edef\@pdfproducer{%
5172 \@pdfproducer-%
5173 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
5174 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
5175 \pdfTeXrevision
5176 }
5177 \else
5178 \edef\@pdfproducer{%
5179 \@pdfproducer-%
5180 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
5181 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
5182 \pdfTeXrevision
5183 }%
5184 \fi
5185 \fi
5186 \fi
5187 \fi

```

\PDF@SetupDox

```

5188 \def\PDF@SetupDoc{%
5189 \ifx\@pdfpagescrop\@empty
5190 \else
5191 \edef\process@me{%
5192 \pdfpagesattr={%
5193 /CropBox[\@pdfpagescrop]%
5194 \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
5195 \else
5196 ^^J\the\pdfpagesattr
5197 \fi
5198 }%
5199 }%
5200 \process@me
5201 \fi
5202 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
5203 \pdfcatalog{%
5204 /PageMode\@pdfpagemode
5205 \ifx\@baseurl\@empty
5206 \else
5207 /URI<</Base(\Hy@pstringB)>>%
5208 \fi
5209 }%
5210 \ifx\@pdfstartview\@empty
5211 \else
5212 openaction goto page \@pdfstartpage {\@pdfstartview}%
5213 \fi
5214 \edef\Hy@temp{%
5215 \ifHy@toolbar\else /HideToolbar true\fi
5216 \ifHy@menubar\else /HideMenubar true\fi
5217 \ifHy>windowui\else /HideWindowUI true\fi
5218 \ifHy@fitwindow /FitWindow true\fi
5219 \ifHy@centerwindow /CenterWindow true\fi
5220 \ifHy@displaydoctitle /DisplayDocTitle true\fi
5221 \ifx\@pdfnonfullscreenpagemode\@empty
5222 \else
5223 /NonFullScreenPageMode\@pdfnonfullscreenpagemode

```

```

5224     \fi
5225   }%
5226   \pdfcatalog{%
5227     \ifx\Hy@temp\@empty
5228     \else
5229       /ViewerPreferences<<\Hy@temp>>%
5230     \fi
5231     \ifx\pdf@pagelayout\@empty
5232     \else
5233       /PageLayout/\pdf@pagelayout
5234     \fi
5235   }%
5236 }

```

\PDF@FinishDoc

```

5237 \def\PDF@FinishDoc{%
5238   \Hy@UseMaketitleInfos
5239   \pdfinfo{%
5240     /Author(\@pdfauthor)%
5241     /Title(\@pdftitle)%
5242     /Subject(\@pdfsubject)%
5243     /Creator(\@pdfcreator)%
5244     \ifx\@pdfcreationdate\@empty
5245     \else
5246       /CreationDate(\@pdfcreationdate)%
5247     \fi
5248     \ifx\@pdfmoddate\@empty
5249     \else
5250       /ModDate(\@pdfmoddate)%
5251     \fi
5252     \ifx\@pdfproducer\relax
5253     \else
5254       /Producer(\@pdfproducer)%
5255     \fi
5256     /Keywords(\@pdfkeywords)%
5257   }%
5258   \Hy@DisableOption{pdfauthor}%
5259   \Hy@DisableOption{pdftitle}%
5260   \Hy@DisableOption{pdfsubject}%
5261   \Hy@DisableOption{pdfcreator}%
5262   \Hy@DisableOption{pdfcreationdate}%
5263   \Hy@DisableOption{pdfmoddate}%
5264   \Hy@DisableOption{pdfproducer}%
5265   \Hy@DisableOption{pdfkeywords}%
5266 }

```

\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.

```

5267 \def\hyper@pagetransition{%
5268   \ifx\@pdfpagetransition\relax
5269   \else
5270     \expandafter\Hy@RemoveTransPageAttr\the\pdfpageattr^^J/Trans{}>>\END
5271     \ifx\@pdfpagetransition\@empty
5272     \else
5273       \edef\@processme{%
5274         \global\pdfpageattr{%

```



```

5275         \the\pdfpageattr
5276         ^^J/Trans << /S /\@pdfpagetransition\space >>%
5277     }%
5278 }%
5279     \@processme
5280 \fi
5281 \fi
5282 }

```

**\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.

```

5283 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
5284     \ifx\#2\%
5285         \global\pdfpageattr{#1}%
5286     \else
5287         \Hy@RemoveTransPageAttr#1#4\END
5288     \fi
5289 }

```

**\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`.

```

5290 \def\hyper@pageduration{%
5291     \ifx\@pdfpageduration\relax
5292     \else
5293         \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{ } \END
5294         \ifx\@pdfpageduration\@empty
5295         \else
5296             \edef\@processme{%
5297                 \global\pdfpageattr{%
5298                     \the\pdfpageattr
5299                     ^^J/Dur \@pdfpageduration\space
5300                 }%
5301             }%
5302             \@processme
5303         \fi
5304     \fi
5305 }

```

**\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.

```

5306 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
5307     \ifx\#2\%
5308         \global\pdfpageattr{#1}%
5309     \else
5310         \Hy@RemoveDurPageAttr#1#4\END
5311     \fi
5312 }

```

**\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).

```

5313 \def\hyper@pagehidden{%
5314   \ifHy@useHidKey
5315     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
5316   \ifHy@pdfpagehidden
5317     \edef\@processme{%
5318       \global\pdfpageattr{%
5319         \the\pdfpageattr
5320         ^^J/Hid true % SPACE
5321       }%
5322     }%
5323   \@processme
5324 \fi
5325 \fi
5326 }

```

`\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.

```

5327 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
5328   \ifx\#2\%
5329     \global\pdfpageattr{#1}%
5330   \else
5331     \Hy@RemoveHidPageAttr#1#4\END
5332   \fi
5333 }

```

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.

```

5334 \pdfoutput=1
5335 \pdfcompresslevel=9
5336 \AtBeginDocument{%
5337   \ifHy@setpagesize
5338     \expandafter\@firstofone
5339   \else
5340     \expandafter\@gobble
5341   \fi
5342   {%
5343     \@ifclassloaded{seminar}{%
5344       \setlength{\pdfhorigin}{1truein}%
5345       \setlength{\pdfvorigin}{1truein}%
5346     \ifportrait
5347       \ifdim\paperwidth=\z@
5348       \else
5349         \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
5350       \fi
5351       \ifdim\paperheight=\z@
5352       \else
5353         \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
5354       \fi
5355     \else
5356       \ifdim\paperheight=\z@
5357       \else
5358         \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
5359       \fi
5360       \ifdim\paperwidth=\z@
5361       \else

```

```

5362         \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
5363         \fi
5364     \fi
5365 }{%
5366     \@ifundefined{stockwidth}{%
5367         \ifdim\paperwidth=\z@
5368         \else
5369             \setlength{\pdfpagewidth}{\paperwidth}%
5370         \fi
5371         \ifdim\paperheight=\z@
5372         \else
5373             \setlength{\pdfpageheight}{\paperheight}%
5374         \fi
5375     }{%
5376         \ifdim\stockwidth=\z@
5377         \else
5378             \setlength{\pdfpagewidth}{\stockwidth}%
5379         \fi
5380         \ifdim\stockheight=\z@
5381         \else
5382             \setlength{\pdfpageheight}{\stockheight}%
5383         \fi
5384     }%
5385 }%
5386 }%
5387 \Hy@DisableOption{setpagesize}%
5388 }
5389 \def\Acrobatmenu#1#2{%
5390     \leavevmode
5391     \pdfstartlink
5392     attr{%
5393         \Hy@setpdfborder
5394         /H \@pdfhighlight
5395         /C[\@menubordercolor]%
5396     }%
5397     user{
5398         /Subtype /Link
5399         /A<<%
5400             /S/Named/N/#1%
5401         >>%
5402     }%
5403     \relax
5404     \Hy@colorlink\@menucolor#2\close@pdflink
5405 }
5406 </pdfTeX>
5407 <*hypertex>

```

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

```
5408 \def\PDF@FinishDoc{}
5409 \def\PDF@SetupDoc{%
5410   \ifx\@baseurl\@empty
5411   \else
5412     \special{html:<base href="\@baseurl">}%
5413   \fi
5414 }
5415 \def\hyper@anchor#1{%
5416   \Hy@SaveLastskip
5417   \begingroup
5418     \let\protect=\string
5419     \hyper@chars
5420     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
5421   \endgroup
5422   \Hy@activeanchortrue
5423   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5424   \special{html:</a>}%
5425   \Hy@activeanchorfalse
5426   \Hy@RestoreLastskip
5427 }
5428 \def\hyper@anchorstart#1{%
5429   \Hy@SaveLastskip
5430   \begingroup
5431     \hyper@chars
5432     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
5433   \endgroup
5434   \Hy@activeanchortrue
5435 }
5436 \def\hyper@anchorend{%
5437   \special{html:</a>}%
5438   \Hy@activeanchorfalse
5439   \Hy@RestoreLastskip
5440 }
5441 \def\@urltype{url}
5442 \def\hyper@linkstart#1#2{%
```

```

5443 \expandafter\Hy@colorlink\csname @#1color\endcsname
5444 \def\Hy@tempa{#1}%
5445 \ifx\Hy@tempa\@urltype
5446   \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
5447 \else
5448   \begingroup
5449     \hyper@chars
5450     \special{html:<a href=\hyper@quote\##2\hyper@quote>}}%
5451   \endgroup
5452 \fi
5453 }
5454 \def\hyper@linkend{%
5455   \special{html:</a>}}%
5456 \Hy@endcolorlink
5457 }
5458 \def\hyper@linkfile#1#2#3{%
5459   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}}%
5460 }
5461 \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.

```

5462 \leavevmode
5463 \ifHy@raiselinks
5464   \setbox\@tempboxa=\color@hbox #1\color@endbox
5465   \@linkdim\dp\@tempboxa
5466   \lower\@linkdim\hbox{%
5467     \hyper@chars
5468     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
5469   }%
5470   \Hy@colorlink\@urlcolor#1%
5471   \@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).

```

5472   \advance\@linkdim by -6.5\p@
5473   \raise\@linkdim\hbox{\special{html:</a>}}%
5474   \Hy@endcolorlink
5475 \else
5476   \begingroup
5477     \hyper@chars
5478     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
5479     \Hy@colorlink\@urlcolor#1%
5480     \special{html:</a>}}%
5481     \Hy@endcolorlink
5482   \endgroup
5483 \fi
5484 }
5485 \def\hyper@link#1#2#3{%
5486   \hyper@linkurl{#3}{\##2}}%
5487 }
5488 \def\hyper@image#1#2{%
5489   \begingroup
5490     \hyper@chars
5491     \special{html:<img src=\hyper@quote#1\hyper@quote>}}%

```

```

5492 \endgroup
5493 }
5494 \</hypertex>
5495 \<*dviwindo>

```

## 45.4 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, L<sup>A</sup>T<sub>E</sub>X 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.

```

5496 \providecommand\wwwbrowser{c:\string\netscape\string\netscape}
5497 \def\hyper@anchor#1{%
5498   \Hy@SaveLastskip
5499   \begingroup
5500     \let\protect=\string
5501     \special{mark: #1}%
5502   \endgroup
5503   \Hy@activeanchortrue
5504   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5505   \Hy@activeanchorfalse
5506   \Hy@RestoreLastskip
5507 }
5508 \def\hyper@anchorstart#1{%
5509   \Hy@SaveLastskip
5510   \special{mark: #1}%
5511   \Hy@activeanchortrue
5512 }
5513 \def\hyper@anchorend{%
5514   \Hy@activeanchorfalse
5515   \Hy@RestoreLastskip
5516 }
5517 \def\hyper@linkstart#1#2{%
5518   \expandafter\Hy@colorlink\csname @#1color\endcsname
5519   \special{button:
5520     10000000
5521     \number\baselineskip\space
5522     #2%
5523   }%
5524 }
5525 \def\hyper@linkend{%
5526   \Hy@endcolorlink
5527 }
5528 \def\hyper@link#1#2#3{%
5529   \setbox\@tempboxa=\color@hbox #3\color@endbox
5530   \leavevmode
5531   \ifHy@raiselinks
5532     \@linkdim\dp\@tempboxa
5533     \lower\@linkdim\hbox{%
5534       \special{button:

```

```

5535         \number\wd\@tempboxa\space
5536         \number\ht\@tempboxa\space
5537         #2%
5538     }%
5539     \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
5540     \Hy@endcolorlink
5541 }%
5542 \@linkdim\ht\@tempboxa
5543 \advance\@linkdim by -6.5\p@
5544 \raise\@linkdim\hbox{}%
5545 \else
5546     \special{button:
5547         \number\wd\@tempboxa\space
5548         \number\ht\@tempboxa\space
5549         #2%
5550     }%
5551     \exandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
5552 \fi
5553 }
5554 \def\hyper@linkurl#1#2{%
5555     \begingroup
5556     \hyper@chars
5557     \leavevmode
5558     \setbox\@tempboxa=\color@hbox #1\color@endbox
5559     \ifHy@raiselinks
5560         \@linkdim\dp\@tempboxa
5561         \lower\@linkdim\hbox{%
5562             \special{button:
5563                 \number\wd\@tempboxa\space
5564                 \number\ht\@tempboxa\space
5565                 launch: \wwwbrowser\space
5566                 #2%
5567             }%
5568             \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5569         }%
5570         \@linkdim\ht\@tempboxa
5571         \advance\@linkdim by -6.5\p@
5572         \raise\@linkdim\hbox{}%
5573     \else
5574         \special{button:
5575             \number\wd\@tempboxa\space
5576             \number\ht\@tempboxa\space
5577             launch: \wwwbrowser\space
5578             #2%
5579         }%
5580         \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5581     \fi
5582 \endgroup
5583 }
5584 \def\hyper@linkfile#1#2#3{%
5585     \begingroup
5586     \hyper@chars
5587     \leavevmode
5588     \setbox\@tempboxa=\color@hbox #1\color@endbox
5589     \ifHy@raiselinks
5590         \@linkdim\dp\@tempboxa
5591         \lower\@linkdim\hbox{%

```

```

5592         \special{button:
5593             \number\wd\@tempboxa\space
5594             \number\ht\@tempboxa\space
5595             #3,
5596             file: #2%
5597         }%
5598         \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5599     }%
5600     \@linkdim\ht\@tempboxa
5601     \advance\@linkdim by -6.5\p@
5602     \raise\@linkdim\hbox{}%
5603 \else
5604     \special{button:
5605         \number\wd\@tempboxa\space
5606         \number\ht\@tempboxa\space
5607         #3,
5608         file: #2
5609     }%
5610     \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5611 \fi
5612 \endgroup
5613 }
5614 \ifx\@pdfproducer\relax
5615 \def\@pdfproducer{dviwindo + Distiller}
5616 \fi
5617 \def\PDF@FinishDoc{%
5618     \Hy@UseMaketitleInfos
5619     \special{PDF: Keywords \@pdfkeywords}%
5620     \special{PDF: Title \@pdftitle}%
5621     \special{PDF: Creator \@pdfcreator}%
5622     \ifx\@pdfcreationdate\@empty
5623     \else
5624         \special{PDF: CreationDate \@pdfcreationdate}%
5625     \fi
5626     \ifx\@pdfmoddate\@empty
5627     \else
5628         \special{PDF: ModDate \@pdfmoddate}%
5629     \fi
5630     \special{PDF: Author \@pdfauthor}%
5631     \ifx\@pdfproducer\relax
5632     \else
5633         \special{PDF: Producer \@pdfproducer}%
5634     \fi
5635     \special{PDF: Subject \@pdfsubject}%
5636     \Hy@DisableOption{pdfauthor}%
5637     \Hy@DisableOption{pdftitle}%
5638     \Hy@DisableOption{pdfsubject}%
5639     \Hy@DisableOption{pdfcreator}%
5640     \Hy@DisableOption{pdfcreationdate}%
5641     \Hy@DisableOption{pdfmoddate}%
5642     \Hy@DisableOption{pdfproducer}%
5643     \Hy@DisableOption{pdfkeywords}%
5644 }
5645 \def\PDF@SetupDoc{%
5646     \ifx\@baseurl\@empty
5647     \else
5648         \special{PDF: Base \@baseurl}%

```



```

5649 \fi
5650 \ifx\@pdfpagescrop\@empty\else
5651   \special{PDF: BBox \@pdfpagescrop}%
5652 \fi
5653 \pdfmark{pdfmark=/DOCVIEW,
5654   Page=\@pdfstartpage,
5655   View=\@pdfstartview,
5656   PageMode=\@pdfpagemode
5657 }%
5658 \ifx\@pdfpagescrop\@empty
5659 \else
5660   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
5661 \fi
5662 \edef\Hy@temp{%
5663   \ifHy@toolbar\else /HideToolbar true\fi
5664   \ifHy@menubar\else /HideMenubar true\fi
5665   \ifHy>windowui\else /HideWindowUI true\fi
5666   \ifHy@fitwindow /FitWindow true\fi
5667   \ifHy@centerwindow /CenterWindow true\fi
5668   \ifHy@displaydoctitle /DisplayDocTitle true\fi
5669   \ifx\@pdfnonfullscreenpagemode\@empty
5670   \else
5671     /NonFullScreenPageMode\@pdfnonfullscreenpagemode
5672   \fi
5673 }%
5674 \pdfmark{pdfmark=/PUT,
5675   Raw={%
5676     \string{Catalog\string} <<
5677     \ifx\Hy@temp\@empty
5678     \else
5679       /ViewerPreferences<<\Hy@temp>>%
5680     \fi
5681     \ifx\pdf@pagelayout\@empty
5682     \else
5683       /PageLayout /\pdf@pagelayout\space
5684     \fi
5685     >>%
5686   }%
5687 }%
5688 }
5689 </dviwindo>
5690 < *dvipdfm>

```

## 45.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

5691 \newsavebox{\pdfm@box}
5692 \def\@pdfm@mark#1{\special{pdf:#1}}
5693 \def\@pdfm@dest#1{%
5694   \Hy@SaveLastskip
5695   \Hy@pstringdef\Hy@pstringDest{#1}%
5696   \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\@pdfview\space @xpos @ypos]}%
5697   \Hy@RestoreLastskip
5698 }
5699 \providecommand\@pdfview{XYZ}
5700 \providecommand\@pdfborder{0 0 1}
5701 \providecommand*\@pdfborderstyle{}

```

```

5702 \def\hyper@anchor#1{%
5703   \@pdfm@dest{#1}%
5704 }
5705 \def\hyper@anchorstart#1{%
5706   \Hy@activeanchortrue
5707   \@pdfm@dest{#1}%
5708 }
5709 \def\hyper@anchorend{%
5710   \Hy@activeanchorfalse
5711 }
5712 \def\Hy@undefinedname{UNDEFINED}
5713 \def\hyper@linkstart#1#2{%
5714   \protected@edef\Hy@testname{#2}%
5715   \ifx\Hy@testname\@empty
5716     \let\Hy@testname\Hy@undefinedname
5717   \else
5718     \Hy@pstringdef\Hy@testname\Hy@testname
5719   \fi
5720   \@pdfm@mark{%
5721     bann <<
5722       /Type /Annot
5723       /Subtype /Link
5724       \Hy@setpdfborder
5725       /C [\csname @#1bordercolor\endcsname]
5726       /A <<
5727         /S /GoTo
5728         /D (\Hy@testname)
5729       >>
5730     >>
5731   }%
5732   \expandafter\Hy@colorlink\csname @#1color\endcsname
5733 }
5734 \def\hyper@linkend{%
5735   \Hy@endcolorlink
5736   \@pdfm@mark{eann}%
5737 }
5738 \def\hyper@link#1#2#3{%
5739   \hyper@linkstart{#1}{#2}#3\hyper@linkend
5740 }
5741 \def\hyper@linkfile#1#2#3{%
5742   \Hy@pstringdef\Hy@pstringF{#2}%
5743   \Hy@pstringdef\Hy@pstringD{#3}%
5744   \@pdfm@mark{%
5745     bann <<
5746       /Type /Annot
5747       /Subtype /Link
5748       \Hy@setpdfborder
5749       /C [\@filebordercolor]
5750       /A <<
5751         /S /GoToR
5752         /F (\Hy@pstringF)
5753         /D \ifx\@#3\@0 \pdfstartview\else(\Hy@pstringD)\fi\space
5754         \ifHy@newwindow /NewWindow true \fi
5755       >>
5756     >>%
5757   }%
5758   \Hy@colorlink\@filecolor#1\Hy@endcolorlink

```

```

5759 \pdfmark{eann}%
5760 }
5761 \def\hyper@launch run:#1\#2#3{% filename, anchor text linkname
5762 \Hy@pstringdef\Hy@pstringF{#1}%
5763 \Hy@pstringdef\Hy@pstringP{#3}%
5764 \pdfmark{%
5765     bann <<
5766         /Type /Annot
5767         /Subtype /Link
5768         \Hy@setpdfborder
5769         /C [\@filebordercolor]
5770         /A <<
5771             /S /Launch
5772             /F (\Hy@pstringF)
5773             \ifHy@newwindow /NewWindow true \fi
5774             \ifx\#3\%
5775             \else
5776                 /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
5777             \fi
5778         >>
5779     >>%
5780 }%
5781 \Hy@colorlink\@filecolor#2\Hy@endcolorlink
5782 \pdfmark{eann}%
5783 }
5784 \def\hyper@linkurl#1#2{%
5785 \Hy@pstringdef\Hy@pstringURI{#2}%
5786 \pdfmark{%
5787     bann <<
5788         /Type /Annot
5789         /Subtype /Link
5790         \Hy@setpdfborder
5791         /C [\@urlbordercolor]
5792         /A <<
5793             /S /URI
5794             /URI (\Hy@pstringURI)
5795         >>
5796     >>%
5797 }%
5798 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5799 \pdfmark{eann}%
5800 }
5801 \def\Acrobatmenu#1#2{%
5802 \pdfmark{%
5803     bann <<
5804         /Type /Annot
5805         /Subtype /Link
5806         /A <<
5807             /S /Named
5808             /N /#1
5809         >>
5810         \Hy@setpdfborder
5811         /C [\@menubordercolor]
5812     >>%
5813 }%
5814 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
5815 \pdfmark{eann}%

```

```

5816 }
5817 \ifx\pdfproducer\relax
5818   \def\pdfproducer{dvipdfm}
5819 \fi
5820 \def\PDF@FinishDoc{%
5821   \Hy@UseMaketitleInfos
5822   \@pdfm@mark{%
5823     docinfo <<
5824       /Title (\pdftitle)
5825       /Subject (\pdfsubject)
5826       /Creator (\pdfcreator)
5827       \ifx\pdfcreationdate\empty
5828       \else
5829         /CreationDate(\pdfcreationdate) %
5830       \fi
5831       \ifx\pdfmoddate\empty
5832       \else
5833         /ModDate(\pdfmoddate) %
5834       \fi
5835       /Author (\pdfauthor)
5836       \ifx\pdfproducer\relax
5837       \else
5838         /Producer (\pdfproducer)
5839       \fi
5840       /Keywords (\pdfkeywords)
5841     >>%
5842   }%
5843   \Hy@DisableOption{pdfauthor}%
5844   \Hy@DisableOption{pdftitle}%
5845   \Hy@DisableOption{pdfsubject}%
5846   \Hy@DisableOption{pdfcreator}%
5847   \Hy@DisableOption{pdfcreationdate}%
5848   \Hy@DisableOption{pdfmoddate}%
5849   \Hy@DisableOption{pdfproducer}%
5850   \Hy@DisableOption{pdfkeywords}%
5851 }
5852 \def\PDF@SetupDoc{%
5853   \edef\Hy@temp{%
5854     \ifHy@toolbar\else /HideToolbar true\fi
5855     \ifHy@menubar\else /HideMenubar true\fi
5856     \ifHy>windowui\else /HideWindowUI true\fi
5857     \ifHy@fitwindow /FitWindow true\fi
5858     \ifHy@centerwindow /CenterWindow true\fi
5859     \ifHy@displaydoctitle /DisplayDocTitle true\fi
5860     \ifx\pdfnonfullscreenpagemode\empty
5861     \else
5862       /NonFullScreenPageMode\pdfnonfullscreenpagemode
5863     \fi
5864   }%
5865   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
5866   \@pdfm@mark{%
5867     docview <<%
5868     \ifx\pdfstartview\empty
5869     \else
5870       /OpenAction[@page\pdfstartpage\pdfstartview]%
5871     \fi
5872     \ifx\@baseurl\empty

```

```

5873 \else
5874 /URI<</Base(\Hy@pstringB)>>%
5875 \fi
5876 /PageMode \@pdfpagemode
5877 \ifx\Hy@temp\@empty
5878 \else
5879 /ViewerPreferences<<\Hy@temp>>%
5880 \fi
5881 \ifx\pdf@pagelayout\@empty
5882 \else
5883 /PageLayout/\pdf@pagelayout\space
5884 \fi
5885 >>%
5886 }%
5887 \ifx\@pdfpagescrop\@empty
5888 \else
5889 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}
5890 \fi
5891 }
5892 </dvipdfm>

```

## 45.6 VTeX typesetting system

Provided by MicroPress, May 1998. They require VTeX version 6.02 or newer; see <http://www.micropress-inc.com/> for details.

```

5893 <*vtexhtml>
5894 \RequirePackage{vtexhtml}
5895 \newif\if@Localurl
5896 \def\PDF@FinishDoc{}
5897 \def\PDF@SetupDoc{%
5898 \ifx\@baseurl\@empty
5899 \else
5900 \special{!direct <base href="\@baseurl">}%
5901 \fi
5902 }
5903 \def\@urltype{url}
5904 \def\hyper@link#1#2#3{%
5905 \leavevmode
5906 \special{!direct <a href=\hyper@quote\hyper@hash#2\hyper@quote>}%
5907 #3%
5908 \special{!direct </a>}%
5909 }
5910 \def\hyper@linkurl#1#2{%
5911 \begingroup
5912 \hyper@chars
5913 \leavevmode
5914 \MathBSuppress=1\relax
5915 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
5916 #1%
5917 \MathBSuppress=0\relax
5918 \special{!direct </a>}%
5919 \endgroup
5920 }
5921 \def\hyper@linkfile#1#2#3{%
5922 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\\#3\fi}%
5923 }
5924 \def\hyper@linkstart#1#2{%

```

```

5925 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
5926   \@Localurltrue
5927   \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
5928 \else
5929   \@Localurlfalse
5930   \begingroup
5931   \hyper@chars
5932   \special{!aref #2}%
5933   \endgroup
5934 \fi
5935 }
5936 \def\hyper@linkend{%
5937   \if@Localurl
5938     \special{!endaref}%
5939   \else
5940     \special{!direct </a>}%
5941   \fi
5942 }
5943 \def\hyper@anchorstart#1{%
5944   \Hy@SaveLastskip
5945   \begingroup
5946   \hyper@chars
5947   \special{!aname #1}%
5948   \special{!direct <a name=\hyper@quote#1\hyper@quote>}%
5949   \endgroup
5950   \Hy@activeanchortrue
5951 }
5952 \def\hyper@anchorend{%
5953   \special{!direct </a>}%
5954   \Hy@activeanchorfalse
5955   \Hy@RestoreLastskip
5956 }
5957 \def\hyper@anchor#1{%
5958   \Hy@SaveLastskip
5959   \begingroup
5960   \let\protect=\string
5961   \hyper@chars
5962   \leavevmode
5963   \special{!aname #1}%
5964   \special{!direct <a name=\hyper@quote #1\hyper@quote>}%
5965   \endgroup
5966   \Hy@activeanchortrue
5967   \bgroup\anchor@spot\egroup
5968   \special{!direct </a>}%
5969   \Hy@activeanchorfalse
5970   \Hy@RestoreLastskip
5971 }
5972 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
5973 \def\@EndForm{}
5974 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
5975   \typeout{Sorry, TeXpider does not yet support FORM gauges}%
5976 }
5977 \def\@TextField[#1]#2{% parameters, label
5978   \typeout{Sorry, TeXpider does not yet support FORM text fields}%
5979 }
5980 \def\@CheckBox[#1]#2{% parameters, label
5981   \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%

```

```

5982 }
5983 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
5984 \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
5985 }
5986 \def\@PushButton[#1]#2{% parameters, label
5987 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
5988 }
5989 \def\@Reset[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
5990 \def\@Submit[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
5991 \</vtxhtml>
5992 \<vtx>

```

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.

```

5993 \ifx\mediaheight\@undefined
5994 \else
5995 \ifx\mediaheight\relax
5996 \else
5997 \ifHy@setpagesize
5998 \providecommand*\VTeXInitMediaSize{%
5999 \ifundefined{stockwidth}{%
6000 \ifdim\paperheight>0pt %
6001 \setlength\mediaheight\paperheight
6002 \fi
6003 \ifdim\paperheight>0pt %
6004 \setlength\mediawidth\paperwidth
6005 \fi
6006 }{%
6007 \ifdim\stockheight>0pt %
6008 \setlength\mediaheight\stockheight
6009 \fi
6010 \ifdim\stockwidth>0pt %
6011 \setlength\mediawidth\stockwidth
6012 \fi
6013 }%
6014 }%
6015 \AtBeginDocument{\VTeXInitMediaSize}%
6016 \fi
6017 \Hy@DisableOption{setpagesize}%
6018 \fi
6019 \fi

```

Older versions of VTeX require xyz in lower case.

```

6020 \providecommand\@pdfview{xyz}
6021 \providecommand\@pdfborder{0 0 1}
6022 \providecommand*\@pdfborderstyle{}
6023 \def\CurrentBorderColor{\@linkbordercolor}
6024 \def\hyper@anchor#1{%
6025 \Hy@SaveLastskip
6026 \begingroup
6027 \let\protect=\string
6028 \hyper@chars
6029 \special{!aname #1;\@pdfview}%
6030 \endgroup
6031 \Hy@activeanchortrue
6032 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6033 \Hy@activeanchorfalse

```

```

6034 \Hy@RestoreLastskip
6035 }
6036 \def\hyper@anchorstart#1{%
6037 \Hy@SaveLastskip
6038 \begingroup
6039 \hyper@chars
6040 \special{!aname #1;\@pdfview}%
6041 \endgroup
6042 \Hy@activeanchortrue
6043 }
6044 \def\hyper@anchorend{%
6045 \Hy@activeanchorfalse
6046 \Hy@RestoreLastskip
6047 }
6048 \def\@urltype{url}
6049 \def\Hy@undefinedname{UNDEFINED}
6050 \def\hyper@linkstart#1#2{%
6051 \Hy@pstringdef\Hy@pstringURI{#2}%
6052 \expandafter\Hy@colorlink\csname @#1color\endcsname
6053 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6054 \def\Hy@tempa{#1}%
6055 \ifx\Hy@tempa\@urltype
6056 \special{!%
6057 \a href <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6058 \a <\Hy@setpdfborder /C [\CurrentBorderColor]>%
6059 }%
6060 \else
6061 \protected@edef\Hy@testname{#2}%
6062 \ifx\Hy@testname\@empty
6063 \let\Hy@testname\Hy@undefinedname
6064 \fi
6065 \special{!%
6066 \a href \Hy@testname;%
6067 \a <\Hy@setpdfborder /C [\CurrentBorderColor]>%
6068 }%
6069 \fi
6070 }
6071 \def\hyper@linkend{%
6072 \special{!endaref}%
6073 \Hy@endcolorlink
6074 }
6075 \def\hyper@linkfile#1#2#3{%
6076 \leavevmode
6077 \special{!%
6078 \a href <%
6079 \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
6080 f=#2>#3;%
6081 \a <\Hy@setpdfborder /C [\@filebordercolor]>%
6082 }%
6083 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6084 \special{!endaref}%
6085 }
6086 \def\hyper@linkurl#1#2{%
6087 \begingroup
6088 \Hy@pstringdef\Hy@pstringURI{#2}%
6089 \hyper@chars
6090 \leavevmode

```



```

6091 \special{!%
6092   \def <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6093   a=<\Hy@setpdfborder /C [\@urlbordercolor]>%
6094   }%
6095   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6096 \special{!endaref}%
6097 \endgroup
6098 }
6099 \def\hyper@link#1#2#3{%
6100 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6101 \leavevmode
6102 \protected@edef\Hy@testname{#2}%
6103 \ifx\Hy@testname\empty
6104 \let\Hy@testname\Hy@undefinedname
6105 \fi
6106 \special{!%
6107   \def \Hy@testname;%
6108   a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6109   }%
6110 \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
6111 \special{!endaref}%
6112 }
6113 \def\hyper@image#1#2{%
6114 \hyper@linkurl{#2}{#1}%
6115 }
6116 \def\@hyper@launch run:#1\#2#3{%
6117 \Hy@pstringdef\Hy@pstringF{#1}%
6118 \Hy@pstringdef\Hy@pstringP{#3}%
6119 \leavevmode
6120 \special{!aref
6121   <u=%
6122     /Type /Action
6123     /S /Launch
6124     /F (\Hy@pstringF)
6125     \ifHy@newwindow /NewWindow true \fi
6126     \ifx\#3\else /Win << /F (\Hy@pstringF) /P (\Hy@pstringP) >> \fi%
6127   >;%
6128   a=<\Hy@setpdfborder /C [\@runbordercolor]>%
6129   }%
6130 \Hy@colorlink\@filecolor#2\Hy@endcolorlink
6131 \special{!endaref}%
6132 }
6133 \def\Acrobatmenu#1#2{%
6134 \leavevmode
6135 \special{!%
6136   \def <u=/S /Named /N /#1>;%
6137   a=<\Hy@setpdfborder /C [\@menubordercolor]>%
6138   }%
6139 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
6140 \special{!endaref}%
6141 }

```

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

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

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

```

6142 \ifnum\Hy@VTeXversion<702 %
6143 \else
6144 \def\hyper@pagetransition{%

```

```

6145 \ifx\@pdfpagetransition\relax
6146 \else
6147 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

6148 \else
6149 \hvtex@parse@trans\@pdfpagetransition
6150 \fi
6151 \fi
6152 }

```

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

Syntax of VT<sub>E</sub>X \special{!trans <transition\_effect>}:

```

<transition_effect> ::= <transition_style>[,<transition_duration>]
<transition_style> ::= <Blinds_effect> | <Box_effect> |
                        <Dissolve_effect> | <Glitter_effect> |
                        <Split_effect> | <Wipe_effect>
<Blinds_effect> ::= B[<effect_dimension>]
<Box_effect> ::= X[<effect_motion>]
<Dissolve_effect> ::= D
<Glitter_effect> ::= G[<effect_direction>]
<Split_effect> ::= S[<effect_motion>][<effect_dimension>]
<Wipe_effect> ::= W[<effect_direction>]
<Replace_effect> ::= R
<effect_direction> ::= <number>
<effect_dimension> ::= H | V
<effect_motion> ::= I | O
<transition_duration> ::= <number>

```

Transition codes:

```

6153 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}
6154 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}
6155 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}
6156 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}
6157 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}
6158 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}
6159 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}

```

Optional parameters:

```

6160 \def\hvtex@par@dimension{/Dm}
6161 \def\hvtex@par@direction{/Di}
6162 \def\hvtex@par@duration{/D}
6163 \def\hvtex@par@motion{/M}

```

Tokenizer:

```

6164 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}

```

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

```

6165 \def\hvtex@gettoken#1 #2\@nil{%
6166 \edef\hvtex@token{#1}%
6167 \edef\hvtex@buffer{#2}%
6168 }
6169 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

6170 \let\hvtex@trans@code\@empty
6171 \let\hvtex@param@dimension\@empty

```

```

6172 \let\hvtex@param@direction\@empty
6173 \let\hvtex@param@duration\@empty
6174 \let\hvtex@param@motion\@empty
6175 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

6176 \hvtex@gettoken
6177 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

6178 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

6179 \else
6180 \hvtex@gettoken
6181 \fi
6182 \fi
6183 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

6184 \hvtex@trans@params
6185 }

```

Reentrant macro to parse optional parameters.

```

6186 \def\hvtex@trans@params{%
6187 \ifx\hvtex@buffer\@empty
6188 \else
6189 \hvtex@gettoken
6190 \let\hvtex@trans@par\hvtex@token
6191 \ifx\hvtex@buffer\@empty
6192 \else
6193 \hvtex@gettoken
6194 \ifx\hvtex@trans@par\hvtex@par@duration

```

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

```

6195 \let\hvtex@param@duration\hvtex@token
6196 \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

6197 \expandafter\edef\expandafter\hvtex@param@motion
6198 \expandafter{\expandafter\@gobble\hvtex@token}%
6199 \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

6200 \expandafter\edef\expandafter\hvtex@param@dimension
6201 \expandafter{\expandafter\@gobble\hvtex@token}%
6202 \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).

```

6203 \let\hvtex@param@direction\hvtex@token
6204 \fi\fi\fi\fi
6205 \fi
6206 \fi
6207 \ifx\hvtex@buffer\@empty
6208 \let\next\hvtex@produce@trans
6209 \else
6210 \let\next\hvtex@trans@params
6211 \fi
6212 \next
6213 }

```

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

```

6214 \def\hvtex@produce@trans{%
6215   \let\vtex@trans@special\@empty
6216   \if S\hvtex@trans@code
6217     \edef\vtex@trans@special{\hvtex@trans@code
6218       \hvtex@param@dimension\hvtex@param@motion}%
6219   \else \if B\hvtex@trans@code
6220     \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@dimension}%
6221   \else \if X\hvtex@trans@code
6222     \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@motion}%
6223   \else \if W\hvtex@trans@code
6224     \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6225   \else \if D\hvtex@trans@code
6226     \let\vtex@trans@special\hvtex@trans@code
6227   \else \if R\hvtex@trans@code
6228     \let\vtex@trans@special\hvtex@trans@code
6229   \else \if G\hvtex@trans@code
6230     \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6231   \fi\fi\fi\fi\fi\fi\fi
6232   \ifx\vtex@trans@special\@empty
6233   \else
6234     \ifx\hvtex@param@duration\@empty
6235     \else
6236       \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

6237   \multiply\dimen@\@m
6238   \edef\vtex@trans@special{\vtex@trans@special,\strip@pt\dimen@}%
6239   \fi

```

And all the mess is just for this.

```

6240   \special{!trans \vtex@trans@special}%
6241   \fi
6242 }
6243 \def\hyper@pageduration{%
6244   \ifx\@pdfpageduration\relax
6245   \else
6246     \ifx\@pdfpageduration\@empty
6247       \special{!duration-}%
6248     \else
6249       \special{!duration \@pdfpageduration}%
6250     \fi
6251   \fi
6252 }
6253 \def\hyper@pagehidden{%
6254   \ifHy@useHidKey
6255     \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
6256   \fi
6257 }
6258 \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

```

6259 \ifx\@pdfproducer\relax
6260 \def\@pdfproducer{VTeX}
6261 \ifnum\Hy@VTeXversion>\z@
6262 \count@\VTeXversion
6263 \divide\count@ 100
6264 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}
6265 \multiply\count@ -100
6266 \advance\count@\VTeXversion
6267 \edef\@pdfproducer{%
6268 \@pdfproducer
6269 .\ifnum\count@<10 0\fi\the\count@
6270 \ifx\VTeXOS\@undefined\else
6271 \ifnum\VTeXOS>0 %
6272 \ifnum\VTeXOS<6 %
6273 \space(
6274 \ifcase\VTeXOS
6275 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
6276 \fi
6277 )%
6278 \fi
6279 \fi
6280 \fi
6281 ,\space
6282 \ifnum\OpMode=\@ne PDF\else PS\fi
6283 \space backend%
6284 \ifx\gexmode\@undefined\else
6285 \ifnum\gexmode>\z@\space with GeX\fi
6286 \fi
6287 }
6288 \fi
6289 \fi

```

Current !pdfinfo key syntax:

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

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

```

6290 \def\PDF@SetupDoc{%
6291 \ifx\@pdfpagescrop\@empty
6292 \else
6293 \special{!pdfinfo b=<\@pdfpagescrop>}%
6294 \fi

```

```

6295 \special{!onopen Page\@pdfstartpage}%
6296 \special{!pdfinfo p=<\@pdfpagemode>}%
6297 \ifx\@baseurl\@empty
6298 \else
6299 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
6300 \fi
6301 \special{!pdfinfo v=<<<%
6302 \ifHy@toolbar\else /HideToolbar true\fi
6303 \ifHy@menubar\else /HideMenubar true\fi
6304 \ifHy>windowui\else /HideWindowUI true\fi
6305 \ifHy@fitwindow /FitWindow true\fi
6306 \ifHy@centerwindow /CenterWindow true\fi
6307 \ifHy@displaydoctitle /DisplayDocTitle true\fi
6308 \ifx\@pdfnonfullscreenpagemode\@empty
6309 \else
6310 /NonFullScreenPageMode\@pdfnonfullscreenpagemode
6311 \fi
6312 >>>}%
6313 \ifx\pdf@pagelayout\@empty
6314 \else
6315 \special{!pdfinfo l=</\pdf@pagelayout\space>}%
6316 \fi
6317 }%
6318 \def\PDF@FinishDoc{%
6319 \Hy@UseMaketitleInfos
6320 \special{!pdfinfo a=<\@pdfauthor>}%
6321 \special{!pdfinfo t=<\@pdftitle>}%
6322 \special{!pdfinfo s=<\@pdfsubject>}%
6323 \special{!pdfinfo c=<\@pdfcreator>}%
6324 \ifx\@pdfproducer\relax
6325 \else
6326 \special{!pdfinfo r=<\@pdfproducer>}%
6327 \fi
6328 \special{!pdfinfo k=<\@pdfkeywords>}%
6329 \Hy@DisableOption{pdfauthor}%
6330 \Hy@DisableOption{pdftitle}%
6331 \Hy@DisableOption{pdfsubject}%
6332 \Hy@DisableOption{pdfcreator}%
6333 \Hy@DisableOption{pdfcreationdate}%
6334 \Hy@DisableOption{pdfmoddate}%
6335 \Hy@DisableOption{pdfproducer}%
6336 \Hy@DisableOption{pdfkeywords}%
6337 }
6338 </vtex>

```

## 45.7 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.

```

6339 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
6340 <package>\providecommand*{\Hy@DistillerDestFix}{}
6341 <*pdfmark | dviwindo>
6342 \def\Hy@DistillerDestFix{%
6343   \begingroup
6344     \let\x\literalps@out

```

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

```

6345   \ifnum \@ifundefined{OpMode}{0}{%
6346     \@ifundefined{gexmode}{0}{%
6347       \ifnum\gexmode>0 \OpMode\else 0\fi
6348     }>1 %
6349   \def\x##1{%
6350     \immediate\special{!=##1}%
6351   }%
6352 \fi
6353 \x{%
6354   /product where{%
6355     pop %
6356     product(Distiller)search{%
6357       pop pop pop %
6358       version(.)search{%
6359         exch pop exch pop%
6360         (3011)eq{%
6361           gsave %
6362           newpath 0 0 moveto closepath clip%
6363           /Courier findfont 10 scalefont setfont %
6364           72 72 moveto(.)show %
6365           grestore%
6366         }if%
6367       }{pop}ifelse%
6368     }{pop}ifelse%
6369   }if%
6370 }%
6371 \endgroup
6372 }
6373 </pdfmark | dviwindo>

```

## 45.8 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

```

6374 <*pdfmark | dvipdf>
6375 \def\hyper@anchor#1{%
6376   \Hy@SaveLastskip

```

```

6377 \begingroup
6378   \pdfmark[\anchor@spot]{%
6379     pdfmark=/DEST,%
6380     linktype=anchor,%
6381     View=/\@pdfview \@pdfviewparams,%
6382     DestAnchor={#1}%
6383   }%
6384 \endgroup
6385 \Hy@RestoreLastskip
6386 }
6387 <*/dvipdf>
6388 \def\hyper@anchorstart#1{\Hy@activeanchortrue}
6389 \def\hyper@anchorend{\Hy@activeanchorfalse}
6390 \def\hyper@linkstart#1#2{%
6391   \expandafter\Hy@colorlink\csname @#1color\endcsname
6392   \xdef\hyper@currentanchor{#2}%
6393 }
6394 \def\hyper@linkend{%
6395   \Hy@endcolorlink
6396 }
6397 </dvipdf>
6398 <*/pdfmark>
6399 \ifundefined{hyper@anchorstart}{\endinput}
6400 \def\hyper@anchorstart#1{%
6401   \Hy@SaveLastskip
6402   \literalps@out{H.S}%
6403   \xdef\hyper@currentanchor{#1}%
6404   \Hy@activeanchortrue
6405 }
6406 \def\hyper@anchorend{%
6407   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
6408   \pdfmark{%
6409     pdfmark=/DEST,%
6410     linktype=anchor,%
6411     View=/\@pdfview \@pdfviewparams,%
6412     DestAnchor=\hyper@currentanchor,%
6413     Raw=H.B%
6414   }%
6415   \Hy@activeanchorfalse
6416   \Hy@RestoreLastskip
6417 }
6418 \def\hyper@linkstart#1#2{%
6419   \ifHy@breaklinks
6420   \else
6421     \leavevmode\hbox\bgroup
6422     \fi
6423     \expandafter\Hy@colorlink\csname @#1color\endcsname
6424     \literalps@out{H.S}%
6425     \xdef\hyper@currentanchor{#2}%
6426     \gdef\hyper@currentlinktype{#1}%
6427 }
6428 \def\hyper@linkend{%
6429   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
6430   \edef\Hy@temp{\csname @\hyper@currentlinktype bordercolor\endcsname}%
6431   \pdfmark{%
6432     pdfmark=/ANN,%
6433     linktype=link,%

```



```

6434 Subtype=/Link,%
6435 Dest=\hyper@currentanchor,%
6436 AcroHighlight=\@pdfhighlight,%
6437 Border=\@pdfborder,%
6438 BorderStyle=\@pdfborderstyle,%
6439 Color=\Hy@temp,%
6440 Raw=H.B%
6441 }%
6442 \Hy@endcolorlink
6443 \ifHy@breaklinks
6444 \else
6445 \egroup
6446 \fi
6447 }
6448 \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.

```

6449 \begingroup
6450 \catcode'P=12
6451 \catcode'T=12
6452 \lowercase{\endgroup
6453 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
6454 }
6455 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
6456 \pdfmark

```

\hyper@pagetransition

```

6457 \def\hyper@pagetransition{%
6458 \ifx\@pdfpagetransition\relax
6459 \else
6460 \ifx\@pdfpagetransition\@empty
6461 % 1. Does an old entry have to be deleted?
6462 % 2. If 1=yes, how to delete?
6463 \else
6464 \pdfmark{%
6465 pdfmark=/PUT,%
6466 Raw={%
6467 \string{ThisPage\string}%
6468 <</Trans << /S /\@pdfpagetransition\space >> >>%
6469 }%
6470 }%
6471 \fi
6472 \fi
6473 }

```

\hyper@pageduration

```

6474 \def\hyper@pageduration{%
6475 \ifx\@pdfpageduration\relax
6476 \else
6477 \ifx\@pdfpageduration\@empty
6478 % 1. Does an old entry have to be deleted?
6479 % 2. If 1=yes, how to delete?
6480 \else
6481 \pdfmark{%
6482 pdfmark=/PUT,%

```

```

6483         Raw={%
6484             \string{ThisPage\string}%
6485             <</Dur \@pdfpageduration>>%
6486         }%
6487     }%
6488     \fi
6489 \fi
6490 }

```

\hyper@pagehidden

```

6491 \def\hyper@pagehidden{%
6492     \ifHy@useHidKey
6493         \pdfmark{%
6494             pdfmark=/PUT,%
6495             Raw={%
6496                 \string{ThisPage\string}%
6497                 <</Hid \@pdfpagehidden true\else false\fi>>%
6498             }%
6499         }%
6500     \fi
6501 }

6502 </pdfmark>
6503 \def\hyper@image#1#2{%
6504     \hyper@linkurl{#2}{#1}}
6505 \def\Hy@undefinedname{UNDEFINED}
6506 \def\hyper@link#1#2#3{%
6507     \edef\Hy@temp{\csname @#1bordercolor\endcsname}%
6508     \begingroup
6509         \protected@edef\Hy@testname{#2}%
6510         \ifx\Hy@testname\@empty
6511             \let\Hy@testname\Hy@undefinedname
6512         \fi
6513     <*/dvipdf>
6514     \pdfmark[{#3}]{%
6515         pdfmark=/LNK,%
6516         {},{%
6517             linktype={#1},{%
6518                 AcroHighlight=\@pdfhighlight,%
6519                 Border=\@pdfborder,%
6520                 BorderStyle=\@pdfborderstyle,%
6521                 Color=\Hy@temp,%
6522                 Dest=\Hy@testname
6523             }%
6524         }</dvipdf>
6525     <*/pdfmarkbase>
6526     \pdfmark[{#3}]{%
6527         Color=\Hy@temp,%
6528         linktype={#1},{%
6529             AcroHighlight=\@pdfhighlight,%
6530             Border=\@pdfborder,%
6531             BorderStyle=\@pdfborderstyle,%
6532             pdfmark=/ANN,%
6533             Subtype=/Link,%
6534             Dest=\Hy@testname
6535         }%
6536     </pdfmarkbase>
6537     \endgroup

```

```

6538 }
6539 \newtoks\pdf@docset
6540 \def\PDF@FinishDoc{%
6541   \Hy@UseMaketitleInfos
6542   \let\Hy@temp\@empty
6543   \ifx\@pdfcreationdate\@empty
6544   \else
6545     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
6546   \fi
6547   \ifx\@pdfmoddate\@empty
6548   \else
6549     \expandafter\def\expandafter\Hy@temp\expandafter{%
6550       \Hy@temp
6551       ModDate=\@pdfmoddate,%
6552     }%
6553   \fi
6554   \ifx\@pdfproducer\relax
6555   \else
6556     \expandafter\def\expandafter\Hy@temp\expandafter{%
6557       \Hy@temp
6558       Producer=\@pdfproducer,%
6559     }%
6560   \fi
6561   \expandafter
6562   \pdfmark\expandafter{%
6563     \Hy@temp
6564     pdfmark=/DOCINFO,%
6565     Title=\@pdftitle,%
6566     Subject=\@pdfsubject,%
6567     Creator=\@pdfcreator,%
6568     Author=\@pdfauthor,%
6569     Keywords=\@pdfkeywords
6570   }%
6571   \Hy@DisableOption{pdfauthor}%
6572   \Hy@DisableOption{pdftitle}%
6573   \Hy@DisableOption{pdfsubject}%
6574   \Hy@DisableOption{pdfcreator}%
6575   \Hy@DisableOption{pdfcreationdate}%
6576   \Hy@DisableOption{pdfmoddate}%
6577   \Hy@DisableOption{pdfproducer}%
6578   \Hy@DisableOption{pdfkeywords}%
6579 }
6580 \def\PDF@SetupDoc{%
6581   \pdfmark{%
6582     pdfmark=/DOCVIEW,%
6583     Page=\@pdfstartpage,%
6584     View=\@pdfstartview,%
6585     PageMode=\@pdfpagemode
6586   }%
6587   \ifx\@pdfpagescrop\@empty
6588   \else
6589     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
6590   \fi
6591   \edef\Hy@temp{%
6592     \ifHy@toolbar\else /HideToolbar true\fi
6593     \ifHy@menubar\else /HideMenubar true\fi
6594     \ifHy>windowui\else /HideWindowUI true\fi

```

```

6595 \ifHy@fitwindow /FitWindow true\fi
6596 \ifHy@centerwindow /CenterWindow true\fi
6597 \ifHy@displaydoctitle /DisplayDocTitle true\fi
6598 \ifx\@pdfnonfullscreenpagemode\@empty
6599 \else
6600 /NonFullScreenPageMode\@pdfnonfullscreenpagemode
6601 \fi
6602 }%
6603 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6604 \pdfmark{%
6605 pdfmark=/PUT,%
6606 Raw={%
6607 \string{Catalog\string} <<
6608 \ifx\Hy@temp\@empty
6609 \else
6610 /ViewerPreferences<<\Hy@temp>>%
6611 \fi
6612 \ifx\pdf@pagelayout\@empty
6613 \else
6614 /PageLayout /\pdf@pagelayout\space
6615 \fi
6616 \ifx\@baseurl\@empty
6617 \else
6618 /URI << /Base (\Hy@pstringB) >>%
6619 \fi
6620 >>%
6621 }%
6622 }%
6623 }
6624 </pdfmark | dvipdf>
6625 <*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.

```

6626 \newif\ifHy@pdfmarkerror
6627 \def\pdfmark{\@ifnextchar [{\pdfmark@}{\pdfmark@[]}}
6628 \def\pdfmark@[#1]#2{%
6629 \Hy@pdfmarkerrorfalse
6630 \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
6631 \@processme
6632 \let\pdf@type\relax
6633 \setkeys{PDF}{#2}%
6634 \ifHy@pdfmarkerror
6635 \else
6636 \ifx\pdf@type\relax
6637 \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
6638 \ifx\#1\\\relax\else\pdf@rect{#1}\fi
6639 \else
6640 \ifx\#1\\\relax
6641 <pdfmarkbase> \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark]}%
6642 <dvipdf> \literalps@out{/ANN >>}%
6643 \else
6644 \ifundefined{@pdf@linktype color}{%
6645 \Hy@colorlink\@linkcolor

```

```

6646      }{%
6647      \expandafter\Hy@colorlink
6648      \csname @\pdf@linktype color\endcsname
6649      }%
6650      \pdf@rect{#1}%
6651 \pdfmarkbase) \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark}%
6652 \dvipdf) \literalps@out{/ANN >>}%
6653 \Hy@endcolorlink
6654 \fi
6655 \fi
6656 \fi
6657 }

```

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}

6658 \newsavebox{\pdf@box}
6659 \providecommand{\Hy@setouterhbox}{\sbox}
6660 \providecommand{\Hy@breaklinksunhbox}{\unhbox}
6661 \def\pdf@rect#1{%
6662 \dvipdf) \literalps@out{/ANN \pdf@type\space\the\pdf@toks\space <<}>#1%
6663 \leavevmode
6664 \ifHy@breaklinks
6665 \Hy@setouterhbox\pdf@box{#1}%
6666 \else
6667 \sbox\pdf@box{#1}%
6668 \fi
6669 \dimen@=\ht\pdf@box
6670 \ifdim\dp\pdf@box=\z@
6671 \literalps@out{H.S}%
6672 \else
6673 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
6674 \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...).

```

6675 \ifHy@breaklinks
6676 \expandafter\Hy@breaklinksunhbox
6677 \else
6678 \expandafter\box
6679 \fi
6680 \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

6681 \ifdim\dimen@=\z@
6682 \literalps@out{H.R}%

```

```

6683 \else
6684   \raise\dimen@{hbox{\literalps@out{H.R}}}%
6685 \fi
6686 \pdf@addtoksx{H.B}%
6687 }

```

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.

```

6688 \newtoks\pdf@toks
6689 \newtoks\pdf@defaulttoks
6690 \pdf@defaulttoks={}%
6691 \def\pdf@addtoks#1#2{%
6692   \edef\@processme{\pdf@toks{\the\pdf@toks\space /#2 #1}}%
6693   \@processme
6694 }
6695 \def\pdf@addtoksx#1{%
6696   \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
6697   \@processme
6698 }
6699 \def\PDFdefaults#1{%
6700   \pdf@defaulttoks={#1}%
6701 }

```

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

```

6702 % what is the type of pdfmark?
6703 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
6704 % what is the link type?
6705 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
6706 \def\pdf@linktype{link}
6707 % parameter is a stream of PDF
6708 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
6709 % parameter is a name
6710 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
6711 % parameter is a array
6712 \define@key{PDF}{Border}{%
6713   \edef\Hy@temp{#1}%
6714   \ifx\Hy@temp\@empty
6715     \else
6716       \pdf@addtoks{[#1]}{Border}%
6717     \fi
6718 }
6719 % parameter is a dictionary
6720 \define@key{PDF}{BorderStyle}{%
6721   \edef\Hy@temp{#1}%
6722   \ifx\Hy@temp\@empty
6723     \else
6724       \pdf@addtoks{<<#1>>}{BS}%
6725     \fi
6726 }
6727 % parameter is a array
6728 \define@key{PDF}{Color}{\pdf@addtoks{[#1]}{Color}}
6729 % parameter is a string
6730 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
6731 % parameter is a integer
6732 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
6733 % parameter is a array
6734 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}
6735 % parameter is a string

```

```

6736 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
6737 % parameter is a string or file
6738 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
6739 % parameter is a destination
6740 \define@key{PDF}{Dest}{%
6741   \Hy@pstringdef\Hy@pstringDest{#1}%
6742   \ifx\Hy@pstringDest\@empty
6743     \Hy@pdfmarkerrortrue
6744     \Hy@Warning{Destination with empty name ignored}%
6745   \else
6746     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
6747   \fi
6748 }
6749 \define@key{PDF}{DestAnchor}{%
6750   \Hy@pstringdef\Hy@pstringDest{#1}%
6751   \ifx\Hy@pstringDest\@empty
6752     \Hy@pdfmarkerrortrue
6753     \Hy@Warning{Destination with empty name ignored}%
6754   \else
6755     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
6756   \fi
6757 }
6758 % parameter is a string
6759 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
6760 % parameter is a string
6761 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
6762 % parameter is a int
6763 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
6764 % parameter is a name
6765 \define@key{PDF}{AcroHighlight}{\pdf@addtoks{#1}{H}}
6766 % parameter is a string
6767 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}
6768 % parameter is a string
6769 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
6770 % parameter is a string
6771 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
6772 % parameter is a string
6773 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
6774 % parameter is a Boolean
6775 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
6776 % parameter is a integer or name
6777 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
6778 % parameter is a name
6779 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
6780 % parameter is a string
6781 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
6782 % parameter is a array
6783 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}
6784 % parameter is a integer
6785 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
6786 % parameter is a name
6787 \pdfmarkbase\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
6788 \dvpdf\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{}}
6789 % parameter is a string
6790 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
6791 % parameter is a string
6792 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}

```

```

6793 % parameter is a string
6794 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
6795 % parameter is an array
6796 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}
6797 % parameter is a string
6798 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

6799 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
6800 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
6801 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
6802 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
6803 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
6804 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
6805 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
6806 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
6807 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
6808 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
6809 </pdfmarkbase | dvipdf>
6810 <*pdfmark | dvipdf>
6811 \def\Acrobatmenu#1#2{%
6812   \pdfmark[#{#2}]{%
6813     linktype=menu,%
6814     pdfmark=/ANN,%
6815     AcroHighlight=\pdfhighlight,%
6816     Border=\pdfborder,%
6817     BorderStyle=\pdfborderstyle,%
6818     Action={<< /Subtype /Named /N /#1 >>},%
6819     Subtype=/Link%
6820   }%
6821 }

```

And now for some useful examples:

```

6822 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
6823 \def\PDFNextPage@[#1]#2{%
6824   \pdfmark[#{#2}]{%
6825     #1,%
6826     Border=\pdfborder,%
6827     BorderStyle=\pdfborderstyle,%
6828     Color=.2 .1 .5,%
6829     pdfmark=/ANN,%
6830     Subtype=/Link,%
6831     Page=/Next%
6832   }%
6833 }
6834 \def\PDFPreviousPage{%
6835   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
6836 }
6837 \def\PDFPreviousPage@[#1]#2{%
6838   \pdfmark[#{#2}]{%
6839     #1,%
6840     Border=\pdfborder,%
6841     BorderStyle=\pdfborderstyle,%
6842     Color=.4 .4 .1,%
6843     pdfmark=/ANN,%
6844     Subtype=/Link,%
6845     Page=/Prev%
6846   }%

```



```

6847 }
6848 \def\PDFOpen#1{%
6849   \pdfmark{#1,pdfmark=/DOCVIEW}%
6850 }

```

This is not as simple as it looks; if we make the argument of this macro eg `\pageref{foo}` and expect it to expand to ‘3’, we need a special version of `\pageref` which does *not* produce ‘3’... David Carlisle looked at this bit and provided the solution, as ever!

```

6851 \def\PDFPage{\@ifnextchar [{\PDFPage@}{\PDFPage@[]}}
6852 \def\PDFPage@[#1]#2#3{%
6853   \let\pageref\simple@pageref
6854   \pdfmark[{#3}] {%
6855     #1,%
6856     Page={#2},%
6857     AcroHighlight=\@pdfhighlight,%
6858     Border=\@pdfborder,%
6859     BorderStyle=\@pdfborderstyle,%
6860     Color=\@pagebordercolor,%
6861     pdfmark=/ANN,%
6862     Subtype=/Link%
6863   }%
6864 }
6865 \def\simple@pageref#1{%
6866   \expandafter\ifx\csname r@#1\endcsname\relax
6867     0%
6868   \else
6869     \expandafter\expandafter\expandafter
6870       \@secondoffive\csname r@#1\endcsname
6871   \fi}

```

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

```

6872 \def\hyper@linkurl#1#2{%
6873   \begingroup
6874     \Hy@pstringdef\Hy@pstringURI{#2}%
6875     \hyper@chars
6876     \leavevmode
6877     \pdfmarkbase{
6878       \pdfmark[{#1}] {%
6879         pdfmark=/ANN,%
6880         linktype=url,%
6881         AcroHighlight=\@pdfhighlight,%
6882         Border=\@pdfborder,%
6883         BorderStyle=\@pdfborderstyle,%
6884         Color=\@urlbordercolor,%
6885         Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
6886         Subtype=/Link%
6887       }%
6888     }/pdfmarkbase}
6889 \def\hyper@hstring#1#2{%
6890   \pdfmark[{#1}] {%
6891     pdfmark=/LNK,%
6892     linktype=url,%
6893     AcroHighlight=\@pdfhighlight,%
6894     Border=\@pdfborder,%
6895     BorderStyle=\@pdfborderstyle,%
6896     Color=\@urlbordercolor,%
6897     Action={URI /URI <\Hy@hstringURI>}%
6898   }%

```

```

6899 </dvipdf>
6900   \endgroup
6901 }
6902 \def\hyper@linkfile#1#2#3{%
6903   \begingroup
6904     \Hy@pstringdef\Hy@pstringF{#2}%
6905     \Hy@pstringdef\Hy@pstringD{#3}%
6906     \leavevmode
6907 <*pdfmark>
6908   \pdfmark[#{1}]{%
6909     pdfmark=/ANN,%
6910     Subtype=/Link,%
6911     AcroHighlight=\@pdfhighlight,%
6912     Border=\@pdfborder,%
6913     BorderStyle=\@pdfborderstyle,%
6914     linktype=file,%
6915     Color=\@filebordercolor,%
6916     Action={<<
6917       /S /GoToR
6918       \ifHy@newwindow /NewWindow true \fi
6919       /F (\Hy@pstringF)
6920       /D \ifx\#3\[\[0 \@pdfstartview]\else(\Hy@pstringD) cvn\fi
6921     >>}%
6922   }%
6923 </pdfmark>
6924 <*dvipdf>
6925   \pdfmark[#{1}]{%
6926     pdfmark=/LNK,%
6927     linktype=file,%
6928     AcroHighlight=\@pdfhighlight,%
6929     Border=\@pdfborder,%
6930     BorderStyle=\@pdfborderstyle,%
6931     Color=\@filebordercolor,%
6932     Action={<<
6933       /S /GoToR
6934       \ifHy@newwindow /NewWindow true \fi
6935       /F (\Hy@pstringF)
6936       /D \ifx\#3\[\[0 \@pdfstartview]\else(\Hy@pstringD) cvn\fi
6937     >>}%
6938   }%
6939 </dvipdf>
6940   \endgroup
6941 }
6942 \def\@hyper@launch run:#1\#2#3{%
6943   \begingroup
6944     \Hy@pstringdef\Hy@pstringF{#1}%
6945     \Hy@pstringdef\Hy@pstringP{#3}%
6946     \leavevmode
6947 <*pdfmark>
6948   \pdfmark[#{2}]{%
6949     pdfmark=/ANN,%
6950     Subtype=/Link,%
6951     AcroHighlight=\@pdfhighlight,%
6952     Border=\@pdfborder,%
6953     BorderStyle=\@pdfborderstyle,%
6954     linktype=file,%
6955     Color=\@filebordercolor,%

```

```

6956     Action={<<
6957         /S /Launch
6958         \ifHy@newwindow /NewWindow true \fi
6959         /F (\Hy@pstringF)
6960         \ifx\#3\%
6961         \else
6962             /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
6963         \fi
6964     >>}%
6965 }%
6966 </pdfmark>
6967 <*dvipdf>
6968     \pdfmark[{#2}]{%
6969         pdfmark=/LNK,%
6970         linktype=file,%
6971         AcroHighlight=\@pdfhighlight,%
6972         Border=\@pdfborder,%
6973         BorderStyle=\@pdfborderstyle,%
6974         Color=\@filebordercolor,%
6975         Action={<<
6976             /S /GoToR
6977             \ifHy@newwindow /NewWindow true \fi
6978             /F (\Hy@pstringF)
6979             \ifx\#3\%
6980             \else
6981                 /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
6982             \fi
6983         >>}%
6984     }%
6985 </dvipdf>
6986 \endgroup
6987 }
6988 </pdfmark | dvipdf>

```

Unfortunately, some parts of the pdfmark PostScript code depend on vagaries of the dvi driver. We isolate here all the problems.

## 45.9 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.

```

6989 <*dvips>
6990 \input{pdfmark.def}%
6991 \ifx\@pdfproducer\relax
6992     \def\@pdfproducer{dvips + Distiller}
6993 \fi
6994 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
6995 \def\headerps@out#1{\special{! #1}}%
6996 \providecommand\@pdfborder{0 0 12}
6997 \providecommand*\@pdfborderstyle{}
6998 \providecommand\@pdfview{XYZ}
6999 \providecommand\@pdfviewparams{ H.V}

7000 \AtBeginDvi{%
7001     \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.

```
7002 /DvipsToPDF { 72.27 mul Resolution div } def
7003 /PDFToDvips { 72.27 div Resolution mul } 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.

```
7004 /HyperBorder { 1 PDFToDvips } def
7005 /H.V {pdf@hoff pdf@voff null} def
7006 /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

```
7007 /H.S {
7008   currentpoint
7009   HyperBorder add /pdf@lly exch def
7010   dup DvipsToPDF /pdf@hoff exch def
7011   HyperBorder sub /pdf@llx exch def
7012 } 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`

```
7013 /H.L {
7014   2 sub dup
7015   /HyperBasePt exch def
7016   PDFToDvips /HyperBaseDvips exch def
7017   currentpoint
7018   HyperBaseDvips sub /pdf@ury exch def
7019   /pdf@urx exch def
7020 } def
7021 /H.A {
7022   H.L
7023 % |pdf@voff| = the distance from the top of the page to a point
7024 % |\baselineskip| above the current point in PDF coordinates
7025   currentpoint exch pop
7026   vsize 72 sub exch DvipsToPDF
7027   HyperBasePt sub % baseline skip
7028   sub /pdf@voff exch def
7029 } def
7030 /H.R {
7031   currentpoint
7032   HyperBorder sub /pdf@ury exch def
```

```

7033     HyperBorder add /pdf@urx exch def
7034 % | /pdf@voff| = the distance from the top of the page to the current point, in
7035 % PDF coordinates
7036     currentpoint exch pop vsize 72 sub
7037     exch DvipsToPDF sub /pdf@voff exch def
7038 } def
7039 systemdict /pdfmark known
7040 {
7041     userdict /?pdfmark systemdict /exec get put
7042 }{
7043     userdict /?pdfmark systemdict /pop get put
7044     userdict /pdfmark systemdict /cleartomark get put
7045 }
7046 ifelse
7047 }%
7048 }
7049 \AfterBeginDocument{%
7050 \ifx\special@paper\@empty\else
7051 \ifHy@setpagesize
7052 \special{papersize=\special@paper}%
7053 \fi
7054 \Hy@DisableOption{setpagesize}%
7055 \fi
7056 }
7057 </dvips>

```

## 45.10 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.

```

7058 <*vtexpdfmark>
7059 \input{pdfmark.def}%
7060 \ifx\@pdfproducer\relax
7061 \ifnum\OpMode=\@ne
7062 \def\@pdfproducer{VTeX}
7063 \else
7064 \def\@pdfproducer{VTeX + Distiller}
7065 \fi
7066 \fi
7067 \def\literalps@out#1{\special{pS:#1}}%
7068 \def\headerps@out#1{\immediate\special{pS:#1}}%
7069 \providecommand\@pdfborder{0 0 1}
7070 \providecommand*\@pdfborderstyle{}
7071 \providecommand\@pdfview{XYZ}
7072 \providecommand\@pdfviewparams{ H.V}
7073 \AtBeginDvi{%
7074 \headerps@out{%
7075 /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.

```

7076 /HyperBorder {1} def
7077 /H.V {pdf@hoff pdf@voff null} def
7078 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def

```

H.S (start of anchor, link, or rect) stores the  $x$  and  $y$  coordinates of the current point, in PDF coordinates:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

7079   /H.S {
7080       currentpoint
7081       HyperBorder sub
7082       /pdf@lly exch def
7083       dup 72 add /pdf@hoff exch def
7084       HyperBorder sub
7085       /pdf@llx exch def
7086   } def

```

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

```

7087   /H.L {
7088       2 sub
7089       /HyperBasePt exch def
7090       currentpoint
7091       HyperBasePt add HyperBorder add
7092       /pdf@ury exch def
7093       HyperBorder add
7094       /pdf@urx exch def
7095   } def
7096   /H.A {
7097       H.L
7098       currentpoint exch pop
7099       vsize 72 sub exch
7100       HyperBasePt add add
7101       /pdf@voff exch def
7102   } def

```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

7103   /H.R {
7104       currentpoint
7105       HyperBorder add
7106       /pdf@ury exch def
7107       HyperBorder add
7108       /pdf@urx exch def
7109       currentpoint exch pop vsize 72 sub add
7110       /pdf@voff exch def
7111   } def
7112   systemdict /pdfmark known
7113   {
7114       userdict /?pdfmark systemdict /exec get put
7115   }{
7116       userdict /?pdfmark systemdict /pop get put
7117       userdict /pdfmark systemdict /cleartomark get put
7118   }
7119   ifelse
7120 }%
7121 }
7122 </vtxpdfmark>

```

## 45.11 Textures

At the suggestion of Jacques Distler ([distler@golem.ph.utexas.edu](mailto:distler@golem.ph.utexas.edu)), try to derive a suitable driver for Textures. This was initially a copy of dvips, with some guesses about

Textures behaviour. Ross Moore (ross@maths.mq.edu.au) 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.

```

7123 <*textures>
7124 \begingroup
7125   \obeylines %
7126   \gdef\Hy@ps@CR{\noexpand
7127   }%
7128 \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`.

```

7129 \def\literalps@out#1{%
7130   \special{postscript 0 0 transform}%
7131   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
7132 }%
7133 %

```

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.

```

7134 \def\headerps@out#1{%
7135   \special{%
7136     prepostscript TeXdict begin\Hy@ps@CR
7137     #1\Hy@ps@CR
7138     end%
7139   }%
7140 }%
7141 %

```

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.

```

7142 \AtBeginDvi{%
7143   \headerps@out{%
7144     /betterpdfmark {%
7145       systemdict begin
7146         dup /BP eq
7147         {cleartomark gsave nulldevice []}
7148         {dup /EP eq
7149           {cleartomark cleartomark grestore}
7150           {cleartomark}
7151           ifelse
7152         }ifelse
7153       end
7154     }def\Hy@ps@CR

```

```

7155 __pdfmark__ not{/pdfmark /betterpdfmark load def}if
7156 systemdict /pdfmark known
7157 {
7158     userdict /?pdfmark systemdict /load get put
7159 }{
7160     userdict /?pdfmark systemdict /pop get put
7161 }
7162 ifelse
7163 }% end of \headerps@out
7164}% end of \AtBeginDvi
7165%
7166\input{pdfmark.def}%
7167%
7168\ifx\@pdfproducer\relax
7169 \def\@pdfproducer{Textures + Distiller}%
7170\fi
7171\providecommand\@pdfborder{0 0 1}
7172\providecommand*\@pdfborderstyle{}
7173\providecommand\@pdfview{XYZ}
7174\providecommand\@pdfviewparams{ H.V}
7175%

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called pdf@llx pdf@lly pdf@urx pdf@ury, which are the coordinates of the bounding rectangle of the link, and pdf@hoff pdf@voff which are the PDF page offsets. The Rect pair are called at the LL and UR corners of a box known to  $\text{\TeX}$ .

```

7176\headerps@out{%

```

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

```

7177 /vsize {\Hy@pageheight} def
7178 /DvipsToPDF {} def
7179 /PDFToDvips {} def
7180 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
7181 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
7182 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
7183 /H.S {
7184     currentpoint
7185     HyperBorder add /pdf@lly exch def
7186     dup DvipsToPDF /pdf@hoff exch def
7187     HyperBorder sub /pdf@llx exch def
7188 } def\Hy@ps@CR
7189 /H.L {
7190     2 sub
7191     PDFToDvips /HyperBase exch def
7192     currentpoint
7193     HyperBase sub /pdf@ury exch def
7194     /pdf@urx exch def
7195 } def\Hy@ps@CR
7196 /H.A {
7197     H.L
7198     currentpoint exch pop
7199     vsize 72 sub exch DvipsToPDF
7200     HyperBase sub % baseline skip
7201     sub /pdf@voff exch def
7202 } def\Hy@ps@CR
7203 /H.R {
7204     currentpoint

```



```

7205   HyperBorder sub /pdf@ury exch def
7206   HyperBorder add /pdf@urx exch def
7207   currentpoint exch pop vsize 72 sub
7208   exch DvipsToPDF sub /pdf@voff exch def
7209 } def\Hy@ps@CR
7210 }

7211 \AfterBeginDocument{%
7212   \ifHy@colorlinks
7213     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
7214   \fi
7215 }

```

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.

```

7216 \expandafter\let\expandafter\keepPDF@SetupDoc
7217   \csname PDF@SetupDoc\endcsname
7218 \def\PDF@SetupDoc{%
7219   \ifx\@baseurl\@empty
7220   \else
7221     \special{html:<base href="\@baseurl">}%
7222   \fi
7223   \keepPDF@SetupDoc
7224 }

7225 \def\hyper@anchor#1{%
7226   \Hy@SaveLastskip
7227   \begingroup
7228     \let\protect=\string
7229     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
7230   \endgroup
7231   \Hy@activeanchortrue
7232   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7233   \special{html:</a>}%
7234   \Hy@activeanchorfalse
7235   \Hy@RestoreLastskip
7236 }

7237 \def\hyper@anchorstart#1{%
7238   \Hy@SaveLastskip
7239   \begingroup
7240     \hyper@chars
7241     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
7242   \endgroup
7243   \Hy@activeanchortrue
7244 }

7245 \def\hyper@anchorend{%
7246   \special{html:</a>}%
7247   \Hy@activeanchorfalse
7248   \Hy@RestoreLastskip
7249 }

7250 \def\@urltype{url}
7251 \def\hyper@linkstart#1#2{%
7252   \expandafter\Hy@colorlink\csname @#1color\endcsname
7253   \def\Hy@tempa{#1}%
7254   \ifx\Hy@tempa\@urltype
7255     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7256   \else
7257     \begingroup
7258       \hyper@chars

```

```

7259     \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
7260     \endgroup
7261     \fi
7262 }
7263 \def\hyper@linkend{%
7264     \special{html:</a>}%
7265     \Hy@endcolorlink
7266 }
7267 \def\hyper@linkfile#1#2#3{%
7268     \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
7269 }
7270 \def\hyper@linkurl#1#2{%
7271     \leavevmode
7272     \ifHy@raiselinks
7273         \setbox\@tempboxa=\color@hbox #1\color@endbox
7274         \@linkdim\dp\@tempboxa
7275         \lower\@linkdim\hbox{%
7276             \hyper@chars
7277             \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7278             }%
7279         \Hy@colorlink\@urlcolor#1%
7280         \@linkdim\ht\@tempboxa
7281         \advance\@linkdim by -6.5\p@
7282         \raise\@linkdim\hbox{\special{html:</a>}}%
7283         \Hy@endcolorlink
7284     \else
7285         \begingroup
7286         \hyper@chars
7287         \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7288         \Hy@colorlink\@urlcolor#1%
7289         \special{html:</a>}%
7290         \Hy@endcolorlink
7291     \endgroup
7292     \fi
7293 }
7294 \def\hyper@link#1#2#3{%
7295     \hyper@linkurl{#3}{\##2}%
7296 }
7297 \def\hyper@image#1#2{%
7298     \begingroup
7299     \hyper@chars
7300     \special{html:<img src=\hyper@quote#1\hyper@quote>}%
7301     \endgroup
7302 }
7303 </textures>

```

## 45.12 dvipsone

```

7304 % \subsection{dvipsone driver}
7305 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
7306 % |\special| commands.
7307 <*dvipsone>
7308 \providecommand\@pdfborder{0 0 65781}
7309 \providecommand*\@pdfborderstyle{}
7310 \input{pdfmark.def}%
7311 \ifx\@pdfproducer\relax
7312     \def\@pdfproducer{dvipsone + Distiller}

```

```

7313 \fi
7314 \def\literalps@out#1{\special{ps:#1}}%
7315 \def\headerps@out#1{\special{! #1}}%
7316 \def\PDF@FinishDoc{%
7317   \Hy@UseMaketitleInfos
7318   \special{PDF: Keywords \@pdfkeywords}%
7319   \special{PDF: Title \@pdftitle}%
7320   \special{PDF: Creator \@pdfcreator}%
7321   \ifx\@pdfcreationdate\@empty
7322   \else
7323     \special{PDF: CreationDate \@pdfcreationdate}%
7324   \fi
7325   \ifx\@pdfmoddate\@empty
7326   \else
7327     \special{PDF: ModDate \@pdfmoddate}%
7328   \fi
7329   \special{PDF: Author \@pdfauthor}%
7330   \ifx\@pdfproducer\relax
7331   \else
7332     \special{PDF: Producer \@pdfproducer}%
7333   \fi
7334   \special{PDF: Subject \@pdfsubject}%
7335   \Hy@DisableOption{pdfauthor}%
7336   \Hy@DisableOption{pdftitle}%
7337   \Hy@DisableOption{pdfsubject}%
7338   \Hy@DisableOption{pdfcreator}%
7339   \Hy@DisableOption{pdfcreationdate}%
7340   \Hy@DisableOption{pdfmoddate}%
7341   \Hy@DisableOption{pdfproducer}%
7342   \Hy@DisableOption{pdfkeywords}%
7343 }
7344 \def\PDF@SetupDoc{%
7345   \pdfmark{%
7346     pdfmark=/DOCVIEW,
7347     Page=\@pdfstartpage,
7348     View=\@pdfstartview,
7349     PageMode=\@pdfpagemode
7350   }%
7351   \ifx\@pdfpagescrop\@empty
7352   \else
7353     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7354   \fi
7355   \edef\Hy@temp{%
7356     \ifHy@toolbar\else /HideToolbar true\fi
7357     \ifHy@menubar\else /HideMenubar true\fi
7358     \ifHy>windowui\else /HideWindowUI true\fi
7359     \ifHy@fitwindow /FitWindow true\fi
7360     \ifHy@centerwindow /CenterWindow true\fi
7361     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7362     \ifx\@pdfnonfullscreenpagemode\@empty
7363     \else
7364       /NonFullScreenPageMode\@pdfnonfullscreenpagemode
7365     \fi
7366   }%
7367   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7368   \pdfmark{%
7369     pdfmark=/PUT,%

```

```

7370 Raw={%
7371   \string{Catalog\string} <<
7372   \ifx\Hy@temp\@empty
7373   \else
7374     /ViewerPreferences<<\Hy@temp>>%
7375   \fi
7376   \ifx\pdf@pagelayout\@empty
7377   \else
7378     /PageLayout /\pdf@pagelayout\space
7379   \fi
7380   \ifx\@baseurl\@empty
7381   \else
7382     /URI << /Base (\Hy@pstringB) >>%
7383   \fi
7384   >>%
7385 }%
7386 }%
7387 }
7388 \providecommand\@pdfview{XYZ}
7389 \providecommand\@pdfviewparams{ %
7390   gsave revscl currentpoint grestore
7391   72 add exch pop null exch null
7392 }

```

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

```
7393 \special{headertext=
```

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

```

7394 /DvipsToPDF { 65781 div } def
7395 /PDFToDvips { 65781 mul } def
7396 /HyperBorder { 1 PDFToDvips } def
7397 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def
7398 /H.S {
7399   currentpoint
7400   HyperBorder add /pdf@lly exch def
7401   dup DvipsToPDF /pdf@hoff exch def
7402   HyperBorder sub /pdf@llx exch def
7403 } def
7404 /H.L {
7405   2 sub
7406   PDFToDvips /HyperBase exch def
7407   currentpoint
7408   HyperBase sub /pdf@ury exch def
7409   /pdf@urx exch def
7410 } def
7411 /H.A {
7412   H.L
7413   currentpoint exch pop
7414   HyperBase sub % baseline skip
7415   DvipsToPDF /pdf@voff exch def
7416 } def
7417 /H.R {
7418   currentpoint
7419   HyperBorder sub /pdf@ury exch def

```

```

7420   HyperBorder add /pdf@urx exch def
7421   currentpoint exch pop DvipsToPDF /pdf@voff exch def
7422 } def
7423 systemdict
7424 /pdfmark known
7425 {
7426   userdict /?pdfmark /exec load put
7427 }{
7428   userdict /?pdfmark /pop load put
7429   userdict /pdfmark systemdict /cleartomark get put
7430 }
7431 ifelse
7432 }
7433 </dvipsone>
7434 <*dvipdf>
7435 \def\literalps@out#1{\special{pdf: #1}}%
7436 \providecommand\@pdfborder{0 0 1}
7437 \providecommand*\@pdfborderstyle{}
7438 </dvipdf>

```

### 45.13 TeX4ht

```

7439 <*tex4ht>
7440 \@ifpackageloaded{tex4ht}
7441 {\typeout{hyperref tex4ht: tex4ht already loaded}}%
7442 {\RequirePackage[hTeX4ht]{tex4ht}}
7443 \def\PDF@FinishDoc{}
7444 \def\PDF@SetupDoc{%
7445   \ifx\@baseurl\@empty
7446   \else
7447     \special{t4ht=<base href="\@baseurl">}%
7448   \fi
7449 }
7450 \def\hyper@anchor#1{%
7451   \Hy@SaveLastskip
7452   \begingroup
7453     \let\protect=\string
7454     \special{t4ht=<a name=\hyper@quote #1\hyper@quote>}}%
7455   \endgroup
7456   \Hy@activeanchortrue
7457   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7458   \special{t4ht=</a>}}%
7459   \Hy@activeanchorfalse
7460   \Hy@RestoreLastskip
7461 }
7462 \def\hyper@anchorstart#1{%
7463   \Hy@SaveLastskip
7464   \begingroup
7465     \hyper@chars\special{t4ht=<a name=\hyper@quote#1\hyper@quote>}}%
7466   \endgroup
7467   \Hy@activeanchortrue
7468 }
7469 \def\hyper@anchorend{%
7470   \special{t4ht=</a>}}%
7471   \Hy@activeanchorfalse
7472   \Hy@RestoreLastskip
7473 }
7474 \def\@urltype{url}

```

```

7475 \def\hyper@linkstart#1#2{%
7476   \expandafter\Hy@colorlink\csname @#1color\endcsname
7477   \def\Hy@tempa{#1}%
7478   \ifx\Hy@tempa\@urltype
7479     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7480   \else
7481     {\hyper@chars\special{t4ht=<a href=\hyper@quote\##2\hyper@quote>}}%
7482   \fi
7483 }
7484 \def\hyper@linkend{%
7485   \special{t4ht=</a>}%
7486   \Hy@endcolorlink
7487 }
7488 \def\hyper@linkfile#1#2#3{%
7489   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
7490 }
7491 \def\hyper@linkurl#1#2{%
7492   \leavevmode
7493   \ifHy@raiselinks
7494     \setbox\@tempboxa=\color@hbox #1\color@endbox
7495     \@linkdim\dp\@tempboxa
7496     \lower\@linkdim\hbox{%
7497       \begingroup
7498         \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7499       \endgroup
7500     }%
7501     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7502     \@linkdim\ht\@tempboxa
7503     \advance\@linkdim by -6.5\p@
7504     \raise\@linkdim\hbox{\special{t4ht=</a>}}%
7505   \else
7506     \begingroup
7507       \hyper@chars
7508       \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7509       \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7510       \special{t4ht=</a>}%
7511     \endgroup
7512   \fi
7513 }
7514 \def\hyper@link#1#2#3{%
7515   \hyper@linkurl{#3}{\##2}%
7516 }
7517 \def\hyper@image#1#2{%
7518   \begingroup
7519     \hyper@chars
7520     \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
7521   \endgroup
7522 }
7523 \let\autoref\ref
7524 \ifx \rEfLiNK \UnDef
7525   \def\rEfLiNK #1#2{#2}%
7526 \fi
7527 \def\backref#1{}
7528 </tex4ht>
7529 <*tex4htcfg>
7530 \IfFileExists{\jobname.cfg}{\endinput}{}
7531 \Preamble{html}

```

```

7532 \begin{document}
7533 \EndPreamble
7534 \def\TeX{\TeX}
7535 \def\OMEGA{\Omega}
7536 \def\LaTeX{\LaTeX}
7537 \def\LaTeXe{\LaTeX2e}
7538 \def\eTeX{e-TeX}
7539 \def\MF{Metafont}
7540 \def\MP{Metapost}
7541 \</tex4htcfg>

```

## 46 Driver-specific form support

### 46.1 pdfmarks

```

7542 \<*pdfmark>
7543 \long\def\@Form[#1]{%
7544 \AtBeginDvi{%
7545 \headerps@out{%
7546 [ /_objdef {pdfDocEncoding}
7547 /type /dict
7548 /OBJ pdfmark
7549 [ {pdfDocEncoding}
7550 << /Type /Encoding
7551 /Differences [ 24 /breve /caron /circumflex /dotaccent
7552 /hungarumlaut /ogonek /ring /tilde 39 /quotesingle 96 /grave 128
7553 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin /fraction
7554 /guilsinglleft /guilsinglright /minus /perthousand /quotedblbase
7555 /quotedblleft /quotedblright /quoteleft /quoteright /quotesinglbase
7556 /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis /Zcaron /dotlessi
7557 /lslash /oe /scaron /zcaron 164 /currency 166 /brokenbar 168 /dieresis
7558 /copyright /ordfeminine 172 /logicalnot /.notdef /registered /macron
7559 /degree /plusminus /twosuperior /threesuperior /acute /mu 183
7560 /periodcentered /cedilla /onesuperior /ordmasculine 188 /onequarter
7561 /onehalf /threequarters 192 /Agrave /Aacute /Acircumflex /Atilde
7562 /Adieresis /Aring /AE /Ccedilla /Egrave /Eacute /Ecircumflex
7563 /Edieresis /Igrave /Iacute /Icircumflex /Idieresis /Eth /Ntilde
7564 /Ograve /Oacute /Ocircumflex /Otilde /Odieresis /multiply /Oslash
7565 /Ugrave /Uacute /Ucircumflex /Udieresis /Yacute /Thorn /germandbls
7566 /agrave /aacute /acircumflex /atilde /adieresis /aring /ae /ccedilla
7567 /egrave /eacute /ecircumflex /edieresis /igrave /iacute /icircumflex
7568 /idieresis /eth /ntilde /ograve /oacute /ocircumflex /otilde
7569 /odieresis /divide /oslash /ugrave /uacute /ucircumflex /udieresis
7570 /yacute /thorn /ydieresis ]
7571 >>
7572 /PUT pdfmark
7573 [ /_objdef {ZaDb}
7574 /type /dict
7575 /OBJ pdfmark
7576 [ {ZaDb}
7577 <<
7578 /Type /Font
7579 /Subtype /Type1
7580 /Name /ZaDb
7581 /BaseFont /ZapfDingbats
7582 >>
7583 /PUT pdfmark
7584 [ /_objdef {Helv}

```

```

7585 /type /dict
7586 /OBJ pdfmark
7587 [ {Helv}
7588 <<
7589 /Type /Font
7590 /Subtype /Type1
7591 /Name /Helv
7592 /BaseFont /Helvetica
7593 /Encoding {pdfDocEncoding}
7594 >>
7595 /PUT pdfmark
7596 [ /_objdef {aform}
7597 /type /dict
7598 /OBJ pdfmark
7599 [ /_objdef {afields}
7600 /type /array
7601 /OBJ pdfmark
7602 {
7603 [/BBox [0 0 100 100] /_objdef {Check} /BP pdfmark
7604 1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (4) show
7605 [/EP pdfmark
7606 [/BBox [0 0 100 100] /_objdef {Cross} /BP pdfmark
7607 1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (8) show
7608 [/EP pdfmark
7609 [/BBox [0 0 250 100] /_objdef {Submit} /BP pdfmark 0.6 setgray 0 0 250
7610 100 rectfill 1 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246 96
7611 lineto 4 96 lineto 4 4 lineto fill 0.34 setgray 248 98 moveto 248 2
7612 lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
7613 /Helvetica 76 selectfont 0 setgray 8 22.5 moveto (Submit) show
7614 [/EP pdfmark
7615 [/BBox [0 0 250 100] /_objdef {SubmitP} /BP pdfmark 0.6 setgray 0 0
7616 250 100 rectfill 0.34 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246
7617 96 lineto 4 96 lineto 4 4 lineto fill 1 setgray 248 98 moveto 248 2
7618 lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
7619 /Helvetica 76 selectfont 0 setgray 10 20.5 moveto (Submit) show
7620 [/EP pdfmark
7621 } ?pdfmark
7622 [ {aform}
7623 <<
7624 /Fields {afields}
7625 /DR << /Font << /ZaDb {ZaDb} /Helv {Helv} >> >>
7626 /DA (/Helv 10 Tf 0 g )
7627 /CO {corder}
7628 /NeedAppearances true
7629 >>
7630 /PUT pdfmark
7631 [ \string{Catalog\string}
7632 <<
7633 /AcroForm {aform}
7634 >>
7635 /PUT pdfmark
7636 [ /_objdef {corder} /type /array /OBJ pdfmark % dps
7637 }}%
7638 \setkeys{Form}{#1}%
7639 }
7640 \def\@endForm{}
7641 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum

```



```

7642 \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
7643 }
7644 \def\@TextField[#1]#2{% parameters, label
7645   \def\Fld@name{#2}%
7646   \def\Fld@default{}%
7647   \let\Fld@value\@empty
7648   \def\Fld@width{\DefaultWidthofText}%
7649   \def\Fld@height{\DefaultHeightofText}%
7650   \ifFld@multiline
7651     \begingroup
7652       \dimen@=\DefaultHeightofText
7653       \dimen@=4\dimen@
7654       \edef\x{\endgroup
7655         \def\noexpand\Fld@height{\the\dimen@}%
7656       }%
7657     \x
7658   \fi
7659   \bgroup
7660     \Field@toks={ }%
7661     \setkeys{Field}{#1}%
7662     \ifFld@hidden\def\Fld@width{1sp}\fi
7663     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
7664     \LayoutTextField{#2}{%
7665       \Hy@escapeform\PDFForm@Text
7666       \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
7667         pdfmark=/ANN,Raw={\PDFForm@Text}%
7668       }%
7669     }%
7670   \egroup
7671 }
7672 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7673   \def\Fld@name{#2}%
7674   \def\Fld@default{}%
7675   \def\Fld@width{\DefaultWidthofChoiceMenu}%
7676   \def\Fld@height{\DefaultHeightofChoiceMenu}%
7677   \bgroup
7678     \Fld@menulength=0
7679     \@tempdima\z@
7680     \@for\@curropt:=#3\do{%
7681       \expandafter\Fld@checkequals\@curropt==\%
7682       \Hy@StepCount\Fld@menulength
7683       \settowidth{\@tempdimb}{\@currDisplay}%
7684       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
7685     }%
7686     \advance\@tempdima by 15\p@
7687     \Field@toks={ }%
7688     \setkeys{Field}{#1}%
7689     \ifFld@hidden\def\Fld@width{1sp}\fi
7690     \LayoutChoiceField{#2}{%
7691       \ifFld@radio
7692         \@@Radio{#3}%
7693       \else
7694         {%
7695           \ifdim\Fld@width<\@tempdima
7696             \ifdim\@tempdima<1cm\@tempdima1cm\fi
7697             \edef\Fld@width{\the\@tempdima}%
7698           \fi

```

```

7699         \def\Fld@flags{%
7700         \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
7701         \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
7702         \ifx\Fld@flags\@empty
7703             \@tempdima=\the\Fld@menulength\Fld@charsize
7704             \advance\@tempdima by \Fld@borderwidth bp
7705             \advance\@tempdima by \Fld@borderwidth bp
7706             \edef\Fld@height{\the\@tempdima}%
7707         \fi
7708         \@@ListBox{#3}%
7709     }%
7710 \fi
7711 }%
7712 \egroup
7713 }
7714 \def\@@Radio#1{%
7715     \Fld@listcount=0
7716     \@for\@curropt:=#1\do{%
7717         \expandafter\Fld@checkequals\@curropt==\%
7718         \Hy@StepCount\Fld@listcount
7719         \@currDisplay\space
7720         \Hy@escapeform\PDFForm@Radio
7721         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
7722             pdfmark=/ANN,%
7723             Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
7724         } % deliberate space between radio buttons
7725     }%
7726 }
7727 \newcount\Fld@listcount
7728 \def\@@ListBox#1{%
7729     \Choice@toks={ }%
7730     \Fld@listcount=0
7731     \@for\@curropt:=#1\do{%
7732         \expandafter\Fld@checkequals\@curropt==\%
7733         \Hy@StepCount\Fld@listcount
7734         \edef\@processme{%
7735             \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
7736         }\@processme
7737     }%
7738     \Hy@escapeform\PDFForm@List
7739     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
7740         pdfmark=/ANN,Raw={\PDFForm@List}%
7741     }%
7742 }
7743 \def\@PushButton[#1]#2{% parameters, label
7744     \def\Fld@name{#2}%
7745     \bgroup
7746         \Field@toks={ }%
7747         \setkeys{Field}{#1}%
7748         \ifFld@hidden\def\Fld@width{1sp}\fi
7749         \LayoutPushButtonField{%
7750             \Hy@escapeform\PDFForm@Push
7751             \pdfmark[\MakeButtonField{#2}]{%
7752                 pdfmark=/ANN,Raw={\PDFForm@Push}%
7753             }%
7754         }%
7755     \egroup

```

```

7756 }
7757 \def\@Submit[#1]#2{%
7758   \Field@toks={ }%
7759   \def\Fld@width{\DefaultWidthofSubmit}%
7760   \def\Fld@height{\DefaultHeightofSubmit}%
7761   \bgroup
7762     \def\Fld@name{Submit}%
7763     \setkeys{Field}{#1}%
7764     \ifFld@hidden\def\Fld@width{1sp}\fi
7765     \Hy@escapeform\PDFForm@Submit
7766     \pdfmark[\MakeButtonField{#2}] {%
7767       pdfmark=/ANN,%
7768       Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
7769     }%
7770   \egroup
7771 }
7772 \def\@Reset[#1]#2{%
7773   \Field@toks={ }%
7774   \def\Fld@width{\DefaultWidthofReset}%
7775   \def\Fld@height{\DefaultHeightofReset}%
7776   \bgroup
7777     \def\Fld@name{Reset}%
7778     \setkeys{Field}{#1}%
7779     \ifFld@hidden\def\Fld@width{1sp}\fi
7780     \Hy@escapeform\PDFForm@Reset
7781     \pdfmark[\MakeButtonField{#2}] {%
7782       pdfmark=/ANN,Raw={\PDFForm@Reset}%
7783     }%
7784   \egroup
7785 }
7786 \def\@CheckBox[#1]#2{% parameters, label
7787   \def\Fld@name{#2}%
7788   \def\Fld@default{0}%
7789   \bgroup
7790     \def\Fld@width{\DefaultWidthofCheckBox}%
7791     \def\Fld@height{\DefaultHeightofCheckBox}%
7792     \Field@toks={ }%
7793     \setkeys{Field}{#1}%
7794     \ifFld@hidden\def\Fld@width{1sp}\fi
7795     \LayoutCheckField{#2} {%
7796       \Hy@escapeform\PDFForm@Check
7797       \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}] {%
7798         pdfmark=/ANN,Raw={\PDFForm@Check}%
7799       }%
7800     }%
7801   \egroup
7802 }
7803 \pdfmark

```

## 46.2 dvipdf

```

7804 \dvipdf
7805 \def\@Form[#1]{\typeout{Sorry, I do not support FORMs}}
7806 \def\@endForm{}
7807 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7808   \typeout{Sorry, dvipdf does not support FORM gauges}%
7809 }
7810 \def\@TextField[#1]#2{% parameters, label

```

```

7811 \typeout{Sorry, dvipdf does not support FORM text fields}%
7812 }
7813 \def\@CheckBox[#1]#2{% parameters, label
7814 \typeout{Sorry, dvipdf does not support FORM checkboxes}%
7815 }
7816 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7817 \typeout{Sorry, dvipdf does not support FORM choice menus}%
7818 }
7819 \def\@PushButton[#1]#2{% parameters, label
7820 \typeout{Sorry, dvipdf does not support FORM pushbuttons}%
7821 }
7822 \def\@Reset[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
7823 \def\@Submit[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
7824 \end{dvipdf}

```

### 46.3 HyperTeX

```

7825 \hypertex
7826 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
7827 \def\@endForm{}
7828 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7829 \typeout{Sorry, HyperTeX does not support FORM gauges}%
7830 }
7831 \def\@TextField[#1]#2{% parameters, label
7832 \typeout{Sorry, HyperTeX does not support FORM text fields}%
7833 }
7834 \def\@CheckBox[#1]#2{% parameters, label
7835 \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
7836 }
7837 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7838 \typeout{Sorry, HyperTeX does not support FORM choice menus}%
7839 }
7840 \def\@PushButton[#1]#2{% parameters, label
7841 \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
7842 }
7843 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
7844 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
7845 \end{hypertex}

```

### 46.4 TeX4ht

```

7846 \tex4ht
7847 \def\@Form[#1]{%
7848 \setkeys{Form}{#1}%
7849 \HCode{<form action="\Form@action" method="\Form@method">}%
7850 }
7851 \def\@endForm{\HCode{</form>}}
7852 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7853 \typeout{Sorry, TeX4ht does not support gauges}%
7854 }
7855 \def\@TextField[#1]#2{% parameters, label
7856 \let\Hy@reserved@a\@empty
7857 \def\Fld@name{#2}%
7858 \def\Fld@default{}%
7859 \bgroup
7860 \Field@toks={ }%
7861 \setkeys{Field}{#1}%
7862 \HCode{<label for="\Fld@name">#2</label>}%
7863 \ifFld@password

```

```

7864     \@@PasswordField
7865     \else
7866         \@@TextField
7867     \fi
7868 \egroup
7869 }
7870 \def\@@PasswordField{%
7871     \HCode{%
7872         <input type="password"
7873             id="\Fld@name"
7874             name="\Fld@name"
7875             \ifFld@hidden type="hidden"\fi
7876             value="\Fld@default"
7877             \the\Field@toks
7878         >%
7879     }%
7880 }
7881 \def\@@TextField{%
7882     \ifFld@multiline
7883         \HCode{<textarea
7884             \ifFld@readonly readonly \fi
7885             id="\Fld@name"
7886             name="\Fld@name"
7887             \ifFld@hidden type="hidden"\fi
7888             \the\Field@toks>%
7889         }%
7890         \Fld@default
7891         \HCode{</textarea>}}%
7892     \else
7893         \HCode{<input type="text"
7894             \ifFld@readonly readonly \fi
7895             id="\Fld@name"
7896             name="\Fld@name"
7897             \ifFld@hidden type="hidden"\fi
7898             value="\Fld@default" \the\Field@toks>
7899         }%
7900     \fi
7901 }
7902 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7903     \def\Fld@name{#2}%
7904     \def\Fld@default{}%
7905     \let\Hy@reserved@a\relax
7906     \bgroup
7907     \expandafter\Fld@findlength#3\\%
7908     \Field@toks={ }%
7909     \setkeys{Field}{#1}%
7910     #2%
7911     \ifFld@radio
7912         \expandafter\@@Radio#3\\%
7913     \else
7914         \expandafter\@@Menu#3\\%
7915     \fi
7916 \egroup
7917 }
7918 \def\Fld@findlength#1\\{%
7919     \Fld@menulength=0
7920     \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%

```

```

7921 }
7922 \def\@@Menu#1\\{%
7923   \HCode{<select size="\the\Fld@menulength"
7924     name="\Fld@name" \the\Field@toks>}%
7925   \@for\@curropt:=#1\do{%
7926     \expandafter\Fld@checkequals\@curropt==\\%
7927     \HCode{<option
7928       \ifx\@curropt\Fld@default selected \fi
7929       value="\@currValue">\@currDisplay</option>%
7930     }%
7931   }%
7932   \HCode{</select>}%
7933 }
7934 \def\@@Radio#1\\{%
7935   \@for\@curropt:=#1\do{%
7936     \expandafter\Fld@checkequals\@curropt==\\%
7937     \HCode{<input type="radio"
7938       \ifx\@curropt\Fld@default checked \fi
7939       name="\Fld@name"
7940       value="\@currValue"
7941       \the\Field@toks>%
7942     }%
7943     \@currDisplay
7944   }%
7945 }
7946 \def\@PushButton[#1]#2{% parameters, label
7947   \def\Fld@name{#2}%
7948   \bgroup
7949     \Field@toks={ }%
7950     \setkeys{Field}{#1}%
7951     \HCode{<input type="button"
7952       name="\Fld@name"
7953       value="#2"
7954       \the\Field@toks>%
7955     }%
7956     \HCode{</button>}%
7957   \egroup
7958 }
7959 \def\@Submit[#1]#2{%
7960   \HCode{<button type="submit">#2</button>}%
7961 }
7962 \def\@Reset[#1]#2{%
7963   \HCode{<button type="reset">#2</button>}%
7964 }
7965 \def\@CheckBox[#1]#2{% parameters, label
7966   \let\Hy@reserved@a\@empty
7967   \def\Fld@name{#2}%
7968   \def\Fld@default{0}%
7969   \bgroup
7970     \Field@toks={ }%
7971     \setkeys{Field}{#1}%
7972     \HCode{<input type="checkbox"
7973       \ifFld@checked checked \fi
7974       \ifFld@disabled disabled \fi
7975       \ifFld@readonly readonly \fi
7976       name="\Fld@name"
7977       \ifFld@hidden type="hidden"\fi

```

```

7978     value="\Fld@default"
7979     \the\Fld@toks>%
7980     #2%
7981   }%
7982 \egroup
7983 }
7984 </tex4ht>

```

## 46.5 pdfTeX

```

7985 <*pdfTeX>
7986 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7987   \typeout{Sorry, pdfTeX does not support FORM gauges}%
7988 }
7989 \def\MakeFieldObject#1#2{\sbox0{#1}%
7990   \immediate\pdfxform0 %
7991   \expandafter\edef\csname #2Object\endcsname{%
7992     \the\pdflastxform\space 0 R%
7993   }%
7994 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
7995 }%
7996 \def\@Form[#1]{%
7997   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
7998   \setkeys{Form}{#1}%
7999   \ifnum\pdfTeXversion>13
8000     \pdfrefobj\OBJ@pdfdocencoding
8001     \pdfrefobj\OBJ@ZaDb
8002     \pdfrefobj\OBJ@Helv
8003     \pdfrefobj\OBJ@acroform
8004   \fi
8005   \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
8006   \MakeFieldObject%

```

Same as \ding{123} of package pifont.

```

8007   \begingroup
8008     \fontfamily{pzd}%
8009     \fontencoding{U}%
8010     \fontseries{m}%
8011     \fontshape{n}%
8012     \selectfont
8013     \char123 %
8014   \endgroup
8015 }{Ding}%
8016 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{Submit}}}}{Submit}%
8017 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{SubmitP}}}}{SubmitP}%
8018 }
8019 \def\@EndForm{}
8020 \def\@TextField[#1]#2{% parameters, label
8021   \def\Fld@name{#2}%
8022   \def\Fld@default{}%
8023   \let\Fld@value\@empty
8024   \def\Fld@width{\DefaultWidthofText}%
8025   \def\Fld@height{\DefaultHeightofText}%
8026   \ifFld@multiline
8027     \begingroup
8028       \dimen@=\DefaultHeightofText
8029       \dimen@=4\dimen@
8030       \edef\x{\endgroup
8031         \def\noexpand\Fld@height{\the\dimen@}%

```

```

8032     }%
8033     \x
8034 \fi
8035 \bgroup
8036     \Field@toks={ }%
8037     \setkeys{Field}{#1}%
8038     \ifFld@hidden\def\Fld@width{1sp}\fi
8039     \ifx\Fld@value\empty\def\Fld@value{\Fld@default}\fi
8040     \LayoutTextField{#2}{%
8041         \Hy@escapeform\PDFForm@Text
8042         \pdfstartlink user {\PDFForm@Text}\relax
8043         \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
8044     }%
8045 \egroup
8046 }
8047 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8048     \def\Fld@name{#2}%
8049     \def\Fld@default{}%
8050     \def\Fld@width{\DefaultWidthofChoiceMenu}%
8051     \def\Fld@height{\DefaultHeightofChoiceMenu}%
8052     \bgroup
8053         \Fld@menulength=0
8054         \@tempdima\z@
8055         \@for\@curropt:=#3\do{%
8056             \expandafter\Fld@checkequals\@curropt==\%
8057             \Hy@StepCount\Fld@menulength
8058             \settowidth{\@tempdimb}{\@currDisplay}%
8059             \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8060         }%
8061         \advance\@tempdima by 15\p@
8062         \Field@toks={ }%
8063         \setkeys{Field}{#1}%
8064         \ifFld@hidden\def\Fld@width{1sp}\fi
8065         \LayoutChoiceField{#2}{%
8066             \ifFld@radio
8067                 \@@Radio{#3}%
8068             \else
8069                 {%
8070                     \ifdim\Fld@width<\@tempdima
8071                         \ifdim\@tempdima<1cm\@tempdima1cm\fi
8072                         \edef\Fld@width{\the\@tempdima}%
8073                     \fi
8074                     \def\Fld@flags{}%
8075                     \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8076                     \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8077                     \ifx\Fld@flags\empty
8078                         \@tempdima=\the\Fld@menulength\Fld@charsize
8079                         \advance\@tempdima by \Fld@borderwidth bp
8080                         \advance\@tempdima by \Fld@borderwidth bp
8081                         \edef\Fld@height{\the\@tempdima}%
8082                     \fi
8083                     \@@Listbox{#3}%
8084                 }%
8085             \fi
8086         }%
8087     \egroup
8088 }

```



```

8089 \def\@@Radio#1{%
8090   \Fld@listcount=0
8091   \@for\@curropt:=#1\do{%
8092     \expandafter\Fld@checkequals\@curropt==\%
8093     \Hy@StepCount\Fld@listcount
8094     \@currDisplay\space
8095     \leavevmode
8096     \Hy@escapeform\PDFForm@Radio
8097     \pdfstartlink user {%
8098       \PDFForm@Radio
8099       /AP <<
8100       /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.

```

8101       /\@currValue\space \DingObject
8102       >>
8103     >>
8104   }%
8105   \relax
8106   \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
8107   \space% deliberate space between radio buttons
8108 }%
8109 }
8110 \newcount\Fld@listcount
8111 \def\@@Listbox#1{%
8112   \Choice@toks={ }%
8113   \Fld@listcount=0
8114   \@for\@curropt:=#1\do{%
8115     \expandafter\Fld@checkequals\@curropt==\%
8116     \Hy@StepCount\Fld@listcount
8117     \edef\@processme{%
8118       \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8119     }\@processme
8120   }%
8121   \leavevmode
8122   \Hy@escapeform\PDFForm@List
8123   \pdfstartlink user {\PDFForm@List}\relax
8124   \MakeChoiceField{\Fld@width}{\Fld@height}%
8125   \pdfendlink
8126 }
8127 \def\@PushButton[#1]#2{% parameters, label
8128   \def\Fld@name{#2}%
8129   \bgroup
8130     \Field@toks={ }%
8131     \setkeys{Field}{#1}%
8132     \ifFld@hidden\def\Fld@width{1sp}\fi
8133     \LayoutPushButtonField{%
8134       \leavevmode
8135       \Hy@escapeform\PDFForm@Push
8136       \pdfstartlink user {\PDFForm@Push}\relax
8137       \MakeButtonField{#2}%
8138       \pdfendlink
8139     }%
8140   \egroup
8141 }
8142 \def\@Submit[#1]#2{%

```

```

8143 \Field@toks={ }%
8144 \def\Fld@width{\DefaultWidthofSubmit}%
8145 \def\Fld@height{\DefaultHeightofSubmit}%
8146 \bgroup
8147 \def\Fld@name{Submit}%
8148 \setkeys{Field}{#1}%
8149 \ifFld@hidden\def\Fld@width{1sp}\fi
8150 \leavevmode
8151 \Hy@escapeform\PDFForm@Submit
8152 \pdfstartlink user {%
8153 \PDFForm@Submit
8154 /AP << /N \SubmitObject\space /D \SubmitPObject >>
8155 }%
8156 \relax
8157 \MakeButtonField{#2}%
8158 \pdfendlink
8159 \egroup
8160 }
8161 \def\@Reset[#1]#2{%
8162 \Field@toks={ }%
8163 \def\Fld@width{\DefaultWidthofReset}%
8164 \def\Fld@height{\DefaultHeightofReset}%
8165 \bgroup
8166 \def\Fld@name{Reset}%
8167 \setkeys{Field}{#1}%
8168 \ifFld@hidden\def\Fld@width{1sp}\fi
8169 \leavevmode
8170 \Hy@escapeform\PDFForm@Reset
8171 \pdfstartlink user {\PDFForm@Reset}\relax
8172 \MakeButtonField{#2}%
8173 \pdfendlink
8174 \egroup
8175 }
8176 \def\@CheckBox[#1]#2{% parameters, label
8177 \def\Fld@name{#2}%
8178 \def\Fld@default{0}%
8179 \bgroup
8180 \def\Fld@width{\DefaultWidthofCheckBox}%
8181 \def\Fld@height{\DefaultHeightofCheckBox}%
8182 \Field@toks={ }%
8183 \setkeys{Field}{#1}%
8184 \ifFld@hidden\def\Fld@width{1sp}\fi
8185 \LayoutCheckField{#2}{%
8186 \Hy@escapeform\PDFForm@Check
8187 \pdfstartlink user {\PDFForm@Check}\relax
8188 \MakeCheckField{\Fld@width}{\Fld@height}%
8189 \pdfendlink
8190 }%
8191 \egroup
8192 }
8193 \pdfobj { << /Type /Encoding /Differences [ 24 /breve /caron
8194 /circumflex /dotaccent /hungarumlaut /ogonek /ring /tilde 39
8195 /quotesingle 96 /grave 128 /bullet /dagger /daggerdbl /ellipsis
8196 /emdash /endash /florin /fraction /guilsinglleft /guilsinglright
8197 /minus /perthousand /quotedblbase /quotedblleft /quotedblright
8198 /quoteleft /quoteright /quotesinglbase /trademark /fi /fl /Lslash /OE
8199 /Scaron /Ydieresis /Zcaron /dotlessi /lslash /oe /scaron /zcaron 164

```

```

8200 /currency 166 /brokenbar 168 /dieresis /copyright /ordfeminine 172
8201 /logicalnot /.notdef /registered /macron /degree /plusminus
8202 /twosuperior /threesuperior /acute /mu 183 /periodcentered /cedilla
8203 /onesuperior /ordmasculine 188 /onequarter /onehalf /threequarters 192
8204 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE /Ccedilla
8205 /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute /Icircumflex
8206 /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex /Otilde
8207 /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex /Udieresis
8208 /Yacute /Thorn /germandbls /agrave /aacute /acircumflex /atilde
8209 /adieresis /aring /ae /ccedilla /egrave /eacute /ecircumflex
8210 /edieresis /igrave /iacute /icircumflex /idieresis /eth /ntilde
8211 /ograde /oacute /ocircumflex /otilde /odieresis /divide /oslash
8212 /ugrave /uacute /ucircumflex /udieresis /yacute /thorn /ydieresis ] >>
8213 }
8214 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
8215 \pdfobj {
8216   <<
8217     /Type /Font
8218     /Subtype /Type1
8219     /Name /ZaDb
8220     /BaseFont /ZapfDingbats
8221   >>
8222 }
8223 \edef\OBJ@ZaDb{\the\pdflastobj}
8224 \pdfobj { <<
8225   /Type /Font
8226   /Subtype /Type1
8227   /Name /Helv
8228   /BaseFont /Helvetica
8229   /Encoding \OBJ@pdfdocencoding\space 0 R
8230   >>
8231 }
8232 \edef\OBJ@Helv{\the\pdflastobj}
8233 \pdfobj {
8234   <<
8235     /Fields []
8236     /DR <<
8237       /Font << /ZaDb \OBJ@ZaDb\space 0 R /Helv \OBJ@Helv\space 0 R >>
8238     >>
8239     /DA (/Helv 10 Tf 0 g )
8240     /NeedAppearances true
8241   >>
8242 }
8243 \edef\OBJ@acroform{\the\pdflastobj}
8244 \pdfx

```

## 46.6 dvipdfm

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

```
8245 \dvipdfm
```

\@Gauge

```

8246 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8247   \typeout{Sorry, dvipdfm does not support FORM gauges}%
8248 }

```

\@Form

```

8249 \def \@Form[#1]{%
8250   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
8251   \setkeys{Form}{#1}%
8252   \@pdfm@mark{obj @afields [ ]}%
8253   \@pdfm@mark{obj @corder [ ]}%
8254   \@pdfm@mark{%
8255     obj @aform <<
8256       /Fields @afields
8257       /DR << /Font << /ZaDb @OBJZaDb /Helv @OBJHelv >> >>
8258       /DA (/Helv 10 Tf 0 g )
8259       /CO @corder
8260       /NeedAppearances true
8261     >>%
8262   }%
8263   \@pdfm@mark{put @catalog << /AcroForm @aform >>}%
8264 }

\@endForm

8265 \def \@endForm{}

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

8266 \def \dvipdfm@setdim{%
8267   height \the\ht\pdfm@box\space
8268   width \the\wd\pdfm@box\space
8269   depth \the\dp\pdfm@box\space
8270 }

\@TextField

8271 \def \@TextField[#1]#2{% parameters, label
8272   \def \Fld@name{#2}%
8273   \def \Fld@default{}%
8274   \let \Fld@value\@empty
8275   \def \Fld@width{\DefaultWidthofText}%
8276   \def \Fld@height{\DefaultHeightofText}%
8277   \ifFld@multiline
8278     \begingroup
8279       \dimen@=\DefaultHeightofText
8280       \dimen@=4\dimen@
8281       \edef\x{\endgroup
8282         \def\noexpand\Fld@height{\the\dimen@}%
8283       }%
8284     \x
8285   \fi
8286   \bgroup
8287     \Field@toks={ }%
8288     \setkeys{Field}{#1}%
8289     \ifFld@hidden\def\Fld@width{1sp}\fi
8290     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
8291     \setbox\pdfm@box=\hbox{%
8292       \MakeTextField{\Fld@width}{\Fld@height}%
8293     }%
8294     \LayoutTextField{#2}{%
8295       \Hy@escapeform\PDFForm@Text
8296       \@pdfm@mark{%
8297         ann @\Fld@name\space \dvipdfm@setdim << \PDFForm@Text >>%
8298       }%
8299     }%

```

```

8300 \unhbox\pdfm@box
8301 \@pdfm@mark{put \@fields \@Fld@name}% record in \@fields array
8302 \egroup
8303 }

```

\@ChoiceMenu

```

8304 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8305 \def\Fld@name{#2}%
8306 \def\Fld@default{}%
8307 \def\Fld@width{\DefaultWidthofChoiceMenu}%
8308 \def\Fld@height{\DefaultHeightofChoiceMenu}%
8309 \bgroup
8310 \Fld@menulength=0
8311 \@tempdima\z@
8312 \@for\@curropt:=#3\do{%
8313 \expandafter\Fld@checkequals\@curropt==\%
8314 \Hy@StepCount\Fld@menulength
8315 \settowidth{\@tempdimb}{\@currDisplay}%
8316 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8317 }%
8318 \advance\@tempdima by 15\p@
8319 \Field@toks={ }%
8320 \setkeys{Field}{#1}%
8321 \ifFld@hidden\def\Fld@width{1sp}\fi
8322 \LayoutChoiceField{#2}{%
8323 \ifFld@radio
8324 \@@Radio{#3}%
8325 \else
8326 {%
8327 \ifdim\Fld@width<\@tempdima
8328 \ifdim\@tempdima<1cm\@tempdima1cm\fi
8329 \edef\Fld@width{\the\@tempdima}%
8330 \fi
8331 \def\Fld@flags{}%
8332 \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8333 \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8334 \ifx\Fld@flags\@empty
8335 \@tempdima=\the\Fld@menulength\Fld@charsize
8336 \advance\@tempdima by \Fld@borderwidth bp
8337 \advance\@tempdima by \Fld@borderwidth bp
8338 \edef\Fld@height{\the\@tempdima}%
8339 \fi
8340 \@@Listbox{#3}%
8341 }%
8342 \fi
8343 }%
8344 \egroup
8345 }

```

\@@Radio

```

8346 \def\@@Radio#1{%
8347 \Fld@listcount=0
8348 \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
8349 \@for\@curropt:=#1\do{%
8350 \expandafter\Fld@checkequals\@curropt==\%
8351 \Hy@StepCount\Fld@listcount
8352 \@currDisplay\space

```

```

8353 \leavevmode
8354 \Hy@escapeform\PDFForm@Radio
8355 \@pdfm@mark{%
8356   ann \ifnum\Fld@listcount=1 @\Fld@name\space\fi
8357   \dvipdfm@setdim
8358   <<
8359   \PDFForm@Radio\space
8360   /AP << /N << /\@currValue /null >> >>
8361   >>%
8362 }%
8363 \unhcopy\pdfm@box\space% deliberate space between radio buttons
8364 \ifnum\Fld@listcount=1\@pdfm@mark{put @afields @\Fld@name}\fi
8365 }%
8366 }

\Fld@listcount

8367 \newcount\Fld@listcount

\@@ListBox

8368 \def\@@ListBox#1{%
8369   \Choice@toks={ }%
8370   \Fld@listcount=0
8371   \@for\@curropt:=#1\do{%
8372     \expandafter\Fld@checkequals\@curropt==\%
8373     \Hy@StepCount\Fld@listcount
8374     \edef\@processme{%
8375       \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8376     }\@processme
8377   }%
8378   \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
8379   \leavevmode
8380   \Hy@escapeform\PDFForm@List
8381   \@pdfm@mark{%
8382     ann @\Fld@name\space\dvipdfm@setdim
8383     << \PDFForm@List >>%
8384   }%
8385   \unhbox\pdfm@box
8386   \@pdfm@mark{put @afields @\Fld@name}%
8387 }

\@PushButton

8388 \def\@PushButton[#1]#2{% parameters, label
8389   \def\Fld@name{#2}%
8390   \bgroup
8391   \Field@toks={ }%
8392   \setkeys{Field}{#1}%
8393   \ifFld@hidden\def\Fld@width{1sp}\fi
8394   \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8395   \LayoutPushButtonField{%
8396     \leavevmode
8397     \Hy@escapeform\PDFForm@Push
8398     \@pdfm@mark{%
8399       ann @\Fld@name\space\dvipdfm@setdim
8400       << \PDFForm@Push >>%
8401     }%
8402   }%
8403   \unhbox\pdfm@box

```

```

8404 \pdfmark{put @afields @\Fld@name}%
8405 \egroup
8406 }

\@Submit
8407 \def\@Submit[#1]#2{%
8408 \Field@toks={ }%
8409 \def\Fld@width{\DefaultWidthofSubmit}%
8410 \def\Fld@height{\DefaultHeightofSubmit}%
8411 \bgroup
8412 \def\Fld@name{Submit}%
8413 \setkeys{Field}{#1}%
8414 \ifFld@hidden\def\Fld@width{1sp}\fi
8415 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8416 \leavevmode
8417 \Hy@escapeform\PDFForm@Submit
8418 \pdfmark{%
8419 ann @\Fld@name\space\dvipdfm@setdim
8420 << \PDFForm@Submit >>%
8421 }%
8422 \unhbox\pdfm@box%
8423 \pdfmark{put @afields @\Fld@name}%
8424 \egroup
8425 }

\@Reset
8426 \def\@Reset[#1]#2{%
8427 \Field@toks={ }%
8428 \def\Fld@width{\DefaultWidthofReset}%
8429 \def\Fld@height{\DefaultHeightofReset}%
8430 \bgroup
8431 \def\Fld@name{Reset}%
8432 \setkeys{Field}{#1}%
8433 \ifFld@hidden\def\Fld@width{1sp}\fi
8434 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8435 \leavevmode
8436 \Hy@escapeform\PDFForm@Reset
8437 \pdfmark{%
8438 ann @\Fld@name\space\dvipdfm@setdim
8439 << \PDFForm@Reset >>%
8440 }%
8441 \unhbox\pdfm@box
8442 \pdfmark{put @afields @\Fld@name}%
8443 \egroup
8444 }

\@CheckBox
8445 \def\@CheckBox[#1]#2{% parameters, label
8446 \def\Fld@name{#2}%
8447 \def\Fld@default{0}%
8448 \bgroup
8449 \def\Fld@width{\DefaultWidthofCheckBox}%
8450 \def\Fld@height{\DefaultHeightofCheckBox}%
8451 \Field@toks={ }%
8452 \setkeys{Field}{#1}%
8453 \ifFld@hidden\def\Fld@width{1sp}\fi
8454 \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%

```

```

8455 \LayoutCheckField{#2}{%
8456 \Hy@escapeform\PDFForm@Check
8457 \@pdfm@mark{%
8458 ann @\Fld@name\space\dvipdfm@setdim
8459 << \PDFForm@Check >>%
8460 }%
8461 \unhbox\pdfm@box
8462 \@pdfm@mark{put @afields @\Fld@name}%
8463 }%
8464 \egroup
8465 }

8466 \@pdfm@mark{obj @OBJpdfdocencoding << /Type /Encoding /Differences [%
8467 24 /breve /caron /circumflex /dotaccent /hungarumlaut /ogonek /ring
8468 /tilde
8469 39 /quotesingle
8470 96 /grave
8471 128 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin
8472 /fraction /guilsinglleft /guilsinglright /minus /perthousand
8473 /quotedblbase /quotedblleft /quotedblright /quoteleft /quoteright
8474 /quotesinglbase /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis
8475 /Zcaron /dotlessi /lslash /oe /scaron /zcaron
8476 164 /currency
8477 166 /brokenbar
8478 168 /dieresis /copyright /ordfeminine
8479 172 /logicalnot /.notdef /registered /macron /degree /plusminus
8480 /twosuperior /threesuperior /acute /mu
8481 183 /periodcentered /cedilla /onesuperior /ordmasculine
8482 188 /onequarter /onehalf /threequarters
8483 192 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE
8484 /Ccedilla /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute
8485 /Icircumflex /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex
8486 /Otilde /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex
8487 /Udieresis /Yacute /Thorn /germandbls /agrave /aacute /acircumflex
8488 /atilde /adieresis /aring /ae /ccedilla /egrave /eacute
8489 /ecircumflex /edieresis /igrave /iacute /icircumflex /idieresis
8490 /eth /ntilde /ograde /oacute /ocircumflex /otilde /odieresis
8491 /divide /oslash /ugrave /uacute /ucircumflex /udieresis /yacute
8492 /thorn /ydieresis%
8493 ] >>
8494 }
8495 \@pdfm@mark{obj @OBJZaDb
8496 <<
8497 /Type /Font
8498 /Subtype /Type1
8499 /Name /ZaDb
8500 /BaseFont /ZapfDingbats
8501 >>
8502 }
8503 \@pdfm@mark{obj @OBJHelv
8504 <<
8505 /Type /Font
8506 /Subtype /Type1
8507 /Name /Helv
8508 /BaseFont /Helvetica
8509 /Encoding @OBJpdfdocencoding
8510 >>
8511 }

```



8512 </dvipdfm>

## 46.7 Common forms part

8513 < \*pdfform>

\Hy@escapestring

```
8514 \begingroup\expandafter\expandafter\expandafter\endgroup
8515 \expandafter\ifx\csname pdfescapestring\endcsname\relax
8516   \let\Hy@escapestring\@firstofone
8517   \def\Hy@escapeform#1{%
8518     \ifHy@escapeform
8519       \def\Hy@escapestring##1{%
8520         \noexpand\Hy@escapestring{\noexpand##1}%
8521       }%
8522     \edef\Hy@temp{#1}%
8523     \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
8524     \def\Hy@escapestring##1{%
8525       \@ifundefined{Hy@esc@\string##1}{%
8526         ##1%
8527         \ThisShouldNotHappen
8528       }{%
8529         \csname Hy@esc@\string##1\endcsname
8530       }%
8531     }%
8532   \else
8533     \let\Hy@escapestring\@firstofone
8534   \fi
8535 }%
8536 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
8537   \ifx\#3\%
8538   \else
8539     \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
8540     \Hy@ReturnAfterFi{%
8541       \Hy@@escapeform#3\@nil
8542     }%
8543   \fi
8544 }%
8545 \else
8546   \def\Hy@escapeform#1{%
8547     \ifHy@escapeform
8548       \let\Hy@escapestring\pdfescapestring
8549     \else
8550       \let\Hy@escapestring\@firstofone
8551     \fi
8552   }%
8553   \Hy@escapeform{}}%
8554 \fi
```

\PDFForm@Check

```
8555 \def\PDFForm@Check{%
8556   /Subtype /Widget
8557   \ifFld@hidden /F 6 \else /F 4 \fi
8558   /T (\Hy@escapestring{Fld@name})
8559   /Q \Fld@align\space
8560   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8561   /MK <<
```

```

8562     /BC [\Fld@bordercolor]
8563     \ifx\Fld@bcolor\@empty
8564     \else
8565         /BG [\Fld@bcolor]
8566     \fi
8567     /CA (\Hy@escapestring{\Fld@cbsymbol})
8568 >>
8569 /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
8570 /FT /Btn
8571 /H /P
8572 \ifFld@checked /V /Yes \else /V /Off \fi
8573 }

```

\PDFForm@Push

```

8574 \def\PDFForm@Push{%
8575     /Subtype /Widget
8576     \ifFld@hidden /F 6 \else /F 4 \fi
8577     /T (\Hy@escapestring{\Fld@name})
8578     /FT /Btn
8579     /Ff 65540
8580     /H /P
8581     /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8582     /MK <<
8583         /BC [\Fld@bordercolor]
8584     >>
8585     /A << /S /JavaScript /JS (\Hy@escapestring{\Fld@onclick}) >>
8586 }

```

\Fld@additionalactions

```

8587 \def\Fld@additionalactions{%
8588     /AA <<

```

K input (keystroke) format

```

8589     \ifx\Fld@keystroke@code\@empty
8590     \else
8591         /K << /S /JavaScript /JS (\Hy@escapestring{\Fld@keystroke@code}) >>
8592     \fi

```

F display format

```

8593     \ifx\Fld@format@code\@empty
8594     \else
8595         /F << /S /JavaScript /JS (\Hy@escapestring{\Fld@format@code}) >>
8596     \fi

```

V validation

```

8597     \ifx\Fld@validate@code\@empty
8598     \else
8599         /V << /S /JavaScript /JS (\Hy@escapestring{\Fld@validate@code}) >>
8600     \fi

```

C calculation

```

8601     \ifx\Fld@calculate@code\@empty
8602     \else
8603         /C << /S /JavaScript /JS (\Hy@escapestring{\Fld@calculate@code}) >>
8604     \fi

```

Fo receiving the input focus

```

8605     \ifx\Fld@onfocus@code\@empty
8606     \else

```

```

8607      /Fo << /S /JavaScript /JS (\Hy@escapestring{\Fld@onfocus@code}) >>
8608      \fi

```

Bl loosing the input focus (blurred)

```

8609      \ifx\Fld@onblur@code\@empty
8610      \else
8611      /Bl << /S /JavaScript /JS (\Hy@escapestring{\Fld@onblur@code}) >>
8612      \fi

```

D pressing the mouse button (down)

```

8613      \ifx\Fld@onmousedown@code\@empty
8614      \else
8615      /D << /S /JavaScript /JS (\Hy@escapestring{\Fld@onmousedown@code}) >>
8616      \fi

```

U releasing the mouse button (up)

```

8617      \ifx\Fld@onmouseup@code\@empty
8618      \else
8619      /U << /S /JavaScript /JS (\Hy@escapestring{\Fld@onmouseup@code}) >>
8620      \fi

```

E cursor enters the annotation's active area.

```

8621      \ifx\Fld@onenter@code\@empty
8622      \else
8623      /E << /S /JavaScript /JS (\Hy@escapestring{\Fld@onenter@code}) >>
8624      \fi

```

X cursor exits the annotation's active area.

```

8625      \ifx\Fld@onexit@code\@empty
8626      \else
8627      /X << /S /JavaScript /JS (\Hy@escapestring{\Fld@onexit@code}) >>
8628      \fi
8629      >>
8630 }

```

\PDFForm@List

```

8631 \def\PDFForm@List{%
8632   /Subtype /Widget
8633   \ifFld@hidden /F 6 \else /F 4 \fi
8634   /T (\Hy@escapestring{\Fld@name})
8635   /FT /Ch
8636   /Q \Fld@align\space
8637   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8638   /MK <<
8639     /BC [\Fld@bordercolor]
8640     \ifx\Fld@bcolor\@empty
8641     \else
8642     /BG [\Fld@bcolor]
8643     \fi
8644   >>
8645   /DA (/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg )
8646   /Opt [\the\Choice@toks]
8647   /DV (\Hy@escapestring{\Fld@default})
8648   \Fld@additionalactions
8649   \Fld@flags
8650 }

```

\PDFForm@Radio

```

8651 \def\PDFForm@Radio{%

```

```

8652 /Subtype /Widget
8653 \ifFld@hidden /F 6 \else /F 4 \fi
8654 /T (\Hy@escapestring{\Fld@name})
8655 /FT /Btn
8656 /Ff 49152
8657 /H /P
8658 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8659 /MK <<
8660 /BC [\Fld@bordercolor]
8661 \ifx\Fld@bcolor\@empty
8662 \else
8663 /BG [\Fld@bcolor]
8664 \fi
8665 /CA (H)
8666 >>
8667 /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
8668 \ifx\@currValue\Fld@default
8669 /V /\Fld@default\space
8670 \else
8671 /V /Off
8672 \fi
8673 \Fld@additionalactions
8674 }

```

\PDFForm@Text

```

8675 \def\PDFForm@Text{%
8676 /Subtype /Widget
8677 \ifFld@hidden /F 6 \else /F 4 \fi
8678 /T (\Hy@escapestring{\Fld@name})
8679 /Q \Fld@align\space
8680 /FT /Tx
8681 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8682 /MK <<
8683 /BC [\Fld@bordercolor]
8684 \ifx\Fld@bcolor\@empty
8685 \else
8686 /BG [\Fld@bcolor]
8687 \fi
8688 >>
8689 /DA (/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg )
8690 /DV (\Hy@escapestring{\Fld@default})
8691 /V (\Hy@escapestring{\Fld@value})
8692 \Fld@additionalactions
8693 \ifFld@multiline
8694 \ifFld@readonly /Ff 4097 \else /Ff 4096 \fi
8695 \else
8696 \ifFld@password
8697 \ifFld@readonly /Ff 8193 \else /Ff 8192 \fi
8698 \else
8699 \ifFld@readonly /Ff 1 \fi
8700 \fi
8701 \fi
8702 \ifnum\Fld@maxlen>0/MaxLen \Fld@maxlen \fi
8703 }

```

\PDFForm@Submit

```

8704 \def\PDFForm@Submit{%

```

```

8705 /Subtype /Widget
8706 \ifFld@hidden /F 6 \else /F 4 \fi
8707 /T (\Hy@escapestring{\Fld@name})
8708 /FT /Btn
8709 /Ff 65540
8710 /H /P
8711 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8712 /MK <<
8713 /BC [\Fld@bordercolor]
8714 >>
8715 /A <<
8716 /S /SubmitForm
8717 /F <<
8718 /FS /URL
8719 /F (\Hy@escapestring{\Form@action})
8720 >>
8721 \ifForm@html /Flags 4 \fi
8722 >>
8723 }

```

`\PDFForm@Reset`

```

8724 \def\PDFForm@Reset{%
8725 /Subtype /Widget
8726 \ifFld@hidden /F 6 \else /F 4 \fi
8727 /T (\Hy@escapestring{\Fld@name})
8728 /FT /Btn
8729 /H /P
8730 /DA (/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)
8731 /Ff 65540
8732 /MK <<
8733 /BC [\Fld@bordercolor]
8734 % /CA (Clear)
8735 % /AC (Done)
8736 >>
8737 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8738 /A << /S /ResetForm >>
8739 }

8740 </pdfform>
8741 <*package>

```

## 47 Bookmarks in the PDF file

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

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

```

8742 \def\phantomsection{%
8743 \Hy@GlobalStepCount\Hy@linkcounter
8744 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
8745 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%

```

```

8746 }
8747 </package>

```

## 47.1 Bookmarks

```

8748 <*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`.

```

8749 \def\Hy@writebookmark#1#2#3#4#5{% section number, text, label, level, file
8750 \ifx\WriteBookmarks\relax%
8751 \else
8752 \ifnum#4>\Hy@bookmarksdepth\relax
8753 \else
8754 \@@writetorep{#1}{#2}{#3}{#4}{#5}%
8755 \fi
8756 \fi}
8757 \def\Hy@currentbookmarklevel{0}
8758 \def\Hy@numberline#1{#1 }
8759 \def\@@writetorep#1#2#3#4#5{%
8760 \begingroup
8761 \edef\Hy@tempa{#5}%
8762 \ifx\Hy@tempa\Hy@bookmarkstype
8763 \edef\Hy@level{#4}%
8764 \ifx\Hy@levelcheck Y%
8765 \@tempcnta\Hy@level\relax
8766 \advance\@tempcnta by -1
8767 \ifnum\Hy@currentbookmarklevel<\@tempcnta
8768 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
8769 \advance\@tempcnta by 1
8770 \Hy@Warning{%
8771 Difference (\the\@tempcnta) between bookmark levels is %
8772 greater \MessageBreak than one, level fixed%
8773 }%
8774 \@tempcnta\Hy@currentbookmarklevel
8775 \advance\@tempcnta by 1
8776 \edef\Hy@level{\the\@tempcnta}%
8777 \fi
8778 \else
8779 \global\let\Hy@levelcheck Y%
8780 \fi
8781 \global\let\Hy@currentbookmarklevel\Hy@level
8782 \@tempcnta\Hy@level\relax
8783 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
8784 \advance\@tempcnta by -1
8785 \edef\Hy@tempa{#3}%
8786 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
8787 \ifx\Hy@tempa\Hy@tempb
8788 \Hy@Warning{%
8789 The anchor of a bookmark and its parent's must not%
8790 \MessageBreak be the same. Added a new anchor%
8791 }%
8792 \phantomsection
8793 \fi

```

```

8794 \ifHy@bookmarksnumbered
8795 \let\numberline\Hy@numberline
8796 \else
8797 \let\numberline\@gobble
8798 \fi
8799 \pdfstringdef\Hy@tempa{#2}%
8800 \if@files
8801 \protected@write\@outlinefile{}\{
8802 \protect\BOOKMARK
8803 [\Hy@level] [\@bookmarkopenstatus{\Hy@level}]{#3}%
8804 {\Hy@tempa}{\Hy@tempb}%
8805 }%
8806 \fi
8807 \fi
8808 \endgroup
8809 }

```

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

```

8810 \newcommand{\currentpdfbookmark}{%
8811 \pdfbookmark[\Hy@currentbookmarklevel]%
8812 }
8813 \newcommand{\subpdfbookmark}{%
8814 \@tempcnta\Hy@currentbookmarklevel
8815 \Hy@StepCount\@tempcnta
8816 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
8817 }
8818 \newcommand{\belowpdfbookmark}[2]{%
8819 \@tempcnta\Hy@currentbookmarklevel
8820 \Hy@StepCount\@tempcnta
8821 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
8822 \advance\@tempcnta by -1
8823 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
8824 }

```

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.

```

8825 \renewcommand\pdfbookmark[3][0]{%
8826 \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
8827 \hyper@anchorstart{#3.#1}\hyper@anchorend
8828 }
8829 \def\BOOKMARK{\@ifnextchar[\@BOOKMARK[1][-]}
8830 \def\@BOOKMARK[#1]{\@ifnextchar[\@BOOKMARK[#1]{\@BOOKMARK[#1][-]}}

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfo` macros.

The VTEX section was written originally by VTEX, but then amended by Denis Girou (`denis.girou@idris.fr`), then by Taco Hoekwater (`taco.hoekwater@wkap.nl`). The problem is that VTEX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping `\` and the like.

```

8831 \vte
8832 \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.

```

8833 \begingroup

```

```

8834 \catcode'\'=12
8835 \ifnum\Hy@VTeXversion<650 %
8836 \catcode\'=12
8837 \gdef\hv@pdf@char#1#2#3{%
8838 \char
8839 \ifcase'#1#2#3
8840 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
8841 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
8842 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
8843 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
8844 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
8845 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
8846 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
8847 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
8848 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
8849 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
8850 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
8851 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
8852 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
8853 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
8854 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
8855 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
8856 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
8857 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
8858 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
8859 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
8860 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
8861 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
8862 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
8863 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
8864 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
8865 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
8866 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
8867 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
8868 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
8869 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
8870 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
8871 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
8872 \fi
8873 }
8874 \else
8875 \gdef\hv@pdf@char{\char'}
8876 \fi
8877 \endgroup

```

\@@BOOKMARK

```

8878 \def\@@BOOKMARK[#1][#2]#3#4#5{%
8879 \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
8880 \edef\@mycount{\the\@serial@counter}%
8881 \Hy@StepCount\@serial@counter
8882 \edef\@parcount{%
8883 \expandafter\ifx\csname @count@#5\endcsname\relax
8884 0%
8885 \else
8886 \csname @count@#5\endcsname
8887 \fi
8888 }%

```



```

8889 \immediate\special{!outline #3;p=\@parcount,i=\@mycount,s=\ifx#2-c\else
8890 o\fi,t=#4}%
8891 }%

```

# \ReadBookmarks

```

8892 \def\ReadBookmarks{%
8893   \begingroup
8894     \def\O{\hv@pdf@char 0}%
8895     \def\1{\hv@pdf@char 1}%
8896     \def\2{\hv@pdf@char 2}%
8897     \def\3{\hv@pdf@char 3}%
8898     \def\{({}%
8899     \def\)}{)%
8900     \def\do##1{%
8901       \ifnum\the\catcode'##1=\active
8902         \makeother##1%
8903       \fi
8904     }%
8905     \dospecials
8906     \InputIfFileExists{\jobname.out}{\}{}%
8907   \endgroup
8908   \ifx\WriteBookmarks\relax
8909   \else
8910     \if@filesw
8911       \newwrite\@outlinefile
8912       \immediate\openout\@outlinefile=\jobname.out
8913       \ifHy@typexml
8914         \immediate\write\@outlinefile{<relaxxml>\relax}%
8915       \fi
8916     \fi
8917   \fi
8918 }

8919 </vtex>

8920 <*\vtex>
8921 \def\ReadBookmarks{%
8922   \begingroup
8923     \escapechar='\\%
8924     \let\escapechar\@gobble %
8925     \def\@@BOOKMARK [##1][##2]##3##4##5{\calc@bm@number{##5}}%
8926     \InputIfFileExists{\jobname.out}{\}{}%
8927     \ifx\WriteBookmarks\relax
8928       \global\let\WriteBookmarks\relax
8929     \fi
8930     \def\@@BOOKMARK [##1][##2]##3##4##5{%
8931       \def\Hy@temp{##4}%
8932     }%
8933     \Hy@pstringdef\Hy@pstringName{##3}%
8934     \Hy@OutlineName{\Hy@pstringName{
8935       ##2\check@bm@number{##3}%
8936     }}%
8937     \expandafter\strip@prefix\meaning\Hy@temp
8938   }%
8939 </pdfetex>
8940 <*\pdfmark>
8941   \Hy@pstringdef\Hy@pstringName{##3}%
8942   \pdfmark{

```

```

8943 pdfmark=/OUT,%
8944 Count={##2\check@bm@number{##3}},%
8945 Dest={\Hy@pstringName},%
8946 Title=\expandafter\strip@prefix\meaning\Hy@temp
8947 }%
8948 \pdfmark>
8949 \*dvipdfm>
8950 \Hy@pstringdef\Hy@pstringName{##3}%
8951 \@pdfm@mark{%
8952 outline ##1 <<
8953 /Title (\expandafter\strip@prefix\meaning\Hy@temp)
8954 /A <<
8955 /S /GoTo
8956 /D (\Hy@pstringName)
8957 >>
8958 >>
8959 }%
8960 \dvipdfm>
8961 }%
8962 {%
8963 \def\WriteBookmarks{0}%
8964 \InputIfFileExists{\jobname.out}{\relax}%
8965 }%
8966 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{\relax}}%
8967 \ifx\WriteBookmarks\relax
8968 \else
8969 \if@files
8970 \newwrite\@outlinefile
8971 \immediate\openout\@outlinefile=\jobname.out
8972 \ifHy@typexml
8973 \immediate\write\@outlinefile{<relaxxml>\relax}%
8974 \fi
8975 \fi
8976 \fi
8977 \endgroup
8978 }
8979 \*pdfTeX>
8980 \def\Hy@OutlineName#1#2#3#4{%
8981 \pdfoutline goto name{#2}count#3{#4}%
8982 }
8983 \pdfTeX>
8984 \def\check@bm@number#1{%
8985 \expandafter\ifx\csname B_#1\endcsname\relax
8986 0%
8987 \else
8988 \csname B_#1\endcsname
8989 \fi
8990 }
8991 \def\calc@bm@number#1{%
8992 \@tempcnta=\check@bm@number{#1}\relax
8993 \advance\@tempcnta by1
8994 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
8995 }
8996 \!vTeX>

```

This code is added, so that option ‘pdfpagenumbers’ works with option ‘implicit’ (suggestion of Sebastian Rahtz).

```

8997 \ifHy@implicit

```

```

8998 \else
8999   \def\@beginndvi{%
9000     \unvbox\@beginndvibox
9001     \HyPL@EveryPage
9002     \global\let\@beginndvi\HyPL@EveryPage
9003   }%
9004   \expandafter\endinput
9005 \fi

9006 </outlines>
9007 <*outlines | hypertex>

9008 \let\H@old@ssect\@ssect
9009 \def\@ssect#1#2#3#4#5{%
9010   \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
9011   \phantomsection
9012 }
9013 \let\H@old@schapter\@schapter
9014 \def\@schapter#1{%
9015   \H@old@schapter{#1}%
9016   \begingroup
9017     \let\@mkboth\@gobbletwo
9018     \Hy@GlobalStepCount\Hy@linkcounter
9019     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9020     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9021   \endgroup
9022 }

```

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:

```

9023 \@ifundefined{chapter}{%
9024   \let\Hy@org@chapter\@chapter
9025   \def\@chapter{%
9026     \def\Hy@next{%
9027       \Hy@GlobalStepCount\Hy@linkcounter
9028       \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9029       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9030     }%
9031     \ifnum\c@secnumdepth>\m@ne
9032       \@ifundefined{if@mainmatter}%
9033       \iftrue{\csname if@mainmatter\endcsname}
9034       \let\Hy@next\relax
9035     \fi
9036   \fi
9037   \Hy@next
9038   \Hy@org@chapter
9039 }%
9040 }

9041 \let\H@old@part\@part
9042 \begingroup\expandafter\expandafter\expandafter\endgroup
9043 \expandafter\ifx\csname chapter\endcsname\relax
9044   \let\Hy@secnum@part\z@
9045 \else
9046   \let\Hy@secnum@part\m@ne
9047 \fi
9048 \def\@part{%
9049   \ifnum\Hy@secnum@part>\c@secnumdepth

```

```

9050 \phantomsection
9051 \fi
9052 \H@old@part
9053 }

9054 \let\H@old@spart\@spart
9055 \def\@spart#1{%
9056 \H@old@spart{#1}%
9057 \Hy@GlobalStepCount\Hy@linkcounter
9058 \xdef\@currentHref{part*.\the\Hy@linkcounter}%
9059 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9060 }

9061 \let\H@old@sect\@sect
9062 \def\@sect#1#2#3#4#5#6[#7]#8{%
9063 \ifnum #2>\c@secnumdepth
9064 \Hy@GlobalStepCount\Hy@linkcounter
9065 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
9066 \fi
9067 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}%
9068 \ifnum #2>\c@secnumdepth
9069 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9070 \fi
9071 }

9072 </outlines | hypertex>
9073 <*outlines>

9074 \expandafter\def\csname Parent-4\endcsname{}
9075 \expandafter\def\csname Parent-3\endcsname{}
9076 \expandafter\def\csname Parent-2\endcsname{}
9077 \expandafter\def\csname Parent-1\endcsname{}
9078 \expandafter\def\csname Parent0\endcsname{}
9079 \expandafter\def\csname Parent1\endcsname{}
9080 \expandafter\def\csname Parent2\endcsname{}
9081 \expandafter\def\csname Parent3\endcsname{}
9082 \expandafter\def\csname Parent4\endcsname{}

9083 </outlines>

```

## 48 Compatibility with koma-script classes

```

9084 <*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.

```

9085 \def\Hy@tempa{%
9086 \def\@addchap[##1]##2{%
9087 \typeout{##2}%
9088 \if@twoside
9089 \@mkboth{##1}{}%
9090 \else
9091 \@mkboth{}{##1}%
9092 \fi
9093 \addtocontents{lof}{\protect\addvspace{10\p@}}%
9094 \addtocontents{lot}{\protect\addvspace{10\p@}}%
9095 \Hy@GlobalStepCount\Hy@linkcounter
9096 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9097 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%

```

```

9098 \if@twocolumn
9099 \topnewpage[\@makeschapterhead{##2}]%
9100 \else
9101 \@makeschapterhead{##2}%
9102 \afterheading
9103 \fi
9104 \addcontentsline{toc}{chapter}{##1}%
9105 }%
9106 }
9107 \@ifclassloaded{scrbook}{%
9108 \@ifclasslater{scrbook}{2001/01/01}{%
9109 \let\Hy@tempa\@empty
9110 }{}%
9111 }{%
9112 \@ifclassloaded{scrreprt}{%
9113 \@ifclasslater{scrreprt}{2001/01/01}{%
9114 \let\Hy@tempa\@empty
9115 }{}%
9116 }{%
9117 \let\Hy@tempa\@empty
9118 }%
9119 }%
9120 \Hy@tempa
9121 </outlines | hypertext>

```

## 49 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek oberdiek@ruf.uni-freiburg.de

### 49.1 PD1 encoding

```

9122 < *pd1enc >
9123 \DeclareFontEncoding{PD1}{}{}

```

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

```

9124 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
9125 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
9126 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
9127 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
9128 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed

```

Accents

```

9129 \DeclareTextAccent{\`}{PD1}{\textgrave}
9130 \DeclareTextAccent{\'}{PD1}{\textacute}
9131 \DeclareTextAccent{\`}{PD1}{\textcircumflex}
9132 \DeclareTextAccent{\~}{PD1}{\texttilde}
9133 \DeclareTextAccent{\"}{PD1}{\textdieresis}
9134 \DeclareTextAccent{\r}{PD1}{\textring}
9135 \DeclareTextAccent{\v}{PD1}{\textcaron}
9136 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
9137 \DeclareTextAccent{\c}{PD1}{\textcedilla}
9138 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textgrave}
9139 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
9140 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textcircumflex}
9141 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
9142 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textdieresis}
9143 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
9144 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}

```

```

9145 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
9146 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
9147 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}

Accent glyph names
9148 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve
9149 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
9150 \DeclareTextCommand{\textcirc{}}{PD1}{\032} % circumflex
9151 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
9152 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
9153 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
9154 \DeclareTextCommand{\textring}{PD1}{\036} % ring
9155 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde

\040: space
\041: exclam
9156 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042
9157 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign
9158 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar
9159 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent
9160 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand

\047: quotesingle
9161 \DeclareTextCommand{\textparenleft}{PD1}{\string\()} % parenleft \050
9162 \DeclareTextCommand{\textparenright}{PD1}{\string\)} % parenright \051

\052: asterisk
\053: plus
\054: comma
\055: hyphen
\056: period
\057: slash
\060... \071: 0...9
\072: colon
\073: semicolon
9163 \DeclareTextCommand{\textless}{PD1}{<} % less \074

\075: equal
9164 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076

\077: question
\100: at
\101... \132: A...Z
\133: bracketleft
9165 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash

\135: bracketright
9166 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum
9167 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
9168 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave

\141... \172: a...z
9169 \DeclareTextCompositeCommand{\.}{PD1}{i}{i} % i
9170 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
9171 \DeclareTextCommand{\textbar}{PD1}{|} % bar
9172 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
9173 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde

No glyph \177 in PDFDocEncoding.
9174 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
9175 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
9176 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl

```

```

9177 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis
9178 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
9179 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
9180 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
9181 \DeclareTextCommand{\textfractionmark}{PD1}{/} % fraction, \207
9182 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft
9183 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
9184 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
9185 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
9186 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
9187 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
9188 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright
9189 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
9190 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
9191 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
9192 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark
9193 \DeclareTextCommand{\textfi}{PD1}{fi} % fi ?? \223
9194 \DeclareTextCommand{\textfl}{PD1}{fl} % fl ?? \224
9195 \DeclareTextCommand{\L}{PD1}{L} % Lslash, \225
9196 \DeclareTextCommand{\OE}{PD1}{\226} % OE
9197 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron
9198 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230} % Ydieresis
9199 \DeclareTextCommand{\IJ}{PD1}{\230}
9200 \DeclareTextCompositeCommand{\v}{PD1}{Z}{Z} % Zcaron, \231
9201 \DeclareTextCommand{\i}{PD1}{i} % dotlessi, \232
9202 \DeclareTextCommand{\l}{PD1}{l} % lslash, \233
9203 \DeclareTextCommand{\oe}{PD1}{\234} % oe
9204 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
9205 \DeclareTextCompositeCommand{\v}{PD1}{z}{z} % zcaron, 236

```

No glyph \237 in PDFDocEncoding.

The euro \240 is inserted in version 1.3 of the pdf specification.

```

9206 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
9207 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown
9208 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
9209 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
9210 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
9211 \DeclareTextCommand{\textyen}{PD1}{\245} % yen
9212 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
9213 \DeclareTextCommand{\textsection}{PD1}{\247} % section
9214 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
9215 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
9216 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
9217 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
9218 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

```

No glyph \255 in PDFDocEncoding.

```

9219 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
9220 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
9221 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
9222 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
9223 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
9224 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
9225 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
9226 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
9227 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
9228 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
9229 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
9230 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior

```

9231 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine  
 9232 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright  
 9233 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter  
 9234 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf  
 9235 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters  
 9236 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown  
 9237 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300} % Agrave  
 9238 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301} % Aacute  
 9239 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302} % Acircumflex  
 9240 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303} % Atilde  
 9241 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304} % Adieresis  
 9242 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring  
 9243 \DeclareTextCommand{\AE}{PD1}{\306} % AE  
 9244 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla  
 9245 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310} % Egrave  
 9246 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311} % Eacute  
 9247 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312} % Ecircumflex  
 9248 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313} % Edieresis  
 9249 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314} % Igrave  
 9250 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315} % Iacute  
 9251 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316} % Icircumflex  
 9252 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317} % Idieresis  
 9253 \DeclareTextCommand{\DH}{PD1}{\320} % Eth  
 9254 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth  
 9255 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321} % Ntilde  
 9256 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322} % Ograve  
 9257 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323} % Oacute  
 9258 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324} % Ocircumflex  
 9259 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325} % Otilde  
 9260 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326} % Odieresis  
 9261 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply  
 9262 \DeclareTextCommand{\O}{PD1}{\330} % Oslash  
 9263 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331} % Ugrave  
 9264 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute  
 9265 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333} % Ucircumflex  
 9266 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis  
 9267 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335} % Yacute  
 9268 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn  
 9269 \DeclareTextCommand{\ss}{PD1}{\337} % germandbls  
 9270 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340} % agrave  
 9271 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute  
 9272 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342} % acircumflex  
 9273 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343} % atilde  
 9274 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344} % adieresis  
 9275 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring  
 9276 \DeclareTextCommand{\ae}{PD1}{\346} % ae  
 9277 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla  
 9278 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350} % egrave  
 9279 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute  
 9280 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352} % ecircumflex  
 9281 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353} % edieresis  
 9282 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354} % igrave  
 9283 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave  
 9284 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute  
 9285 \DeclareTextCompositeCommand{\^}{PD1}{i}{\355} % iacute  
 9286 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356} % icircumflex  
 9287 \DeclareTextCompositeCommand{\~}{PD1}{i}{\356} % icircumflex



```

9288 \DeclareTextCompositeCommand{"}{PD1}{i}{\357} % idieresis
9289 \DeclareTextCompositeCommand{"}{PD1}{\i}{\357} % idieresis
9290 \DeclareTextCommand{\dh}{PD1}{\360} % eth
9291 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361} % ntilde
9292 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362} % ograve
9293 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363} % oacute
9294 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364} % ocircumflex
9295 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365} % otilde
9296 \DeclareTextCompositeCommand{"}{PD1}{o}{\366} % odieresis
9297 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
9298 \DeclareTextCommand{\o}{PD1}{\370} % oslash
9299 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371} % ugrave
9300 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372} % uacute
9301 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373} % ucircumflex
9302 \DeclareTextCompositeCommand{"}{PD1}{u}{\374} % udieresis
9303 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375} % yacute
9304 \DeclareTextCommand{\th}{PD1}{\376} % thorn
9305 \DeclareTextCompositeCommand{"}{PD1}{y}{\377} % ydieresis
9306 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

9307 \DeclareTextCommand{\SS}{PD1}{SS}
9308 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

9309 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
9310 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
9311 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
9312 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
9313 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
9314 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
9315 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
9316 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

9317 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
9318 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
9319 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
9320 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
9321 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
9322 \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;

```

9323 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
9324 \DeclareTextCompositeCommand{\'}{PD1}{c}{c} % cacute
9325 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
9326 \DeclareTextCompositeCommand{\'}{PD1}{n}{n} % nacute
9327 \DeclareTextCompositeCommand{\'}{PD1}{s}{s} % sacute
9328 \DeclareTextCompositeCommand{\'}{PD1}{z}{z} % zacute
9329 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot

9330 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
9331 \DeclareTextCompositeCommand{\'}{PD1}{C}{C} % Cacute
9332 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
9333 \DeclareTextCompositeCommand{\'}{PD1}{N}{N} % Nacute
9334 \DeclareTextCompositeCommand{\'}{PD1}{S}{S} % Sacute
9335 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z} % Zacute
9336 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot

```

```

9337 \end{pd1enc}

```

## 49.2 PU encoding

```
9338 <*puenc>
9339 \DeclareFontEncoding{PU}{-}{-}
```

### 49.2.1 Basic Latin

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

```
9340 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
9341 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
9342 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
9343 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
9344 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed
```

#### Accents

```
9345 \DeclareTextAccent{\`}{PU}{\textgrave}
9346 \DeclareTextAccent{\'}{PU}{\textacute}
9347 \DeclareTextAccent{\~}{PU}{\textcircumflex}
9348 \DeclareTextAccent{\`}{PU}{\texttilde}
9349 \DeclareTextAccent{\¨}{PU}{\textdieresis}
9350 \DeclareTextAccent{\r}{PU}{\textring}
9351 \DeclareTextAccent{\v}{PU}{\textcaron}
9352 \DeclareTextAccent{\.}{PU}{\textdotaccent}
9353 \DeclareTextAccent{\c}{PU}{\textcedilla}
9354 \DeclareTextAccent{\U}{PU}{\textbreve}
9355 \DeclareTextAccent{\C}{PU}{\textdoublegrave}
9356 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textgrave}
9357 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
9358 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textcircumflex}
9359 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\texttilde}
9360 \DeclareTextCompositeCommand{\¨}{PU}{\@empty}{\textdieresis}
9361 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
9362 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
9363 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
9364 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
9365 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
9366 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}
9367 \DeclareTextCommand{\=}{PU}[1]{\TextSymbolUnavailable{\={#1}}#1}
9368 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
9369 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
9370 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}
```

#### Accent glyph names

```
9371 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
9372 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
9373 \DeclareTextCommand{\textcircumflex}{PU}{\80\032} % circumflex
9374 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
9375 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
9376 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
9377 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
9378 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
9379 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave
```

\040: space

\041: exclam

```
9380 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
9381 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
9382 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
9383 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
9384 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand
```

\047: quotesingle  
 9385 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft  
 9386 \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  
 9387 \DeclareTextCommand{\textless}{PU}{<} % less \80\074  
 \075: equal  
 9388 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076  
 \077: question  
 \100: at  
 \101... \132: A...Z  
 \133: bracketleft  
 9389 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash  
 \135: bracketright  
 9390 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum  
 9391 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore  
 9392 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave  
 \141... \172: a...z  
 9393 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % i  
 9394 \DeclareTextCommand{\j}{PU}{j} % jdotless  
 9395 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft  
 9396 \DeclareTextCommand{\textbar}{PU}{|} % bar  
 9397 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright  
 9398 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde  
 No glyph \177 in PDFDocEncoding.

## 49.2.2 Latin-1 Supplement

9399 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212  
 9400 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223  
 9401 \DeclareTextCommand{\textfl}{PU}{fl} % fl ?? \80\224

There are two positions for the glyphs from \80\225 until \80\236. See the test files testbmoe., testbml, testbmse, testbmzc, and testbmyi for details. Problematic are all positions, but especially \OE, \oe, and \i.

9402 %\DeclareTextCommand{\OE}{PU}{OE} % OE  
 9403 %\DeclareTextCommand{\oe}{PU}{oe} % oe

The euro \240 is inserted in version 1.3 of the pdf specification.

9404 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown  
 9405 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent  
 9406 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling  
 9407 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency  
 9408 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen  
 9409 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar  
 9410 \DeclareTextCommand{\textsection}{PU}{\80\247} % section  
 9411 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis

9412 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright  
 9413 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine  
 9414 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft  
 9415 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot

No glyph \255 in PDFDocEncoding.

9416 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered  
 9417 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron  
 9418 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree  
 9419 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus  
 9420 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior  
 9421 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior  
 9422 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute  
 9423 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu  
 9424 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph  
 9425 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered  
 9426 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla  
 9427 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior  
 9428 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine  
 9429 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright  
 9430 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter  
 9431 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf  
 9432 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters  
 9433 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown  
 9434 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300} % Agrave  
 9435 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute  
 9436 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\302} % Acircumflex  
 9437 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303} % Atilde  
 9438 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis  
 9439 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring  
 9440 \DeclareTextCommand{\AE}{PU}{\80\306} % AE  
 9441 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla  
 9442 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310} % Egrave  
 9443 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311} % Eacute  
 9444 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\312} % Ecircumflex  
 9445 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis  
 9446 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314} % Igrave  
 9447 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315} % Iacute  
 9448 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\316} % Icircumflex  
 9449 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317} % Idieresis  
 9450 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth  
 9451 \DeclareTextCompositeCommand{\`}{PU}{N}{\80\321} % Ntilde  
 9452 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322} % Ograve  
 9453 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323} % Oacute  
 9454 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\324} % Ocircumflex  
 9455 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325} % Otilde  
 9456 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326} % Odieresis  
 9457 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply  
 9458 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash  
 9459 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331} % Ugrave  
 9460 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332} % Uacute  
 9461 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\333} % Ucircumflex  
 9462 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334} % Udieresis  
 9463 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335} % Yacute  
 9464 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn  
 9465 \DeclareTextCommand{\ss}{PU}{\80\337} % germandbls  
 9466 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340} % agrave  
 9467 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341} % aacute

```

9468 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\342} % acircumflex
9469 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343} % atilde
9470 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344} % adieresis
9471 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
9472 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
9473 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
9474 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350} % egrave
9475 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351} % eacute
9476 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352} % ecircumflex
9477 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353} % edieresis
9478 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave
9479 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave
9480 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
9481 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
9482 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
9483 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
9484 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
9485 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
9486 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
9487 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361} % ntilde
9488 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362} % ograve
9489 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363} % oacute
9490 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364} % ocircumflex
9491 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365} % otilde
9492 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366} % odieresis
9493 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
9494 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
9495 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371} % ugrave
9496 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372} % uacute
9497 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373} % ucircumflex
9498 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374} % udieresis
9499 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375} % yacute
9500 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
9501 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377} % ydieresis
9502 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```

9503 \DeclareTextCommand{\SS}{PU}{SS}

```

Aliases (german.sty)

```

9504 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
9505 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
9506 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
9507 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
9508 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
9509 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
9510 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
9511 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

9512 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
9513 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
9514 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
9515 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
9516 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

### 49.2.3 Latin Extended-A

```

9517 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% Amacron
9518 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% amacron

```

```

9519 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% Abreve
9520 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% abreve
9521 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% Aogonek
9522 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% aogonek
9523 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% Cacute
9524 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% cacute
9525 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% Ccircumflex
9526 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% ccircumflex
9527 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% Cdot
9528 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% cdot
9529 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% Ccaron
9530 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% ccaron
9531 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% Dcaron
9532 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% dcaron
9533 \DeclareTextCommand{\DJ}{PU}{\81\020}% Dslash
9534 \DeclareTextCommand{\dj}{PU}{\81\021}% dslash
9535 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% Emacron
9536 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% emacron
9537 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% Ebreve
9538 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% ebreve
9539 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% Edot
9540 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% edot
9541 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% Eogonek
9542 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% eogonek
9543 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% Ecaron
9544 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% ecaron
9545 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% Gcircumflex
9546 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% gcircumflex
9547 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% Gbreve
9548 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% gbreve
9549 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% Gdot
9550 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% gdot
9551 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% Gcedilla
9552 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% gcedilla
9553 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% Hcircumflex
9554 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% hcircumflex
9555 \DeclareTextCommand{\textHslash}{PU}{\81\046}% Hslash
9556 \DeclareTextCommand{\texthslash}{PU}{\81\047}% hslash
9557 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% Itilde
9558 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% itilde
9559 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% itilde
9560 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% Imacron
9561 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% imacron
9562 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% imacron
9563 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% Ibreve
9564 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% ibreve
9565 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% ibreve
9566 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% Iogonek
9567 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% iogonek
9568 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% iogonek
9569 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% Idot
9570 \DeclareTextCommand{\i}{PU}{\81\061}% idotless
9571 % IJlig
9572 % ijlig
9573 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% Jcircumflex
9574 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% jcircumflex
9575 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% jcircumflex

```

```

9576 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
9577 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
9578 % kgreen
9579 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
9580 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
9581 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
9582 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
9583 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
9584 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
9585 % L middle dot
9586 % l middle dot
9587 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
9588 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
9589 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute
9590 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
9591 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
9592 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
9593 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
9594 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
9595 % n apostrophe
9596 \DeclareTextCommand{\NG}{PU}{\81\112} % NG
9597 \DeclareTextCommand{\ng}{PU}{\81\113} % ng
9598 \DeclareTextCompositeCommand{=}{PU}{O}{\81\114} % Omacron
9599 \DeclareTextCompositeCommand{=}{PU}{o}{\81\115} % omacron
9600 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve
9601 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
9602 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
9603 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
9604 \DeclareTextCommand{\OE}{PU}{\81\122} % OE
9605 \DeclareTextCommand{\oe}{PU}{\81\123} % oe
9606 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
9607 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
9608 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
9609 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
9610 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
9611 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
9612 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
9613 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
9614 \DeclareTextCompositeCommand{\`}{PU}{S}{\81\134} % Scircumflex
9615 \DeclareTextCompositeCommand{\`}{PU}{s}{\81\135} % scircumflex
9616 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
9617 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
9618 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
9619 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
9620 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
9621 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
9622 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
9623 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
9624 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
9625 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
9626 \DeclareTextCompositeCommand{\`}{PU}{U}{\81\150} % Utilde
9627 \DeclareTextCompositeCommand{\`}{PU}{u}{\81\151} % utilde
9628 \DeclareTextCompositeCommand{=}{PU}{U}{\81\152} % Umacron
9629 \DeclareTextCompositeCommand{=}{PU}{u}{\81\153} % umacron
9630 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
9631 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
9632 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring

```

```

9633 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
9634 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
9635 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute
9636 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Uogonek
9637 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % uogonek
9638 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164} % Wcircumflex
9639 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165} % wcircumflex
9640 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166} % Ycircumflex
9641 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167} % ycircumflex
9642 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170} % Ydieresis
9643 \DeclareTextCommand{\IJ}{PU}{\81\170}
9644 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
9645 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
9646 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
9647 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
9648 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
9649 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

```

#### 49.2.4 Latin Extended-B

```

9650 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
9651 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
9652 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
9653 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
9654 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
9655 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
9656 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
9657 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
9658 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
9659 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
9660 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
9661 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
9662 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
9663 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
9664 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
9665 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
9666 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Oogonek
9667 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

```

#### 49.2.5 Greek

```

9668 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
9669 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
9670 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}
9671 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
9672 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
9673 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
9674 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
9675 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
9676 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}
9677 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
9678 \DeclareTextCommand{\textBeta}{PU}{\83\222}
9679 \DeclareTextCommand{\textGamma}{PU}{\83\223}
9680 \DeclareTextCommand{\textDelta}{PU}{\83\224}
9681 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
9682 \DeclareTextCommand{\textZeta}{PU}{\83\226}
9683 \DeclareTextCommand{\textEta}{PU}{\83\227}
9684 \DeclareTextCommand{\textTheta}{PU}{\83\230}
9685 \DeclareTextCommand{\textIota}{PU}{\83\231}

```



9686 \DeclareTextCommand{\textKappa}{PU}{\83\232}  
 9687 \DeclareTextCommand{\textLambda}{PU}{\83\233}  
 9688 \DeclareTextCommand{\textMu}{PU}{\83\234}  
 9689 \DeclareTextCommand{\textNu}{PU}{\83\235}  
 9690 \DeclareTextCommand{\textXi}{PU}{\83\236}  
 9691 \DeclareTextCommand{\textOmicron}{PU}{\83\237}  
 9692 \DeclareTextCommand{\textPi}{PU}{\83\240}  
 9693 \DeclareTextCommand{\textRho}{PU}{\83\241}  
 9694 \DeclareTextCommand{\textSigma}{PU}{\83\243}  
 9695 \DeclareTextCommand{\textTau}{PU}{\83\244}  
 9696 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}  
 9697 \DeclareTextCommand{\textPhi}{PU}{\83\246}  
 9698 \DeclareTextCommand{\textChi}{PU}{\83\247}  
 9699 \DeclareTextCommand{\textPsi}{PU}{\83\250}  
 9700 \DeclareTextCommand{\textOmega}{PU}{\83\251}  
 9701 \DeclareTextCompositeCommand{\"}{PU}{\textIota}{\83\252}  
 9702 \DeclareTextCompositeCommand{\"}{PU}{\textUpsilon}{\83\253}  
 9703 \DeclareTextCompositeCommand{\'}{PU}{\textalpha}{\83\254}  
 9704 \DeclareTextCompositeCommand{\'}{PU}{\textepsilon}{\83\255}  
 9705 \DeclareTextCompositeCommand{\'}{PU}{\texteta}{\83\256}  
 9706 \DeclareTextCompositeCommand{\'}{PU}{\textiota}{\83\257}  
 9707 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}  
 9708 \DeclareTextCompositeCommand{\"}{PU}{\textupsilonacute}{\83\260}  
 9709 \DeclareTextCommand{\textalpha}{PU}{\83\261}  
 9710 \DeclareTextCommand{\textbeta}{PU}{\83\262}  
 9711 \DeclareTextCommand{\textgamma}{PU}{\83\263}  
 9712 \DeclareTextCommand{\textdelta}{PU}{\83\264}  
 9713 \DeclareTextCommand{\textepsilon}{PU}{\83\265}  
 9714 \DeclareTextCommand{\textzeta}{PU}{\83\266}  
 9715 \DeclareTextCommand{\texteta}{PU}{\83\267}  
 9716 \DeclareTextCommand{\texttheta}{PU}{\83\270}  
 9717 \DeclareTextCommand{\textiota}{PU}{\83\271}  
 9718 \DeclareTextCommand{\textkappa}{PU}{\83\272}  
 9719 \DeclareTextCommand{\textlambda}{PU}{\83\273}  
 9720 \DeclareTextCommand{\textmu}{PU}{\83\274}  
 9721 \DeclareTextCommand{\textnu}{PU}{\83\275}  
 9722 \DeclareTextCommand{\textxi}{PU}{\83\276}  
 9723 \DeclareTextCommand{\textomicron}{PU}{\83\277}  
 9724 \DeclareTextCommand{\textpi}{PU}{\83\300}  
 9725 \DeclareTextCommand{\textrho}{PU}{\83\301}  
 9726 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}  
 9727 \DeclareTextCommand{\textsigma}{PU}{\83\303}  
 9728 \DeclareTextCommand{\texttau}{PU}{\83\304}  
 9729 \DeclareTextCommand{\textupsilon}{PU}{\83\305}  
 9730 \DeclareTextCommand{\textphi}{PU}{\83\306}  
 9731 \DeclareTextCommand{\textchi}{PU}{\83\307}  
 9732 \DeclareTextCommand{\textpsi}{PU}{\83\310}  
 9733 \DeclareTextCommand{\textomega}{PU}{\83\311}  
 9734 \DeclareTextCompositeCommand{\"}{PU}{\textiota}{\83\312}  
 9735 \DeclareTextCompositeCommand{\"}{PU}{\textupsilon}{\83\313}  
 9736 \DeclareTextCompositeCommand{\'}{PU}{\textomicron}{\83\314}  
 9737 \DeclareTextCompositeCommand{\'}{PU}{\textupsilon}{\83\315}  
 9738 \DeclareTextCompositeCommand{\'}{PU}{\textomega}{\83\316}  
 9739 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}  
 9740 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}  
 9741 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}  
 9742 %\DeclareTextCommand{\textdigamma}{PU}{\83\334}

```

9743 \DeclareTextCommand{\textvarkappa}{PU}{\83\360}
9744 \DeclareTextCommand{\textvarrho}{PU}{\83\361}

```

## 49.2.6 Cyrillic

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names.

```

9745 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
9746 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}%
9747 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
9748 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% GJE
9749 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
9750 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
9751 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
9752 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI
9753 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
9754 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
9755 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE
9756 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
9757 \DeclareTextCompositeCommand{'}{PU}{\CYRK}{\84\014}% KJE
9758 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
9759 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
9760 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A
9761 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
9762 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
9763 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
9764 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
9765 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
9766 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
9767 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
9768 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I
9769 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
9770 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}%
9771 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
9772 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
9773 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM
9774 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN
9775 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O
9776 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE
9777 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER
9778 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES
9779 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE
9780 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U
9781 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF
9782 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA
9783 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE
9784 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE
9785 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA
9786 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA
9787 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN
9788 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU
9789 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN
9790 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E
9791 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU
9792 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA
9793 \DeclareTextCommand{\cyra}{PU}{\84\060}% a
9794 \DeclareTextCommand{\cyrb}{PU}{\84\061}% be
9795 \DeclareTextCommand{\cyrv}{PU}{\84\062}% ve

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9796 \DeclareTextCommand{\cyrg}{PU}{\84\063}% ghe
9797 \DeclareTextCommand{\cyrd}{PU}{\84\064}% de
9798 \DeclareTextCommand{\cyre}{PU}{\84\065}% ie
9799 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% zhe
9800 \DeclareTextCommand{\cyrz}{PU}{\84\067}% ze
9801 \DeclareTextCommand{\cyri}{PU}{\84\070}% i
9802 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i
9803 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}%
9804 \DeclareTextCommand{\cyrk}{PU}{\84\072}% ka
9805 \DeclareTextCommand{\cyrk}{PU}{\84\073}% el
9806 \DeclareTextCommand{\cyrn}{PU}{\84\074}% em
9807 \DeclareTextCommand{\cyrn}{PU}{\84\075}% en
9808 \DeclareTextCommand{\cyro}{PU}{\84\076}% o
9809 \DeclareTextCommand{\cyrp}{PU}{\84\077}% pe
9810 \DeclareTextCommand{\cyrr}{PU}{\84\100}% er
9811 \DeclareTextCommand{\cyrz}{PU}{\84\101}% es
9812 \DeclareTextCommand{\cyrt}{PU}{\84\102}% te
9813 \DeclareTextCommand{\cyru}{PU}{\84\103}% u
9814 \DeclareTextCommand{\cyrf}{PU}{\84\104}% ef
9815 \DeclareTextCommand{\cyrh}{PU}{\84\105}% ha
9816 \DeclareTextCommand{\cyrk}{PU}{\84\106}% tse
9817 \DeclareTextCommand{\cyrch}{PU}{\84\107}% che
9818 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% sha
9819 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% shcha
9820 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% hard sign
9821 \DeclareTextCommand{\cyrery}{PU}{\84\113}% yeru
9822 \DeclareTextCommand{\cyrstfn}{PU}{\84\114}% soft sign
9823 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% e
9824 \DeclareTextCommand{\cyrly}{PU}{\84\116}% yu
9825 \DeclareTextCommand{\cyrly}{PU}{\84\117}% ya
9826 \DeclareTextCommand{\cyrly}{PU}{\84\121}% io
9827 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\121}%
9828 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% dje
9829 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% gje
9830 \DeclareTextCommand{\cyrie}{PU}{\84\124}% ukrainian ie
9831 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% dze
9832 \DeclareTextCommand{\cyrli}{PU}{\84\126}% byelorussian-ukrainian i
9833 \DeclareTextCommand{\cyrly}{PU}{\84\127}% yi
9834 \DeclareTextCommand{\cyrje}{PU}{\84\130}% je
9835 \DeclareTextCommand{\cyrlyje}{PU}{\84\131}% lje
9836 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% nje
9837 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% tshe
9838 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% kje
9839 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% short u
9840 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% dzhe
9841 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA
9842 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega
9843 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT
9844 \DeclareTextCommand{\cyrlyat}{PU}{\84\143}% yat
9845 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E
9846 \DeclareTextCommand{\cyriote}{PU}{\84\145}% iotified e
9847 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS
9848 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% little yus
9849 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS
9850 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% iotified little yus
9851 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS
9852 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% big yus

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9853 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS  
 9854 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% iotified big yus  
 9855 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI  
 9856 \DeclareTextCommand{\cyrkSI}{PU}{\84\157}% ksi  
 9857 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI  
 9858 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi  
 9859 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA  
 9860 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita  
 9861 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA  
 9862 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa  
 9863 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave  
 9864 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave  
 9865 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK  
 9866 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk  
 9867 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA  
 9868 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega  
 9869 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo  
 9870 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo  
 9871 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT  
 9872 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot  
 9873 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA  
 9874 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa  
 9875 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign  
 9876 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO  
 9877 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION  
 9878 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA  
 9879 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA  
 9880 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn  
 9881 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn  
 9882 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke  
 9883 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke  
 9884 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook  
 9885 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook  
 9886 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender  
 9887 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender  
 9888 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender  
 9889 \DeclareTextCommand{\cyrzdsdsc}{PU}{\84\231}% ze descender  
 9890 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender  
 9891 \DeclareTextCommand{\cyrkdsdsc}{PU}{\84\233}% ka descender  
 9892 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke  
 9893 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke  
 9894 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke  
 9895 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% ka stroke  
 9896 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA  
 9897 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka  
 9898 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender  
 9899 \DeclareTextCommand{\cyrndsdc}{PU}{\84\243}% en descender  
 9900 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE  
 9901 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe  
 9902 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook  
 9903 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook  
 9904 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA  
 9905 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha  
 9906 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender  
 9907 \DeclareTextCommand{\cyrsdsdsc}{PU}{\84\253}% es descender  
 9908 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender  
 9909 \DeclareTextCommand{\cyrtdsdsc}{PU}{\84\255}% te descender

9910 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U  
 9911 \DeclareTextCommand{\cyry}{PU}{\84\257}% straight u  
 9912 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke  
 9913 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% straight u stroke  
 9914 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender  
 9915 \DeclareTextCommand{\cyrhds}{PU}{\84\263}% ha descender  
 9916 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE  
 9917 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% ligature te tse  
 9918 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender  
 9919 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender  
 9920 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke  
 9921 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% che vertical stroke  
 9922 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA  
 9923 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha  
 9924 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhasian CHE  
 9925 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhasian che  
 9926 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% abkhasian CHE descender  
 9927 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhasian che descender  
 9928 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% palochka  
 9929 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve  
 9930 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% zhe breve  
 9931 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook  
 9932 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% ka hook  
 9933 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook  
 9934 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% en hook  
 9935 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE  
 9936 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che  
 9937 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve  
 9938 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve  
 9939 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% A diaeresis  
 9940 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% a diaeresis  
 9941 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE  
 9942 \DeclareTextCommand{\cyrae}{PU}{\84\325}% ligature a ie  
 9943 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve  
 9944 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve  
 9945 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA  
 9946 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% schwa  
 9947 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis  
 9948 \DeclareTextCompositeCommand{"}{PU}{\cyrswa}{\84\333}% schwa diaeresis  
 9949 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% ZHE diaeresis  
 9950 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% zhe diaeresis  
 9951 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% ZE diaeresis  
 9952 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% ze diaeresis  
 9953 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhasian DZE  
 9954 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhasian dze  
 9955 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% I macron  
 9956 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% i macron  
 9957 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% I diaeresis  
 9958 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% i diaeresis  
 9959 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% O diaeresis  
 9960 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% o diaeresis  
 9961 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O  
 9962 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% barred o  
 9963 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% barred O diaeresis  
 9964 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% barred o diaeresis  
 9965 \DeclareTextCompositeCommand{\=}{PU}{\CYRU}{\84\356}% U macron  
 9966 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% u macron

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9967 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U diaeresis
9968 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% u diaeresis
9969 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U double acute
9970 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% u double acute
9971 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% CHE diaeresis
9972 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% che diaeresis
9973 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% YERU diaeresis
9974 \DeclareTextCompositeCommand{"}{PU}{\cyrery}{\84\371}% yeru diaeresis

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#### 49.2.7 Symbols

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9975 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash
9976 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash
9977 \DeclareTextCommand{\textquotelleft}{PU}{\9040\030} % quoteleft
9978 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright
9979 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase
9980 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
9981 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
9982 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
9983 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
9984 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
9985 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet
9986 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
9987 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
9988 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
9989 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
9990 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
9991 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
9992 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
9993 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}
9994 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
9995 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
9996 \DeclareTextCommand{\cyrlangle}{PU}{\9043\051}
9997 \DeclareTextCommand{\cyrangle}{PU}{\9043\052}

9998 </puenc>

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### 49.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

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9999 <*puvnenc>

10000 \DeclareTextCommand{\abreve}{PU}{\81\003}
10001 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
10002 \DeclareTextCommand{\dj}{PU}{\81\021}
10003 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
10004 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
10005 \DeclareTextCommand{\ohorn}{PU}{\81\241}
10006 \DeclareTextCommand{\uhorn}{PU}{\81\260}
10007 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
10008 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
10009 \DeclareTextCommand{\DJ}{PU}{\81\020}
10010 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
10011 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
10012 \DeclareTextCommand{\OHORN}{PU}{\81\240}
10013 \DeclareTextCommand{\UHORN}{PU}{\81\257}

10014 \DeclareTextCompositeCommand{'}{PU}{a}{\80\341}
10015 \DeclareTextCompositeCommand{d}{PU}{a}{\9036\241}

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10016 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}  
10017 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}  
10018 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}  
10019 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}  
10020 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}  
10021 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}  
10022 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}  
10023 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}  
10024 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}  
10025 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}  
10026 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}  
10027 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
10028 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}  
10029 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
10030 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
10031 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
10032 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
10033 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
10034 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
10035 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
10036 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
10037 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
10038 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
10039 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
10040 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
10041 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
10042 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
10043 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
10044 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
10045 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
10046 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
10047 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
10048 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
10049 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
10050 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
10051 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
10052 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
10053 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
10054 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
10055 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
10056 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
10057 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
10058 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
10059 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
10060 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
10061 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
10062 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
10063 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
10064 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
10065 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
10066 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
10067 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
10068 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
10069 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
10070 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
10071 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
10072 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}

10073 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
10074 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
10075 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
10076 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
10077 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
10078 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
10079 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
10080 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
10081 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
10082 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
10083 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}  
10084 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}  
10085 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}  
10086 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}  
10087 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}  
10088 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}  
10089 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}  
10090 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}  
10091 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}  
10092 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}  
10093 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}  
10094 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}  
10095 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}  
10096 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}  
10097 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}  
10098 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}  
10099 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}  
10100 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}  
10101 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}  
10102 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}  
10103 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}  
10104 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}  
10105 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}  
10106 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}  
10107 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}  
10108 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}  
10109 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}  
10110 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}  
10111 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}  
10112 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}  
10113 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}  
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10138 \end{document}
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