

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

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## 1 Documentation overview for `hyperref`

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

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

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

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

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

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

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

Source code documentation:

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

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

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

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### 3 File hycheck.tex

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

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

`\checklatex` Optional argument: release date of  $\LaTeX$ .

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

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

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

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

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

`\HyC@checkPackage`

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

`\checkcommand` The macro `\checkcommand` parses the next tokens as a  $\text{\LaTeX}$  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 Babel's protection of shorthand characters

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

```

325 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
326 \def\Hy@safe@activesfalse{\csname @safe@activesfalse\endcsname}

```

### 5.3 Coordinate transformations

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

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

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

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

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

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

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

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.  
Email: oberdiek@uni-freiburg.de.

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

## 6.1 Description of PDF strings

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

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

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

## 6.2 Definition of `\pdfstringdef`

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

Important: In  $\text{T}_{\text{E}}\text{X}$ '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  $\text{T}_{\text{E}}\text{X}$  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  $\text{T}_{\text{E}}\text{X}$  string is expanded the first time to get a PDF string.
3. Postprocessing. The result of the expansion is checked and converted to the final form.

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

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

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

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

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

```
369 \begingroup
```

### 6.2.1 Preprocessing

**Octal escape sequences.** To avoid problems with eight bit or non printable characters, the octal escape notation is supported. So most glyphs in the encoding definitions for PD1 and PU produce these octal escape sequences. All three octal digits have to be used:

- Wrong results are avoided, if digits follow that are not part of the octal sequence.
- Macros rely on the fact that the octal sequences always consist of three digits (vtex driver, Unicode support).

The escape sequences start with a backslash. By `\string` it will be printed. Therefore it is ensured that the  $\TeX$  escape character indeed prints as a normal backslash. Eventually this line can be removed, because this is standard  $\LaTeX$  behaviour.

```
370 \escapechar'\%
```

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

```
371 \edef\0{\string\0}%  
372 \edef\1{\string\1}%  
373 \edef\2{\string\2}%  
374 \edef\3{\string\3}%
```

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

The encoding is set by `\enc@update` for optimizing reasons.

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

**Internal encoding commands.** `\pdfstringdef` interpretes text strings which are not allowed to contain mathematical stuff. The text glyph commands will produce a warning, if called in math mode. But this warning disturbs while expanding. Therefore we check for math mode here, before `\@inmathwarn` will be disabled (see below).

```
384 \@inmathwarn\pdfstringdef
```

If a glyph is used, that isn't in the PD1/PU encoding there will be an infinite error loop, because the NFSS encoding stuff have to be expanded unprotected (`\edef`), so that the assignments of `\@changed@cmd` don't take place. To patch this behaviour I only found `\@inmathwarn` as a usable hook. While an `\edef` a warning message by `\@inmathwarn` or `\TextSymbolUnavailable` cannot be give out, so `\@inmathwarn` should be disabled. And with the help of it the assignments in `\@changed@cmd` can easily be caught (see below).

```
385 \let\@inmathwarn\HyPsd@inmathwarn
```



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

```
386 \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.

```
387 \let\{\textbraceleft
388 \let\}\textbraceright
389 \let\\\textbackslash
390 \let\#\textnumbersign
391 \let\$\textdollar
392 \let\%\textpercent
393 \let\&\textampersand
394 % \let\~\textasciitilde
395 \let\_ \textunderscore
396 \let\P\textparagraph
397 \let\ldots\textellipsis
398 \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.

```
399 \def\{\pdfstringdefWarn\\}%
400 \def\newline{\pdfstringdefWarn\newline}%
```

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

```
401 \def\TeX{\TeX}%
402 \def\LaTeX{La\TeX}%
403 \def\LaTeXe{LaTeX2e}%
404 \def\eTeX{e-\TeX}%
405 \def\MF{Metafont}%
406 \def\MP{Metapost}%
```

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

```
407 \let\emph\@firstofone
408 \let\textbf\@firstofone
409 \let\textit\@firstofone
410 \let\textmd\@firstofone
411 \let\textnormal\@firstofone
412 \let\textrm\@firstofone
413 \let\textsc\@firstofone
414 \let\textsf\@firstofone
415 \let\textsl\@firstofone
```

```

416 \let\texttt\@firstofone
417 \let\textup\@firstofone
418 \let\ttfamily\@empty
419 \let\sffamily\@empty
420 \let\itshape\@empty
421 \let\upshape\@empty
422 \let\bfseries\@empty
423 \let\rm\@empty
424 \let\Huge\@empty
425 \let\LARGE\@empty
426 \let\Large\@empty
427 \let\footnotesize\@empty
428 \let\huge\@empty
429 \let\large\@empty
430 \let\normalsize\@empty
431 \let\scriptsize\@empty
432 \let\small\@empty
433 \let\tiny\@empty

```

#### Package color.

```

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

```

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

```

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

```

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

```

441 \let\cyr\relax

```

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

```

442 \let\es@roman\@Roman

```

#### Package german.

```

443 \let\glqq\textglqq
444 \let\grqq\textgrqq
445 \let\glq\textglq
446 \let\grq\textgrq
447 \let\flqq\textflqq
448 \let\frqq\textfrqq
449 \let\flq\textflq
450 \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}
451 \let\if@mid@expandable\@firstoftwo

```

### AMS classes.

```
452 \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.

```
453 \let\hspace\HyPsd@hspace
```

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

```
454 \let\label@gobble
455 \let\index@gobble
456 \let\glossary@gobble
457 \let\href@secondoftwo
```

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

```
458 \let\ref\HyPsd@ref
459 \let\pageref\HyPsd@pageref
```

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

```
460 \def\HyPsd@ar@get##1.##2\@nil{##1}%
461 \def\HyPsd@ar@tmp##1{%
462   \expandafter\expandafter\expandafter\HyPsd@ar@get
463   \expandafter\@fourthoffive##1\@empty\@empty.\@nil
464 }%
465 \def\auto@setref##1##2##3{%
466   \ifx##1\relax
467   \else
468     \csname\HyPsd@ar@tmp{##1}%
469     \expandafter\ifx\csname\HyPsd@ar@tmp{##1}\autorefname\endcsname
470       \relax
471     \else
472       \autoref%
473     \fi
474     name%
475   \endcsname
476   \space
477   \expandafter##2##1\@empty\@empty
478   \fi
479 }%
```

### Miscellaneous commands.

```
480 \let\leavevmode\@empty
481 \let\mbox\@empty
```

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

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

### Patch for cjk bookmarks.

```
483 \ifHy@CJKbookmarks
484   \HyPsd@CJKhook
485 \fi
```

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

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

```
486 \Hy@pdfstringtrue
487 \pdfstringdefPreHook
```

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

```
488 \HyPsd@LetUnexpandableSpace\space
489 \HyPsd@LetUnexpandableSpace\ %
490 \HyPsd@LetUnexpandableSpace~%
491 \HyPsd@LetUnexpandableSpace\nobreakspace
```

**Package xspace.**

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

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

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

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

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

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

```
501 \let\@ifnextchar\HyPsd@ifnextchar
502 \let\@ifnextchar\HyPsd@new@ifnextchar
503 \let\@protected@testopt\HyPsd@protected@testopt
```

## 6.2.2 Expansion

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

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

`\csname`: First the string is expanded within a `\csname` and `\endcsname`. Then the command name is converted to characters with catcode 12 by `\string` and the first escape character removed by `\@gobble`. This method has the great *advantage*

that stomach tokens that aren't allowed in PDF strings are detected by  $\TeX$  and reported as errors in order to force the user to write correct things. So he get no wrong results by forgetting the proofreading of his text. But the *disadvantage* is that old wrong code cannot processed without errors. Mainly the error message is very cryptic and for the normal user hard to understand.  $\TeX$  provides no way to catch the error caused by `\csname` or allows to support the user with a descriptive error message. Therefore the experienced user had to enable this behaviour by an option `exactdef` in previous versions less or equal 6.50.

`\edef` This version uses this standard form for expansion. It is stronger than  $\LaTeX$ 's `\protected@edef`. So the font encoding mechanism works and the glyph commands are converted to the correct tokens for PDF strings with the definitions of the PD1 encoding. Because the protecting mechanism of  $\LaTeX$  doesn't work within an `\edef`, there are situations thinkable where code can break. For example, assignments and definitions aren't performed and so undefined command errors or argument parsing errors can occur. But this is only a compatibility problem with old texts. Now there are possibilities to write code that gives correct PDF strings (see `\texorpdfstring`). In the most cases unexpandable commands and tokens (math shift, grouping characters) remains. They don't cause an error like with `\csname`. However a PDF reader isn't  $\TeX$ , so these tokens are viewed verbatim. So this version detects them now, and removes them with an descriptive warning for the user. As additional features xspace support is possible and grouping characters can be used without problems, because they are removed silently.

**Generic messages.** While expanding via `\xdef` the `\Generic...` messages don't work and causes problems (error messages, invalid .out file). So they are disabled while expanding and removed silently, because a user warning would be too expensive (memory and runtime, `\pdfstringdef` is slow enough).

```
504     \begingroup
505     \let\GenericError\@gobblefour
506     \let\GenericWarning\@gobbletwo
507     \let\GenericInfo\@gobbletwo
```

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

```
508     \ifx\nofrenchguillemets\@undefined
509     \else
510     \nofrenchguillemets
511     \fi
```

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

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

### 6.2.3 Postprocessing

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

```
521 \ifx#1\@empty
522 \else
```

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

- $\TeX$  does not accept a space as an undelimited argument, it cancels space tokens while looking for an undelimited argument. Therefore we must protect the spaces now.
- An argument can be a single token or a group of many tokens. And within curly braces tokens aren't found by  $\TeX$ 's argument scanning process. Third curly braces as grouping characters cannot be expanded further, so they don't vanish by the string expansion above. So these characters with catcode 1 and 2 are removed in the following and replaced by a marker for the xspace support.
- $\TeX$  silently removes the outermost 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.

```
523 \HyPsd@ProtectSpaces#1%
524 \let\HyPsd@String\@empty
525 \expandafter\HyPsd@RemoveBraces\expandafter{#1}%
526 \global\let#1\HyPsd@String
```

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

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

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

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

```
527 \let\HyPsd@SPACEOPTI\relax
528 {%
529 \let\HyPsd@String\@empty
530 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
531 \global\let#1\HyPsd@String
532 }%
533 \expandafter\HyPsd@RemoveMask\expandafter
534 |\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.

```
535 \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
536 \let\HyPsd@String\@empty
537 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
538 \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.

```
539 \HyPsd@StringSubst{\}{\textbackslash}#1%
```

**Spaces.** All spaces have already the form \040. The last postprocessing step will be an optimizing of the spaces, so we already introduce already the necessary command \HyPsd@SPACEOPTI. But first it is defined to be \relax in order to prevent a too early expansion by an \edef. Secondly a \relax serves as a marker for a token that is detected by \xspace.

The code of frenchb.lfd can produce an additional space before \guillemotright, because \lastskip and \unskip do not work. Therefore it is removed here.

```
540 \ifHy@unicode
541 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
542 \HyPsd@SPACEOPTI#1%
543 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
544 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
545 {\HyPsd@SPACEOPTI\80\273}#1%
546 \else
547 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
548 \expandafter\HyPsd@Subst\expandafter{%
549 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
550 \string\273}\HyPsd@SPACEOPTI\273}#1%
551 \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.

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

```

562      \HyPsd@StringSubst{\051}{\HyPsd@empty\string\)}#1%
563      \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`.

```

564      \expandafter\HyPsd@Subst\expandafter{\}/\HyPsd@empty#1%
565      \@ifundefined{xspace}{%
566      }{%
567      \let\HyPsd@xspace\relax
568      \expandafter\HyPsd@Subst\expandafter
569      {\HyPsd@XSPACE}\HyPsd@xspace#1%
570      \let\HyPsd@xspace\HyPsd@doxspace
571      }%
572      \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.

```

573 %      \HyPsd@Subst{---}\textemdash#1%
574 %      \HyPsd@Subst{--}\textendash#1%
575 %      \HyPsd@Subst{fi}\textfi#1%
576 %      \HyPsd@Subst{fl}\textfl#1%
577 %      \HyPsd@Subst{!'}\texttexclamdown#1%
578 %      \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

579      \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.

```

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

```



```
587 \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.

```
588 \ifHy@unicode
589 \edef\HyPsd@SPACEOPTI{\80\040}%
590 \else
591 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
592 \fi
593 \xdef#1{#1\@empty}%
594 \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.

```
595 \ifHy@unicode
596 \HyPsd@ConvertToUnicode#1%
597 \fi
```

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

```
598 \pdfstringdefPostHook#1%
599 \endgroup
600 }
```

## 6.3 Encodings

### 6.3.1 PD1 encoding

The PD1 encoding implements the PDFDocEncoding for use with  $\LaTeX$  2<sub>ε</sub>'s NFSS. Because the informational strings are not set by  $\TeX$ '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  $\TeX$  does not process it anyway. So use CM.

```
601 \@ifundefined{T@PD1}{\input{pd1enc.def}}{}
602 \DeclareFontFamily{PD1}{pdf}{}
603 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
604 \DeclareFontSubstitution{PD1}{pdf}{m}{n}
```

### 6.3.2 PU encoding

The PU encoding implements the Unicode encoding for use with  $\LaTeX$ '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`.

```
605 \def\HyPsd@InitUnicode{%
606 \ifundefined{T@PU}{\input{puenc.def}}{}%
607 \DeclareFontFamily{PU}{pdf}{}%
```

```

608 \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
609 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
610 \let\HyPsd@InitUnicode\relax
611 }

```

## 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.

```

612 \newcommand*{\texorpdfstring}{%
613   \ifHy@pdfstring
614     \expandafter\@secondoftwo
615   \else
616     \expandafter\@firstoftwo
617   \fi
618 }

```

### 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`.

```

619 \@ifundefined{pdfstringdefPreHook}{%
620   \let\pdfstringdefPreHook\@empty
621 }{}
622 \@ifundefined{pdfstringdefPostHook}{%
623   \let\pdfstringdefPostHook\@gobble
624 }{}

```

`\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`.

```

625 \def\pdfstringdefDisableCommands{%
626   \begingroup
627     \makeatletter
628     \HyPsd@DisableCommands
629 }

```

`\HyPsd@DisableCommands`

```

630 \long\def\HyPsd@DisableCommands#1{%

```

```

631 \toks0=\expandafter{\pdfstringdefPreHook}%
632 \toks1={#1}%
633 \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
634 \endgroup
635 }

```

`\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`.

```

636 \def\pdfstringdefWarn#1{%
637   \expandafter\noexpand\csname\<>-string#1\endcsname
638 }

```

## 6.5 Help macros for expansion

### 6.5.1 Babel languages

```

639 \newif\ifHy@next

  Nothing to do for english.
640 \@ifpackagewith{babel}{danish}{}%
641   \def\HyPsd@babel@danish{%
642     \declare@shorthand{danish}{"}{|}%
643     \declare@shorthand{danish}{"}{~}{-}%
644   }%
645 }{}
646 \Hy@nextfalse
647 \@ifpackagewith{babel}{dutch}{\Hy@nexttrue}{}%
648 \@ifpackagewith{babel}{afrikaans}{\Hy@nexttrue}{}%
649 \ifHy@next
650   \def\HyPsd@babel@dutch{%
651     \declare@shorthand{dutch}{"}{|}%
652     \declare@shorthand{dutch}{"}{~}{-}%
653   }%
654 \fi
655 \@ifpackagewith{babel}{finnish}{}%
656   \def\HyPsd@babel@finnish{%
657     \declare@shorthand{finnish}{"}{|}%
658   }%
659 }{}
660 \Hy@nextfalse
661 \@ifpackagewith{babel}{frenchb}{\Hy@nexttrue}{%
662 \@ifpackagewith{babel}{français}{\Hy@nexttrue}{%
663 \ifHy@next
664   \def\HyPsd@babel@frenchb{%
665     \def\guill@spacing{ }%
666   }%
667 \fi
668 \Hy@nextfalse
669 \@ifpackagewith{babel}{german}{\Hy@nexttrue}{}%
670 \@ifpackagewith{babel}{germanb}{\Hy@nexttrue}{}%
671 \@ifpackagewith{babel}{austrian}{\Hy@nexttrue}{%

```

```

672 \ifHy@next
673   \def\HyPsd@babel@german{%
674     \declare@shorthand{german}{f}{f}%
675     \declare@shorthand{german}{|}{|}%
676     \declare@shorthand{german}{~}{-}%
677   }%
678 \fi
679 \Hy@nextfalse
680 \@ifpackagewith{babel}{ngerman}{\Hy@nexttrue}{}%
681 \@ifpackagewith{babel}{ngermanb}{\Hy@nexttrue}{}%
682 \@ifpackagewith{babel}{naustrian}{\Hy@nexttrue}{}%
683 \ifHy@next
684   \def\HyPsd@babel@ngerman{%
685     \declare@shorthand{german}{|}{|}%
686     \declare@shorthand{german}{~}{-}%
687   }%
688 \fi
689 \Hy@nextfalse
690 \@ifpackagewith{babel}{usorbian}{\Hy@nexttrue}{}%
691 \@ifpackagewith{babel}{uppersorbian}{\Hy@nexttrue}{}%
692 \ifHy@next
693   \def\HyPsd@babel@usorbian{%
694     \declare@shorthand{usorbian}{f}{f}%
695     \declare@shorthand{usorbian}{|}{|}%
696   }%
697 \fi
698 \Hy@nextfalse
699 \@ifpackagewith{babel}{brazil}{\Hy@nexttrue}{}%
700 \@ifpackagewith{babel}{brazilian}{\Hy@nexttrue}{}%
701 \@ifpackagewith{babel}{portuges}{\Hy@nexttrue}{}%
702 \@ifpackagewith{babel}{portuguese}{\Hy@nexttrue}{}%
703 \ifHy@next
704   \def\HyPsd@babel@portuges{%
705     \declare@shorthand{portuges}{|}{|}%
706   }%
707 \fi
708 \Hy@nextfalse
709 \@ifpackagewith{babel}{russian}{\Hy@nexttrue}{}%
710 \@ifpackagewith{babel}{russianb}{\Hy@nexttrue}{}%
711 \ifHy@next
712   \def\HyPsd@babel@russian{%
713     \declare@shorthand{russian}{|}{|}%
714     \declare@shorthand{russian}{~}{-}%
715   }%
716 \fi
717 \Hy@nextfalse
718 \@ifpackagewith{babel}{ukrainian}{\Hy@nexttrue}{}%
719 \@ifpackagewith{babel}{ukraineb}{\Hy@nexttrue}{}%
720 \ifHy@next
721   \def\HyPsd@babel@ukrainian{%
722     \declare@shorthand{ukrainian}{|}{|}%
723     \declare@shorthand{ukrainian}{~}{-}%
724   }%
725 \fi
726 \@ifpackagewith{babel}{macedonian}{}%
727 \def\HyPsd@babel@macedonian{%
728   \declare@shorthand{macedonian}{|}{|}%

```

```

729 \declare@shorthand{macedonian}{~}{-}%
730 }%
731 {}
732 \@ifpackagewith{babel}{slovene}{%
733 \def\HyPsd@babel@slovene{%
734 \declare@shorthand{slovene}{~}{-}%
735 }%
736 {}
737 \@ifpackagewith{babel}{swedish}{%
738 \def\HyPsd@babel@swedish{%
739 \declare@shorthand{swedish}{~}{-}%
740 \declare@shorthand{swedish}{~}{-}%
741 }%
742 {}

```

### 6.5.2 CJK bookmarks

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

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

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

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

```

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

```

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

```

774 \def\HyPsd@CJKActiveChars#1{%
775   \ifx#1!%
776     \let\HyPsd@CJKActiveChars\relax
777   \else
778     \edef#1{\noexpand\Hy@cjkpu\string#1}%
779   \fi
780   \HyPsd@CJKActiveChars
781 }
```

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

```

782 \def\HyPsd@DecimalToOctal#1{%
783   \ifcase #1 %
784     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
785     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
786     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
787     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
788     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
789     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
790     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
791     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
792     \or @\or A\or B\or C\or D\or E\or F\or G%
793     \or H\or I\or J\or K\or L\or M\or N\or O%
794     \or P\or Q\or R\or S\or T\or U\or V\or W%
795     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
796     \or \140\or a\or b\or c\or d\or e\or f\or g%
797     \or h\or i\or j\or k\or l\or m\or n\or o%
798     \or p\or q\or r\or s\or t\or u\or v\or w%
799     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
800     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
801     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
802     \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
803     \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
804     \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
805     \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
806     \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
807     \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
808     \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
809     \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
810     \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
811     \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
812     \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
813     \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
814     \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
815     \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
816   \fi
817 }
```

### 6.5.3 `\@inmathwarn-Patch`

`\HyPsd@inmathwarn` The patch of `\@inmathwarn` is needed to get rid of the infinite error loop with glyphs of other encodings (see the explanation above). Potentially the patch is dangerous, if the code in `ltoutenc.dtx` changes. Checked with  $\text{\LaTeX}$  2<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}

818 \def\HyPsd@inmathwarn#1#2{%
819   \ifx#2\expandafter
820     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
821       \HyPsd@GLYPHERR
822     \expandafter\@gobble\string#1%
823     >%
824     \expandafter\expandafter\expandafter\HyPsd@EndWithElse
825   \else
826     \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
827   \fi
828 \else
829   \expandafter#2%
830 \fi
831 }
832 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
833 \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`

```
834 \def\HyPsd@add@accent#1#2{%
835   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
836   #2%
837 }%
```

### 6.5.5 Unexpandable spaces

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

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

These properties are used in `\HyPsd@CheckCatcodes`.

```
838 \def\HyPsd@LetUnexpandableSpace#1{%
839   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
840 }
```

`\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.

```
841 \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.

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

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

### 6.5.7 \hspace fix

`\HyPsd@hspace`

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

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

```
846 \def\HyPsd@@hspace#1*#2\END{%
847   \ifx\#2\%
848     \HyPsd@hspacetest{#1}%
849   \else
850     \expandafter\HyPsd@hspacetest
851   \fi
852 }
```

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

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



### 6.5.8 Fix for AMS classes

```

854 \@ifundefined{tocsection}{%
855   \let\HyPSD@AMSclassfix\relax
856 }{%
857   \def\HyPSD@AMSclassfix{%
858     \let\tocpart\HyPSD@tocsection
859     \let\tocchapter\HyPSD@tocsection
860     \let\tocappendix\HyPSD@tocsection
861     \let\tocsection\HyPSD@tocsection
862     \let\tocsubsection\HyPSD@tocsection
863     \let\tocsubsubsection\HyPSD@tocsection
864     \let\tocparagraph\HyPSD@tocsection
865   }%
866   \def\HyPSD@tocsection#1#2#3{%
867     \if @#2@\else\if @#1@\else#1 \fi#2. \fi
868     #3%
869   }%
870 }

```

### 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.

```

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

```

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

```

872 \def\HyPsd@@ref#1*#2\END{%
873   \ifx\#2\%
874     \HyPsd@@@ref{#1}%
875   \else
876     \expandafter\HyPsd@@@ref
877   \fi
878 }%

```

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

```

879 \def\HyPsd@@@ref#1{%
880   \expandafter\ifx\csname r@#1\endcsname\relax
881     ??%
882   \else
883     \expandafter\expandafter\expandafter\@car\csname r@#1\endcsname\@nil
884   \fi
885 }

```

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

```

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

```

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

```

887 \def\HyPsd@@pageref#1*#2\END{%
888   \ifx\#2\%
889     \HyPsd@@@pageref{#1}%
890   \else
891     \expandafter\HyPsd@@@pageref
892   \fi
893 }

```

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

```

894 \def\HyPsd@@@pageref#1{%
895   \expandafter\ifx\csname r@#1\endcsname\relax
896     ??%
897   \else
898     \expandafter\expandafter\expandafter\expandafter
899     \expandafter\expandafter\expandafter\@car
900     \expandafter\expandafter\expandafter\@gobble
901     \csname r@#1\endcsname\@nil
902   \fi
903 }
```

### 6.5.10 Redefining the defining commands

Definitions aren't allowed, because they aren't executed in an only expanding context. So the command to be defined isn't defined and can perhaps be undefined. This would cause TeX to stop with an error message. With a deep trick it is possible to define commands in such a context: `\csname` does the job, it defines the command to be `\relax`, if it has no meaning.

Active characters cannot be defined with this trick. It is possible to define all undefined active characters (perhaps that they have the meaning of `\relax`). To avoid side effects this should be done in `\pdfstringdef` shortly before the `\xdef` job. But checking and defining all possible active characters of the full range (0 until 255) would take a while. `\pdfstringdef` is slow enough, so this isn't done.

`\HyPsd@DefCommand` and `\HyPsd@LetCommand` expands to the commands `\<def>-command` and `\<let>-command` with the meaning of `\def` and `\let`. So it is detected by `\HyPsd@CheckCatcodes` and the command name `\<def>-command` or `\<let>-command` should indicate a forbidden definition command.

The command to be defined is converted to a string and back to a command name with the help of `\csname`. If the command is already defined, `\noexpand` prevents a further expansion, even though the command would expand to legal stuff. If the command doesn't have the meaning of `\relax`, `\HyPsd@CheckCatcodes` will produce a warning. (The command itself can be legal, but the warning is legitimate because of the position after a defining command.)

The difference between `\HyPsd@DefCommand` and `\HyPsd@LetCommand` is that the first one also cancels this arguments, the parameter and definition text. The right side of the `\let` commands cannot be canceled with an undelimited parameter because of a possible space token after `\futurelet`.

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

```

\HyPsd@DefCommand
\HyPsd@LetCommand
904 \begingroup
905   \def\x#1#2{%
906     \endgroup
907     \let#1\def
908     \def\HyPsd@DefCommand##1##2##{%
909       #1%
910       \expandafter\noexpand
911       \csname\expandafter\@gobble\string##1\@empty\endcsname
912       \@gobble
913     }%
914     \let#2\let
915     \def\HyPsd@@@LetCommand##1{%
```

```

916 \expandafter\ifx\csname##1\expandafter\endcsname
917 \csname iftrue\endcsname
918 \pdfstringdefWarn\let
919 \expandafter\@gobble
920 \else
921 \expandafter\ifx\csname##1\expandafter\endcsname
922 \csname iffalse\endcsname
923 \pdfstringdefWarn\let
924 \expandafter\expandafter\expandafter\@gobble
925 \else
926 #2%
927 \expandafter\noexpand
928 \csname##1\expandafter\expandafter\expandafter\endcsname
929 \fi
930 \fi
931 }%
932 }%
933 \expandafter\x\csname <def>-command\expandafter\endcsname
934 \csname <let>-command\endcsname
935 \def\HyPsd@LetCommand#1{%
936 \expandafter\expandafter\expandafter\HyPsd@@LetCommand
937 \expandafter\expandafter\expandafter{%
938 \expandafter\@gobble\string#1\@empty
939 }%
940 }

```

### 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.

```

941 \def\HyPsd@ifnextchar{%
942 \pdfstringdefWarn\ifnextchar
943 \expandafter\@gobbletwo\@gobble
944 }

```

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

```

945 \def\HyPsd@new@ifnextchar{%
946 \pdfstringdefWarn\new@ifnextchar
947 \expandafter\@gobbletwo\@gobble
948 }

```

### 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`.

```

949 \def\HyPsd@protected@testopt#1{%
950 \pdfstringdefWarn#1%
951 \@gobbletwo
952 }

```

## 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:

```
953 \def\HyPsd@Warning#1{%
954   \begingroup
955     \def\space{ }%
956     \Hy@Warning{#1}%
957   \endgroup
958 }
```

### 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`.

```
959 \def\HyPsd@ProtectSpaces#1{%
960   \expandafter\HyPsd@@ProtectSpaces
961     \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
962 }
```

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

```
963 \def\HyPsd@@ProtectSpaces#1 #2\HyPsd@End#3{%
964   \ifx\scrollmode#2\scrollmode
965     \HyPsd@RemoveMask#1\HyPsd@End#3%
966   \else
967     \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
968     \Hy@ReturnAfterFi{%
969       \expandafter\HyPsd@@ProtectSpaces#3\HyPsd@End#3%
970     }%
971   \fi
972 }
```

### 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.

```
973 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
974   \toks@\expandafter{#1}%
975   \xdef#2{\the\toks@}%
976 }
```

### 6.6.3 Remove grouping braces

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

```
977 \def\HyPsd@RemoveBraces#1{%
978   \ifx\scrollmode#1\scrollmode
979   \else
980     \Hy@ReturnAfterFi{%
981       \HyPsd@@RemoveBraces#1\HyPsd@End{#1}%
982     }%
983   \fi
984 }
```

`\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`.

```

985 \def\HyPsd@@RemoveBraces#1#2\HyPsd@End#3{%
986   \def\Hy@temp@A{#1#2}%
987   \def\Hy@temp@B{#3}%
988   \ifx\Hy@temp@A\Hy@temp@B
989     \expandafter\def\expandafter\HyPsd@String\expandafter{%
990       \HyPsd@String#1%
991     }%
992     \Hy@ReturnAfterElseFi{%
993       \ifx\scrollmode#2\scrollmode
994       \else
995         \Hy@ReturnAfterFi{%
996           \HyPsd@RemoveBraces{#2}%
997         }%
998       \fi
999     }%
1000  \else
1001    \def\Hy@temp@A{#1}%
1002    \HyPsd@AppendItalcorr\HyPsd@String
1003    \Hy@ReturnAfterFi{%
1004      \ifx\Hy@temp@A\@empty
1005        \Hy@ReturnAfterElseFi{%
1006          \HyPsd@RemoveBraces{#2}%
1007        }%
1008      \else
1009        \Hy@ReturnAfterFi{%
1010          \HyPsd@ProtectSpaces\Hy@temp@A
1011          \HyPsd@AppendItalcorr\Hy@temp@A
1012          \expandafter\HyPsd@RemoveBraces\expandafter
1013            {\Hy@temp@A#2}%
1014        }%
1015      \fi
1016    }%
1017  \fi
1018 }

```

`\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`.

```

1019 \def\HyPsd@AppendItalcorr#1{%
1020   \expandafter\HyPsd@@AppendItalcorr\expandafter{/}#1%
1021 }
1022 \def\HyPsd@@AppendItalcorr#1#2{%
1023   \expandafter\def\expandafter#2\expandafter{#2#1}%
1024 }

```

#### 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`).

```

1025 \def\HyPsd@CheckCatcodes#1#2\HyPsd@end{%
1026   \global\let\HyPsd@Rest\relax
1027   \ifcat\relax\noexpand#1\relax
1028     \ifx#1\protect
1029       \else
1030         \ifx#1\penalty
1031           \setbox\z@=\hbox{%
1032             \afterassignment\HyPsd@AfterCountRemove
1033             \count@=#2\HyPsd@end
1034           }%
1035         \else
1036           \ifx#1\kern
1037             \setbox\z@=\hbox{%
1038               \afterassignment\HyPsd@AfterDimenRemove
1039               \dimen@=#2\HyPsd@end
1040             }%
1041           \else
1042             \ifx#1\hskip
1043               \setbox\z@=\hbox{%
1044                 \afterassignment\HyPsd@AfterSkipRemove
1045                 \skip@=#2\HyPsd@end
1046               }%
1047             \else
1048               \HyPsd@CatcodeWarning{#1}%
1049             \fi
1050           \fi
1051         \fi
1052       \fi
1053     \else
1054       \ifcat#1 %SPACE
1055         \expandafter\def\expandafter\HyPsd@String\expandafter{%
1056           \HyPsd@String\HyPsd@SPACEOPTI
1057         }%
1058       \else
1059         \ifcat$#1%
1060           \HyPsd@CatcodeWarning{math shift}%
1061         \else
1062           \ifcat&#1%
1063             \HyPsd@CatcodeWarning{alignment tab}%
1064           \else
1065             \ifcat^#1%
1066               \HyPsd@CatcodeWarning{superscript}%
1067             \else
1068               \ifcat_#1%
1069                 \HyPsd@CatcodeWarning{subscript}%
1070               \else
1071                 \expandafter\def\expandafter\HyPsd@String\expandafter{%

```

```

1072             \HyPsd@String#1%
1073         }%
1074     \fi
1075 \fi
1076 \fi
1077 \fi
1078 \fi
1079 \fi
1080 \ifx\HyPsd@Rest\relax
1081     \Hy@ReturnAfterElseFi{%
1082     \ifx\scrollmode#2\scrollmode
1083     \else
1084         \Hy@ReturnAfterFi{%
1085         \HyPsd@CheckCatcodes#2\HyPsd@End
1086     }%
1087 \fi
1088 }%
1089 \else
1090     \Hy@ReturnAfterFi{%
1091     \ifx\HyPsd@Rest\@empty
1092     \else
1093         \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1094     \fi
1095 }%
1096 \fi
1097 }

```

### Remove counts, dimens, skips.

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

```

1098 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1099     \gdef\HyPsd@Rest{#1}%
1100 }

```

\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.

```

1101 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1102     \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@ \fi > 1ex
1103     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1104     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1105 \else
1106     \ifdim\dimen@=\z@
1107     \else
1108         \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1109     \fi
1110     \gdef\HyPsd@Rest{#1}%
1111 \fi
1112 }

```

\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).

```

1113 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1114     \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@ \fi > 1ex
1115     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%

```

```

1116 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1117 \else
1118 \ifdim\skip@=\z@
1119 \else
1120 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1121 \fi
1122 \gdef\HyPsd@Rest{#1}%
1123 \fi
1124 }

```

### Catcode warnings.

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

```

1125 \def\HyPsd@CatcodeWarning#1{%
1126 \HyPsd@Warning{%
1127 Token not allowed in a PDFDocEncoded string,%
1128 \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1129 }%
1130 }
1131 \begingroup
1132 \catcode'\|=0
1133 \catcode'\|=12
1134 \gdef\HyPsd@RemoveCmdPrefix#1{%
1135 \expandafter\HyPsd@@RemoveCmdPrefix
1136 \string#1|@empty\<>-|@empty|@empty
1137 }%
1138 \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1139 \endgroup

```

\HyPsd@RemoveSpaceWarning

```

1140 \def\HyPsd@RemoveSpaceWarning#1{%
1141 \HyPsd@Warning{%
1142 Token not allowed in a PDFDocEncoded string:%
1143 \MessageBreak #1\MessageBreak
1144 removed%
1145 }%
1146 }

```

\HyPsd@ReplaceSpaceWarning

```

1147 \def\HyPsd@ReplaceSpaceWarning#1{%
1148 \HyPsd@Warning{%
1149 Token not allowed in a PDFDocEncoded string:%
1150 \MessageBreak #1\MessageBreak
1151 replaced by space%
1152 }%
1153 }

```

### 6.6.5 Check for wrong glyphs

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

```

1154 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1155 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1156 \HyPsd@String#1%
1157 }%
1158 \ifx\#2\%

```



```

1159 \else
1160   \Hy@ReturnAfterFi{%
1161     \HyPsd@GlyphProcessWarning#2\@empty
1162   }%
1163 \fi
1164 }
1165 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1166   \HyPsd@Warning{%
1167     Glyph not defined in %
1168     P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1169     removing '@backslashchar#1'%
1170   }%
1171   \HyPsd@GlyphProcess#2\@empty
1172 }

```

### 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`.

```

1173 \def\HyPsd@spaceopti#1{ % first space
1174   \ifx\HyPsd@spaceopti#1%
1175     \040%
1176   \else
1177     #1%
1178   \fi
1179 }%

```

### 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.

```

1180 \def\HyPsd@Subst#1#2#3{%
1181   \def\HyPsd@@Replace##1#1##2\END{%
1182     ##1%
1183     \ifx\##2\%
1184       \else
1185         #2%
1186         \Hy@ReturnAfterFi{%
1187           \HyPsd@@Replace##2\END
1188         }%
1189       \fi
1190     }%
1191   \xdef#3{%
1192     \expandafter\HyPsd@@Replace#3#1\END
1193   }%
1194 }

```

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

```

1195 \def\HyPsd@StringSubst#1{%
1196   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1197 }

```

### 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.

```

1198 \def\HyPsd@doxspace#1{%
1199   \ifx#1\relax\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                   \ifx#1-\else
1208                     \ifx#1'\else
1209                       \HyPsd@SPACEOPTI
1210                     \fi
1211                   \fi
1212                 \fi
1213               \fi
1214             \fi
1215           \fi
1216         \fi
1217       \fi
1218     \fi
1219   \fi
1220   #1%
1221 }%
```

### 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.

```

1222 \begingroup
1223   \catcode'\|=0
1224   \catcode'\|=12
```

`\HyPsd@ConvertToUnicode`

```

1225 |gdef|HyPsd@ConvertToUnicode#1{%
1226   |xdef#1{%
1227     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1228   }%
1229   |xdef#1{%
1230     |ifx#1|@empty
1231     |else
1232       \376\377%
1233       #1%
1234     |fi
1235   }%
1236 }
```

`\HyPsd@DoConvert`

```

1237 |gdef|HyPsd@DoConvert#1{%
1238   |ifx#1|@empty
```

```

1239     |else
1240     |Hy@ReturnAfterFi{%
1241     |ifx#1\%
1242     \%
1243     |expandafter|HyPsd@DoEscape
1244     |else
1245     \000#1%
1246     |expandafter|HyPsd@DoConvert
1247     |fi
1248     }%
1249     |fi
1250 }

```

\HyPsd@DoEscape

```

1251 |gdef|HyPsd@DoEscape#1{%
1252 |ifx#19%
1253 |expandafter|HyPsd@GetTwoBytes
1254 |else
1255 |Hy@ReturnAfterFi{%
1256 |ifx#18%
1257 00%
1258 |expandafter|HyPsd@GetTwoBytes
1259 |else
1260 #1%
1261 |expandafter|HyPsd@GetOneByte
1262 |fi
1263 }%
1264 |fi
1265 }

```

\HyPsd@GetTwoBytes

```

1266 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1267 #1\#2#3#4%
1268 |HyPsd@DoConvert
1269 }

```

\HyPsd@GetOneByte

```

1270 |gdef|HyPsd@GetOneByte#1#2{%
1271 #1#2%
1272 |HyPsd@DoConvert
1273 }
1274 |endgroup

```

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

```

1275 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1276 \xdef#4{#4#1#2}%
1277 \HyPsd@@ConvertToUnicode#3\END#4%
1278 }

```

## 6.6.9 Support for UTF-8 input encoding

After `\usepackage[utf8]{inputenc}` there are macros that expect the UTF-8 octets as arguments. Therefore we can calculate the PDF octal sequences directly. Because the PDF format is limited to UCS-2, conversion macros are needed for UTF-8 sequences with two and three octets only.

This calculation must be done in an expandable context, so we use eTeX here for performance reasons. Unhappily the results of divisions are rounded. Thus a circumvention via `\dimexpr` is used, e.g.:

`\numexpr 123/4\relax` is replaced by  
`\number\dimexpr.25\dimexpr 123sp\relax\relax`

```
1279 \begingroup\expandafter\expandafter\expandafter\endgroup
1280 \expandafter\ifx\csname numexpr\endcsname\relax
1281   \let\HyPsd@UTFviii\relax
1282 \else
1283   \def\HyPsd@UTFviii{%
1284     \let\UTFviii@two@octets\HyPsd@UTFviii@two
1285     \let\UTFviii@three@octets\HyPsd@UTFviii@three
1286     \let\unichar\HyPsd@unichar
1287   }%
```

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.

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

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

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

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

$$(5)$$

```
1288 \def\HyPsd@UTFviii@two#1#2{%
1289   \expandafter\HyPsd@UTFviii@two
1290   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1291   \number'#1\expandafter|%
1292   \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|%
1293   \number'#2 \@nil
1294 }%
1295 \def\HyPsd@UTFviii@two#1|#2|#3|#4\@nil{%
1296   \expandafter\8%
1297   \number\numexpr #1-48\expandafter\relax
1298   \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1299   \number\numexpr #3-8*%
1300   \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1301   \number\numexpr #4-8*#3\relax
1302 }%
```

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

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

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

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

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

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

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

$$(12)$$

```
1303 \def\HyPsd@UTFviii@three#1#2#3{%
1304   \expandafter\HyPsd@UTFviii@three
```

```

1305 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1306 \number'#1\expandafter|%
1307 \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter|%
1308 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|%
1309 \number'#2\expandafter|%
1310 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|%
1311 \number'#3 \@nil
1312 }%
1313 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1314 \expandafter\9%
1315 \number\numexpr #1-56\expandafter\relax
1316 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1317 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1318 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1319 \number\numexpr #6-16\expandafter\relax
1320 \number\numexpr #7-8*#6\relax
1321 }%

```

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

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

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

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

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

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

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

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

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

$$(21)$$

```

1322 \def\HyPsd@UTFviii@four#1{%
1323 \expandafter\HyPsd@UTFviii@@four\number'#1|%
1324 }%
1325 \def\HyPsd@UTFviii@@four#1|#2|#3|#4{%
1326 \expandafter\HyPsd@UTFviii@@@four\number#1\expandafter|%
1327 \number'#2\expandafter|
1328 \number\dimexpr.03125\dimexpr'#2sp\expandafter|%
1329 \number'#3\expandafter|%
1330 \number\dimexpr.03125\dimexpr'#3sp\expandafter|%
1331 \number'#4\expandafter|%
1332 \number\dimexpr.125\dimexpr'#4|%
1333 }%
1334 \def\HyPsd@UTFviii@@@four#1|#2|#3|#4|#5|#6|#7|{%
1335 \931%
1336 \number\numexpr\dimexpr.5\dimexpr#1sp\relax\relax -120\relax
1337 \csname\number\numexpr\ifodd#1 2\else 0\fi +#3-4\relax\endcsname
1338 \number\dimexpr.25\dimexpr #2sp - 32\dimexpr#3sp\relax\relax\relax
1339 % ...
1340 }%

```

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

```

1341 \def\HyPsd@unichar#1{%
1342 \ifHy@unicode

```

```

1343 \ifnum#1>"FFFF %
1344 \HyPsd@UnicodeReplacementCharacter % unsupported
1345 \else
1346 \ifnum#1>"7FF %
1347 \9%
1348 \expandafter\HyPsd@unichar@first@byte\expandafter{%
1349 \number
1350 \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1351 }%
1352 \else
1353 \8%
1354 \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
1355 \fi
1356 \expandafter\HyPsd@unichar@second@byte\expandafter{%
1357 \number
1358 \numexpr#1-256*\number
1359 \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
1360 }%
1361 \fi
1362 \else
1363 .% unsupported (Unicode -> PDF Doc Encoding)
1364 \fi
1365 }%
1366 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}
1367 \def\HyPsd@unichar@first@byte#1{%
1368 \number\dimexpr.015625\dimexpr#1sp\relax\relax
1369 \expandafter\HyPsd@unichar@octtwo\expandafter{%
1370 \number
1371 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp\relax\relax\relax
1372 }%
1373 }%
1374 \def\HyPsd@unichar@second@byte#1{%
1375 \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
1376 \expandafter\HyPsd@unichar@octtwo\expandafter{%
1377 \number
1378 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp\relax\relax\relax
1379 }%
1380 }%
1381 \def\HyPsd@unichar@octtwo#1{%
1382 \number\dimexpr.125\dimexpr#1sp\relax\relax
1383 \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp\relax\relax\relax
1384 }%
1385 \fi

```

## 7 Support of other packages

### 7.1 Class memoir

```

1386 \@ifclassloaded{memoir}{%
1387 \AtEndOfPackage{\RequirePackage{memhfixc}}}%
1388 }{}

```

### 7.2 Package subfigure

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

```

1389 \@ifpackageloaded{subfigure}{%
1390 \@ifundefined{sub@label}{%

```

```

1391 \Hy@hypertextnamesfalse
1392 }{%
1393 \renewcommand*{\sub@label}[1]{%
1394 \@bsphack
1395 \subfig@oldlabel{#1}%
1396 \if@filesw
1397 \begingroup
1398 \edef\@currentlabstr{%
1399 \expandafter\strip@prefix\meaning\@currentlabelname
1400 }%
1401 \protected@write\@auxout{}{%
1402 \string\newlabel{sub@#1}{%
1403 {\@nameuse{@@thesub\@capttype}}%
1404 {\thepage}%
1405 {\expandafter\strip@period\@currentlabstr\relax.\relax\@@}%
1406 {\@currentHref}%
1407 }%
1408 }%
1409 }%
1410 \endgroup
1411 \fi
1412 \@esphack
1413 }%
1414 \@ifpackagelater{subfigure}{2002/03/26}{%
1415 \providecommand*\toclevel@subfigure{1}%
1416 \providecommand*\toclevel@subtable{1}%
1417 }%
1418 }%
1419 }{}

```

### 7.3 Package xr and xr-hyper

The beta version of xr that supports \XR@addURL is called xr-hyper. Therefore we test for the macro itself and not for the package name:

```

1420 \@ifundefined{XR@addURL}{%
1421 }{%

```

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.

```

1422 \def\XR@addURL#1{\XR@dURL#1{}{}{}{}\\}%
1423 \def\XR@dURL#1#2#3#4#5\\{%
1424 {#1}{#2}%
1425 \if!#4!%
1426 \else
1427 {#3}{#4}{\XR@URL}%
1428 \fi
1429 }%
1430 }

```

```

1431 \def\Hy@true{true}
1432 \def\Hy@false{false}

```

Providing dummy definitions.

```

1433 \let\literalps@out@gobble
1434 \newcommand\pdfbookmark[3][]{ }
1435 \let\Acrobatmenu@gobble
1436 \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

```
1437 \let\HyperRaiseLinkLength\@tempdima
1438 \let\HyperRaiseLinkHook\@empty
1439 \def\HyperRaiseLinkDefault{\baselineskip}
```

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

```
1440 \def\Hy@raisedlink#1{%
1441   \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1442   \HyperRaiseLinkHook
1443   \ifvmode
1444     #1%
1445   \else
1446     \penalty\@M
1447     \smash{\raise\HyperRaiseLinkLength\hbox{#1}}%
1448   \fi
1449 }
```

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

```
1450 \def\Hy@SaveLastskip{%
1451   \let\Hy@RestoreLastskip\relax
1452   \ifvmode
1453     \ifdim\lastskip=\z@
1454       \let\Hy@RestoreLastskip\nobreak
1455     \else
1456       \begingroup
1457         \skip@=-\lastskip
1458         \edef\x{%
1459           \endgroup
1460           \def\noexpand\Hy@RestoreLastskip{%
1461             \noexpand\ifvmode
1462               \noexpand\nobreak
1463               \vskip\the\skip@
1464               \vskip\the\lastskip\relax
1465             \noexpand\fi
1466           }%
1467         }%
1468       \x
1469     \fi
1470   \else
1471     \ifhmode
1472       \ifdim\lastskip=\z@
1473         \let\Hy@RestoreLastskip\nobreak
1474       \else
1475         \begingroup
1476           \skip@=-\lastskip
```



```

1477         \edef\x{%
1478             \endgroup
1479             \def\noexpand\Hy@RestoreLastskip{%
1480                 \noexpand\ifhmode
1481                 \noexpand\nobreak
1482                 \hskip\the\skip@
1483                 \hskip\the\lastskip\relax
1484                 \noexpand\fi
1485             }%
1486         }%
1487     \x
1488 \fi
1489 \fi
1490 \fi
1491 }%

```

## 9 Options

### 9.1 Help macros

\Hy@boolkey

```

1492 \def\Hy@boolkey{\@dblarg\Hy@boolkey}
1493 \def\Hy@@boolkey[#1]#2#3{%
1494     \lowercase{\def\Hy@tempa{#3}}%
1495     \ifx\Hy@tempa\@empty
1496         \let\Hy@tempa\Hy@true
1497     \fi
1498     \ifx\Hy@tempa\Hy@true
1499     \else
1500         \ifx\Hy@tempa\Hy@false
1501         \else
1502             \let\Hy@tempa\relax
1503         \fi
1504     \fi
1505     \ifx\Hy@tempa\relax
1506         \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1507     \else
1508         \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1509         \csname Hy@#2\Hy@tempa\endcsname
1510     \fi
1511 }

```

\Hy@WarnOptionValue

```

1512 \def\Hy@WarnOptionValue#1#2#3{%
1513     \Hy@Warning{%
1514         Unexpected value ‘#1’\MessageBreak
1515         of option ‘#2’ instead of\MessageBreak
1516         #3%
1517     }
1518 }

```

\Hy@DisableOption

```

1519 \def\Hy@DisableOption#1{%
1520     \@ifundefined{KV@Hyp@#1@default}{%
1521         \define@key{Hyp}{#1}%
1522     }{%

```

```

1523 \define@key{Hyp}{#1}[]%
1524 }%
1525 {\Hy@WarnOptionDisabled{#1}}%
1526 }

```

\Hy@WarnOptionDisabled

```

1527 \def\Hy@WarnOptionDisabled#1{%
1528 \Hy@Warning{%
1529 Option ‘#1’ has already been used,\MessageBreak
1530 setting the option has no effect%
1531 }%
1532 }

```

\Hy@CheckOptionValue Some options take a string value out of a limited set of values. Macro \Hy@CheckOptionValue checks whether the given value #1 for option #2 is a member of the value list #3.

```

1533 \def\Hy@CheckOptionValue#1#2#3{%
1534 \begingroup
1535 \edef\x{#1}%
1536 \@onelevel@sanitize\x
1537 \let\y=y%
1538 \def\do##1##2{%
1539 \def\z{##1}%
1540 \@onelevel@sanitize\z
1541 \ifx\x\z
1542 \let\y=n%
1543 \let\do\@gobbletwo
1544 \fi
1545 }%
1546 #3%
1547 \ifx\y y%
1548 \def\do##1##2{%
1549 * ‘##1’%
1550 \ifx\##2\else\space(##2)\fi
1551 \MessageBreak
1552 }%
1553 \Hy@Warning{%
1554 Values of option ‘#2’:\MessageBreak
1555 #3%
1556 * An empty value disables the option.\MessageBreak
1557 Unknown value ‘\x’%
1558 }%
1559 \fi
1560 \endgroup
1561 }

```

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

```

1562 \def\Hy@DefNameKey#1{%
1563 \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
1564 }

```

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

```

1565 \def\Hy@@DefNameKey#1#2#3{%

```

```

1566 \define@key{Hyp}{#2}{%
1567   \edef#1{##1}%
1568   \ifx#1\@empty
1569   \else
1570     \Hy@CheckOptionValue{##1}{#2}{#3}%
1571   \fi
1572 }%
1573 \let#1\@empty
1574 }

```

\Hy@UseNameKey

```

1575 \def\Hy@UseNameKey#1#2{%
1576   \ifx#2\@empty
1577   \else
1578     /#1/#2%
1579   \fi
1580 }

```

## 9.2 Defining the options

```

1581 \define@key{Hyp}{implicit}[true]{%
1582   \Hy@boolkey{implicit}{#1}%
1583 }
1584 \define@key{Hyp}{draft}[true]{%
1585   \Hy@boolkey{draft}{#1}%
1586 }
1587 \define@key{Hyp}{final}[true]{%
1588   \Hy@boolkey{final}{#1}%
1589 }
1590 \let\KV@Hyp@nolinks\KV@Hyp@draft
1591 \define@key{Hyp}{a4paper}[true]{%
1592   \def\special@paper{210mm,297mm}%
1593   \def\Hy@pageheight{842}%
1594 }
1595 \define@key{Hyp}{a5paper}[true]{%
1596   \def\special@paper{148mm,210mm}%
1597   \def\Hy@pageheight{595}%
1598 }
1599 \define@key{Hyp}{b5paper}[true]{%
1600   \def\special@paper{176mm,250mm}%
1601   \def\Hy@pageheight{709}%
1602 }
1603 \define@key{Hyp}{letterpaper}[true]{%
1604   \def\special@paper{8.5in,11in}%
1605   \def\Hy@pageheight{792}%
1606 }
1607 \define@key{Hyp}{legalpaper}[true]{%
1608   \def\special@paper{8.5in,14in}%
1609   \def\Hy@pageheight{1008}%
1610 }
1611 \define@key{Hyp}{executivepaper}[true]{%
1612   \def\special@paper{7.25in,10.5in}%
1613   \def\Hy@pageheight{720}%
1614 }
1615 \define@key{Hyp}{setpagesize}[true]{%
1616   \Hy@boolkey{setpagesize}{#1}%
1617 }

```

```

1618 \define@key{Hyp}{debug}[true]{%
1619   \Hy@boolkey[debug]{verbose}{#1}%
1620 }
1621 \define@key{Hyp}{linktopage}[true]{%
1622   \Hy@boolkey[linktopage]{#1}%
1623 }
1624 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1625 \def\XR@ext{dvi}
1626 \define@key{Hyp}{verbose}[true]{%
1627   \Hy@boolkey[verbose]{#1}%
1628 }
1629 \define@key{Hyp}{typexml}[true]{%
1630   \Hy@boolkey[typexml]{#1}%
1631 }

```

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.

```

1632 \define@key{Hyp}{raiselinks}[true]{%
1633   \Hy@boolkey[raiselinks]{#1}%
1634 }

```

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

```

1635 \define@key{Hyp}{breaklinks}[true]{%
1636   \Hy@boolkey[breaklinks]{#1}%
1637 }

```

Determines whether an automatic anchor is put on each page

```

1638 \define@key{Hyp}{pageanchor}[true]{%
1639   \Hy@boolkey[pageanchor]{#1}%
1640 }

```

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.

```

1641 \define@key{Hyp}{plainpages}[true]{%
1642   \Hy@boolkey[plainpages]{#1}%
1643 }

```

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

```

1644 \define@key{Hyp}{naturalnames}[true]{%
1645   \Hy@boolkey[naturalnames]{#1}%
1646 }

```

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

```

1647 \define@key{Hyp}{hypertexnames}[true]{%
1648   \Hy@boolkey[hypertexnames]{#1}%
1649 }

```

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

```

1650 \define@key{Hyp}{nesting}[true]{%
1651   \Hy@boolkey[nesting]{#1}%
1652 }

```

```

1653 \define@key{Hyp}{unicode}[true]{%
1654   \Hy@boolkey[unicode]{#1}%
1655   \HyPsd@InitUnicode
1656 }

```

## 10 Options for different drivers

```
1657 \define@key{Hyp}{hyperref}[true]{%
1658 \define@key{Hyp}{tex4ht}[true]{%
1659   \def\XR@ext{html}%
1660   \Hy@texhttrue
1661   \def\Hy@raisedlink{}%
1662   \setkeys{Hyp}{colorlinks=true}%
1663   \def\BeforeTeXIVht{\usepackage{color}}%
1664   \def\Hy@driver{htex4ht}%
1665   \def\MaybeStopEarly{%
1666     \typeout{Hyperref stopped early}%
1667     \AfterBeginDocument{\PDF@FinishDoc}%
1668     \endinput
1669   }%
1670 }
1671 \define@key{Hyp}{pdftex}[true]{%
1672   \def\Hy@driver{hpdftex}%
1673   \def\XR@ext{pdf}%
1674   \PassOptionsToPackage{pdftex}{color}%
1675   \Hy@breaklinkstrue
1676 }
1677 \define@key{Hyp}{dvipdf}[true]{%
1678   \Hy@WarningNoLine{%
1679     Option 'dvipdf' is deprecated.\MessageBreak
1680     See the user manual for available driver options%
1681   }%
1682 }
1683 \define@key{Hyp}{nativepdf}[true]{%
1684   \def\Hy@driver{hdvips}%
1685   \def\Hy@raisedlink{}%
1686   \def\XR@ext{pdf}%
1687 }
1688 \define@key{Hyp}{dvipdfm}[true]{%
1689   \def\Hy@driver{hdvipdfm}%
1690   \def\XR@ext{pdf}%
1691   \Hy@breaklinkstrue
1692 }
1693 \define@key{Hyp}{dvipdfmx}[true]{%
1694   \def\Hy@driver{hdvipdfm}%
1695   \def\XR@ext{pdf}%
1696   \Hy@breaklinkstrue
1697 }
1698 \define@key{Hyp}{pdfmark}[true]{%
1699   \def\Hy@driver{hdvips}%
1700   \def\Hy@raisedlink{}%
1701   \def\XR@ext{pdf}%
1702 }
1703 \define@key{Hyp}{dvips}[true]{%
1704   \def\Hy@driver{hdvips}%
1705   \def\Hy@raisedlink{}%
1706   \def\XR@ext{pdf}%
1707 }
1708 \define@key{Hyp}{hypertex}[true]{%
1709   \def\Hy@driver{hypertex}%
1710 }
1711 \let\Hy@MaybeStopNow\relax
```

```

1712 \define@key{Hyp}{vtex}[true]{%
1713   \begingroup\expandafter\expandafter\expandafter\endgroup
1714   \expandafter\ifx\csname OpMode\endcsname\relax
1715     \@latex@error{Non-VTeX processor}{}%
1716     \global\let\Hy@MaybeStopNow\endinput
1717   \endinput
1718   \else
1719     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1720       \def\XR@ext{pdf}%
1721       \def\Hy@driver{hvtex}%
1722     \else
1723       \ifnum\OpMode=10\relax
1724         \def\XR@ext{htm}%
1725         \def\Hy@driver{hvtexhtm}%
1726         \def\MaybeStopEarly{%
1727           \typeout{Hyperref stopped early}%
1728           \AfterBeginDocument{\PDF@FinishDoc}%
1729         \endinput
1730       }%
1731     \else
1732       \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1733       \global\let\Hy@MaybeStopNow\endinput
1734     \endinput
1735   \fi
1736 \fi
1737 \fi
1738 }
1739 \define@key{Hyp}{vtexpdfmark}[true]{%
1740   \begingroup\expandafter\expandafter\expandafter\endgroup
1741   \expandafter\ifx\csname OpMode\endcsname\relax
1742     \@latex@error{Non-VTeX processor}{}%
1743     \let\Hy@MaybeStopNow\endinput
1744   \endinput
1745   \else
1746     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1747       \def\XR@ext{pdf}%
1748       \def\Hy@driver{hvtexmrk}%
1749       \def\Hy@raisedlink{}%
1750     \else
1751       \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1752       \let\Hy@MaybeStopNow\endinput
1753     \endinput
1754   \fi
1755 \fi
1756 }
1757 \define@key{Hyp}{dviwindo}[true]{%
1758   \def\Hy@driver{hdvwind}%
1759   \setkeys{Hyp}{colorlinks}%
1760   \PassOptionsToPackage{dviwindo}{color}%
1761 }
1762 \define@key{Hyp}{dvipsone}[true]{%
1763   \def\XR@ext{pdf}%
1764   \def\Hy@driver{hdvipson}%
1765   \def\Hy@raisedlink{}%
1766 }
1767 \define@key{Hyp}{textures}[true]{%
1768   \def\XR@ext{pdf}%

```

```

1769 \def\Hy@driver{htexture}%
1770 }
1771 \define@key{Hyp}{latex2html}[true]{%
1772 \AtBeginDocument{\@latextohtmlX}%
1773 }

```

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

```

1774 \define@key{Hyp}{ps2pdf}[true]{%
1775 \def\Hy@driver{hdvips}%
1776 \def\Hy@raisedlink{}%
1777 \providecommand\@pdfborder{0 0 1}%
1778 }

```

## 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.

```

1779 \define@key{Hyp}{hyperfigures}[true]{%
1780 \Hy@boolkey[hyperfigures]{figures}{#1}%
1781 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

1782 \define@key{Hyp}{hyperfootnotes}[true]{%
1783 \Hy@boolkey[hyperfootnotes]{#1}%
1784 }

```

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

```

1785 \def\back@none{none}
1786 \def\back@section{section}
1787 \def\back@page{page}
1788 \def\back@slide{slide}
1789 \define@key{Hyp}{backref}[section]{%
1790 \lowercase{\def\Hy@tempa{#1}}%
1791 \ifx\Hy@tempa\@empty
1792 \let\Hy@tempa\back@section
1793 \fi
1794 \ifx\Hy@tempa\Hy@false
1795 \let\Hy@tempa\back@none
1796 \fi
1797 \ifx\Hy@tempa\back@slide
1798 \let\Hy@tempa\back@section
1799 \fi
1800 \ifx\Hy@tempa\back@page
1801 \PassOptionsToPackage{hyperpageref}{backref}%
1802 \Hy@backreftrue
1803 \else
1804 \ifx\Hy@tempa\back@section
1805 \PassOptionsToPackage{hyperref}{backref}%
1806 \Hy@backreftrue
1807 \else
1808 \ifx\Hy@tempa\back@none
1809 \Hy@backreffalse
1810 \else
1811 \Hy@WarnOptionValue{#1}{backref}{%
1812 'section', 'slide', 'page', 'none', \MessageBreak
1813 or 'false'}%
1814 \fi
1815 \fi

```

```

1816 \fi
1817 }
1818 \define@key{Hyp}{pagebackref}[true]{%
1819 \lowercase{\def\Hy@tempa{#1}}%
1820 \ifx\Hy@tempa\@empty
1821 \let\Hy@tempa\Hy@true
1822 \fi
1823 \ifx\Hy@tempa\Hy@true
1824 \PassOptionsToPackage{hyperpageref}{backref}%
1825 \Hy@backreftrue
1826 \else
1827 \ifx\Hy@tempa\Hy@false
1828 \Hy@backreffalse
1829 \else
1830 \Hy@WarnOptionValue{#1}{pagebackref}{‘true’ or ‘false’}%
1831 \fi
1832 \fi
1833 }

```

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

```

1834 \define@key{Hyp}{hyperindex}[true]{%
1835 \Hy@boolkey{hyperindex}{#1}%
1836 }

```

Configuration of encap char.

```

1837 \define@key{Hyp}{encap}[|]{%
1838 \def\HyInd@EncapChar{#1}%
1839 }

```

## 12 Language options

The `\autoref` feature depends on the language.

```

1840 \def\HyLang@english{%
1841 \def\equationautorefname{Equation}%
1842 \def\footnoteautorefname{footnote}%
1843 \def\itemautorefname{item}%
1844 \def\figureautorefname{Figure}%
1845 \def\tableautorefname{Table}%
1846 \def\partautorefname{Part}%
1847 \def\appendixautorefname{Appendix}%
1848 \def\chapterautorefname{chapter}%
1849 \def\sectionautorefname{section}%
1850 \def\subsectionautorefname{subsection}%
1851 \def\subsubsectionautorefname{subsubsection}%
1852 \def\paragraphautorefname{paragraph}%
1853 \def\subparagraphautorefname{subparagraph}%
1854 \def\FancyVerbLineautorefname{line}%
1855 \def\theoremautorefname{Theorem}%
1856 }
1857 \def\HyLang@german{%
1858 \def\equationautorefname{Gleichung}%
1859 \def\footnoteautorefname{Fu\ss note}%
1860 \def\itemautorefname{Punkt}%
1861 \def\figureautorefname{Abbildung}%
1862 \def\tableautorefname{Tabelle}%
1863 \def\partautorefname{Teil}%

```



```

1864 \def\appendixautorefname{Anhang}%
1865 \def\chapterautorefname{Kapitel}%
1866 \def\sectionautorefname{Abschnitt}%
1867 \def\subsectionautorefname{Unterabschnitt}%
1868 \def\subsubsectionautorefname{Unterunterabschnitt}%
1869 \def\paragraphautorefname{Absatz}%
1870 \def\subparagraphautorefname{Unterabsatz}%
1871 \def\FancyVerbLineautorefname{Zeile}%
1872 \def\theoremautorefname{Theorem}%
1873 }
1874 \def\HyLang@portuges{%
1875 \def\equationautorefname{Equa\c c\~ao}%
1876 \def\footnoteautorefname{Nota de rodap\~e}%
1877 \def\itemautorefname{Item}%
1878 \def\figureautorefname{Figura}%
1879 \def\tableautorefname{Tabela}%
1880 \def\partautorefname{Parte}%
1881 \def\appendixautorefname{Ap\~endice}%
1882 \def\chapterautorefname{Cap\~itulo}%
1883 \def\sectionautorefname{Se\c c\~ao}%
1884 \def\subsectionautorefname{Subse\c c\~ao}%
1885 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
1886 \def\paragraphautorefname{par\~agrafo}%
1887 \def\subparagraphautorefname{subpar\~agrafo}%
1888 \def\FancyVerbLineautorefname{linha}%
1889 \def\theoremautorefname{Teorema}%
1890 }
1891 \def\HyLang@spanish{%
1892 \def\equationautorefname{Ecuaci\~on}%
1893 \def\footnoteautorefname{Nota a pie de p\~agina}%
1894 \def\itemautorefname{Elemento}%
1895 \def\figureautorefname{Figura}%
1896 \def\tableautorefname{Tabla}%
1897 \def\partautorefname{Parte}%
1898 \def\appendixautorefname{Ap\~endice}%
1899 \def\chapterautorefname{Cap\~itulo}%
1900 \def\sectionautorefname{Secci\~on}%
1901 \def\subsectionautorefname{Subsecci\~on}%
1902 \def\subsubsectionautorefname{Subsubsecci\~on}%
1903 \def\paragraphautorefname{P\~arrafo}%
1904 \def\subparagraphautorefname{Subp\~arrafo}%
1905 \def\FancyVerbLineautorefname{L\~inea}%
1906 \def\theoremautorefname{Teorema}%
1907 }
1908 \def\HyLang@afrikaans{%
1909 \def\equationautorefname{Vergelyking}%
1910 \def\footnoteautorefname{Voetnota}%
1911 \def\itemautorefname{Item}%
1912 \def\figureautorefname{Figuur}%
1913 \def\tableautorefname{Tabel}%
1914 \def\partautorefname{Deel}%
1915 \def\appendixautorefname{Bylae}%
1916 \def\chapterautorefname{Hoofstuk}%
1917 \def\sectionautorefname{Afdeling}%
1918 \def\subsectionautorefname{Subafdeling}%
1919 \def\subsubsectionautorefname{Subsubafdeling}%
1920 \def\paragraphautorefname{Paragraaf}%

```

```

1921 \def\subparagraphautorefname{Subparagraaf}%
1922 \def\FancyVerbLineautorefname{Lyn}%
1923 \def\theoremautorefname{Teorema}%
1924 }
1925 \def\HyLang@french{%
1926 \def\equationautorefname{\`Equation}%
1927 \def\footnoteautorefname{note}%
1928 \def\itemautorefname{item}%
1929 \def\figureautorefname{Figure}%
1930 \def\tableautorefname{Tableau}%
1931 \def\partautorefname{Partie}%
1932 \def\appendixautorefname{Appendice}%
1933 \def\chapterautorefname{chapitre}%
1934 \def\sectionautorefname{section}%
1935 \def\subsectionautorefname{sous-section}%
1936 \def\subsubsectionautorefname{sous-sous-section}%
1937 \def\paragraphautorefname{paragraphe}%
1938 \def\subparagraphautorefname{sous-paragraphe}%
1939 \def\FancyVerbLineautorefname{ligne}%
1940 \def\theoremautorefname{Th\'eor\'eme}%
1941 }
1942 \def\HyLang@vietnamese{%
1943 \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr\`inh}%
1944 \def\footnoteautorefname{Ch\`u th\`ich}%
1945 \def\itemautorefname{m\`d\`u\`c}%
1946 \def\figureautorefname{H\`inh}%
1947 \def\tableautorefname{B\`h\`a\`ng}%
1948 \def\partautorefname{Ph\`'\acircumflex{}n}%
1949 \def\appendixautorefname{Ph\`d\`u\`l\`d\`u\`c}%
1950 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
1951 \def\sectionautorefname{m\`d\`u\`c}%
1952 \def\subsectionautorefname{m\`d\`u\`c}%
1953 \def\subsubsectionautorefname{m\`d\`u\`c}%
1954 \def\paragraphautorefname{\dj{}o\`d\`a\`n}%
1955 \def\subparagraphautorefname{\dj{}o\`d\`a\`n}%
1956 \def\FancyVerbLineautorefname{d\`ong}%
1957 \def\theoremautorefname{DJ{}\`d\`i\`nh\`l\`y}%
1958 }

```

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

```

1959 \def\HyLang@addto#1#2{%
1960 #2%
1961 \@temptokena{#2}%
1962 \ifx#1\relax
1963 \let#1\@empty
1964 \fi
1965 \ifx#1\undefined
1966 \edef#1{\the\@temptokena}%
1967 \else
1968 \toks@\expandafter{#1}%
1969 \edef#1{\the\toks@\the\@temptokena}%
1970 \fi
1971 \@temptokena{}\toks@\@temptokena
1972 }
1973 \def\HyLang@DeclareLang#1#2{%
1974 \beginngroup

```

```

1975 \edef\x##1##2{%
1976 \noexpand\ifx##2\relax
1977 \errmessage{No definitions for language #2' found!}%
1978 \noexpand\fi
1979 \endgroup
1980 \noexpand\define@key{Hyp}{#1}[] {%
1981 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
1982 }%
1983 }%
1984 \expandafter\x\csname extras#1\expandafter\endcsname
1985 \csname HyLang@#2\endcsname
1986 }
1987 \HyLang@DeclareLang{english}{english}
1988 \HyLang@DeclareLang{UKenglish}{english}
1989 \HyLang@DeclareLang{british}{english}
1990 \HyLang@DeclareLang{USenglish}{english}
1991 \HyLang@DeclareLang{american}{english}
1992 \HyLang@DeclareLang{german}{german}
1993 \HyLang@DeclareLang{austrian}{german}
1994 \HyLang@DeclareLang{ngerman}{german}
1995 \HyLang@DeclareLang{naustrian}{german}
1996 \HyLang@DeclareLang{brazil}{portuges}
1997 \HyLang@DeclareLang{brazilian}{portuges}
1998 \HyLang@DeclareLang{portuguese}{portuges}
1999 \HyLang@DeclareLang{spanish}{spanish}
2000 \HyLang@DeclareLang{afrikaans}{afrikaans}
2001 \HyLang@DeclareLang{french}{french}
2002 \HyLang@DeclareLang{frenchb}{french}
2003 \HyLang@DeclareLang{français}{french}
2004 \HyLang@DeclareLang{acadian}{french}
2005 \HyLang@DeclareLang{canadien}{french}

```

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

```

2006 \define@key{Hyp}{vietnamese}[] {%
2007 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
2008 \AtEndOfPackage{%
2009 \ifundefined{T@PU}{-}{%
2010 \input{puvnenc.def}%
2011 }%
2012 }%
2013 }
2014 \define@key{Hyp}{vietnam}[] {%
2015 \HyLang@addto\extravietnam\HyLang@vietnamese
2016 \AtEndOfPackage{%
2017 \ifundefined{T@PU}{-}{%
2018 \input{puvnenc.def}%
2019 }%
2020 }%
2021 }

```

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

```

2022 \define@key{Hyp}{arabic}[] {%
2023 \AtEndOfPackage{%
2024 \ifundefined{T@PU}{-}{%
2025 \input{puarenc.def}%
2026 }%
2027 }%
2028 }

```

## 13 Options to change appearance of links

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

```
2029 \define@key{Hyp}{colorlinks}[true]{%
2030   \Hy@boolkey{colorlinks}{#1}%
2031   \ifHy@colorlinks
2032     \def\@pdfborder{0 0 0}%
2033   \fi
2034 }
2035 \define@key{Hyp}{frenchlinks}[true]{%
2036   \Hy@boolkey{frenchlinks}{#1}%
2037 }
```

## 14 Bookmarking

```
2038 \define@key{Hyp}{bookmarks}[true]{%
2039   \Hy@boolkey{bookmarks}{#1}%
2040 }
2041 \define@key{Hyp}{bookmarksopen}[true]{%
2042   \Hy@boolkey{bookmarksopen}{#1}%
2043 }
```

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.

```
2044 \let\Hy@bookmarksdepth\c@tocdepth
2045 \define@key{Hyp}{bookmarksdepth}[]{}%
2046   \begingroup
2047     \edef\x{#1}%
2048     \ifx\x\empty
2049       \global\let\Hy@bookmarksdepth\c@tocdepth
2050     \else
2051       \ifundefined{toclevel@\x}{%
2052         \@onelevel@sanitize\x
2053         \edef\y{\expandafter\@car\x\@nil}%
2054         \ifcase 0\expandafter\ifx\y-1\fi
2055           \expandafter\ifnum\expandafter'\y>47 %
2056             \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
2057           \Hy@Warning{Unknown document division name (\x)}%
2058         \else
2059           \setbox\z@=\hbox{%
2060             \count@=\x
2061             \xdef\Hy@bookmarksdepth{\the\count@}%
2062           }%
2063         \fi
2064       }{}%
2065       \setbox\z@=\hbox{%
2066         \count@=\csname toclevel@\x\endcsname
2067         \xdef\Hy@bookmarksdepth{\the\count@}%

```

```

2068      }%
2069      }%
2070      \fi
2071 \endgroup
2072 }

```

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

```

2073 \define@key{Hyp}{bookmarksopenlevel}{%
2074   \def\@bookmarksopenlevel{#1}%
2075 }
2076 \def\@bookmarksopenlevel{\maxdimen}
2077 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
2078 \define@key{Hyp}{bookmarkstype}{%
2079   \def\Hy@bookmarkstype{#1}%
2080 }
2081 \def\Hy@bookmarkstype{toc}

```

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

```

2082 \define@key{Hyp}{bookmarksnumbered}[true]{%
2083   \Hy@boolkey{bookmarksnumbered}{#1}%
2084 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2085 \define@key{Hyp}{CJKbookmarks}[true]{%
2086   \Hy@boolkey{CJKbookmarks}{#1}%
2087 }
2088 \define@key{Hyp}{linkcolor}{\def\@linkcolor{#1}}
2089 \define@key{Hyp}{anchorcolor}{\def\@anchorcolor{#1}}
2090 \define@key{Hyp}{citecolor}{\def\@citecolor{#1}}
2091 \define@key{Hyp}{urlcolor}{\def\@urlcolor{#1}}
2092 \define@key{Hyp}{menucolor}{\def\@menucolor{#1}}
2093 \define@key{Hyp}{filecolor}{\def\@filecolor{#1}}
2094 \define@key{Hyp}{pagecolor}{\def\@pagecolor{#1}}

```

Default values:

```

2095 \def\@linkcolor{red}
2096 \def\@anchorcolor{black}
2097 \def\@citecolor{green}
2098 \def\@filecolor{cyan}
2099 \def\@urlcolor{magenta}
2100 \def\@menucolor{red}
2101 \def\@pagecolor{red}
2102 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2103 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2104 \let\@baseurl\@empty
2105 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2106 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2107 \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.

```

2108 \let\@pdfpagetransition\relax
2109 \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.

```
2110 \let\pdfpageduration\relax
2111 \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.

```
2112 \newif\ifHy@useHidKey
2113 \Hy@useHidKeyfalse
2114 \define@key{Hyp}{pdfpagehidden}[true]{%
2115   \Hy@boolkey{pdfpagehidden}{#1}%
2116   \ifHy@pdfpagehidden
2117     \global\Hy@useHidKeytrue
2118   \fi
2119 }
```

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).

```
2120 \def\Hy@ColorList{cite,file,link,menu,page,run,url}
2121 \@for\Hy@temp:=\Hy@ColorList\do{%
2122   \edef\Hy@temp{%
2123     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2124       \noexpand\Hy@bordercolor{\Hy@temp}{##1}{ }%
2125     }%
2126   }%
2127   \Hy@temp
2128 }
2129 \def\Hy@bordercolor#1#2#3{%
2130   \begingroup
2131     \Hy@safe@activetrue
2132     \@ifundefined{XC@edef}{\edef}{\XC@edef}\x{#2}%
2133     \expandafter\Hy@CheckColorSpec\x{#3}\@nil{#1}{#2}%
2134   }
2135   \def\Hy@CheckColorSpec#1 #2 #3\@nil#4#5{%
2136     \ifx\#3\%
2137       \@ifundefined{XC@bordercolor}{%
2138         \Hy@Warning{%
2139           Unsupported color specification (#4bordercolor).\MessageBreak
2140           Load package 'xcolor' (version >= 1.11) first.\MessageBreak
2141           Ignoring color specification%
2142         }%
2143       }
2144     }{%
2145       \endgroup
2146       \XC@bordercolor{#4}{#5}%
2147     }%
2148   }
2149   \endgroup
2150   \@namedef{@#4bordercolor}{#5}%
2151 \fi
2152 }
```

```

2153 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2154 \Hy@DefNameKey{pdfhighlight}{%
2155   \do{/I}{Invert}%
2156   \do{/N}{None}%
2157   \do{/O}{Outline}%
2158   \do{/P}{Push}%
2159 }
2160 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2161 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2162 \def\Hy@setpdfborder{%
2163   \ifx\@pdfborder\@empty
2164   \else
2165     /Border[\@pdfborder]%
2166   \fi
2167   \ifx\@pdfborderstyle\@empty
2168   \else
2169     /BS<<\@pdfborderstyle>>%
2170   \fi
2171 }
2172 \Hy@DefNameKey{pdfpagemode}{%
2173   \do{UseNone}{}%
2174   \do{UseOutlines}{}%
2175   \do{UseThumbs}{}%
2176   \do{FullScreen}{}%
2177   \do{UseOC}{PDF 1.5}%
2178   \do{UseAttachments}{PDF 1.6}%
2179 }
2180 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2181   \do{UseNone}{}%
2182   \do{UseOutlines}{}%
2183   \do{UseThumbs}{}%
2184   \do{FullScreen}{}%
2185   \do{UseOC}{PDF 1.5}%
2186   \do{UseAttachments}{PDF 1.6}%
2187 }
2188 \Hy@DefNameKey{pdfdirection}{%
2189   \do{L2R}{Left to right}%
2190   \do{R2L}{Right to left}%
2191 }
2192 \Hy@DefNameKey{pdfviewarea}{%
2193   \do{MediaBox}{}%
2194   \do{CropBox}{}%
2195   \do{BleedBox}{}%
2196   \do{TrimBox}{}%
2197   \do{ArtBox}{}%
2198 }
2199 \Hy@DefNameKey{pdfviewclip}{%
2200   \do{MediaBox}{}%
2201   \do{CropBox}{}%
2202   \do{BleedBox}{}%
2203   \do{TrimBox}{}%
2204   \do{ArtBox}{}%
2205 }
2206 \Hy@DefNameKey{pdfprintarea}{%
2207   \do{MediaBox}{}%
2208   \do{CropBox}{}%
2209   \do{BleedBox}{}%

```

```

2210 \do{TrimBox}{}%
2211 \do{ArtBox}{}%
2212 }
2213 \Hy@DefNameKey{pdfprintclip}{%
2214 \do{MediaBox}{}%
2215 \do{CropBox}{}%
2216 \do{BleedBox}{}%
2217 \do{TrimBox}{}%
2218 \do{ArtBox}{}%
2219 }
2220 \Hy@DefNameKey{pdfprintscaling}{%
2221 \do{AppDefault}{}%
2222 \do{None}{}%
2223 }
2224 \Hy@DefNameKey{pdfduplex}{%
2225 \do{Simplex}{}%
2226 \do{DuplexFlipShortEdge}{}%
2227 \do{DuplexFlipLongEdge}{}%
2228 }
2229 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
2230 \do{true}{}%
2231 \do{false}{}%
2232 }
2233 \define@key{Hyp}{pdfprintpagerange}{%
2234 \def\@pdfprintpagerange{#1}%
2235 }
2236 \Hy@DefNameKey{pdfnumcopies}{%
2237 \do{2}{two copies}%
2238 \do{3}{three copies}%
2239 \do{4}{four copies}%
2240 \do{5}{five copies}%
2241 }
2242 \define@key{Hyp}{pdfusetitle}[true]{%
2243 \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2244 }
2245 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2246 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2247 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2248 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2249 \define@key{Hyp}{pdfcreationdate}{\pdfstringdef\@pdfcreationdate{#1}}
2250 \define@key{Hyp}{pdfmoddate}{\pdfstringdef\@pdfmoddate{#1}}
2251 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2252 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2253 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
2254 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2255 \let\setpdflinkmargin\@gobble
2256 \def\calculate@pdfview#1 #2\{%
2257 \def\@pdfview{#1}%
2258 \ifx\#2\%
2259 \def\@pdfviewparams{-32768}%
2260 \else
2261 \def\@pdfviewparams{ #2}%
2262 \fi
2263 }
2264 \define@key{Hyp}{pdfstartpage}{\def\@pdfstartpage{#1}}
2265 \define@key{Hyp}{pdfstartview}{%
2266 \ifx\#1\%

```



```

2267 \def\@pdfstartview{}%
2268 \else
2269 \hypercalcbpdef\@pdfstartview{ /#1 }%
2270 \fi
2271 }
2272 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
2273 \define@key{Hyp}{pdftoolbar}[true]{%
2274 \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2275 }
2276 \define@key{Hyp}{pdfmenubar}[true]{%
2277 \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2278 }
2279 \define@key{Hyp}{pdfwindowui}[true]{%
2280 \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2281 }
2282 \define@key{Hyp}{pdffitwindow}[true]{%
2283 \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2284 }
2285 \define@key{Hyp}{pdfcenterwindow}[true]{%
2286 \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2287 }
2288 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2289 \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2290 }
2291 \define@key{Hyp}{pdfnewwindow}[true]{%
2292 \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2293 }
2294 \Hy@DefNameKey{pdfpagelayout}{%
2295 \do{SinglePage}{}}%
2296 \do{OneColumn}{}%
2297 \do{TwoColumnLeft}{}%
2298 \do{TwoColumnRight}{}%
2299 \do{TwoPageLeft}{PDF 1.5}%
2300 \do{TwoPageRight}{PDF 1.5}%
2301 }
2302 \define@key{Hyp}{pdflang}{%
2303 \def\@pdflang{#1}%
2304 }
2305 \define@key{Hyp}{pdfpagelabels}[true]{%
2306 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2307 }
2308 \define@key{Hyp}{pdfescapeform}[true]{%
2309 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2310 }

```

Default values:

```

2311 \def\@linkbordercolor{1 0 0}
2312 \def\@urlbordercolor{0 1 1}
2313 \def\@menubordercolor{1 0 0}
2314 \def\@filebordercolor{0 .5 .5}
2315 \def\@runbordercolor{0 .7 .7}
2316 \def\@citebordercolor{0 1 0}
2317 \def\@pagebordercolor{1 1 0}
2318 \def\@pdfhighlight{/I}
2319 \def\@pdftitle{}
2320 \def\@pdfauthor{}
2321 \let\@pdfproducer\relax
2322 \def\@pdfcreator{LaTeX with hyperref package}

```

```

2323 \def\@pdfcreationdate{}
2324 \def\@pdfmoddate{}
2325 \def\@pdfsubject{}
2326 \def\@pdfkeywords{}
2327 \def\@pdfpagescrop{}
2328 \def\@pdfstartview{ /Fit }
2329 \def\@pdfstartpage{1}
2330 \def\@pdfprintpagerange{}
2331 \def\@pdflang{}
2332 \let\PDF@SetupDoc\@empty
2333 \let\PDF@FinishDoc\@empty
2334 \let\phantomsection\@empty
2335 \@ifundefined{stockwidth}{%
2336   \edef\special@paper{\the\paperwidth,\the\paperheight}
2337 }{%
2338   \edef\special@paper{\the\stockwidth,\the\stockheight}
2339 }
2340 \begingroup
2341   \dimen@=\@ifundefined{stockheight}{\paperheight}{\stockheight}\relax
2342   \dimen@=0.99626401\dimen@
2343   \xdef\Hy@pageheight{\strip@pt\dimen@}
2344 \endgroup
2345 \def\HyInd@EncapChar{\|}
2346 \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.

```

2347 \let\hyper@normalise\ExecuteOptions
2348 \let\ExecuteOptions\hypersetup
2349 \Hy@RestoreCatcodes
2350 \InputIfFileExists{hyperref.cfg}{-}{-}
2351 \Hy@SetCatcodes
2352 \let\ExecuteOptions\hyper@normalise
2353 \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`.

```

2354 \RequirePackage{kvoptions}[2006/08/17]

```

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

```

2355 \@ifpackageloaded{tex4ht}{%
2356   \@ifpackagewith{hyperref}{tex4ht}{-}{-}%
2357   \PassOptionsToPackage{tex4ht}{hyperref}%
2358 }%
2359 }{-}

2360 \let\ReadBookmarks\relax
2361 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2362 \AtBeginDocument{%
2363   \ifHy@draft
2364     \let\hyper@@anchor\@gobble
2365     \gdef\hyper@link#1#2#3{#3}%
2366     \let\hyper@anchorstart\@gobble

```

```

2367 \let\hyper@anchorend\@empty
2368 \let\hyper@linkstart\@gobbletwo
2369 \let\hyper@linkend\@empty
2370 \def\hyper@linkurl#1#2{#1}%
2371 \def\hyper@linkfile#1#2#3{#1}%
2372 \def\Acrobatmenu#1#2{#2}%
2373 \let\PDF@SetupDoc\@empty
2374 \let\PDF@FinishDoc\@empty
2375 \let\@fifthoffive\@secondoftwo
2376 \let\@secondoffive\@secondoftwo
2377 \let\ReadBookmarks\relax
2378 \let\WriteBookmarks\relax
2379 \Hy@WarningNoLine{ draft mode on}%
2380 \fi
2381 \Hy@DisableOption{draft}%
2382 \Hy@DisableOption{nolinks}%
2383 \Hy@DisableOption{final}%
2384 }%

```

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.

```

2385 \ifx\HyPsd@InitUnicode\relax
2386 \define@key{Hyp}{unicode}[true]{%
2387 \Hy@boolkey{unicode}{#1}%
2388 }
2389 \else
2390 \define@key{Hyp}{unicode}[true]{%
2391 \Hy@boolkey{unicode}{#1}%
2392 \ifHy@unicode
2393 \Hy@WarningNoLine{Set package option ‘unicode’ first\MessageBreak
2394 in order to load unicode support%
2395 }%
2396 \Hy@unicodedefalse
2397 \fi
2398 }
2399 \fi

```

The macro \HyPsd@InitUnicode is no longer needed.

```

2400 \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.

```

2401 \Hy@nextfalse
2402 \@ifpackagewith{babel}{spanish}{\Hy@nexttrue}{}
2403 \@ifpackagewith{babel}{galician}{\Hy@nexttrue}{}
2404 \@ifpackagewith{babel}{estonian}{\Hy@nexttrue}{}
2405 \ifHy@next
2406 \let\texttilde\~%
2407 \fi
2408 \ifHy@figures
2409 \Hy@Info{Hyper figures ON}
2410 \else
2411 \Hy@Info{Hyper figures OFF}
2412 \fi

```

```

2413 \ifHy@nesting
2414   \Hy@Info{Link nesting ON}
2415 \else
2416   \Hy@Info{Link nesting OFF}
2417 \fi
2418 \ifHy@hyperindex
2419   \Hy@Info{Hyper index ON}
2420 \else
2421   \Hy@Info{Hyper index OFF}
2422 \fi
2423 \ifHy@plainpages
2424   \Hy@Info{Plain pages ON}
2425 \else
2426   \Hy@Info{Plain pages OFF}
2427 \fi
2428 \ifHy@backref
2429   \Hy@Info{Backreferencing ON}
2430 \else
2431   \Hy@Info{Backreferencing OFF}
2432 \fi
2433 \ifHy@typexml
2434   \AtEndOfPackage{\RequirePackage{color}\RequirePackage{nameref}}
2435 \fi
2436 \Hy@DisableOption{typexml}
2437 \ifHy@implicit
2438   \typeout{Implicit mode ON; LaTeX internals redefined}%
2439 \else
2440   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
2441   \def\MaybeStopEarly{%
2442     \typeout{Hyperref stopped early}%
2443     \AfterBeginDocument{\PDF@FinishDoc}%
2444     \endinput
2445   }%
2446   \AtBeginDocument{%
2447     \let\autoref\ref
2448     \ifx\@pdfpagemode\@empty
2449       \gdef\@pdfpagemode{UseNone}%
2450     \fi
2451     \global\Hy@backreffalse
2452   }%
2453   \AtEndOfPackage{%
2454     \global\let\ReadBookmarks\relax
2455     \global\let\WriteBookmarks\relax
2456   }%
2457 \fi
2458 \Hy@DisableOption{implicit}

```

### 15.1.1 Driver loading

```

2459 \AtEndOfPackage{%
2460   \@ifpackageloaded{tex4ht}{%
2461     \def\Hy@driver{htex4ht}%
2462     \Hy@texhttrue
2463   }{}%
2464   \ifx\Hy@driver\@empty
2465     \providecommand*{\Hy@defaultdriver}{hypertex}%
2466     \begingroup\expandafter\expandafter\expandafter\endgroup

```

```

2467 \expandafter\ifx\csname pdfoutput\endcsname\relax
2468 \begingroup\expandafter\expandafter\expandafter\endgroup
2469 \expandafter\ifx\csname OpMode\endcsname\relax
2470 \let\Hy@driver\Hy@defaultdriver
2471 \else
2472 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2473 \def\Hy@driver{hvtex}%
2474 \def\XR@ext{pdf}%
2475 \else
2476 \ifnum\OpMode=10\relax
2477 \def\XR@ext{htm}%
2478 \def\Hy@driver{hvtexhtm}%
2479 \def\MaybeStopEarly{%
2480 \typeout{Hyperref stopped early}%
2481 \AfterBeginDocument{\PDF@FinishDoc}%
2482 \endinput
2483 }%
2484 \else
2485 \let\Hy@driver\Hy@defaultdriver
2486 \fi
2487 \fi
2488 \fi
2489 \else
2490 \ifnum\pdfoutput<1 %
2491 \let\Hy@driver\Hy@defaultdriver
2492 \else
2493 \def\Hy@driver{hpdfTeX}%
2494 \def\XR@ext{pdf}%
2495 \PassOptionsToPackage{pdfTeX}{color}%
2496 \Hy@breaklinkstrue
2497 \fi
2498 \fi
2499 \ifx\Hy@driver\Hy@defaultdriver
2500 \def\Hy@temp{hdvips}%
2501 \ifx\Hy@temp\Hy@driver
2502 \def\Hy@raisedlink{}%
2503 \def\XR@ext{pdf}%
2504 \fi
2505 \def\Hy@temp{hdvipdfm}%
2506 \ifx\Hy@temp\Hy@driver
2507 \def\XR@ext{pdf}%
2508 \Hy@breaklinkstrue
2509 \fi
2510 \def\Hy@temp{hdviwind}%
2511 \ifx\Hy@temp\Hy@driver
2512 \setkeys{Hyp}{colorlinks}%
2513 \PassOptionsToPackage{dviwindo}{color}%
2514 \fi
2515 \def\Hy@temp{hdvipson}%
2516 \ifx\Hy@temp\Hy@driver
2517 \def\XR@ext{pdf}%
2518 \def\Hy@raisedlink{}%
2519 \fi
2520 \def\Hy@temp{textures}%
2521 \ifx\Hy@temp\Hy@driver
2522 \def\XR@ext{pdf}%
2523 \fi

```

```

2524 \fi
2525 \typeout{*hyperref using default driver \Hy@driver*}%
2526 \else
2527 \typeout{*hyperref using driver \Hy@driver*}%
2528 \fi
2529 \input{\Hy@driver.def}%
2530 \let\@unprocessedoptions\relax
2531 \Hy@RestoreCatcodes
2532 }
2533 \Hy@DisableOption{tex4ht}
2534 \Hy@DisableOption{pdftex}
2535 \Hy@DisableOption{dvipdf}
2536 \Hy@DisableOption{nativepdf}
2537 \Hy@DisableOption{dvipdfm}
2538 \Hy@DisableOption{pdfmark}
2539 \Hy@DisableOption{dvips}
2540 \Hy@DisableOption{hypertex}
2541 \Hy@DisableOption{vtex}
2542 \Hy@DisableOption{vtexpdfmark}
2543 \Hy@DisableOption{dviwindo}
2544 \Hy@DisableOption{dvipsone}
2545 \Hy@DisableOption{textures}
2546 \Hy@DisableOption{latex2html}
2547 \Hy@DisableOption{ps2pdf}

```

### 15.1.2 Bookmarks

```

2548 \def\WriteBookmarks{0}
2549 \def\@bookmarkopenstatus#1{%
2550 \ifHy@bookmarksopen

```

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

```

2551 \ifnum#1<\expandafter\@firstofone\expandafter
2552 \{number\@bookmarkopenlevel\} % explicit space
2553 \else
2554 -%
2555 \fi
2556 \else
2557 -%
2558 \fi
2559 }
2560 \ifHy@bookmarks
2561 \Hy@Info{Bookmarks ON}%
2562 \ifx\@pdfpagemode\@empty
2563 \def\@pdfpagemode{UseOutlines}%
2564 \fi
2565 \else
2566 \def\@bookmarkopenstatus#1{%
2567 \Hy@Info{Bookmarks OFF}%
2568 \AtEndOfPackage{%
2569 \global\let\ReadBookmarks\relax
2570 \global\let\WriteBookmarks\relax
2571 }
2572 \ifx\@pdfpagemode\@empty
2573 \def\@pdfpagemode{UseNone}%
2574 \fi
2575 \fi
2576 \Hy@DisableOption{bookmarks}

```

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

```

2577 \AtBeginDocument{%
2578   \ifHy@colorlinks
2579     \ifHy@typexml\else\RequirePackage{color}\fi
2580     \def\Hy@colorlink#1{%
2581       \begingroup
2582       \expandafter\Hy@colorscan\expandafter#1#1\@nil%
2583     }%
2584     \def\Hy@colorscan#1{%
2585       \@ifnextchar[% ]
2586       {%
2587         \Hy@@colorscan
2588       }{%
2589         \expandafter\color\expandafter#1\@car{}%
2590       }%
2591     }%
2592     \def\Hy@@colorscan#1\@nil{\color#1}%
2593     \def\Hy@endcolorlink{\endgroup}%
2594     \Hy@Info{Link coloring ON}%
2595   \else
2596     \ifHy@frenchlinks
2597       \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
2598       \def\Hy@endcolorlink{\endgroup}%
2599       \Hy@Info{French linking ON}%
2600     \else
for grouping consistency:
2601       \def\Hy@colorlink#1{\begingroup}%
2602       \def\Hy@endcolorlink{\endgroup}%
2603       \Hy@Info{Link coloring OFF}%
2604     \fi
2605   \fi
2606   \Hy@DisableOption{colorlinks}%
2607   \Hy@DisableOption{frenchlinks}%
2608   \ifHy@texht
2609     \long\def\@firstoffive#1#2#3#4#5{#1}%
2610     \long\def\@secondoffive#1#2#3#4#5{#2}%
2611     \long\def\@thirdoffive#1#2#3#4#5{#3}%
2612     \long\def\@fourthoffive#1#2#3#4#5{#4}%
2613     \long\def\@fifthoffive#1#2#3#4#5{#5}%
2614     \providecommand*\@safe@activetrue{}%
2615     \providecommand*\@safe@activesfalse{}%
2616     \def\T@ref#1{%
2617       \Hy@safe@activetrue
2618       \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
2619       \Hy@safe@activesfalse
2620     }%
2621     \def\T@pageref#1{%
2622       \Hy@safe@activetrue
2623       \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
2624       \Hy@safe@activesfalse
2625     }%
2626   \else
2627     \ifHy@typexml\else\RequirePackage{nameref}\fi
2628   \fi
2629   \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
2630   \DeclareRobustCommand\pageref{%
2631     \@ifstar\@pagerefstar\T@pageref

```

```

2632 }%
2633 }
2634 \AfterBeginDocument{%
2635   \ifHy@texht
2636   \else
2637     \ReadBookmarks
2638   \fi
2639 }

2640 \ifHy@backref
2641   \RequirePackage{backref}
2642 \else
2643   \let\Hy@backout\@gobble
2644 \fi
2645 \Hy@DisableOption{backref}
2646 \Hy@DisableOption{pagebackref}

2647 \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.

```

2648 \begingroup
2649   \endlinechar=-1
2650   \catcode'\^M\active
2651   \catcode'\%\active
2652   \catcode'\#\active
2653   \catcode'\_\active
2654   \catcode'\$\active
2655   \gdef\hyper@normalise{
2656     \begingroup
2657     \catcode'\^M\active
2658     \def^^M{ }
2659     \catcode'\%\active
2660     \let%\@percentchar
2661     \let\%\@percentchar
2662     \catcode'\#\active
2663     \def#{\hyper@hash}
2664     \def\#{\hyper@hash}
2665     \@makeother\&
2666     \edef\textunderscore{\string_}
2667     \let_\textunderscore
2668     \catcode'\_\active
2669     \let_\textunderscore
2670     \let~\hyper@tilde
2671     \let~\hyper@tilde
2672     \let\textasciitilde\hyper@tilde
2673     \let\\\@backslashchar
2674     \edef$\string$}
2675     \Hy@safe@activetrue
2676     \hyper@nrmalise
2677   }
2678   \catcode'\#=6

```



```

2679 \gdef\hyper@n@rmalise#1#2{
2680   \edef\Hy@tempa{
2681     \endgroup
2682     \noexpand#1{\Hy@RemovePercentCr#2%^~M\@nil}
2683   }
2684   \Hy@tempa
2685 }
2686 \gdef\Hy@RemovePercentCr#1%^~M#2\@nil{
2687   #1
2688   \ifx\limits#2\limits
2689   \else
2690     \Hy@ReturnAfterFi{
2691       \Hy@RemovePercentCr #2\@nil
2692     }
2693   \fi
2694 }
2695 \endgroup
2696 \providecommand\hyper@chars{%
2697   \let\#\hyper@hash
2698   \let%\@percentchar
2699 }

2700 \def\hyperlink#1#2{%
2701   \hyper@@link{#1}{#2}%
2702 }

2703 \DeclareRobustCommand*\href{\hyper@normalise\href@}
2704 \begingroup
2705   \catcode'\$=6
2706   \catcode'\#=12
2707   \gdef\href@#1{\expandafter\href@split$1##\}
2708   \gdef\href@split$1#$2#$3\{\%
2709     \hyper@@link{$1}{$2}%
2710   }
2711 \endgroup

```

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

```

2712 \RequirePackage{url}
2713 \let\HyOrg@url\url
2714 \def\Hurl{\begingroup \Url}
2715 \let\nolinkurl\Hurl
2716 \DeclareRobustCommand*\url{\hyper@normalise\url@}
2717 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

2718 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
2719 \providecommand\hyper@image[2]{#2}

2720 \def\hypertarget#1#2{%
2721   \ifHy@nesting
2722     \hyper@@anchor{#1}{#2}%
2723   \else
2724     \hyper@@anchor{#1}{\relax}#2%
2725   \fi
2726 }

```

`\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.

```

2727 \DeclareRobustCommand*\hyperref{%
2728   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
2729 }
2730 \def\Hy@babelnormalise#1[#2]{%
2731   \begingroup
2732     \Hy@safe@activetrue
2733     \edef\Hy@tempa{%
2734       \endgroup
2735       \noexpand#1[#2]}%
2736   }%
2737   \Hy@tempa
2738 }
2739 \def\@hyperref{\hyper@normalise\@hyperref}
2740 \def\@hyperref#1#2#3{%
2741   \edef\ref@one{\ifx\#2\else#2.\fi#3}%
2742   \expandafter\tryhyper@link\ref@one\{#1}%
2743 }
2744 \def\tryhyper@link#1\#2{%
2745   \hyper@@link{#2}{#1}%
2746 }

2747 \def\hyperdef{\@ifnextchar[{\label@hyperdef}\@hyperdef}}
2748 \def\@hyperdef#1#2#3{%, category, name, text
2749   \ifHy@nesting
2750     \hyper@@anchor{#1.#2}{#3}%
2751   \else
2752     \hyper@@anchor{#1.#2}{\relax}#3%
2753   \fi
2754 }

```

We also have a need to give a  $\text{\LaTeX}$  *label* to a hyper reference, to ease the pain of referring to it later.

```

2755 \def\label@hyperref[#1]{%
2756   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
2757 }%
2758 \def\label@@hyperref#1#2#3{%
2759   \ifx#1\relax
2760     \protect\G@refundefinedtrue
2761     \@latex@warning{%
2762       Hyper reference ‘#2’ on page \thepage \space undefined%
2763     }%
2764     \hyper@@link{}{??}{#3}%
2765   \else
2766     \hyper@@link{\expandafter\@fifthoffive#1}%
2767       {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
2768   \fi
2769 }
2770 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
2771                               % anchor text
2772   \@bsphack
2773   \if@files@w
2774     \protected@write\@auxout{%
2775       {\string\newlabel{#1}{\{#\2.#3\}}}%
2776     \fi
2777   \@esphack
2778   \ifHy@nesting

```

```

2779 \hyper@@anchor{#2.#3}{#4}%
2780 \else
2781 \hyper@@anchor{#2.#3}{\relax}#4%
2782 \fi
2783 }

```

## 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.

```

2784 \def\hyper@link{\let\Hy@reserved@a\relax
2785 \@ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
2786 }
2787 \def\hyper@link@[#1]#2#3#4{%
2788 \begingroup
2789 \protected@edef\Hy@tempa{#2}%
2790 \Hy@safe@activestrue
2791 \edef\x{#3}%
2792 \ifx\Hy@tempa\@empty
2793 \toks0{\hyper@link{#1}}%
2794 \else
2795 \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
2796 \fi
2797 \toks1{{#4}}%
2798 \edef\x{\endgroup
2799 \the\toks0 {\x}\the\toks1 }
2800 }%
2801 \x
2802 }

```

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.

```

2803 \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.

```

2804 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
2805 }

```

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

```

2806 \def\@pdftempwordfile{file}%
2807 \def\@pdftempwordrun{run}%
2808 \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:

```
2809 \ifx\#6\%
2810 \expandafter\@hyper@linkfile file:#7\#{3}{#2}%
2811 \else
2812 \ifx\#4\%
2813 \expandafter\@hyper@linkfile file:#7\#{3}{#2}%
2814 \else
```

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

```
2815 \def\@pdftempa{#4}%
2816 \ifx\@pdftempa\@pdftempwordfile
2817 \expandafter\@hyper@linkfile#7\#{3}{#2}%
2818 \else
```

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

```
2819 \ifx\@pdftempa\@pdftempwordrun
2820 \expandafter\@hyper@launch#7\#{3}{#2}%
2821 \else
```

otherwise its a URL

```
2822 \hyper@linkurl{#3}{#7\ifx\#2\else\hyper@hash#2\fi}%
2823 \fi
2824 \fi
2825 \fi
2826 \fi
2827 }
```

By default, turn run: into file:

```
2828 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
2829 \hyper@linkurl{#2}{\Hy@linkfileprefix#1\ifx\#3\else\hyper@hash#3\fi}%
2830 }
```

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

```
2831 \def\@hyper@linkfile file:#1\#2#3{%
2832 %file url,link string, name
2833 \filename@parse{#1}%
2834 \ifx\filename@ext\relax
2835 \edef\filename@ext{\XR@ext}%
2836 \fi
2837 \def\use@file{\filename@area\filename@base.\filename@ext}%
2838 \ifx\filename@ext\XR@ext
2839 \hyper@linkfile{#2}{\use@file}{#3}%
2840 \else
2841 \ifx\@baseurl\@empty
2842 \hyper@linkurl{#2}{%
2843 \Hy@linkfileprefix\use@file\ifx\#3\else\hyper@hash#3\fi
2844 }%
2845 \else
2846 \hyper@linkurl{#2}{\use@file\ifx\#3\else\hyper@hash#3\fi}%
2847 \fi
2848 \fi
2849 }
```

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.

```

2850 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
2851 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
2852   \ifx\#1\%
2853     #2\Hy@WarningNoLine{empty link? #1: #2#3}%
2854   \else
2855     \def\anchor@spot{#2#3}%
2856     \let\put@me@back\@empty
2857     \ifx\relax#2\relax
2858     \else
2859       \ifHy@nesting
2860       \else
2861         \ifcat a\noexpand#2\relax
2862         \else
2863           \ifcat 0\noexpand#2 \relax
2864           \else
2865             \typeout{Anchor start is not alphanumeric %
2866             on input line\the\inputlineno%
2867             }%
2868             \let\anchor@spot\@empty
2869             \def\put@me@back{#2#3}%
2870           \fi
2871         \fi
2872       \fi
2873     \fi
2874     \ifHy@activeanchor
2875       \anchor@spot
2876     \else
2877       \hyper@anchor{#1}%
2878     \fi
2879     \expandafter\put@me@back
2880   \fi
2881   \let\anchor@spot\@empty
2882 }
```

## 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.

```

2883 \let\htmladding\hyperimage
2884 \def\htmladdnormallink#1#2{\href{#2}{#1}}
2885 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
2886 \def\htmlref#1#2{% anchor text, label
2887   \label@hyperref[{#2}]{#1}%
2888 }
```

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.

```

2889 \def\@@latextohtmlX{%
2890   \let\hhyperref\hyperref
2891   \def\hyperref##1##2##3##4{% anchor text for HTML
2892                                   % text to print before label in print
2893                                   % label
2894                                   % post-label text in print
2895     ##2\ref{##4}##3%
2896   }%
2897 }
```

## 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.

```

2898 \newif\ifFld@checked
2899 \newif\ifFld@hidden
2900 \newif\ifFld@multiline
2901 \newif\ifFld@readonly
2902 \newif\ifFld@disabled
2903 \newif\ifFld@password
2904 \newif\ifFld@radio
2905 \newif\ifFld@combo
2906 \newif\ifFld@popdown
2907 \Fld@multilinefalse
2908 \Fld@checkedfalse
2909 \Fld@hiddenfalse
2910 \Fld@readonlyfalse
2911 \Fld@disabledfalse
2912 \Fld@radiofalse
2913 \Fld@combofalse
2914 \Fld@popdownfalse
2915 \Fld@passwordfalse
2916 \newcount\Fld@menulength
2917 \newdimen\Fld@Width
2918 \newdimen\Fld@charsize
2919 \Fld@charsize=10\p@
2920 \def\Fld@maxlen{0}
2921 \def\Fld@align{0}
2922 \def\Fld@color{0 0 0}
2923 \def\Fld@bcolor{1 1 1}
2924 \def\Fld@bordercolor{1 0 0}
2925 \def\Fld@bordersep{1\p@}
2926 \def\Fld@borderwidth{1}
2927 \def\Fld@borderstyle{S}
2928 \def\Fld@cbsymbol{4}
2929 \newtoks\Choice@toks
2930 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
2931 \def\endForm{\@endForm}
2932 \newif\ifForm@html
2933 \Form@htmlfalse
```

```

2934 \def\Form@boolkey#1#2{%
2935   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2936 }
2937 \define@key{Form}{action}{%
2938   \hyper@normalise\Hy@DefFormAction{#1}%
2939 }
2940 \def\Hy@DefFormAction{\def\Form@action}
2941 \def\enc@html{html}
2942 \define@key{Form}{encoding}{%
2943   \def\Hy@tempa{#1}%
2944   \ifx\Hy@tempa\enc@html
2945     \Form@htmltrue
2946   \else
2947     \typeout{hyperref: form 'encoding' key set to #1 %
2948       -- unknown type%
2949     }%
2950     \Form@htmlfalse
2951   \fi
2952 }
2953 \define@key{Form}{method}{%
2954   \def\Form@method{#1}%
2955 }
2956 \def\Form@method{}
2957 \def\Field@boolkey#1#2{%
2958   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2959 }
2960 \newtoks\Field@toks
2961 \Field@toks={ }%
2962 \def\Field@addtoks#1#2{%
2963   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
2964   \@processme
2965 }
2966 \def\Fld@checkequals#1=#2=#3\\{%
2967   \def\@currDisplay{#1}%
2968   \ifx\\#2\\%
2969     \def\@currValue{#1}%
2970   \else
2971     \def\@currValue{#2}%
2972   \fi
2973 }
2974 \define@key{Field}{loc}{%
2975   \def\Fld@loc{#1}%
2976 }
2977 \define@key{Field}{multiline}[true]{%
2978   \lowercase{\Field@boolkey{#1}}{multiline}%
2979 }
2980 \define@key{Field}{checked}[true]{%
2981   \lowercase{\Field@boolkey{#1}}{checked}%
2982 }
2983 \define@key{Field}{hidden}[true]{%
2984   \lowercase{\Field@boolkey{#1}}{hidden}%
2985 }
2986 \define@key{Field}{readonly}[true]{%
2987   \lowercase{\Field@boolkey{#1}}{readonly}%
2988 }
2989 \define@key{Field}{disabled}[true]{%
2990   \lowercase{\Field@boolkey{#1}}{disabled}%

```

```

2991 }
2992 \define@key{Field}{password}[true]{%
2993   \lowercase{\Field@boolkey{#1}}{password}%
2994 }
2995 \define@key{Field}{radio}[true]{%
2996   \lowercase{\Field@boolkey{#1}}{radio}%
2997 }
2998 \define@key{Field}{combo}[true]{%
2999   \lowercase{\Field@boolkey{#1}}{combo}%
3000 }
3001 \define@key{Field}{popdown}[true]{%
3002   \lowercase{\Field@boolkey{#1}}{popdown}%
3003 }
3004 \define@key{Field}{accesskey}{%
3005   \Field@addtoks{accesskey}{#1}%
3006 }
3007 \define@key{Field}{tabkey}{%
3008   \Field@addtoks{tabkey}{#1}%
3009 }
3010 \define@key{Field}{name}{%
3011   \def\Fld@name{#1}%
3012 }
3013 \define@key{Field}{width}{%
3014   \def\Fld@width{#1}%
3015   \Field@Width#1\setbox0=\hbox{m}%
3016 }
3017 \define@key{Field}{maxlen}{%
3018   \def\Fld@maxlen{#1}%
3019 }
3020 \define@key{Field}{menulength}{%
3021   \Fld@menulength=#1\relax
3022 }
3023 \define@key{Field}{height}{%
3024   \def\Fld@height{#1}%
3025 }
3026 \define@key{Field}{charsize}{%
3027   \Fld@charsize#1%
3028 }
3029 \define@key{Field}{fillcolor}{%
3030   \def\Fld@fillcolor{#1}%
3031 }
3032 \define@key{Field}{bordercolor}{%
3033   \def\Fld@bordercolor{#1}%
3034 }
3035 \define@key{Field}{color}{%
3036   \def\Fld@color{#1}%
3037 }
3038 \define@key{Field}{borderwidth}{%
3039   \def\Fld@borderwidth{#1}%
3040 }
3041 \define@key{Field}{borderstyle}{%
3042   \def\Fld@borderstyle{#1}%
3043 }
3044 \define@key{Field}{bordersep}{%
3045   \def\Fld@bordersep{#1}%
3046 }
3047 \define@key{Field}{default}{%

```



```

3048 \def\Fld@default{#1}%
3049 }
3050 \define@key{Field}{align}{%
3051 \def\Fld@align{#1}%
3052 }
3053 \define@key{Field}{value}{%
3054 \def\Fld@value{#1}%
3055 }
3056 \define@key{Field}{backgroundcolor}{%
3057 \def\Fld@bcolor{#1}%
3058 }
3059 \define@key{Field}{checkboxsymbol}{%
3060 \def\Fld@cbsymbol{#1}%
3061 }
3062 \def\Fld@format@code{}
3063 \def\Fld@validate@code{}
3064 \def\Fld@calculate@code{}
3065 \def\Fld@keystroke@code{}
3066 \def\Fld@onfocus@code{}
3067 \def\Fld@onblur@code{}
3068 \def\Fld@onmousedown@code{}
3069 \def\Fld@onmouseup@code{}
3070 \def\Fld@onenter@code{}
3071 \def\Fld@onexit@code{}
3072 \define@key{Field}{keystroke}{%
3073 \def\Fld@keystroke@code{#1}%
3074 }
3075 \define@key{Field}{format}{%
3076 \def\Fld@format@code{#1}%
3077 }
3078 \define@key{Field}{validate}{%
3079 \def\Fld@validate@code{#1}%
3080 }
3081 \define@key{Field}{calculate}{%
3082 \def\Fld@calculate@code{#1}%
3083 }
3084 \define@key{Field}{onfocus}{%
3085 \def\Fld@onfocus@code{#1}%
3086 }
3087 \define@key{Field}{onblur}{%
3088 \def\Fld@onblur@code{#1}%
3089 }
3090 \define@key{Field}{onenter}{%
3091 \def\Fld@onenter@code{#1}%
3092 }
3093 \define@key{Field}{onexit}{%
3094 \def\Fld@onexit@code{#1}%
3095 }
3096 \define@key{Field}{onselect}{%
3097 \Field@addtoks{onselect}{#1}%
3098 }
3099 \define@key{Field}{onchange}{%
3100 \Field@addtoks{onchange}{#1}%
3101 }
3102 \define@key{Field}{onclick}{%
3103 \def\Fld@onclick{#1}%
3104 \Field@addtoks{onclick}{#1}%

```

```

3105 }
3106 \define@key{Field}{ondblclick}{%
3107   \Field@addtoks{ondblclick}{#1}%
3108 }
3109 \define@key{Field}{onmousedown}{%
3110   \Field@addtoks{onmousedown}{#1}%
3111 }
3112 \define@key{Field}{onmouseup}{%
3113   \Field@addtoks{onmouseup}{#1}%
3114 }
3115 \define@key{Field}{onmouseover}{%
3116   \Field@addtoks{onmouseover}{#1}%
3117 }
3118 \define@key{Field}{onmousemove}{%
3119   \Field@addtoks{onmousemove}{#1}%
3120 }
3121 \define@key{Field}{onmouseout}{%
3122   \Field@addtoks{onmouseout}{#1}%
3123 }
3124 \define@key{Field}{onkeypress}{%
3125   \Field@addtoks{onkeypress}{#1}%
3126 }
3127 \define@key{Field}{onkeydown}{%
3128   \Field@addtoks{onkeydown}{#1}%
3129 }
3130 \define@key{Field}{onkeyup}{%
3131   \Field@addtoks{onkeyup}{#1}%
3132 }
3133 %
3134 \DeclareRobustCommand\TextField{%
3135   \@ifnextchar[{\@TextField}{\@TextField[]}%
3136 }
3137 \DeclareRobustCommand\ChoiceMenu{%
3138   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
3139 }
3140 \DeclareRobustCommand\CheckBox{%
3141   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
3142 }
3143 \DeclareRobustCommand\PushButton{%
3144   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
3145 }
3146 \DeclareRobustCommand\Gauge{%
3147   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
3148 }
3149 \DeclareRobustCommand\Submit{%
3150   \@ifnextchar[{\@Submit}{\@Submit[]}%
3151 }
3152 \DeclareRobustCommand\Reset{%
3153   \@ifnextchar[{\@Reset}{\@Reset[]}%
3154 }
3155 \def\LayoutTextField#1#2{% label, field
3156   #1 #2%
3157 }
3158 \def\LayoutChoiceField#1#2{% label, field
3159   #1 #2%
3160 }
3161 \def\LayoutCheckField#1#2{% label, field

```

```

3162 #1 #2%
3163 }
3164 \def\LayoutPushButtonField#1{% button
3165 #1%
3166 }
3167 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3168 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3169 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3170 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3171 \def\MakeButtonField#1{%
3172 \sbox0{%
3173 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
3174 }%
3175 \@tempdima\ht0
3176 \advance\@tempdima by \Fld@borderwidth bp
3177 \advance\@tempdima by \Fld@borderwidth bp
3178 \ht0\@tempdima
3179 \@tempdima\dp0
3180 \advance\@tempdima by \Fld@borderwidth bp
3181 \advance\@tempdima by \Fld@borderwidth bp
3182 \dp0\@tempdima
3183 \box0\relax
3184 }
3185 \def\DefaultHeightofSubmit{14pt}
3186 \def\DefaultWidthofSubmit{2cm}
3187 \def\DefaultHeightofReset{14pt}
3188 \def\DefaultWidthofReset{2cm}
3189 \def\DefaultHeightofCheckBox{\baselineskip}
3190 \def\DefaultWidthofCheckBox{\baselineskip}
3191 \def\DefaultHeightofChoiceMenu{\baselineskip}
3192 \def\DefaultWidthofChoiceMenu{\baselineskip}
3193 \def\DefaultHeightofText{\baselineskip}
3194 \def\DefaultWidthofText{3cm}

```

## 20 Setup

```

3195 \ifHy@figures
3196 \Hy@Info{Hyper figures ON}
3197 \else
3198 \Hy@Info{Hyper figures OFF}
3199 \fi
3200 \ifHy@nesting
3201 \Hy@Info{Link nesting ON}
3202 \else
3203 \Hy@Info{Link nesting OFF}
3204 \fi
3205 \ifHy@hyperindex
3206 \Hy@Info{Hyper index ON}
3207 \else
3208 \Hy@Info{Hyper index OFF}
3209 \fi
3210 \ifHy@backref
3211 \Hy@Info{backreferencing ON}
3212 \else
3213 \Hy@Info{backreferencing OFF}
3214 \fi

```

```

3215 \ifHy@colorlinks
3216   \Hy@Info{Link coloring ON}
3217 \else
3218   \Hy@Info{Link coloring OFF}
3219 \fi

```

## 21 Low-level utility macros

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

```

3220 \edef\hyper@hash{\string#}
3221 \edef\hyper@tilde{\string~}
3222 \edef\hyper@quote{\string"}
3223 \let\@currentHref\@empty
3224 \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.

```

3225 \AfterBeginDocument{%
3226   \Hy@pdfstringtrue
3227   \PDF@SetupDoc
3228   \let\PDF@SetupDoc\@empty
3229   \Hy@DisableOption{pdfpagescrop}%
3230   \Hy@DisableOption{pdfpagemode}%
3231   \Hy@DisableOption{pdfnonfullscreenpagemode}%
3232   \Hy@DisableOption{pdfdirection}%
3233   \Hy@DisableOption{pdfviewarea}%
3234   \Hy@DisableOption{pdfviewclip}%
3235   \Hy@DisableOption{pdfprintarea}%
3236   \Hy@DisableOption{pdfprintclip}%
3237   \Hy@DisableOption{pdfprintscaling}%
3238   \Hy@DisableOption{pdfduplex}%
3239   \Hy@DisableOption{pdfpicktraybypdfsize}%
3240   \Hy@DisableOption{pdfprintpagerange}%
3241   \Hy@DisableOption{pdfnumcopies}%
3242   \Hy@DisableOption{pdfstartview}%
3243   \Hy@DisableOption{pdfstartpage}%
3244   \Hy@DisableOption{pdftoolbar}%
3245   \Hy@DisableOption{pdfmenubar}%
3246   \Hy@DisableOption{pdfwindowui}%
3247   \Hy@DisableOption{pdffitwindow}%
3248   \Hy@DisableOption{pdfcenterwindow}%
3249   \Hy@DisableOption{pdfdisplaydoctitle}%
3250   \Hy@DisableOption{pdfpagelayout}%
3251   \Hy@DisableOption{pdflang}%
3252   \Hy@DisableOption{baseurl}%
3253   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
3254   \Hy@pdfstringfalse
3255 }

```

## 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.

```

3256 \def\NoHyper{%

```

```

3257 \def\hyper@link@{##1}##2##3##4{##4}%
3258 \def\hyper@@anchor##1{%
3259 \global\let\hyper@livelink\hyper@link
3260 \gdef\hyper@link##1##2##3{##3}%
3261 \def\hyper@anchorstart##1{%
3262 \let\hyper@anchorend\@empty
3263 \def\hyper@linkstart##1##2{%
3264 \let\hyper@linkend\@empty
3265 \def\hyper@linkurl##1##2{##1}%
3266 \def\hyper@linkfile##1##2##3{##1}%
3267 \let\Hy@backout\@gobble
3268 }
3269 \def\stop@hyper{%
3270 \def\hyper@link@{##1}##2##3##4{##4}%
3271 \let\Hy@backout\@gobble
3272 \def\hyper@@anchor##1{%
3273 \def\hyper@link##1##2##3{##3}%
3274 \def\hyper@anchorstart##1{%
3275 \let\hyper@anchorend\@empty
3276 \def\hyper@linkstart##1##2{%
3277 \let\hyper@linkend\@empty
3278 \def\hyper@linkurl##1##2{##1}%
3279 \def\hyper@linkfile##1##2##3{##1}%
3280 }
3281 \def\endNoHyper{%
3282 \global\let\hyper@link\hyper@livelink
3283 }
3284 \end{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:

```

3285 \def\*nohyperref
3286 \let\hyper@@anchor\@gobble
3287 \def\hyper@link##1##2##3{##3}%
3288 \let\hyper@anchorstart\@gobble
3289 \let\hyper@anchorend\@empty
3290 \let\hyper@linkstart\@gobbletwo
3291 \let\hyper@linkend\@empty
3292 \def\hyper@linkurl##1##2{##1}%
3293 \def\hyper@linkfile##1##2##3{##1}%
3294 \let\PDF@SetupDoc\@empty
3295 \let\PDF@FinishDoc\@empty

```

Some top-level commands:

```

3296 \let\Acrobatmenu\@gobble
3297 \let\pdfstringdefDisableCommands\@gobbletwo
3298 \let\texorpdfstring\@firstoftwo
3299 \let\pdfbookmark\@undefined
3300 \newcommand\pdfbookmark[3]{}
3301 \let\phantomsection\@empty

```

```

3302 \let\hypersetup\@gobble
3303 \let\hyperbaseurl\@gobble
3304 \let\href\@gobble
3305 \let\hyperdef\@gobbletwo
3306 \let\hyperlink\@gobble
3307 \let\hypertarget\@gobble
3308 \def\hyperref{\@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}}
3309 \long\def\@gobbleopt[#1]{%
3310 \let\hyperpage\@empty
3311 \</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}`

```

3312 \*package
3313 \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.

```

3314 \if@filesw
3315 \ifHy@typexml
3316 \immediate\closeout\@mainaux
3317 \immediate\openout\@mainaux\jobname.aux
3318 \immediate\write\@auxout{<relaxxml>\relax}%
3319 \fi
3320 \immediate\write\@auxout{%
3321 \string\ifx\string\hyper@anchor\string\@undefined^^J%
3322 \global\let\string\oldcontentsline\string\contentsline^^J%
3323 \gdef\string\contentsline%
3324 \string#1\string#2\string#3\string#4{%
3325 \string\oldcontentsline%
3326 {\string#1}{\string#2}{\string#3}}^^J%
3327 \global\let\string\oldnewlabel\string\newlabel^^J%
3328 \gdef\string\newlabel\string#1\string#2{%
3329 \string\newlabelxx{\string#1}\string#2}^^J%
3330 \gdef\string\newlabelxx%
3331 \string#1\string#2\string#3\string#4\string#5\string#6{%
3332 \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.

```

3333 \string\AtEndDocument{%
3334 \let\string\contentsline\string\oldcontentsline^^J%
3335 \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.

```

3336 \string\else^^J%
3337 \global\let\string\hyper@last\relax^^J%
3338 \string\fi^^J%
3339 }%
3340 \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.

```

3341 \ifx\hyper@last\@undefined
3342 \def\@starttoc#1{%
3343 \begingroup
3344 \makeatletter
3345 \IfFileExists{\jobname.#1}{%
3346 \Hy@WarningNoLine{%
3347 old #1 file detected, not used; run LaTeX again%
3348 }%
3349 }{}%
3350 \if@filesw
3351 \expandafter\newwrite\csname tf@#1\endcsname
3352 \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
3353 \fi
3354 \@nobreakfalse
3355 \endgroup
3356 }%
3357 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{}{}{}}%
3358 \fi
3359 }

```

## 25 Title strings

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

```

3360 \ifHy@usetitle
3361 \let\HyOrg@title\title
3362 \let\HyOrg@author\author
3363 \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
3364 \def\Hy@scanopttitle[#1]{%
3365 \gdef\Hy@title{#1}%
3366 \HyOrg@title[{#1}]%
3367 }%
3368 \def\Hy@scantitle#1{%
3369 \gdef\Hy@title{#1}%
3370 \HyOrg@title{#1}%
3371 }
3372 \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
3373 \def\Hy@scanoptauthor[#1]{%
3374 \gdef\Hy@author{#1}%
3375 \HyOrg@author[{#1}]%
3376 }%
3377 \def\Hy@scanauthor#1{%
3378 \gdef\Hy@author{#1}%
3379 \HyOrg@author{#1}%
3380 }

```

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.

```

3381 \begingroup
3382 \def\process@me#1\@nil#2{%
3383 \expandafter\let\expandafter\x\csname @#2\endcsname

```

```

3384 \edef\y{\expandafter\strip@prefix\meaning\x}%
3385 \def\c##1##2\@nil{%
3386 \ifx\\##1\\%
3387 \else
3388 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
3389 \expandafter{\x}%
3390 \fi
3391 }%
3392 \expandafter\c\y\relax#1\@nil
3393 }%
3394 \expandafter\process@me\string\@latex@\@nil{title}%
3395 \expandafter\process@me\string\@latex@\@nil{author}%
3396 \endgroup
3397 \fi
3398 \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.

```

3399 \def\Hy@UseMaketitleString#1{%
3400 \ifundefined{Hy@#1}{-}{%
3401 \begingroup
3402 \let\Hy@saved@hook\pdfstringdefPreHook
3403 \pdfstringdefDisableCommands{%
3404 \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
3405 \let\newline\\%
3406 }%
3407 \expandafter\ifx\csname @pdf#1\endcsname\@empty
3408 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
3409 \csname Hy@#1\endcsname\@empty
3410 }%
3411 \fi
3412 \global\let\pdfstringdefPreHook\Hy@saved@hook
3413 \endgroup
3414 }%
3415 }
3416 \def\Hy@newline@title#1{ #1}
3417 \def\Hy@newline@author#1{, #1}
3418 \def\Hy@UseMaketitleInfos{%
3419 \Hy@UseMaketitleString{title}%
3420 \Hy@UseMaketitleString{author}%
3421 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.



## 26.1 PDF /PageLabels

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

```
3422 \ifHy@pagelabels
```

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

```
3423 \def\thispdfpagelabel#1{%
3424   \gdef\HyPL@thisLabel{#1}%
3425 }
3426 \global\let\HyPL@thisLabel\relax
```

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

```
3427 \def\HyPL@Labels{}
```

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

```
3428 \newcount\Hy@abspage
3429 \Hy@abspage=0
```

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

```
3430 \def\HyPL@LastType{init}%
3431 \def\HyPL@LastNumber{0}%
3432 \def\HyPL@LastPrefix{}
```

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

```
3433 \def\HyPL@arabic{D}%
3434 \def\HyPL@Roman{R}%
3435 \def\HyPL@roman{r}%
3436 \def\HyPL@Alph{A}%
3437 \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.

```
3438 \def\HyPL@EveryPage{%
3439   \begingroup
3440   \ifx\HyPL@thisLabel\relax
3441     \let\HyPL@page\thepage
3442   \else
3443     \let\HyPL@page\HyPL@thisLabel
3444     \global\let\HyPL@thisLabel\relax
3445   \fi
3446   \let\HyPL@Type\relax
3447   \ifnum\the\c@page>0
3448     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
3449   \fi
3450   \let\Hy@temp Y%
3451   \ifx\HyPL@Type\HyPL@LastType
3452   \else
3453     \let\Hy@temp N%
3454   \fi
3455   \ifx\HyPL@Type\relax
3456     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
3457   \else
3458     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
3459   \fi
3460   \ifx\HyPL@Prefix\HyPL@LastPrefix
3461   \else
```

```

3462     \let\Hy@temp N%
3463   \fi
3464   \if Y\Hy@temp
3465     \advance\c@page by -1
3466     \ifnum\HyPL@LastNumber=\the\c@page\relax
3467     \else
3468       \let\Hy@temp N%
3469     \fi
3470     \Hy@StepCount\c@page
3471   \fi
3472   \if N\Hy@temp
3473     \ifx\HyPL@Type\relax
3474       \HyPL@StorePageLabel{/P (\HyPL@Prefix)}%
3475     \else
3476       \HyPL@StorePageLabel{%
3477         \ifx\HyPL@Prefix\@empty
3478         \else
3479           /P (\HyPL@Prefix)
3480         \fi
3481         /S /\csname HyPL\HyPL@Type\endcsname
3482         \ifnum\the\c@page=1
3483         \else
3484           \space/St \the\c@page
3485         \fi
3486       }%
3487     \fi
3488   \fi
3489   \xdef\HyPL@LastNumber{\the\c@page}%
3490   \global\let\HyPL@LastType\HyPL@Type
3491   \global\let\HyPL@LastPrefix\HyPL@Prefix
3492 \endgroup
3493 \Hy@GlobalStepCount\Hy@abspage
3494 }

```

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

```

3495 \def\HyPL@CheckThePage#1\@nil{%
3496   \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
3497 }

```

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

```

3498 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
3499   \def\Hy@tempa{#4}%
3500   \def\Hy@tempb{\csname\endcsname\c@page}%
3501   \ifx\Hy@tempa\Hy@tempb
3502     \expandafter\ifx\csname HyPL#3\endcsname\relax
3503   \else
3504     \def\HyPL@Type{#3}%
3505     \def\HyPL@Prefix{#2}%
3506   \fi
3507   \else
3508     \begingroup
3509     \let\Hy@next\endgroup
3510     \let\HyPL@found\@undefined
3511     \def\arabic{\HyPL@Format{arabic}}%

```

```

3512     \def\Roman{\HyPL@Format{Roman}}%
3513     \def\roman{\HyPL@Format{roman}}%
3514     \def\Alph{\HyPL@Format{Alph}}%
3515     \def\alph{\HyPL@Format{alph}}%
3516     \protected@edef\Hy@temp{#1}%
3517     \ifx\HyPL@found\relax
3518         \toks@{\expandafter{\Hy@temp}}%
3519         \edef\Hy@next{\endgroup
3520             \noexpand\HyPL@@@CheckThePage\the\toks@
3521             \noexpand\HyPL@found\relax\noexpand\@nil
3522         }%
3523     \fi
3524     \Hy@next
3525 \fi
3526 }

```

**\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`.

```

3527 \def\HyPL@Format#1#2{%
3528     \ifx\HyPL@found\@undefined
3529         \expandafter\ifx\csname c@#2\endcsname\c@page
3530             \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
3531         \else
3532             \expandafter\noexpand\csname#1\endcsname{#2}%
3533         \fi
3534     \else
3535         \expandafter\noexpand\csname#1\endcsname{#2}%
3536     \fi
3537 }

```

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

```

3538 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
3539     \def\Hy@tempa{#3}%
3540     \def\Hy@tempb{\HyPL@found\relax}%
3541     \ifx\Hy@tempa\Hy@tempb
3542         \def\HyPL@Type{#2}%
3543         \def\HyPL@Prefix{#1}%
3544     \fi
3545 }

```

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

```

3546 \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`.

```

3547 \def\HyPL@Useless{0 << /S /D >> }%
3548 \@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.

```

3549 \def\HyPL@SetPageLabels{%
3550     \@onelevel@sanitize\HyPL@Labels
3551     \ifx\HyPL@Labels\@empty
3552     \else

```

```

3553     \ifx\HyPL@Labels\HyPL@Useless
3554     \else
3555         \Hy@PutCatalog{/PageLabels << /Nums [\HyPL@Labels] >>}%
3556     \fi
3557 \fi
3558 }

```

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

```

3559 \else
3560 \let\HyPL@EveryPage\@empty
3561 \fi

```

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

```

3562 \Hy@DisableOption{pdfpagelabels}
3563 </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

```

3564 <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.

```

3565 <*vTeX>
3566 \edef\Hy@VTeXversion{%
3567 \ifx\VTeXversion\@undefined
3568 \z@
3569 \else
3570 \ifx\VTeXversion\relax
3571 \z@
3572 \else
3573 \VTeXversion
3574 \fi
3575 \fi
3576 }
3577 \begingroup
3578 \ifnum\Hy@VTeXversion<660 %
3579 \gdef\Hy@PutCatalog#1{%
3580 \Hy@WarningNoLine{%
3581 VTeX 6.59g or above required for pdfpagelabels%
3582 }%
3583 }
3584 \else
3585 \gdef\Hy@PutCatalog#1{%
3586 \Hy@vt@PutCatalog#1/PageLabels <<>>\@nil
3587 }
3588 \gdef\Hy@vt@PutCatalog#1/PageLabels <<#2>>#3\@nil{%
3589 \ifx\#2\%
3590 \else
3591 \immediate\special{!pdfpagelabels #2}%
3592 \fi

```

```

3593    }
3594    \fi
3595 \endgroup
3596 \</vtex>

3597 \<pdfTeX | vTeX>

```

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

```

3598 \ifHy@pagelabels
3599   \def\HyPL@StorePageLabel#1{%
3600     \toks@\expandafter{\HyPL@Labels}%
3601     \xdef\HyPL@Labels{%
3602       \the\toks@
3603       \the\Hy@abspage\space<< #1 >> %
3604     }%
3605   }

```

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.

```

3606   \AtEndDocument{\clearpage\HyPL@SetPageLabels}

3607 \fi
3608 \</pdfTeX | vTeX>

```

### 26.1.2 pdfmarkbase, dvipdfm

`\Hy@PutCatalog`

```

3609 \<dvipdfm>\def\Hy@PutCatalog#1{\@pdfmark{docview << #1 >>}}
3610 \<pdfmarkbase>
3611 \def\Hy@PutCatalog#1{%
3612   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
3613 }
3614 \</pdfmarkbase>

3615 \<pdfmarkbase | dvipdfm>
3616 \ifHy@pagelabels

```

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

```

3617   \def\HyPL@StorePageLabel#1{%
3618     \if@filesw
3619       \begingroup
3620         \edef\Hy@tempa{\the\Hy@abspage\space<< #1 >> }%
3621         \immediate\write\@mainaux{%
3622           \string\HyPL@Entry{\Hy@tempa}%
3623         }%
3624       \endgroup
3625     \fi
3626   }

```

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.

```

3627   \AfterBeginDocument{%
3628     \if@filesw
3629       \immediate\write\@mainaux{%
3630         \string\providecommand\string*\string\HyPL@Entry[1]{}%
3631       }%
3632     \fi

```

```

3633 \ifx\HyPL@Labels\@empty
3634 \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
3635 \else
3636 \HyPL@SetPageLabels
3637 \fi
3638 \let\HyPL@Entry\@gobble
3639 }%

\HyPL@Entry

3640 \def\HyPL@Entry#1{%
3641 \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
3642 \HyPL@Labels
3643 #1%
3644 }%
3645 }

3646 \fi
3647 </pdfmarkbase | dvipdfm>
3648 <*package>
3649 \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 its up to you to make sure these are legal PDF and HTML names. The ‘hypertextnames=false’ option just makes up arbitrary names.

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

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

Start with a fallback for equations

```

3650 \newcommand\theHequation{\theHsection.\arabic{equation}}
3651 \@ifundefined{thepart}{}{\newcommand\theHpart{\arabic{part}}}
3652 \@ifundefined{thechapter}{}%
3653 \newcommand\theHsection {\arabic{section}}
3654 \newcommand\theHfigure {\arabic{figure}}
3655 \newcommand\theHtable {\arabic{table}}
3656 }%
3657 \newcommand\theHchapter {\arabic{chapter}}
3658 \newcommand\theHfigure {\theHchapter.\arabic{figure}}
3659 \newcommand\theHtable {\theHchapter.\arabic{table}}
3660 \newcommand\theHsection {\theHchapter.\arabic{section}}
3661 }
3662 \newcommand\theHsubsection {\theHsection.\arabic{subsection}}
3663 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
3664 \newcommand\theHparagraph {\theHsubsubsection.\arabic{paragraph}}

```

```

3665 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
3666 \newcommand\theHtheorem      {\theHsection.\arabic{theorem}}
3667 \newcommand\theHthm          {\theHsection.\arabic{thm}}

```

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

```

3668 \let\H@item\item
3669 \newcounter{Item}
3670 \def\theHItem{\arabic{Item}}
3671 \def\item{%
3672   \@hyper@itemfalse
3673   \if@nmbrrlist\@hyper@itemtrue\fi
3674   \H@item
3675 }

3676 \newcommand\theHenumi      {\theHItem}
3677 \newcommand\theHenumii     {\theHItem}
3678 \newcommand\theHenumiii    {\theHItem}
3679 \newcommand\theHenumiv     {\theHItem}
3680 \newcommand\theHHfootnote {\arabic{Hfootnote}}
3681 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
3682 \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.

```

3683 \let\H@refstepcounter\refstepcounter
3684 \edef\name@of@eq{equation}%
3685 \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.

```

3686 \newif\if@hyper@item
3687 \newif\if@skiphyperref
3688 \@hyper@itemfalse
3689 \@skiphyperreffalse
3690 \def\refstepcounter#1{%
3691   \H@refstepcounter{#1}%
3692   \edef\This@name{#1}%
3693   \ifx\This@name\name@of@slide
3694   \else
3695     \if@skiphyperref
3696     \else
3697       \if@hyper@item
3698         \stepcounter{Item}%
3699         \hyper@refstepcounter{Item}%
3700       \else
3701         \hyper@refstepcounter{#1}%
3702       \fi
3703     \fi
3704   \fi
3705 }

```

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

```

3706 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

3707 \def\hyper@refstepcounter#1{%
3708   \edef\This@name{#1}%
3709   \ifx\This@name\name@of@eq
3710     \make@stripped@name{\theequation}%
3711     \let\theHequation\newname
3712   \fi
3713   \@ifundefined{theH#1}{%
3714     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
3715   }{}%
3716   \hyper@makecurrent{#1}%
3717   \ifmeasuring@
3718   \else
3719     \Hy@raisedlink{%
3720       \hyper@anchorstart{\@currentHref}\hyper@anchorend
3721     }%
3722   \fi
3723 }
```

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`.

```

3724 \def\Hy@chapterstring{chapter}
3725 \def\Hy@appendixstring{appendix}
3726 \def\Hy@chapapp{\Hy@chapterstring}
3727 \let\HyOrg@appendix\appendix
3728 \def\appendix{%
3729   \@ifundefined{chapter}%
3730   {\gdef\theHsection{\Alph{section}}}%
3731   {\gdef\theHchapter{\Alph{chapter}}}%
3732   \xdef\Hy@chapapp{\Hy@appendixstring}%
3733   \HyOrg@appendix
3734 }
```

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

```

3735 \def\hyper@makecurrent#1{%
3736   \begingroup
3737   \edef\Hy@param{#1}%
3738   \ifx\Hy@param\Hy@chapterstring
3739     \let\Hy@param\Hy@chapapp
3740   \fi
3741   \ifHy@hypertextnames
3742     \let\@number\@firstofone
3743   \ifHy@naturalnames
3744     \let\textlatin\@firstofone
3745     \xdef\@currentHlabel{\csname the#1\endcsname}%
3746   \else
3747     \xdef\@currentHlabel{\csname theH#1\endcsname}%
3748   \fi
3749   \xdef\@currentHref{%
3750     \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
3751   }%
3752   \else
```



```

3753     \Hy@GlobalStepCount\Hy@linkcounter
3754     \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
3755     \fi
3756 \endgroup
3757 }

3758 \@ifpackageloaded{fancyvrb}{%
3759   \def\FV@StepLineNo{%
3760     \FV@SetLineNo
3761     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
3762     \FV@StepLineNo
3763   }%
3764 }{}

```

## 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`

```

3765 \AtBeginDocument{%
3766   \@ifpackageloaded{lastpage}{%
3767     \ifHy@pageanchor
3768     \else
3769       \Hy@WarningNoLine{%
3770         The \string\pageref{LastPage} link doesn't work\MessageBreak
3771         with disabled option 'pageanchor'%
3772       }%
3773     \fi
3774     \def\lastpage@putlabel{%
3775       \addtocounter{page}{-1}%
3776       \if@filesw
3777         \begingroup
3778         \let\@number\@firstofone
3779         \ifHy@pageanchor
3780           \ifHy@hypertexnames
3781             \ifHy@plainpages
3782               \def\Hy@temp{\arabic{page}}%
3783             \else
3784               \Hy@unicodefalse
3785               \pdfstringdef\Hy@temp{\thepage}%
3786             \fi
3787           \else
3788             \def\Hy@temp{\the\Hy@pagecounter}%
3789           \fi
3790         \fi
3791         \immediate\write\@auxout{%
3792           \string\newlabel
3793           {LastPage}{\the\Hy@temp}{\thepage}{}%
3794           \ifHy@pageanchor page.\Hy@temp\fi}{}}%
3795       }%
3796     \endgroup

```

```

3797     \fi
3798     \addtocounter{page}{1}%
3799   }%
3800 }{}%
3801 }
3802 \</package>
3803 \<*check>
3804 \checkpackage{lastpage}[1994/06/25]
3805 \checkcommand\def\lastpage@putlabel{%
3806   \addtocounter{page}{-1}%
3807   \immediate\write\@auxout{%
3808     \string\newlabel{LastPage}{\the\thepage}}%
3809   }%
3810   \addtocounter{page}{1}%
3811 }
3812 \</check>
3813 \<*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.

```

3814 \def\hypergetref#1{\getrefbykeydefault{#1}{}{??}}
3815 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

## 30 Package titlesec and titletoc support

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

Package titlesec support:

```

3816 \@ifpackageloaded{titlesec}{%
3817   \def\ttl@Hy@steplink#1{%
3818     \Hy@GlobalStepCount\Hy@linkcounter
3819     \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
3820     \def\ttl@Hy@saveanchor{%
3821       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
3822     }%
3823   }%
3824   \def\ttl@Hy@refstepcounter#1{%
3825     \let\ttl@b\Hy@raisedlink
3826     \def\Hy@raisedlink##1{\def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}}%
3827     \refstepcounter{#1}%
3828     \let\Hy@raisedlink\ttl@b
3829   }%
3830 }{}

```

Package titletoc support:

```

3831 \@ifpackageloaded{titletoc}{%
3832   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
3833 }{}

```

## 31 Package varioref support

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

```
3834 \def\Hy@varioref@undefined{{???}{??}{}}{}{}
3835 \@ifpackageloaded{varioref}{%
3836   \def\vref@pagenum#1#2{%
3837     \ifundefined{r@#2}{%
3838       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
3839     }{}%
3840     \edef#1{\getpagerefnumber{#2}}%
3841   }%
3842 }{}
```

## 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

```
3843 \@ifpackageloaded{longtable}{%
3844   \begingroup
3845     \def\y{\LT@array}%
3846     \ifundefined{scr@LT@array}{\def\y{\scr@LT@array}}%
3847     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
3848       \expandafter\endgroup
3849       \expandafter\def\y[#1]##2{%
3850         \H@refstepcounter{#1}%
3851         \hyper@makecurrent{table}%
3852         #2\@sharp####4%
3853       }%
3854     }%
3855     \expandafter\expandafter\expandafter\x\y[#1]{#2}\@nil
```

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

```
3856   \begingroup
3857     \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
3858     \endgroup
3859     \def\LT@start{%
3860       #1%
3861       \hyper@refstepcounter{table}%
3862       \ifvoid\LT@firsthead\copy
3863       #2%
3864     }%
3865   }%
3866   \expandafter\x\LT@start\@nil
3867 }{}
```

## 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.

```

3868 \let\new@refstepcounter\refstepcounter
3869 \let\H@equation\equation
3870 \let\H@endequation\endequation

3871 \@ifpackageloaded{amsmath}{%
3872   \long\def\Hy@temp{%
3873     \incr@eqnum
3874     \mathdisplay@push
3875     \st@rredfalse \global\@eqnswtrue
3876     \mathdisplay{equation}%
3877   }%
3878   \ifx\Hy@temp\equation
3879     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
3880       \csname iftrue\endcsname
3881   \else
3882     \long\def\equation{%
3883       \mathdisplay@push
3884       \st@rredfalse \global\@eqnswtrue
3885       \mathdisplay{equation}%
3886       \incr@eqnum
3887     }%
3888   \fi
3889 \fi
3890 }{%
3891 \def\equation{%
3892   \let\refstepcounter\H@refstepcounter
3893   \H@equation
3894   \make@stripped@name{\theequation}%
3895   \let\theHequation\newname
3896   \hyper@makecurrent{equation}%
3897   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
3898   \let\refstepcounter\new@refstepcounter
3899 }%
3900 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
3901 }

```

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.

```

3902 \newif\if@eqnstar
3903 \@eqnstarfalse
3904 \let\H@eqnarray\eqnarray
3905 \let\H@endeqnarray\endeqnarray
3906 \def\eqnarray{%
3907   \let\Hy@reserved@a\relax
3908   \def\@currentHref{}%
3909   \H@eqnarray
3910   \if@eqnstar
3911   \else
3912     \ifx\\ \@currentHref\\%
3913   \else
3914     \make@stripped@name{\theequation}%
3915     \let\theHequation\newname
3916     \hyper@makecurrent{equation}%

```

```

3917     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
3918     \fi
3919 \fi
3920 }
3921 \def\endeqnarray{%
3922   \H@endeqnarray
3923 }

```

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.

```

3924 \@namedef{eqnarray*}{%
3925   \def\@eqnocr{\nonumber\@seqnocr}\@eqnstartrue\eqnarray
3926 }
3927 \@namedef{endeqnarray*}{%
3928   \nonumber\endeqnarray\@eqnstarfalse
3929 }

```

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

```

3930 \@ifundefined{subeqnarray}{%
3931   \let\H@subeqnarray\subeqnarray
3932   \let\H@endsubeqnarray\endsubeqnarray
3933   \def\subeqnarray{%
3934     \let\Hy@reserved@a\relax
3935     \H@subeqnarray
3936     \make@stripped@name{\theequation}%
3937     \let\theHequation\newname
3938     \hyper@makecurrent{equation}%
3939     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
3940   }%
3941   \def\endsubeqnarray{%
3942     \H@endsubeqnarray
3943   }%
3944   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
3945 }

```

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

```

3946 \def\make@stripped@name#1{%
3947   \begingroup
3948     \escapechar\m@ne
3949     \global\let\newname\@empty
3950     \protected@edef\Hy@tempa{#1}%
3951     \edef\@tempb{%
3952       \noexpand\@tfor\noexpand\Hy@tempa:=%
3953       \expandafter\strip@prefix\meaning\Hy@tempa
3954     }%
3955     \@tempb\do{%
3956       \if\Hy@tempa\else
3957         \if\Hy@tempa\else
3958           \xdef\newname{\newname\Hy@tempa}%
3959         \fi
3960       \fi
3961     }%
3962   \endgroup
3963 }

```

## 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.

```

3964 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
3965 \ifHy@hyperfootnotes
3966   \newcounter{Hfootnote}
3967   \let\H@@footnotetext\@footnotetext
3968   \let\H@@footnotemark\@footnotemark
3969   \def\@xfootnotenext[#1]{%
3970     \begingroup
3971       \csname c@\@mpfn\endcsname #1\relax
3972       \unrestored@protected@xdef\@thefnmark{\thempfn}%
3973     \endgroup
3974     \ifx\@footnotetext\@mpfootnotetext
3975       \expandafter\H@@mpfootnotetext
3976     \else
3977       \expandafter\H@@footnotetext
3978     \fi
3979   }%
3980   \def\@xfootnotemark[#1]{%
3981     \begingroup
3982       \c@footnote #1\relax
3983       \unrestored@protected@xdef\@thefnmark{\thefnmark}%
3984     \endgroup
3985     \H@@footnotemark
3986   }%
3987   \let\H@@mpfootnotetext\@mpfootnotetext
3988   \long\def\@mpfootnotetext#1{%
3989     \H@@mpfootnotetext{%
3990       \ifHy@nesting
3991         \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
3992       \else
3993         \Hy@raisedlink{%
3994           \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
3995         }#1%
3996       \fi
3997     }%
3998   }%
3999   \long\def\@footnotetext#1{%
4000     \H@@footnotetext{%
4001       \ifHy@nesting
4002         \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
4003       \else
4004         \Hy@raisedlink{%
4005           \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
4006         }%
4007         \let\@currentHlabel\Hy@footnote@currentHlabel
4008         \let\@currentHref\Hy@footnote@currentHref
4009         \let\@currentlabelname\@empty
4010         #1%
4011       \fi
4012     }%
4013   }%

```

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.

```

4014 \def\@footnotemark{%
4015   \leavevmode
4016   \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
4017   \stepcounter{Hfootnote}%
4018   \global\let\Hy@saved@currentHlabel\@currentHlabel
4019   \global\let\Hy@saved@currentHref\@currentHref
4020   \hyper@makecurrent{Hfootnote}%
4021   \global\let\Hy@footnote@currentHlabel\@currentHlabel
4022   \global\let\Hy@footnote@currentHref\@currentHref
4023   \global\let\@currentHlabel\Hy@saved@currentHlabel
4024   \global\let\@currentHref\Hy@saved@currentHref
4025   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
4026   \@makefnmark
4027   \hyper@linkend
4028   \ifhmode\spacefactor\x@sf\fi
4029   \relax
4030 }%
```

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.

```

4031 \@ifpackageloaded{longtable}{%
4032   \CheckCommand*{\LT@p@ftntext}[1]{%
4033     \edef\@tempa{%
4034       \the\LT@p@ftn
4035       \noexpand\footnotetext[\the\c@footnote]%
4036     }%
4037     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
4038   }%
4039   \long\def\LT@p@ftntext#1{%
4040     \edef\@tempa{%
4041       \the\LT@p@ftn
4042       \begingroup
4043         \noexpand\c@footnote=\the\c@footnote\relax
4044         \noexpand\protected@xdef
4045           \noexpand\@thefnmark{\noexpand\thempfn}%
4046         \noexpand\protected@xdef\noexpand\@thefnmark{%
4047           \noexpand\thempfn
4048         }%
4049         \expandafter\expandafter\expandafter\noexpand
4050           \expandafter\expandafter\expandafter\Hy@LT@footnotetext
4051           \expandafter\expandafter\expandafter{%
4052             \expandafter\Hy@footnote@currentHref\expandafter
4053             }\expandafter{\Hy@footnote@currentHlabel}%
4054       }%
4055       \global\LT@p@ftn\expandafter{%
4056         \@tempa{#1}%
4057       }\endgroup
4058     }%
4059   }%
4060   \long\def\Hy@LT@footnotetext#1#2#3{%
4061     \H@@@footnotetext{%
```

```

4062     \ifHy@nesting
4063       \hyper@@anchor{#1}{#3}%
4064     \else
4065       \Hy@raisedlink{%
4066         \hyper@@anchor{#1}{\relax}%
4067       }%
4068       \def\@currentHlabel{#2}%
4069       \def\@currentHref{#1}%
4070       \let\@currentlabelname\@empty
4071       #3%
4072     \fi
4073   }%
4074 }%
4075 }{}%

```

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.

```

4076 \let\HyOrg@maketitle\maketitle
4077 \def\maketitle{%
4078   \let\Hy@saved@footnotemark\@footnotemark
4079   \let\Hy@saved@footnotetext\@footnotetext
4080   \let\@footnotemark\H@@footnotemark
4081   \let\@footnotetext\H@@footnotetext
4082   \@ifnextchar[\Hy@maketitle@optarg{% ]
4083     \HyOrg@maketitle
4084     \Hy@maketitle@end
4085   }%
4086 }%
4087 \def\Hy@maketitle@optarg[#1]{%
4088   \HyOrg@maketitle[#1]%
4089   \Hy@maketitle@end
4090 }%
4091 \def\Hy@maketitle@end{%
4092   \ifx\@footnotemark\H@@footnotemark
4093     \let\@footnotemark\Hy@saved@footnotemark
4094   \fi
4095   \ifx\@footnotetext\H@@footnotetext
4096     \let\@footnotetext\Hy@saved@footnotetext
4097   \fi
4098 }%

```

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

```

4099 \def\realfootnote{%
4100   \@ifnextchar[\@xfootnote{%
4101     \stepcounter{\@mpfn}%
4102     \protected@xdef\@thefnmark{\thempfn}%
4103     \H@@footnotemark\H@@footnotetext
4104   }%
4105 }%
4106 \fi
4107 \Hy@DisableOption{hyperfootnotes}

4108 \</package>
4109 \<*check>
4110 \checklatex
4111 \checkcommand\def\@xfootnotenext[#1]{%
4112   \begingroup

```



```

4113 \csname c@\mpfn\endcsname #1\relax
4114 \unrestored@protected@xdef\@thefnmark{\thempfn}%
4115 \endgroup
4116 \@footnotetext
4117 }
4118 \checkcommand\def\@xfootnotemark[#1]{%
4119 \begingroup
4120 \c@footnote #1\relax
4121 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
4122 \endgroup
4123 \@footnotemark
4124 }
4125 \checkcommand\def\@footnotemark{%
4126 \leavevmode
4127 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
4128 \@makefnmark
4129 \ifhmode\spacefactor\@x@sf\fi
4130 \relax
4131 }
4132 \end{check}
4133 \end{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.

```

4134 \def\caption{%
4135 \ifx\@capytype\@undefined
4136 \latexerror{\noexpand\caption outside float}\@ehd
4137 \expandafter\@gobble
4138 \else
4139 \H@refstepcounter\@capytype
4140 \@ifundefined{fst@\@capytype}{%
4141 \let\Hy@tempa\@caption
4142 }{%
4143 \let\Hy@tempa\Hy@float@caption
4144 }%
4145 \expandafter\@firstofone
4146 \fi
4147 {\@dblarg{\Hy@tempa\@capytype}}%
4148 }
4149 \long\def\@caption#1[#2]#3{%
4150 \hyper@makecurrent{\@capytype}%
4151 \def\@currentlabelname{#2}%
4152 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
4153 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
4154 }%
4155 \begingroup
4156 \@parboxrestore
4157 \if@minipage
4158 \@setminipage
4159 \fi
4160 \normalsize
4161 \@makecaption{\csname fnum@#1\endcsname}{%
4162 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

4163     \ifHy@nesting
4164     \hyper@@anchor{\@currentHref}{#3}%
4165     \else
4166     \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
4167     \fi
4168   }%
4169   \par
4170 \endgroup
4171 }

```

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.

```

4172 \let\Hy@float@caption\@caption
4173 \@ifpackageloaded{float}{%
4174   \def\Hy@float@caption{%
4175     \hyper@makecurrent{\@capttype}%
4176     \float@caption
4177   }
4178   \let\HyOrg@float@makebox\float@makebox
4179   \renewcommand{\float@makebox}[1]{%
4180     \HyOrg@float@makebox{%
4181       #1\relax
4182     }
4183     \hyper@makecurrent{\@capttype}%
4184     \hyper@@anchor{\@currentHref}{\relax}%
4185   }
4186   }%
4187 }%
4188 }{}

4189 </package>
4190 <*check>
4191 \checklatex[1999/06/01 - 2000/06/01]
4192 \checkcommand\def\caption{%
4193   \ifx\@capttype\undefined
4194     \@latex@error{noexpand\caption outside float}\@ehd
4195     \expandafter\@gobble
4196   \else
4197     \refstepcounter{\@capttype}
4198     \expandafter\@firstofone
4199   \fi
4200   {\@dblarg{\@caption\@capttype}}%
4201 }
4202 \checkcommand\long\def\@caption#1[#2]#3{%
4203   \par
4204   \addcontentsline{\csname ext@#1\endcsname}{#1}%
4205     {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
4206   \begingroup
4207     \@parboxrestore
4208     \if@minipage
4209       \@setminipage
4210     \fi
4211     \normalsize
4212     \makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
4213   \endgroup
4214 }
4215 </check>

```

4216  $\langle$ \*package $\rangle$

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

```
4217 \def\hyper@natlinkstart#1{%
4218   \Hy@backout{#1}%
4219   \hyper@linkstart{cite}{cite.#1}%
4220   \def\hyper@nat@current{#1}%
4221 }
4222 \def\hyper@natlinkend{%
4223   \hyper@linkend
4224 }
4225 \def\hyper@natlinkbreak#1#2{%
4226   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
4227 }
4228 \def\hyper@natanchorstart#1{%
4229   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
4230 }
4231 \def\hyper@natanchorend{\hyper@anchorend}
```

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

```
4232 \@ifundefined{NAT@parse}{%
4233   \def\bibcite#1#2{%
4234     \newl@bel{b}{#1\@extra@binfo}{\hyper@link{cite}{cite.#1}{#2}}%
4235   }%
4236   \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.”.

```
4237 \let\Hy@bibcite\bibcite
4238 \begingroup
4239   \@ifundefined{bbl@cite@choice}{}%
4240   \g@addto@macro\bbl@cite@choice{%
4241     \let\bibcite\Hy@bibcite
4242   }%
4243 }%
4244 \endgroup
```

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

```
4245 \providecommand*\@BIBLABEL{\@biblabel}%
4246 \def\@lbibitem[#1]#2{%
4247   \@skiphyperreftrue
4248   \H@item[%
4249     \ifx\Hy@raisedlink\@empty
4250       \hyper@anchorstart{cite.#2}\@BIBLABEL{#1}\hyper@anchorend
4251     \else
4252       \Hy@raisedlink{\hyper@anchorstart{cite.#2}\hyper@anchorend}%
4253     \fi
4254   ]{#2}
```

```

4253      \@BIBLABEL{#1}%
4254      \fi
4255      \hfill
4256    ]%
4257    \@skiphyperreffalse
4258    \if@filesw
4259      \begingroup
4260        \let\protect\noexpand
4261        \immediate\write\@auxout{%
4262          \string\bibcite{#2}{#1}%
4263        }%
4264      \endgroup
4265    \fi
4266    \ignorespaces
4267  }%

```

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

```

4268  \def\@bibitem#1{%
4269    \@skiphyperreftrue\H@item\@skiphyperreffalse
4270    \Hy@raisedlink{\hyper@anchorstart{cite.#1}\relax\hyper@anchorend}%
4271    \if@filesw
4272      \begingroup
4273        \let\protect\noexpand
4274        \immediate\write\@auxout{%
4275          \string\bibcite{#1}{\the\value{\@listctr}}}%
4276      }%
4277    \endgroup
4278    \fi
4279    \ignorespaces
4280  }%
4281 }{}

4282 \</package>
4283 \<*check>
4284 \checklatex
4285 \checkcommand\def\@lbibitem[#1]#2{%
4286   \item[\@biblabel{#1}\hfill]%
4287   \if@filesw
4288     {%
4289       \let\protect\noexpand
4290       \immediate\write\@auxout{%
4291         \string\bibcite{#2}{#1}%
4292       }%
4293     }%
4294   \fi
4295   \ignorespaces
4296 }
4297 \checkcommand\def\@bibitem#1{%
4298   \item
4299   \if@filesw
4300     \immediate\write\@auxout{%
4301       \string\bibcite{#1}{\the\value{\@listctr}}}%
4302   }%
4303   \fi
4304   \ignorespaces
4305 }
4306 \</check>
4307 \<*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.

```

4308 \@ifclassloaded{revtex}{%
4309   \Hy@Info{*** compatibility with revtex **** }%
4310   \def\revtex@checking#1#2{%
4311     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
4312     \expandafter\def\csname b@#1\endcsname{#2}%
4313     \@SetMaxRnhefLabel{#1}%
4314     \expandafter\let\csname b@#1\endcsname\T@temp
4315   }%

```

Tanmoy provided this replacement for CITEX. Lord knows what it does. For chapterbib added: extra@b@citeb

```

4316 \@ifundefined{CITE}{\def\CITE{\@cite}}{%
4317   \providecommand*\@extra@b@citeb{}%
4318   \def\CITE[#1]#2{%
4319     \let\@citea\@empty
4320     \leavevmode
4321     \unskip
4322     $~{%
4323       \scriptstyle
4324       \@CITE{%
4325         \@for\@citeb:=#2\do{%
4326           \@citea
4327           \def\@citea{,\penalty\@m\ }%
4328           \edef\@citeb{\expandafter\@firstofone\@citeb}%
4329           \if@filesw
4330             \immediate\write\@auxout{\string\citation{\@citeb}}%
4331           \fi
4332           \@ifundefined{b@\@citeb\extra@b@citeb}{%
4333             \mbox{\reset@font\bfseries ?}%
4334             \G@refundefinedtrue
4335             \@latex@warning{%
4336               Citation ‘\@citeb’ on page \thepage \space undefined%
4337             }%
4338           }{%
4339             {\csname b@\@citeb\extra@b@citeb\endcsname}%
4340           }%
4341         }%
4342       }{#1}%
4343     }$%
4344   }%

```

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.

```

4345 \def\citex[#1]#2{%
4346   \let\@citea\@empty
4347   \@cite{%
4348     \@for\@citeb:=#2\do{%
4349       \@citea
4350       \def\@citea{,\penalty\@m\ }%
4351       \edef\@citeb{\expandafter\@firstofone\@citeb}%
4352       \if@filesw
4353         \immediate\write\@auxout{\string\citation{\@citeb}}%
4354       \fi
4355       \@ifundefined{b@\@citeb\extra@b@citeb}{%
4356         \mbox{\reset@font\bfseries ?}%

```

```

4357         \G@refundefinedtrue
4358         \@latex@warning{%
4359             Citation ‘\@citeb’ on page \thepage \space undefined%
4360         }%
4361     }{%
4362         \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
4363     }%
4364 }%
4365 }{\#1}%
4366 }%
4367 }{}

```

## 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 $\TeX$ , then `hyperref` is already loaded at the begin of `harvard.sty`, and the `\newcommand` macros causes error messages.

```

4368 \ifpackageloaded{harvard}{%
4369   \AtBeginDocument{%
4370     \Hy@Info{*** compatibility with harvard *** }%
4371     \Hy@raiselinksfalse
4372     \def\harvardcite#1#2#3#4{%
4373       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{\cite.#1}{#2}}%
4374       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{\cite.#1}{#3}}%
4375       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{\cite.#1}{#4}}%
4376       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
4377     }%
4378     \def\HAR@citetoaux#1{%
4379       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
4380       \ifHy@backref
4381         \ifx\@empty\@currentlabel
4382         \else
4383           \@bsphack
4384           \if@filesw
4385             \protected@write\@auxout{}{%
4386               \string\writefile{brf}{%
4387                 \string\backcite{#1}{%
4388                   {\thepage}{\@currentlabel}{\@currentHref}%
4389                 }%
4390             }%
4391           }%
4392         \fi
4393         \@esphack
4394       \fi
4395     \fi
4396   }%
4397   \def\harvarditem{%
4398     \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
4399   }%
4400   \def\@harvarditem[#1]#2#3#4#5\par{%
4401     \item[]%
4402     \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
4403   \if@filesw

```

```

4404     \begingroup
4405     \def\protect##1{\string ##1\space}%
4406     \ifthenelse{\equal{#1}{\null}}{%
4407         {\def\next{{#4}{#2}{#2}{#3}}}%
4408         {\def\next{{#4}{#2}{#1}{#3}}}%
4409     \immediate\write\@auxout{\string\harvardcite\codeof\next}%
4410     \endgroup
4411     \fi
4412     \protect\hspace*{-\labelwidth}%
4413     \protect\hspace*{-\labelsep}%
4414     \ignorespaces
4415     #5%
4416     \ifHy@backref
4417         \newblock
4418         \backref{\csname br@#4\endcsname}%
4419     \fi
4420     \par
4421     }%

```

`\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`:

```

4422     \long\def\HAR@checkcitations#1#2#3#4{%
4423         \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
4424         \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
4425             \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
4426             \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
4427                 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
4428                 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
4429                     \else
4430                         \@tempswatrue
4431                     \fi
4432                 \else
4433                     \@tempswatrue
4434                 \fi
4435             \else
4436                 \@tempswatrue
4437             \fi
4438         }%
4439     }%

4440 }{}

```

## 36.2 Package chicago

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

```

4441 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

4442     \def\citeN{%
4443         \def\@citesep{pen{-1000}}%
4444         \def\@cite##1##2{##1}%
4445         \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
4446         \@citedata@opt
4447     }%

```

`\shortciteN`

```

4448 \def\shortciteN{%
4449   \def\@citesep{--1000}%
4450   \def\@cite##1##2{##1}%
4451   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
4452   \@citedata@opt
4453 }%

```

`\@citedata@opt`

```

4454 \def\@citedata@opt{%
4455   \let\@cite@opt\@empty
4456   \@ifnextchar [{%
4457     \@tempwatrue
4458     \@citedatax@opt
4459   }{%
4460     \@tempwafalse
4461     \@citedatax[]%
4462   }%
4463 }%

```

`\@citedatax@opt`

```

4464 \def\@citedatax@opt[#1]{%
4465   \def\@cite@opt{, #1}%
4466   \@citedatax[{#1}]%
4467 }
4468 }{}

```

## 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 `\@beginndvi`. We cannot even overload this, as it sets itself to null. SIGH.

```

4469 \def\@beginndvi{%
4470   \unvbox \@beginndvibox
4471   \Hy@beginndvi
4472   \global\let\@beginndvi\Hy@beginndvi
4473 }
4474 \def\Hy@beginndvi{%
4475   \@hyperfixhead
4476   \HyPL@EveryPage
4477 }
4478 \def\pagenumbering#1{%
4479   \global\c@page \@ne
4480   \gdef\thepage{\csname @#1\endcsname\c@page}%
4481 }

```

This is needed for some unremembered reason...

```

4482 \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.

```
4483 \providecommand\hyper@pagetransition{}
4484 \providecommand\hyper@pageduration{}
4485 \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`

```
4486 \def\@hyperfixhead{%
4487   \Hy@DistillerDestFix
4488   \ifHy@pageanchor
4489     \ifHy@hypertextnames
4490     \ifHy@plainpages
4491       \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
4492     \else
4493       \begingroup
4494         \let\@number\@firstofone
4495         \Hy@unicodedefalse
4496         \pdfstringdef\@theH@page{\thepage}%
4497       \endgroup
4498       \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\@theH@page}}%
4499     \fi
4500   \else
4501     \Hy@GlobalStepCount\Hy@pagecounter
4502     \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}%
4503   \fi
4504   \else
4505     \let\Hy@TempPageAnchor\@empty
4506   \fi
4507   \let\H@old@thehead\@thehead
4508   \if~\@thehead~%
4509     \def\H@old@thehead{\hfil}%
4510   \fi
4511   \ifHy@texht
4512     \def\@thehead{}%
4513   \else
4514     \ifHy@seminarslides
4515       \begingroup
4516         \let\leavevmode\relax
4517         \Hy@TempPageAnchor\relax
4518         \hyper@pagetransition
4519         \hyper@pageduration
4520         \hyper@pagehidden
4521       \endgroup
4522     \else
4523       \def\@thehead{%
4524         \Hy@TempPageAnchor\relax
4525         \hyper@pagetransition
4526         \hyper@pageduration
4527         \hyper@pagehidden
4528         \H@old@thehead
4529       }%
4530     \fi
4531   \fi
4532   \ifx\PDF@FinishDoc\@empty
4533   \else
```

```

4534 \PDF@FinishDoc
4535 \gdef\PDF@FinishDoc{%
4536 \fi
4537 }

```

## 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.

```

4538 \begingroup\expandafter\expandafter\expandafter\endgroup
4539 \expandafter\ifx\csname chapter\endcsname\relax
4540 \def\toclevel@part{0}
4541 \else
4542 \def\toclevel@part{-1}
4543 \fi
4544 \def\toclevel@chapter{0}
4545 \def\toclevel@section{1}
4546 \def\toclevel@subsection{2}
4547 \def\toclevel@subsubsection{3}
4548 \def\toclevel@paragraph{4}
4549 \def\toclevel@subparagraph{5}
4550 \def\toclevel@figure{0}
4551 \def\toclevel@table{0}
4552 \@ifpackageloaded{listings}{%
4553 \providecommand*\theHlstlisting{\thelstlisting}%
4554 \providecommand*\toclevel@lstlisting{0}%
4555 }{}
4556 \@ifpackageloaded{listing}{%
4557 \providecommand*\theHlisting{\thelisting}%
4558 \providecommand*\toclevel@listing{0}%
4559 }{}
4560 \def\addcontentsline#1#2#3{% toc extension, type, tag
4561 \begingroup
4562 \let\label@gobble
4563 \let\textlatin@firstofone
4564 \ifx\@currentHref\@empty
4565 \Hy@Warning{%
4566 No destination for bookmark of \string\addcontentsline,%
4567 \MessageBreak destination is added%
4568 }%
4569 \phantomsection
4570 \fi
4571 \expandafter\ifx\csname toclevel@#2\endcsname\relax
4572 \begingroup
4573 \def\Hy@tempa{#1}%
4574 \ifx\Hy@tempa\Hy@bookmarkstype
4575 \Hy@WarningNoLine{bookmark level for unknown #2 defaults to 0}%
4576 \else
4577 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
4578 \fi
4579 \endgroup
4580 \expandafter\gdef\csname toclevel@#2\endcsname{0}%
4581 \fi
4582 \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
4583 \Hy@writebookmark{\csname the#2\endcsname}%

```

```

4584     {#3}%
4585     {\@currentHref}%
4586     {\Hy@toclevel}%
4587     {#1}%
4588     \ifHy@verbose
4589       \def\Hy@tempa{#3}%
4590       \@onelevel@sanitize\Hy@tempa
4591       \typeout{pdfTeX: bookmark at \the\inputlineno:
4592         {\csname the#2\endcsname}
4593         {\Hy@tempa}
4594         {\@currentHref}%
4595         {\Hy@toclevel}%
4596         {#1}%
4597       }%
4598     \fi
4599     \addtocontents{#1}{%
4600       \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
4601     }%
4602   \endgroup
4603 }
4604 \def\contentsline#1#2#3#4{%
4605   \ifx\#4\%
4606     \csname l@#1\endcsname{#2}{#3}%
4607   \else
4608     \ifHy@linktocpage
4609       \csname l@#1\endcsname{#2}{#3}{%
4610         \hyper@linkstart{link}{#4}{#3}\hyper@linkend
4611       }%
4612     \else
4613       \csname l@#1\endcsname{%
4614         \hyper@linkstart{link}{#4}{#2}\hyper@linkend
4615       }{#3}%
4616     \fi
4617   \fi
4618 }
4619 \end{package}
4620 \end{*check}
4621 \checklatex
4622 \checkcommand\def\addcontentsline#1#2#3{%
4623   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
4624 }
4625 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
4626 \end{*check}
4627 \end{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.

```

4628 \let\H@definecounter\@definecounter
4629 \def\@definecounter#1{%
4630   \H@definecounter{#1}%
4631   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
4632 }

```

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.

```

4633 \let\H@newctr\@newctr
4634 \def\@newctr#1[#2]{%
4635   \H@newctr#1[#2]}%
4636 \expandafter\def\csname theH#1\endcsname{%
4637   \csname the\@ifundefined{theH#2}{-}{H}#2\endcsname.\arabic{#1}%
4638 }%
4639 }

```

## 40 AMS $\LaTeX$ compatibility

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

```

4640 \let\Hmake@df@tag@@\make@df@tag@@
4641 \def\make@df@tag@@#1{%
4642   \Hmake@df@tag@@{#1}%
4643   \Hy@GlobalStepCount\Hy@linkcounter
4644   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4645   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4646 }
4647 \let\Hmake@df@tag@@@\make@df@tag@@@
4648 \def\make@df@tag@@@#1{%
4649   \Hmake@df@tag@@@{#1}%
4650   \Hy@GlobalStepCount\Hy@linkcounter
4651   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4652   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4653 }

```

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

```

4654 \@ifpackagewith{hyperref}{pdf $\TeX$ }{%
4655   \let\H@seteqlabel\@seteqlabel
4656   \def\@seteqlabel#1{%
4657     \H@seteqlabel{#1}%
4658     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4659     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4660   }%
4661 }{}

```

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.

```

4662 \let\HyOrg@addtoreset\@addtoreset
4663 \def\@addtoreset#1#2{%
4664   \HyOrg@addtoreset{#1}{#2}%
4665   \expandafter\xdef\csname theH#1\endcsname{%
4666     \expandafter\noexpand
4667       \csname the\@ifundefined{theH#2}{H#2\endcsname
4668     .\noexpand\the\noexpand\value{#1}%
4669   }%
4670 }
```

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

```

4671 \</package>
4672 \<*check>
4673 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
4674 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
4675   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
4676     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
4677       \@addtoreset{#2}{#3}%
4678       \@xp\xdef\csname the#2\endcsname{%
4679         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
4680       }%
4681     }%
4682   }%
4683 }%
4684 \</check>
4685 \<*package>
4686 \@ifpackageloaded{amsmath}{%
4687   \@ifpackagelater{amsmath}[1999/12/14]{%
4688     \renewcommand*\@numberwithin[3][\arabic]{%
4689       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
4690         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
4691           \HyOrg@addtoreset{#2}{#3}%
4692           \@xp\xdef\csname the#2\endcsname{%
4693             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
4694           }%
4695           \@xp\xdef\csname theH#2\endcsname{%
4696             \@xp\@nx
4697             \csname the\@ifundefined{theH#3}{H#3\endcsname
4698             .\@nx#1{#2}%
4699           }%
4700         }%
4701       }%
4702     }%
4703   }{%
4704     \Hy@WarningNoLine{%
4705       \string\numberwithin\space of package 'amsmath'
4706       only fixed\MessageBreak
4707       for version 2000/06/06 v2.12 or newer%
4708     }%
4709   }
4710 }{}%
```

## 41 Included figures

Simply intercept the low level graphics package macro.

```
4711 \ifHy@figures
4712   \let\Hy@Gin@setfile\Gin@setfile
4713   \def\Gin@setfile#1#2#3{%
4714     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
4715   }
4716 \fi
4717 \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 emboldening entries. That would make Makeindex fail (cannot have two | specifiers). The solution is for the author to use generic coding, and put in the requisite \hyperpage in his/her own macros along with the boldness.

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

```
4718 \ifHy@hyperindex
4719   \def\HyInd@ParenLeft{({}%
4720   \def\HyInd@ParenRight{)}}%
4721   \Hy@nextfalse
4722   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
4723   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
4724   \begingroup
4725     \lccode'\|=\expandafter'\HyInd@EncapChar\relax
4726   \lowercase{\endgroup
4727     \ifHy@next
4728       \let\HyInd@org@wrindex\@wrindex
4729       \def\@wrindex#1#2{\HyInd@@wrindex{#1}{#2}||\}%
4730       \def\HyInd@@wrindex#1#2|#3|#4\{\%
4731         \ifx\|#3\%
4732           \HyInd@org@wrindex{#1}{#2|hyperpage}%
4733         \else
4734           \def\Hy@temp@A{#3}%
4735           \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4736             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4737             \relax
4738           \HyInd@org@wrindex{#1}{#2|#3}%
4739         \else
4740           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
4741         \fi
4742       \fi
4743     }%
4744   \else
4745     \def\@wrindex#1{\@@wrindex#1||\}%
4746     \def\@@wrindex#1|#2|#3\{\%
4747       \if@filesw
4748         \ifx\|#2\%
4749           \protected@write\@indexfile{\%
4750             \string\indexentry{#1|hyperpage}{\thepage}%

```

```

4751         }%
4752     \else
4753         \def\Hy@temp@A{#2}%
4754         \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4755             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4756             \relax
4757             \protected@write\@indexfile{}\{%
4758                 \string\indexentry{#1|#2}{\thepage}%
4759             }%
4760     \else
4761         \protected@write\@indexfile{}\{%
4762             \string\indexentry{#1|#2hyperpage}{\thepage}%
4763         }%
4764     \fi
4765 \fi
4766 \fi
4767 \endgroup
4768 \@esphack
4769 }%
4770 \fi
4771 }%
4772 \fi
4773 \Hy@DisableOption{hyperindex}
4774 \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.

```

4775 \def\hyperpage#1{\@hyperpage#1---\}
4776 \def\@hyperpage#1--#2--#3\{\%
4777     \ifx\#2\%
4778         \@commahyperpage{#1}%
4779     \else
4780         \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
4781     \fi
4782 }
4783 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
4784 \def\@commahyperpage#1, #2,#3\{\%
4785     \ifx\#2\%
4786         \HyInd@pagelink{#1}%
4787     \else
4788         \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
4789     \fi
4790 }

```

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

```

4791 \def\HyInd@pagelink#1{%
4792     \begingroup
4793     \toks@={}%
4794     \HyInd@removespaces#1 \@nil
4795 \endgroup
4796 }
4797 \def\HyInd@removespaces#1 #2\@nil{%
4798     \toks@=\expandafter{\the\toks@#1}%
4799     \ifx\#2\%
4800         \edef\x{\the\toks@}%
4801         \ifx\x@empty
4802             \else

```

```

4803     \hyperlink{page.\the\toks@}{\the\toks@}%
4804   \fi
4805 \else
4806   \Hy@ReturnAfterFi{%
4807     \HyInd@removespaces#2\@nil
4808   }%
4809 \fi
4810 }

```

## 43 Compatibility with foiltex

```

4811 \@ifclassloaded{foils}{%
4812   \providecommand*\ext@table{lot}%
4813   \providecommand*\ext@figure{lof}%
4814 }{}

```

## 44 Compatibility with seminar slide package

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

```

4815 \@ifclassloaded{seminar}{%
4816   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}}%
4817 }{%
4818   \Hy@seminarslidesfalse
4819 }
4820 \@ifpackageloaded{slidesec}{%
4821   \newcommand\theHslidesection {\arabic{slidesection}}%
4822   \newcommand\theHslidesubsection{%
4823     \theHslidesection.\arabic{slidesubsection}%
4824   }%
4825   \def\slide@heading[#1]#2{%
4826     \H@refstepcounter{slidesection}%
4827     \@addtoreset{slidesubsection}{slidesection}%
4828     \addtocontents{los}{%
4829       \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
4830       {\@SCTR}{\slideheading.\theslidesection}%
4831     }%
4832     \def\Hy@tempa{#2}%
4833     \ifx\Hy@tempa\@empty
4834       \else
4835         {%
4836           \edef\@currentlabel{%
4837             \csname p@slidesection\endcsname\theslidesection
4838           }%
4839           \makeslideheading{#2}%
4840         }%
4841       \fi
4842       \gdef\theslideheading{#1}%
4843       \gdef\theslidesubheading{%
4844         \ifHy@bookmarksnumbered
4845           \def\Hy@slidetitle{\theslidesection\space #1}%
4846         \else
4847           \def\Hy@slidetitle{#1}%
4848         \fi
4849         \ifHy@hypertextnames
4850           \ifHy@naturalnames

```



```

4851         \hyper@@anchor{slideheading.\theslidesection}{\relax}%
4852         \Hy@writebookmark
4853             {\theslidesection}%
4854             {\Hy@slidetitle}%
4855             {slideheading.\theslidesection}%
4856             {1}%
4857             {toc}%
4858     \else
4859         \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
4860         \Hy@writebookmark
4861             {\theslidesection}%
4862             {\Hy@slidetitle}%
4863             {slideheading.\theHslidesection}%
4864             {1}%
4865             {toc}%
4866     \fi
4867 \else
4868     \Hy@GlobalStepCount\Hy@linkcounter
4869     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
4870     \Hy@writebookmark
4871         {\theslidesection}%
4872         {\Hy@slidetitle}%
4873         {slideheading.\the\Hy@linkcounter}%
4874         {1}%
4875         {toc}%
4876 \fi
4877 }%
4878 \def\slide@subheading[#1]#2{%
4879     \H@refstepcounter{slidesubsection}%
4880     \addtocontents{los}{%
4881         \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
4882         {\@SCTR}{slideheading.\theslidesubsection}%
4883     }%
4884     \def\Hy@tempa{#2}%
4885     \ifx\Hy@tempa\@empty
4886     \else
4887         {%
4888             \edef\@currentlabel{%
4889                 \csname p@slidesubsection\endcsname\theslidesubsection
4890             }%
4891             \makeslidesubheading{#2}%
4892         }%
4893     \fi
4894     \gdef\theslidesubheading{#1}%
4895     \ifHy@bookmarksnumbered
4896         \def\Hy@slidetitle{\theslidesubsection\space #1}%
4897     \else
4898         \def\Hy@slidetitle{#1}%
4899     \fi
4900     \ifHy@hypertextnames
4901         \ifHy@naturalnames
4902             \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
4903             \Hy@writebookmark
4904                 {\theslidesubsection}%
4905                 {\Hy@slidetitle}%
4906                 {slideheading.\theslidesubsection}%
4907                 {2}%

```

```

4908         {toc}%
4909     \else
4910         \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
4911         \Hy@writebookmark
4912             {\theslidesubsection}%
4913             {\Hy@slidetitle}%
4914             {slideheading.\theHslidesubsection}%
4915             {2}%
4916         {toc}%
4917     \fi
4918 \else
4919     \Hy@GlobalStepCount\Hy@linkcounter
4920     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
4921     \Hy@writebookmark
4922         {\theslidesubsection}%
4923         {\Hy@slidetitle}%
4924         {slideheading.\the\Hy@linkcounter}%
4925         {1}%
4926     {toc}%
4927 \fi
4928 }%
4929 \providecommand*\listslidenamelist{List of Slides}%
4930 \def\listofslides{%
4931     \section*{%
4932         \listslidenamelist
4933         \@mkboth{%
4934             \expandafter\MakeUppercase\listslidenamelist
4935         }{%
4936             \expandafter\MakeUppercase\listslidenamelist
4937         }%
4938     }%
4939     \def\l@slide##1##2##3##4{%
4940         \slide@undottedcline{%
4941             \slidenumberline{##3}{\hyperlink{##4}{##2}}%
4942         }{%
4943         }%
4944         \let\l@subslide\l@slide
4945         \@startlos
4946     }%
4947     \def\slide@contents{%
4948         \def\l@slide##1##2##3##4{%
4949             \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
4950         }%
4951         \let\l@subslide\@gobblefour
4952         \@startlos
4953     }%
4954     \def\Slide@contents{%
4955         \def\l@slide##1##2##3##4{%
4956             \ifcase\lslide@flag
4957                 \message{##1 ** \the\c@slidesection}%
4958                 \ifnum##1>\c@slidesection
4959                     \def\lslide@flag{1}%
4960                 {%
4961                     \large
4962                     \slide@ccline{%
4963                         \slidenumberline{\$ \Rightarrow \bullet \$}%
4964                         {\hyperlink{##4}{##2}}%

```

```

4965         }{##3}%
4966     }%
4967 \else
4968     {%
4969         \large
4970         \slide@cline{%
4971             \slidenumberline{$\surd\;\bullet$}%
4972             {\hyperlink{##4}{##2}}%
4973         }{##3}%
4974     }%
4975 \fi
4976 \or
4977 \def\lslide@flag{2}%
4978 {%
4979     \large
4980     \slide@cline{%
4981         \slidenumberline{$\bullet$}%
4982         {\hyperlink{##4}{##2}}%
4983     }{##3}%
4984 }%
4985 \or
4986 {%
4987     \large
4988     \slide@cline{%
4989         \slidenumberline{$\bullet$}%
4990         {\hyperlink{##4}{##2}}%
4991     }{##3}%
4992 }%
4993 \fi
4994 }%
4995 \def\l@subslide##1##2##3##4{%
4996     \ifnum\lslide@flag=1
4997         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
4998     \fi
4999 }%
5000 \def\lslide@flag{0}%
5001 \@startlos
5002 }%
5003 }{}

```

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.)

```

5004 \ifHy@texht
5005     \expandafter\endinput
5006 \fi
5007 \let\real@setref\@setref
5008 \def\@setref#1#2#3{% csname, extract group, refname
5009     \ifx#1\relax
5010         \protect\G@refundefinedtrue
5011         \nfss@text{\reset@font\bfseries ??}%
5012         \@latex@warning{%
5013             Reference ‘#3’ on page \thepage \space undefined%
5014         }%
5015     \else
5016         \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
5017     \fi
5018 }

```

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

```

5019 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
5020   \begingroup
5021     \toks0={\hyper@link{#5}{#4}}%
5022     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
5023     \edef\x{\endgroup
5024       \the\toks0 {\the\toks1 }%
5025     }%
5026   \x
5027 }
5028 \def\@pagesetref#1#2#3{% csname, extract macro, ref
5029   \ifx#1\relax
5030     \protect\G@refundefinedtrue
5031     \nfss@text{\reset@font\bfseries ??}%
5032     \@latex@warning{%
5033       Reference ‘#3’ on page \thepage \space undefined%
5034     }%
5035   \else
5036     \protect\hyper@link
5037     {\expandafter\@fifthoffive#1}%
5038     {page.\expandafter\@secondoffive#1}%
5039     {\expandafter\@secondoffive#1}%
5040   \fi
5041 }
5042 </package>
5043 <*check>
5044 \checklatex
5045 \checkcommand\def\@setref#1#2#3{%
5046   \ifx#1\relax
5047     \protect\G@refundefinedtrue
5048     \nfss@text{\reset@font\bfseries ??}%
5049     \@latex@warning{%
5050       Reference ‘#3’ on page \thepage\space undefined%
5051     }%
5052   \else
5053     \expandafter#2#1\null
5054   \fi
5055 }
5056 </check>
5057 <*package>

```

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

```

5058 \def\@refstar#1{%
5059   \Hy@safe@activetrue
5060   \expandafter\real@setref\csname r@#1\endcsname\@firstoffive{#1}%
5061   \Hy@safe@activetrue
5062 }
5063 \def\@pagerefstar#1{%
5064   \Hy@safe@activetrue
5065   \expandafter\real@setref\csname r@#1\endcsname\@secondoffive{#1}%
5066   \Hy@safe@activetrue
5067 }
5068 \DeclareRobustCommand\autoref{%
5069   \@ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@link}%
5070 }

```

```

5071 \def\HyRef@autoref#1#2{%
5072   \begingroup
5073   \Hy@safe@activetrue
5074   \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
5075 \endgroup
5076 }
5077 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
5078   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
5079   \edef\HyRef@thisref{\expandafter\@fourthoffive#1\@empty\@empty\@empty}%
5080   \expandafter\HyRef@testreftype\HyRef@thisref\%
5081   \Hy@safe@activesfalse
5082   #3{%
5083     \expandafter\@fifthoffive#1%
5084   }{%
5085     \expandafter\@fourthoffive#1\@empty\@empty\@empty
5086   }{%
5087     \HyRef@currentHtag
5088     \expandafter\@firstoffive#1\@empty\@empty\@empty
5089     \null
5090   }%
5091 \else
5092   \protect\G@refundefinedtrue
5093   \nfss@text{\reset@font\bfseries ??}%
5094   \@latex@warning{%
5095     Reference ‘#2’ on page \thepage\space undefined%
5096   }%
5097 \fi
5098 }
5099 \def\HyRef@testreftype#1.#2\{%
5100   \@ifundefined{#1autorefname}{%
5101     \@ifundefined{#1name}{%
5102       \def\HyRef@currentHtag{%
5103         \@latex@warning{no tag name for #1 at \the\inputlineno}%
5104       }{%
5105         \edef\HyRef@currentHtag{%
5106           \expandafter\noexpand\csname#1name\endcsname
5107           \noexpand~%
5108         }%
5109       }%
5110     }{%
5111       \edef\HyRef@currentHtag{%
5112         \expandafter\noexpand\csname#1autorefname\endcsname
5113         \noexpand~%
5114       }%
5115     }%
5116   }
5117 \def\HyRef@currentHtag{}

```

Defaults for the names that \autoref uses.

```

5118 \providecommand\AMSautorefname{\equationautorefname}
5119 \providecommand\Hfootnoteautorefname{\footnoteautorefname}
5120 \providecommand\Itemautorefname{\itemautorefname}
5121 \providecommand\itemautorefname{item}
5122 \providecommand\equationautorefname{Equation}
5123 \providecommand\footnoteautorefname{footnote}
5124 \providecommand\itemautorefname{item}
5125 \providecommand\figureautorefname{Figure}
5126 \providecommand\tableautorefname{Table}

```

```

5127 \providecommand\partautorefname{Part}
5128 \providecommand\appendixautorefname{Appendix}
5129 \providecommand\chapterautorefname{chapter}
5130 \providecommand\sectionautorefname{section}
5131 \providecommand\subsectionautorefname{subsection}
5132 \providecommand\subsubsectionautorefname{subsubsection}
5133 \providecommand\paragraphautorefname{paragraph}
5134 \providecommand\subparagraphautorefname{subparagraph}
5135 \providecommand\FancyVerbLineautorefname{line}
5136 \providecommand\theoremautorefname{Theorem}
5137 </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><sub>E</sub>X offers `\pdfescapestring`.

```

5138 < *pdfTEX | dvipdfm | vtex | pdfmarkbase | dviwindo >
5139 \begingroup\expandafter\expandafter\expandafter\endgroup
5140 \expandafter\ifx\csname pdfescapestring\endcsname\relax
5141   \begingroup
5142     \catcode'\| = 0 %
5143     \@makeother\| %
5144     |@firstofone{|endgroup
5145     |def|Hy@pstringdef#1#2{%
5146       |edef#1{#2}%
5147       |@onelevel@sanitize#1%
5148       |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
5149       |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
5150       |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
5151     }%
5152     |def|Hy@ExchangeBackslash#1\#2|@nil{%
5153       #1%
5154       |ifx|\#2\| %
5155       |else
5156         \| %
5157         |Hy@ReturnAfterFi{%
5158           |Hy@ExchangeBackslash#2|@nil
5159         }%
5160       |fi
5161     }%
5162   }
5163   \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
5164     #1%
5165     \ifx\#2\| %
5166     \else
5167       \@backslashchar(%
5168       \Hy@ReturnAfterFi{%
5169         \Hy@ExchangeLeftParenthesis#2\@nil
5170       }%

```

```

5171 \fi
5172 }
5173 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
5174 #1%
5175 \ifx\#2\%
5176 \else
5177 \@backslashchar)%
5178 \Hy@ReturnAfterFi{%
5179 \Hy@ExchangeRightParenthesis#2\@nil
5180 }%
5181 \fi
5182 }
5183 \else
5184 \def\Hy@pstringdef#1#2{%
5185 \edef#1{\pdfescapestring{#2}}%
5186 }%
5187 \fi
5188 </pdfTeX | dvipdfm | vTeX | pdfmarkbase | dviwindo>

```

## 45.2 pdfTeX

```
5189 < *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:

```

5190 \def\setpdflinkmargin#1{\pdflinkmargin#1}
5191 \ifx\pdfstartlink\undefined% less than version 14
5192 \let\pdfstartlink\pdfannotlink
5193 \let\pdflinkmargin\@tempdima
5194 \let\pdfxform\pdfform
5195 \let\pdflastxform\pdflastform
5196 \let\pdfrefxform\pdfrefform
5197 \else
5198 \pdflinkmargin1pt
5199 \fi

```

First set up the default linking

```
5200 \providecommand\@pdfview{XYZ}
```

First define the anchors:

```

5201 \def\new@pdflink#1{%
5202 \ifHy@verbose
5203 \typeout{pdfTeX: define anchor at line \the\inputlineno: #1}%
5204 \fi
5205 \Hy@SaveLastskip
5206 \Hy@pstringdef\Hy@pstringDest{#1}%
5207 \Hy@DestName\Hy@pstringDest\@pdfview
5208 \Hy@RestoreLastskip
5209 }
5210 \let\pdf@endanchor\@empty

```

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

```

5211 \def\Hy@DestName#1#2{%
5212 \pdfdest name{#1}#2\relax
5213 }

```

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.

```

5214 \providecommand\pdfborder{0 0 1}
5215 \providecommand*\pdfborderstyle{}
5216 \def\Hy@undefinedname{UNDEFINED}
5217 \def\find@pdflink#1#2{%
5218   \leavevmode
5219   \protected@edef\Hy@testname{#2}%
5220   \ifx\Hy@testname\@empty
5221     \let\Hy@testname\Hy@undefinedname
5222   \else
5223     \Hy@pstringdef\Hy@testname\Hy@testname
5224   \fi
5225   \Hy@StartlinkName{%
5226     \Hy@setpdfborder
5227     \ifx\@pdfhighlight\@empty
5228       \else
5229         /H\@pdfhighlight
5230       \fi
5231     /C[\CurrentBorderColor]%
5232   }\Hy@testname
5233   \expandafter\Hy@colorlink\csname @#1color\endcsname
5234 }
5235 \def\Hy@StartlinkName#1#2{%
5236   \pdfstartlink attr{#1}goto name{#2}\relax
5237 }
5238 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
5239 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
5240 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
5241 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
5242 \def\hyper@linkstart#1#2{%
5243   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
5244   \find@pdflink{#1}{#2}}
5245 \def\hyper@linkend{\close@pdflink}
5246 \def\hyper@link#1#2#3{%
5247   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
5248   \find@pdflink{#1}{#2}#3\close@pdflink
5249 }
5250 \def\CurrentBorderColor{\@linkbordercolor}
5251 \def\hyper@linkurl#1#2{%
5252   \begingroup
5253     \Hy@pstringdef\Hy@pstringURI{#2}%
5254     \hyper@chars
5255     \leavevmode
5256     \pdfstartlink
5257       attr{%
5258         \Hy@setpdfborder
5259         \ifx\@pdfhighlight\@empty
5260           \else
5261             /H\@pdfhighlight
5262           \fi
5263         /C[\@urlbordercolor]%
5264       }%
5265     user{%
5266       /Subtype/Link%

```



```

5267      /A<<%
5268      /Type/Action%
5269      /S/URI%
5270      /URI(\Hy@pstringURI)%
5271      >>%
5272      }%
5273      \relax
5274      \Hy@colorlink\@urlcolor#1%
5275      \close@pdflink
5276      \endgroup
5277 }
5278 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
5279   \begingroup
5280     \Hy@pstringdef\Hy@pstringF{#2}%
5281     \Hy@pstringdef\Hy@pstringD{#3}%
5282     \leavevmode
5283     \pdfstartlink
5284     attr{%
5285       \Hy@setpdfborder
5286       \ifx\@pdfhighlight\@empty
5287       \else
5288         /H\@pdfhighlight
5289       \fi
5290       /C[\@filebordercolor]%
5291     }%
5292     user {%
5293       /Subtype/Link%
5294       /A<<%
5295       /F(\Hy@pstringF)%
5296       /S/GoToR%
5297       \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}

```

```

5298      \ifx\#3\%
5299      /D[0 \pdfstartview]%
5300      \else
5301      /D(\Hy@pstringD)%
5302      \fi
5303      >>%
5304      }%
5305      \relax
5306      \Hy@colorlink\@filecolor#1%
5307      \close@pdflink
5308      \endgroup
5309 }
5310 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
5311   \begingroup
5312     \Hy@pstringdef\Hy@pstringF{#1}%

```

```

5313 \Hy@pstringdef\Hy@pstringP{#3}%
5314 \leavevmode
5315 \pdfstartlink
5316 attr{%
5317   \Hy@setpdfborder
5318   \ifx\@pdfhighlight\@empty
5319   \else
5320     /H\@pdfhighlight
5321   \fi
5322   /C[\@runbordercolor]%
5323 }%
5324 user {%
5325   /Subtype/Link%
5326   /A<<%
5327     /F(\Hy@pstringF)%
5328     /S/Launch%
5329     \ifHy@newwindow /NewWindow true\fi
5330     \ifx\@#3\%
5331     \else
5332       /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
5333     \fi
5334   >>%
5335 }%
5336 \relax
5337 \Hy@colorlink\@filecolor#2%
5338 \close@pdflink
5339 \endgroup
5340 }

```

\@pdfproducer

```

5341 \ifx\@pdfproducer\relax
5342 \def\@pdfproducer{pdfTeX}
5343 \ifx\@eTeXversion\@undefined
5344 \else
5345   \ifx\@eTeXversion\relax
5346   \else
5347     \ifnum\@eTeXversion>0 %
5348     \def\@pdfproducer{pdfTeX}
5349     \fi
5350   \fi
5351 \fi
5352 \ifx\pdfTeXversion\@undefined
5353 \else
5354   \ifnum\pdfTeXversion<100 %
5355   \edef\@pdfproducer{%
5356     \@pdfproducer
5357     \the\pdfTeXversion.\pdfTeXrevision
5358   }
5359 \else
5360   \ifnum\pdfTeXversion<130 %
5361   \edef\@pdfproducer{%
5362     \@pdfproducer-
5363     \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
5364     \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
5365     \pdfTeXrevision
5366   }
5367 \else

```

```

5368     \ifnum\pdfTeXversion<140 %
5369     \else
5370         \def\@pdfproducer{pdfTeX}%
5371     \fi
5372     \edef\@pdfproducer{%
5373         \@pdfproducer-%
5374         \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
5375         \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
5376         \pdfTeXrevision
5377     }%
5378     \fi
5379 \fi
5380 \fi
5381 \fi

```

\PDF@SetupDox

```

5382 \def\PDF@SetupDoc{%
5383     \ifx\@pdfpagescrop\@empty
5384     \else
5385         \edef\process@me{%
5386             \pdfpagesattr={%
5387                 /CropBox[\@pdfpagescrop]%
5388                 \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
5389                 \else
5390                     ^^J\the\pdfpagesattr
5391                 \fi
5392             }%
5393         }%
5394         \process@me
5395     \fi
5396     \Hy@pstringdef\Hy@pstringB{\@baseurl}%
5397     \pdfcatalog{%
5398         /PageMode/\@pdfpagemode
5399         \ifx\@baseurl\@empty
5400         \else
5401             /URI<</Base(\Hy@pstringB)>>%
5402         \fi
5403     }%
5404     \ifx\@pdfstartview\@empty
5405     \else
5406         openaction goto page \@pdfstartpage {\@pdfstartview}%
5407     \fi
5408     \edef\Hy@temp{%
5409         \ifHy@toolbar\else /HideToolbar true\fi
5410         \ifHy@menubar\else /HideMenubar true\fi
5411         \ifHy@windowui\else /HideWindowUI true\fi
5412         \ifHy@fitwindow /FitWindow true\fi
5413         \ifHy@centerwindow /CenterWindow true\fi
5414         \ifHy@displaydoctitle /DisplayDocTitle true\fi
5415         \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
5416         \Hy@UseNameKey{Direction}\@pdfdirection
5417         \Hy@UseNameKey{ViewArea}\@pdfviewarea
5418         \Hy@UseNameKey{ViewClip}\@pdfviewclip
5419         \Hy@UseNameKey{PrintArea}\@pdfprintarea
5420         \Hy@UseNameKey{PrintClip}\@pdfprintclip
5421         \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
5422         \Hy@UseNameKey{Duplex}\@pdfduplex

```

```

5423 \ifx\@pdfpicktraybypdfsize\@empty
5424 \else
5425 /PickTrayByPDFSize \@pdfpicktraybypdfsize
5426 \fi
5427 \ifx\@pdfprintpagerange\@empty
5428 \else
5429 /PrintPageRange[\@pdfprintpagerange]%
5430 \fi
5431 \ifx\@pdfnumcopies\@empty
5432 \else
5433 /NumCopies \@pdfnumcopies
5434 \fi
5435 }%
5436 \pdfcatalog{%
5437 \ifx\Hy@temp\@empty
5438 \else
5439 /ViewerPreferences<<\Hy@temp>>%
5440 \fi
5441 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
5442 \ifx\@pdflang\@empty
5443 \else
5444 /Lang(\@pdflang)%
5445 \fi
5446 }%
5447 }

```

\PDF@FinishDoc

```

5448 \def\PDF@FinishDoc{%
5449 \Hy@UseMaketitleInfos
5450 \pdfinfo{%
5451 /Author(\@pdfauthor)%
5452 /Title(\@pdftitle)%
5453 /Subject(\@pdfsubject)%
5454 /Creator(\@pdfcreator)%
5455 \ifx\@pdfcreationdate\@empty
5456 \else
5457 /CreationDate(\@pdfcreationdate)%
5458 \fi
5459 \ifx\@pdfmoddate\@empty
5460 \else
5461 /ModDate(\@pdfmoddate)%
5462 \fi
5463 \ifx\@pdfproducer\relax
5464 \else
5465 /Producer(\@pdfproducer)%
5466 \fi
5467 /Keywords(\@pdfkeywords)%
5468 }%
5469 \Hy@DisableOption{pdfauthor}%
5470 \Hy@DisableOption{pdftitle}%
5471 \Hy@DisableOption{pdfsubject}%
5472 \Hy@DisableOption{pdfcreator}%
5473 \Hy@DisableOption{pdfcreationdate}%
5474 \Hy@DisableOption{pdfmoddate}%
5475 \Hy@DisableOption{pdfproducer}%
5476 \Hy@DisableOption{pdfkeywords}%
5477 }

```

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

```

5478 \def\hyper@pagetransition{%
5479   \ifx\@pdfpagetransition\relax
5480   \else
5481     \expandafter\Hy@RemoveTransPageAttr\the\pdfpageattr^^J/Trans{}>>\END
5482     \ifx\@pdfpagetransition\@empty
5483     \else
5484       \edef\@processme{%
5485         \global\pdfpageattr{%
5486           \the\pdfpageattr
5487             ^^J/Trans << /S /\@pdfpagetransition\space >>%
5488         }%
5489       }%
5490       \@processme
5491     \fi
5492   \fi
5493 }

```

`\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.

```

5494 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
5495   \ifx\#2\%
5496     \global\pdfpageattr{#1}%
5497   \else
5498     \Hy@RemoveTransPageAttr#1#4\END
5499   \fi
5500 }

```

`\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`.

```

5501 \def\hyper@pageduration{%
5502   \ifx\@pdfpageduration\relax
5503   \else
5504     \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
5505     \ifx\@pdfpageduration\@empty
5506     \else
5507       \edef\@processme{%
5508         \global\pdfpageattr{%
5509           \the\pdfpageattr
5510             ^^J/Dur \@pdfpageduration\space
5511         }%
5512       }%
5513       \@processme
5514     \fi
5515   \fi
5516 }

```

`\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.

```

5517 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
5518   \ifx\#2\%
5519     \global\pdfpageattr{#1}%
5520   \else
5521     \Hy@RemoveDurPageAttr#1#4\END
5522   \fi
5523 }

```

`\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).

```

5524 \def\hyper@pagehidden{%
5525   \ifHy@useHidKey
5526     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
5527   \ifHy@pdfpagehidden
5528     \edef\@processme{%
5529       \global\pdfpageattr{%
5530         \the\pdfpageattr
5531         ^^J/Hid true % SPACE
5532       }%
5533     }%
5534     \@processme
5535   \fi
5536 \fi
5537 }

```

`\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.

```

5538 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
5539   \ifx\#2\%
5540     \global\pdfpageattr{#1}%
5541   \else
5542     \Hy@RemoveHidPageAttr#1#4\END
5543   \fi
5544 }

```

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.

```

5545 \pdfoutput=1
5546 \pdfcompresslevel=9
5547 \AtBeginDocument{%
5548   \ifHy@setpagesize
5549     \expandafter\@firstofone
5550   \else
5551     \expandafter\@gobble
5552   \fi
5553 }%
5554 \@ifclassloaded{seminar}{%
5555   \setlength{\pdfhorigin}{1truein}%
5556   \setlength{\pdfvorigin}{1truein}%
5557   \ifportrait
5558     \ifdim\paperwidth=\z@
5559     \else
5560       \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
5561     \fi

```

```

5562     \ifdim\paperheight=\z@
5563     \else
5564         \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
5565     \fi
5566 \else
5567     \ifdim\paperheight=\z@
5568     \else
5569         \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
5570     \fi
5571     \ifdim\paperwidth=\z@
5572     \else
5573         \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
5574     \fi
5575 \fi
5576 }{%
5577 \@ifundefined{stockwidth}{%
5578     \ifdim\paperwidth=\z@
5579     \else
5580         \setlength{\pdfpagewidth}{\paperwidth}%
5581     \fi
5582     \ifdim\paperheight=\z@
5583     \else
5584         \setlength{\pdfpageheight}{\paperheight}%
5585     \fi
5586 }{%
5587     \ifdim\stockwidth=\z@
5588     \else
5589         \setlength{\pdfpagewidth}{\stockwidth}%
5590     \fi
5591     \ifdim\stockheight=\z@
5592     \else
5593         \setlength{\pdfpageheight}{\stockheight}%
5594     \fi
5595 }%
5596 }%
5597 }%
5598 \Hy@DisableOption{setpagesize}%
5599 }
5600 \def\Acrobatmenu#1#2{%
5601     \leavevmode
5602     \pdfstartlink
5603     attr{%
5604         \Hy@setpdfborder
5605         \ifx\@pdfhighlight\@empty
5606         \else
5607             /H\@pdfhighlight
5608         \fi
5609         /C[\@menubordercolor]%
5610     }%
5611     user{
5612         /Subtype /Link
5613         /A<<%
5614             /S/Named/N/#1%
5615         >>%
5616     }%
5617     \relax
5618     \Hy@colorlink\@menucolor#2\close@pdflink

```

```

5619 }
5620 </pdfTeX>
5621 <*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.

```

5622 \def\PDF@FinishDoc{
5623 \def\PDF@SetupDoc{%
5624   \ifx\@baseurl\@empty
5625   \else
5626     \special{html:<base href="\@baseurl">}%
5627   \fi
5628 }
5629 \def\hyper@anchor#1{%
5630   \Hy@SaveLastskip
5631   \begingroup
5632     \let\protect=\string
5633     \hyper@chars
5634     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
5635   \endgroup
5636   \Hy@activeanchortrue
5637   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5638   \special{html:</a>}%
5639   \Hy@activeanchorfalse
5640   \Hy@RestoreLastskip

```



```

5641 }
5642 \def\hyper@anchorstart#1{%
5643   \Hy@SaveLastskip
5644   \begingroup
5645     \hyper@chars
5646     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
5647   \endgroup
5648   \Hy@activeanchortrue
5649 }
5650 \def\hyper@anchorend{%
5651   \special{html:</a>}%
5652   \Hy@activeanchorfalse
5653   \Hy@RestoreLastskip
5654 }
5655 \def\@urltype{url}
5656 \def\hyper@linkstart#1#2{%
5657   \expandafter\Hy@colorlink\csname @#1color\endcsname
5658   \def\Hy@tempa{#1}%
5659   \ifx\Hy@tempa\@urltype
5660     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
5661   \else
5662     \begingroup
5663       \hyper@chars
5664       \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
5665     \endgroup
5666   \fi
5667 }
5668 \def\hyper@linkend{%
5669   \special{html:</a>}%
5670   \Hy@endcolorlink
5671 }
5672 \def\hyper@linkfile#1#2#3{%
5673   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
5674 }
5675 \def\hyper@linkurl#1#2{%

```

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

```

5676 \leavevmode
5677 \ifHy@raiselinks
5678   \setbox\@tempboxa=\color@hbox #1\color@endbox
5679   \@linkdim\dp\@tempboxa
5680   \lower\@linkdim\hbox{%
5681     \hyper@chars
5682     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
5683   }%
5684   \Hy@colorlink\@urlcolor#1%
5685   \@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).

```

5686   \advance\@linkdim by -6.5\p@
5687   \raise\@linkdim\hbox{\special{html:</a>}}%
5688   \Hy@endcolorlink
5689 \else
5690   \begingroup

```

```

5691     \hyper@chars
5692     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
5693     \Hy@colorlink\@urlcolor#1%
5694     \special{html:</a>}%
5695     \Hy@endcolorlink
5696   \endgroup
5697 \fi
5698 }
5699 \def\hyper@link#1#2#3{%
5700   \hyper@linkurl{#3}{\##2}%
5701 }
5702 \def\hyper@image#1#2{%
5703   \begingroup
5704     \hyper@chars
5705     \special{html:<img src=\hyper@quote#1\hyper@quote>}%
5706   \endgroup
5707 }
5708 \end{hypertex}
5709 \end{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,  $\LaTeX$  must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by \baselineskip high is used.

```

5710 \providecommand\wwwbrowser{c:\string\netscape\string\netscape}
5711 \def\hyper@anchor#1{%
5712   \Hy@SaveLastskip
5713   \begingroup
5714     \let\protect=\string
5715     \special{mark: #1}%
5716   \endgroup
5717   \Hy@activeanchortrue
5718   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5719   \Hy@activeanchorfalse
5720   \Hy@RestoreLastskip
5721 }
5722 \def\hyper@anchorstart#1{%
5723   \Hy@SaveLastskip
5724   \special{mark: #1}%
5725   \Hy@activeanchortrue
5726 }
5727 \def\hyper@anchorend{%
5728   \Hy@activeanchorfalse
5729   \Hy@RestoreLastskip
5730 }
5731 \def\hyper@linkstart#1#2{%
5732   \expandafter\Hy@colorlink\csname @#1color\endcsname
5733   \special{button:

```

```

5734     10000000
5735     \number\baselineskip\space
5736     #2%
5737 }%
5738 }
5739 \def\hyper@linkend{%
5740   \Hy@endcolorlink
5741 }
5742 \def\hyper@link#1#2#3{%
5743   \setbox\@tempboxa=\color@hbox #3\color@endbox
5744   \leavevmode
5745   \ifHy@raiselinks
5746     \@linkdim\dp\@tempboxa
5747     \lower\@linkdim\hbox{%
5748       \special{button:
5749         \number\wd\@tempboxa\space
5750         \number\ht\@tempboxa\space
5751         #2%
5752       }%
5753       \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
5754       \Hy@endcolorlink
5755     }%
5756     \@linkdim\ht\@tempboxa
5757     \advance\@linkdim by -6.5\p@
5758     \raise\@linkdim\hbox{}%
5759   \else
5760     \special{button:
5761       \number\wd\@tempboxa\space
5762       \number\ht\@tempboxa\space
5763       #2%
5764     }%
5765     \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
5766   \fi
5767 }
5768 \def\hyper@linkurl#1#2{%
5769   \begingroup
5770   \hyper@chars
5771   \leavevmode
5772   \setbox\@tempboxa=\color@hbox #1\color@endbox
5773   \ifHy@raiselinks
5774     \@linkdim\dp\@tempboxa
5775     \lower\@linkdim\hbox{%
5776       \special{button:
5777         \number\wd\@tempboxa\space
5778         \number\ht\@tempboxa\space
5779         launch: \wwwbrowser\space
5780         #2%
5781       }%
5782       \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5783     }%
5784     \@linkdim\ht\@tempboxa
5785     \advance\@linkdim by -6.5\p@
5786     \raise\@linkdim\hbox{}%
5787   \else
5788     \special{button:
5789       \number\wd\@tempboxa\space
5790       \number\ht\@tempboxa\space

```

```

5791         launch: \wwwbrowser\space
5792         #2%
5793     }%
5794     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5795 \fi
5796 \endgroup
5797 }
5798 \def\hyper@linkfile#1#2#3{%
5799 \begingroup
5800 \hyper@chars
5801 \leavevmode
5802 \setbox\@tempboxa=\color@hbox #1\color@endbox
5803 \ifHy@raiselinks
5804 \@linkdim\dp\@tempboxa
5805 \lower\@linkdim\hbox{%
5806 \special{button:
5807 \number\wd\@tempboxa\space
5808 \number\ht\@tempboxa\space
5809 #3,
5810 file: #2%
5811 }%
5812 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5813 }%
5814 \@linkdim\ht\@tempboxa
5815 \advance\@linkdim by -6.5\p@
5816 \raise\@linkdim\hbox{}}%
5817 \else
5818 \special{button:
5819 \number\wd\@tempboxa\space
5820 \number\ht\@tempboxa\space
5821 #3,
5822 file: #2
5823 }%
5824 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5825 \fi
5826 \endgroup
5827 }
5828 \ifx\@pdfproducer\relax
5829 \def\@pdfproducer{dviwindo + Distiller}
5830 \fi
5831 \def\PDF@FinishDoc{%
5832 \Hy@UseMaketitleInfos
5833 \special{PDF: Keywords \@pdfkeywords}%
5834 \special{PDF: Title \@pdftitle}%
5835 \special{PDF: Creator \@pdfcreator}%
5836 \ifx\@pdfcreationdate\@empty
5837 \else
5838 \special{PDF: CreationDate \@pdfcreationdate}%
5839 \fi
5840 \ifx\@pdfmoddate\@empty
5841 \else
5842 \special{PDF: ModDate \@pdfmoddate}%
5843 \fi
5844 \special{PDF: Author \@pdfauthor}%
5845 \ifx\@pdfproducer\relax
5846 \else
5847 \special{PDF: Producer \@pdfproducer}%

```

```

5848 \fi
5849 \special{PDF: Subject \@pdfsubject}%
5850 \Hy@DisableOption{pdfauthor}%
5851 \Hy@DisableOption{pdftitle}%
5852 \Hy@DisableOption{pdfsubject}%
5853 \Hy@DisableOption{pdfcreator}%
5854 \Hy@DisableOption{pdfcreationdate}%
5855 \Hy@DisableOption{pdfmoddate}%
5856 \Hy@DisableOption{pdfproducer}%
5857 \Hy@DisableOption{pdfkeywords}%
5858 }
5859 \def\PDF@SetupDoc{%
5860 \ifx\@baseurl\@empty
5861 \else
5862 \special{PDF: Base \@baseurl}%
5863 \fi
5864 \ifx\@pdfpagescrop\@empty\else
5865 \special{PDF: BBox \@pdfpagescrop}%
5866 \fi
5867 \pdfmark{pdfmark=/DOCVIEW,
5868 Page=\@pdfstartpage,
5869 View=\@pdfstartview,
5870 PageMode=/\@pdfpagemode
5871 }%
5872 \ifx\@pdfpagescrop\@empty
5873 \else
5874 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
5875 \fi
5876 \edef\Hy@temp{%
5877 \ifHy@toolbar\else /HideToolbar true\fi
5878 \ifHy@menubar\else /HideMenubar true\fi
5879 \ifHy>windowui\else /HideWindowUI true\fi
5880 \ifHy@fitwindow /FitWindow true\fi
5881 \ifHy@centerwindow /CenterWindow true\fi
5882 \ifHy@displaydoctitle /DisplayDocTitle true\fi
5883 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
5884 \Hy@UseNameKey{Direction}\@pdfdirection
5885 \Hy@UseNameKey{ViewArea}\@pdfviewarea
5886 \Hy@UseNameKey{ViewClip}\@pdfviewclip
5887 \Hy@UseNameKey{PrintArea}\@pdfprintarea
5888 \Hy@UseNameKey{PrintClip}\@pdfprintclip
5889 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
5890 \Hy@UseNameKey{Duplex}\@pdfduplex
5891 \ifx\@pdfpicktraybypdfsize\@empty
5892 \else
5893 /PickTrayByPDFSize \@pdfpicktraybypdfsize
5894 \fi
5895 \ifx\@pdfprintpagerange\@empty
5896 \else
5897 /PrintPageRange[\@pdfprintpagerange]%
5898 \fi
5899 \ifx\@pdfnumcopies\@empty
5900 \else
5901 /NumCopies \@pdfnumcopies
5902 \fi
5903 }%
5904 \pdfmark{pdfmark=/PUT,

```

```

5905 Raw={%
5906   \string{Catalog\string} <<
5907   \ifx\Hy@temp\@empty
5908   \else
5909     /ViewerPreferences<<\Hy@temp>>%
5910   \fi
5911   \Hy@UseNameKey{PageLayout}\@pdfpagelayout
5912   \ifx\@pdflang\@empty
5913   \else
5914     /Lang(\@pdflang)%
5915   \fi
5916   >>%
5917 }%
5918 }%
5919 }
5920 </dviwindo>
5921 <*dviptfm>

```

## 45.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

5922 \newsavebox{\pdfm@box}
5923 \def\@pdfm@mark#1{\special{pdf:#1}}
5924 \def\@pdfm@dest#1{%
5925   \Hy@SaveLastskip
5926   \Hy@pstringdef\Hy@pstringDest{#1}%
5927   \@pdfm@mark{dest (\Hy@pstringDest) [thispage /\@pdfview\space @xpos @ypos]}%
5928   \Hy@RestoreLastskip
5929 }
5930 \providecommand\@pdfview{XYZ}
5931 \providecommand\@pdfborder{0 0 1}
5932 \providecommand*\@pdfborderstyle{}
5933 \def\hyper@anchor#1{%
5934   \@pdfm@dest{#1}%
5935 }
5936 \def\hyper@anchorstart#1{%
5937   \Hy@activeanchortrue
5938   \@pdfm@dest{#1}%
5939 }
5940 \def\hyper@anchorend{%
5941   \Hy@activeanchorfalse
5942 }
5943 \def\Hy@undefinedname{UNDEFINED}
5944 \def\hyper@linkstart#1#2{%
5945   \protected@edef\Hy@testname{#2}%
5946   \ifx\Hy@testname\@empty
5947     \let\Hy@testname\Hy@undefinedname
5948   \else
5949     \Hy@pstringdef\Hy@testname\Hy@testname
5950   \fi
5951   \@pdfm@mark{%
5952     bann <<
5953     /Type /Annot
5954     /Subtype /Link
5955     \Hy@setpdfborder
5956     /C [\csname @#1bordercolor\endcsname]
5957     /A <<

```

```

5958         /S /GoTo
5959         /D (\Hy@testname)
5960     >>
5961 >>
5962 }%
5963 \expandafter\Hy@colorlink\csname @#1color\endcsname
5964 }
5965 \def\hyper@linkend{%
5966 \Hy@endcolorlink
5967 \@pdfm@mark{eann}%
5968 }
5969 \def\hyper@link#1#2#3{%
5970 \hyper@linkstart{#1}{#2}#3\hyper@linkend
5971 }
5972 \def\hyper@linkfile#1#2#3{%
5973 \Hy@pstringdef\Hy@pstringF{#2}%
5974 \Hy@pstringdef\Hy@pstringD{#3}%
5975 \leavevmode
5976 \@pdfm@mark{%
5977     bann <<
5978         /Type /Annot
5979         /Subtype /Link
5980         \Hy@setpdfborder
5981         /C [\@filebordercolor]
5982         /A <<
5983             /S /GoToR
5984             /F (\Hy@pstringF)
5985             /D \ifx\#3\[\[0 \@pdfstartview]\else(\Hy@pstringD)\fi\space
5986             \ifHy@newwindow /NewWindow true \fi
5987         >>
5988     >>%
5989 }%
5990 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5991 \@pdfm@mark{eann}%
5992 }
5993 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
5994 \Hy@pstringdef\Hy@pstringF{#1}%
5995 \Hy@pstringdef\Hy@pstringP{#3}%
5996 \leavevmode
5997 \@pdfm@mark{%
5998     bann <<
5999         /Type /Annot
6000         /Subtype /Link
6001         \Hy@setpdfborder
6002         /C [\@filebordercolor]
6003         /A <<
6004             /S /Launch
6005             /F (\Hy@pstringF)
6006             \ifHy@newwindow /NewWindow true \fi
6007             \ifx\#3\[%
6008                 \else
6009                 /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
6010             \fi
6011         >>
6012     >>%
6013 }%
6014 \Hy@colorlink\@filecolor#2\Hy@endcolorlink

```

```

6015 \@pdfmark{eann}%
6016 }
6017 \def\hyper@linkurl#1#2{%
6018   \Hy@pstringdef\Hy@pstringURI{#2}%
6019   \leavevmode
6020   \@pdfmark{%
6021     bann <<
6022       /Type /Annot
6023       /Subtype /Link
6024       \Hy@setpdfborder
6025       /C [\@urlbordercolor]
6026       /A <<
6027         /S /URI
6028         /URI (\Hy@pstringURI)
6029       >>
6030     >>%
6031   }%
6032   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6033   \@pdfmark{eann}%
6034 }
6035 \def\Acrobatmenu#1#2{%
6036   \leavevmode
6037   \@pdfmark{%
6038     bann <<
6039       /Type /Annot
6040       /Subtype /Link
6041       /A <<
6042         /S /Named
6043         /N /#1
6044       >>
6045       \Hy@setpdfborder
6046       /C [\@menubordercolor]
6047     >>%
6048   }%
6049   \Hy@colorlink\@menucolor#2\Hy@endcolorlink
6050   \@pdfmark{eann}%
6051 }
6052 \ifx\@pdfproducer\relax
6053   \def\@pdfproducer{dvi}
6054 \fi
6055 \def\PDF@FinishDoc{%
6056   \Hy@UseMaketitleInfos
6057   \@pdfmark{%
6058     docinfo <<
6059       /Title (\@pdftitle)
6060       /Subject (\@pdfsubject)
6061       /Creator (\@pdfcreator)
6062       \ifx\@pdfcreationdate\@empty
6063       \else
6064         /CreationDate(\@pdfcreationdate) %
6065       \fi
6066       \ifx\@pdfmoddate\@empty
6067       \else
6068         /ModDate(\@pdfmoddate) %
6069       \fi
6070       /Author (\@pdfauthor)
6071       \ifx\@pdfproducer\relax

```



```

6072         \else
6073             /Producer (\@pdfproducer)
6074         \fi
6075         /Keywords (\@pdfkeywords)
6076     >>%
6077 }%
6078 \Hy@DisableOption{pdfauthor}%
6079 \Hy@DisableOption{pdftitle}%
6080 \Hy@DisableOption{pdfsubject}%
6081 \Hy@DisableOption{pdfcreator}%
6082 \Hy@DisableOption{pdfcreationdate}%
6083 \Hy@DisableOption{pdfmoddate}%
6084 \Hy@DisableOption{pdfproducer}%
6085 \Hy@DisableOption{pdfkeywords}%
6086 }

6087 \def\PDF@SetupDoc{%
6088     \edef\Hy@temp{%
6089         \ifHy@toolbar\else /HideToolbar true\fi
6090         \ifHy@menubar\else /HideMenubar true\fi
6091         \ifHy@windowui\else /HideWindowUI true\fi
6092         \ifHy@fitwindow /FitWindow true\fi
6093         \ifHy@centerwindow /CenterWindow true\fi
6094         \ifHy@displaydoctitle /DisplayDocTitle true\fi
6095         \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
6096         \Hy@UseNameKey{Direction}\@pdfdirection
6097         \Hy@UseNameKey{ViewArea}\@pdfviewarea
6098         \Hy@UseNameKey{ViewClip}\@pdfviewclip
6099         \Hy@UseNameKey{PrintArea}\@pdfprintarea
6100         \Hy@UseNameKey{PrintClip}\@pdfprintclip
6101         \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6102         \Hy@UseNameKey{Duplex}\@pdfduplex
6103         \ifx\@pdfpicktraybypdfsize\@empty
6104             \else
6105                 /PickTrayByPDFSize \@pdfpicktraybypdfsize
6106             \fi
6107         \ifx\@pdfprintpagerange\@empty
6108             \else
6109                 /PrintPageRange[\@pdfprintpagerange]%
6110             \fi
6111         \ifx\@pdfnumcopies\@empty
6112             \else
6113                 /NumCopies \@pdfnumcopies
6114             \fi
6115     }%
6116     \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6117     \@pdfm@mark{%
6118         docview <<%
6119             \ifx\@pdfstartview\@empty
6120             \else
6121                 /OpenAction[\@page\@pdfstartpage\@pdfstartview]%
6122             \fi
6123             \ifx\@baseurl\@empty
6124             \else
6125                 /URI<</Base(\Hy@pstringB)>>%
6126             \fi
6127             /PageMode/\@pdfpagemode
6128             \ifx\Hy@temp\@empty

```

```

6129     \else
6130         /ViewerPreferences<<\Hy@temp>>%
6131     \fi
6132     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
6133     \ifx\@pdflang\@empty
6134     \else
6135         /Lang(\@pdflang)%
6136     \fi
6137     >>%
6138 }%
6139 \ifx\@pdfpagescrop\@empty
6140 \else
6141     \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}
6142 \fi
6143 }
6144 </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.

```

6145 <*\texhtml>
6146 \RequirePackage{vtexhtml}
6147 \newif\if@Localurl
6148 \def\PDF@FinishDoc{}
6149 \def\PDF@SetupDoc{%
6150     \ifx\@baseurl\@empty
6151     \else
6152         \special{!direct <base href="\@baseurl">}%
6153     \fi
6154 }
6155 \def\@urltype{url}
6156 \def\hyper@link#1#2#3{%
6157     \leavevmode
6158     \special{!direct <a href=\hyper@quote\hyper@hash#2\hyper@quote>}%
6159     #3%
6160     \special{!direct </a>}%
6161 }
6162 \def\hyper@linkurl#1#2{%
6163     \begingroup
6164         \hyper@chars
6165         \leavevmode
6166         \MathBSuppress=1\relax
6167         \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
6168         #1%
6169         \MathBSuppress=0\relax
6170         \special{!direct </a>}%
6171     \endgroup
6172 }
6173 \def\hyper@linkfile#1#2#3{%
6174     \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
6175 }
6176 \def\hyper@linkstart#1#2{%
6177     \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
6178         \@Localurltrue
6179         \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
6180     \else

```

```

6181 \Localurlfalse
6182 \begingroup
6183 \hyper@chars
6184 \special{!aref #2}%
6185 \endgroup
6186 \fi
6187 }
6188 \def\hyper@linkend{%
6189 \if@Localurl
6190 \special{!endaref}%
6191 \else
6192 \special{!direct </a>}%
6193 \fi
6194 }
6195 \def\hyper@anchorstart#1{%
6196 \Hy@SaveLastskip
6197 \begingroup
6198 \hyper@chars
6199 \special{!aname #1}%
6200 \special{!direct <a name=\hyper@quote#1\hyper@quote>}%
6201 \endgroup
6202 \Hy@activeanchortrue
6203 }
6204 \def\hyper@anchorend{%
6205 \special{!direct </a>}%
6206 \Hy@activeanchorfalse
6207 \Hy@RestoreLastskip
6208 }
6209 \def\hyper@anchor#1{%
6210 \Hy@SaveLastskip
6211 \begingroup
6212 \let\protect=\string
6213 \hyper@chars
6214 \leavevmode
6215 \special{!aname #1}%
6216 \special{!direct <a name=\hyper@quote #1\hyper@quote>}%
6217 \endgroup
6218 \Hy@activeanchortrue
6219 \bgroup\anchor@spot\egroup
6220 \special{!direct </a>}%
6221 \Hy@activeanchorfalse
6222 \Hy@RestoreLastskip
6223 }
6224 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
6225 \def\@endForm{}
6226 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
6227 \typeout{Sorry, TeXpider does not yet support FORM gauges}%
6228 }
6229 \def\@TextField[#1]#2{% parameters, label
6230 \typeout{Sorry, TeXpider does not yet support FORM text fields}%
6231 }
6232 \def\@CheckBox[#1]#2{% parameters, label
6233 \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
6234 }
6235 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
6236 \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
6237 }

```

```

6238 \def\@PushButton[#1]#2{% parameters, label
6239 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
6240 }
6241 \def\@Reset[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
6242 \def\@Submit[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
6243 \</vtexhtml>
6244 \<vtex>

```

VTeX version 6.68 supports `\mediawidth` and `\mediaheight`. The `\ifx` construct is better than a `\csname`, because it avoids the definition and the hash table entry of a previous undefined macro.

```

6245 \ifx\mediaheight\@undefined
6246 \else
6247 \ifx\mediaheight\relax
6248 \else
6249 \ifHy@setpagesize
6250 \providecommand*{\VTeXInitMediaSize}{%
6251 \ifundefined{stockwidth}{%
6252 \ifdim\paperheight>0pt %
6253 \setlength\mediaheight\paperheight
6254 \fi
6255 \ifdim\paperheight>0pt %
6256 \setlength\mediawidth\paperwidth
6257 \fi
6258 }{%
6259 \ifdim\stockheight>0pt %
6260 \setlength\mediaheight\stockheight
6261 \fi
6262 \ifdim\stockwidth>0pt %
6263 \setlength\mediawidth\stockwidth
6264 \fi
6265 }%
6266 }%
6267 \AtBeginDocument{\VTeXInitMediaSize}%
6268 \fi
6269 \Hy@DisableOption{setpagesize}%
6270 \fi
6271 \fi

```

Older versions of VTeX require xyz in lower case.

```

6272 \providecommand\@pdfview{xyz}
6273 \providecommand\@pdfborder{0 0 1}
6274 \providecommand*\@pdfborderstyle{}
6275 \def\CurrentBorderColor{\@linkbordercolor}
6276 \def\hyper@anchor#1{%
6277 \Hy@SaveLastskip
6278 \begingroup
6279 \let\protect=\string
6280 \hyper@chars
6281 \special{!aname #1;\@pdfview}%
6282 \endgroup
6283 \Hy@activeanchortrue
6284 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6285 \Hy@activeanchorfalse
6286 \Hy@RestoreLastskip
6287 }
6288 \def\hyper@anchorstart#1{%
6289 \Hy@SaveLastskip

```

```

6290 \begingroup
6291   \hyper@chars
6292   \special{!aname #1;\@pdfview}%
6293 \endgroup
6294 \Hy@activeanchortrue
6295 }
6296 \def\hyper@anchorend{%
6297   \Hy@activeanchorfalse
6298   \Hy@RestoreLastskip
6299 }
6300 \def\@urltype{url}
6301 \def\Hy@undefinedname{UNDEFINED}
6302 \def\hyper@linkstart#1#2{%
6303   \Hy@pstringdef\Hy@pstringURI{#2}%
6304   \expandafter\Hy@colorlink\csname @#1color\endcsname
6305   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6306   \def\Hy@tempa{#1}%
6307   \ifx\Hy@tempa\@urltype
6308     \special{!%
6309       aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6310       a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6311     }%
6312   \else
6313     \protected@edef\Hy@testname{#2}%
6314     \ifx\Hy@testname\@empty
6315       \let\Hy@testname\Hy@undefinedname
6316     \fi
6317     \special{!%
6318       aref \Hy@testname;%
6319       a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6320     }%
6321   \fi
6322 }
6323 \def\hyper@linkend{%
6324   \special{!endaref}%
6325   \Hy@endcolorlink
6326 }
6327 \def\hyper@linkfile#1#2#3{%
6328   \leavevmode
6329   \special{!%
6330     aref <%
6331     \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
6332     f=#2>#3;%
6333     a=<\Hy@setpdfborder /C [\@filebordercolor]>%
6334   }%
6335   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6336   \special{!endaref}%
6337 }
6338 \def\hyper@linkurl#1#2{%
6339   \begingroup
6340     \Hy@pstringdef\Hy@pstringURI{#2}%
6341     \hyper@chars
6342     \leavevmode
6343     \special{!%
6344       aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6345       a=<\Hy@setpdfborder /C [\@urlbordercolor]>%
6346     }%

```

```

6347 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6348 \special{!endaref}%
6349 \endgroup
6350 }
6351 \def\hyper@link#1#2#3{%
6352 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6353 \leavevmode
6354 \protected@edef\Hy@testname{#2}%
6355 \ifx\Hy@testname\@empty
6356 \let\Hy@testname\Hy@undefinedname
6357 \fi
6358 \special{!%
6359 \a href \Hy@testname;%
6360 a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6361 }%
6362 \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
6363 \special{!endaref}%
6364 }
6365 \def\hyper@image#1#2{%
6366 \hyper@linkurl{#2}{#1}%
6367 }
6368 \def\@hyper@launch run:#1\#2#3{%
6369 \Hy@pstringdef\Hy@pstringF{#1}%
6370 \Hy@pstringdef\Hy@pstringP{#3}%
6371 \leavevmode
6372 \special{!a href
6373 <u=%
6374 /Type /Action
6375 /S /Launch
6376 /F (\Hy@pstringF)
6377 \ifHy@newwindow /NewWindow true \fi
6378 \ifx\#3\else /Win << /F (\Hy@pstringF) /P (\Hy@pstringP) >> \fi%
6379 >;%
6380 a=<\Hy@setpdfborder /C [\@runbordercolor]>%
6381 }%
6382 \Hy@colorlink\@filecolor#2\Hy@endcolorlink
6383 \special{!endaref}%
6384 }
6385 \def\Acrobatmenu#1#2{%
6386 \leavevmode
6387 \special{!%
6388 \a href <u=/S /Named /N /#1>;%
6389 a=<\Hy@setpdfborder /C [\@menubordercolor]>%
6390 }%
6391 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
6392 \special{!endaref}%
6393 }

```

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

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

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

```

6394 \ifnum\Hy@VTeXversion<702 %
6395 \else
6396 \def\hyper@pagetransition{%
6397 \ifx\@pdfpagetransition\relax
6398 \else
6399 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```
6400     \else
6401     \hvtex@parse@trans\@pdfpagetransition
6402     \fi
6403     \fi
6404 }
```

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:

```
6405 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}
6406 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}
6407 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}
6408 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}
6409 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}
6410 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}
6411 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}
```

Optional parameters:

```
6412 \def\hvtex@par@dimension{/Dm}
6413 \def\hvtex@par@direction{/Di}
6414 \def\hvtex@par@duration{/D}
6415 \def\hvtex@par@motion{/M}
```

Tokenizer:

```
6416 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}
```

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

```
6417 \def\hvtex@gettoken#1 #2\@nil{%
6418     \edef\hvtex@token{#1}%
6419     \edef\hvtex@buffer{#2}%
6420 }
6421 \def\hvtex@parse@trans#1{%
```

Initializing code:

```
6422 \let\hvtex@trans@code\@empty
6423 \let\hvtex@param@dimension\@empty
6424 \let\hvtex@param@direction\@empty
6425 \let\hvtex@param@duration\@empty
6426 \let\hvtex@param@motion\@empty
6427 \edef\hvtex@buffer{#1\space}%
```

First token is the PDF transition name without escape.

```
6428 \hvtex@gettoken
6429 \ifx\hvtex@token\@empty
```

Leading space(s)?

```
6430 \ifx\hvtex@buffer\@empty
```

The buffer is empty, nothing to do.

```
6431 \else
6432 \hvtex@gettoken
6433 \fi
6434 \fi
6435 \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
6436 \hvtex@trans@params
6437 }
```

Reentrant macro to parse optional parameters.

```
6438 \def\hvtex@trans@params{%
6439 \ifx\hvtex@buffer\@empty
6440 \else
6441 \hvtex@gettoken
6442 \let\hvtex@trans@par\hvtex@token
6443 \ifx\hvtex@buffer\@empty
6444 \else
6445 \hvtex@gettoken
6446 \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.

```
6447 \let\hvtex@param@duration\hvtex@token
6448 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
6449 \expandafter\edef\expandafter\hvtex@param@motion
6450 \expandafter{\expandafter\@gobble\hvtex@token}%
6451 \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
6452 \expandafter\edef\expandafter\hvtex@param@dimension
6453 \expandafter{\expandafter\@gobble\hvtex@token}%
6454 \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).

```
6455 \let\hvtex@param@direction\hvtex@token
6456 \fi\fi\fi\fi
6457 \fi
6458 \fi
6459 \ifx\hvtex@buffer\@empty
6460 \let\next\hvtex@produce@trans
6461 \else
6462 \let\next\hvtex@trans@params
6463 \fi
6464 \next
6465 }
```

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

```
6466 \def\hvtex@produce@trans{%
```



```

6467 \let\vtex@trans@special\@empty
6468 \if S\hvtex@trans@code
6469 \edef\vtex@trans@special{\hvtex@trans@code
6470 \hvtex@param@dimension\hvtex@param@motion}%
6471 \else \if B\hvtex@trans@code
6472 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@dimension}%
6473 \else \if X\hvtex@trans@code
6474 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@motion}%
6475 \else \if W\hvtex@trans@code
6476 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6477 \else \if D\hvtex@trans@code
6478 \let\vtex@trans@special\hvtex@trans@code
6479 \else \if R\hvtex@trans@code
6480 \let\vtex@trans@special\hvtex@trans@code
6481 \else \if G\hvtex@trans@code
6482 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6483 \fi\fi\fi\fi\fi\fi\fi
6484 \ifx\vtex@trans@special\@empty
6485 \else
6486 \ifx\hvtex@param@duration\@empty
6487 \else
6488 \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

6489 \multiply\dimen@\@m
6490 \edef\vtex@trans@special{\vtex@trans@special,\strip@pt\dimen@}%
6491 \fi

```

And all the mess is just for this.

```

6492 \special{!trans \vtex@trans@special}%
6493 \fi
6494 }

6495 \def\hyper@pageduration{%
6496 \ifx\@pdfpageduration\relax
6497 \else
6498 \ifx\@pdfpageduration\@empty
6499 \special{!duration-}%
6500 \else
6501 \special{!duration \@pdfpageduration}%
6502 \fi
6503 \fi
6504 }

6505 \def\hyper@pagehidden{%
6506 \ifHy@useHidKey
6507 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
6508 \fi
6509 }
6510 \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

```

6511 \ifx\@pdfproducer\relax
6512 \def\@pdfproducer{VTeX}
6513 \ifnum\Hy@VTeXversion>\z@
6514 \count@\VTeXversion
6515 \divide\count@ 100
6516 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}
6517 \multiply\count@ -100
6518 \advance\count@\VTeXversion
6519 \edef\@pdfproducer{%
6520 \@pdfproducer
6521 .\ifnum\count@<10 0\fi\the\count@
6522 \ifx\VTeXOS\@undefined\else
6523 \ifnum\VTeXOS>0 %
6524 \ifnum\VTeXOS<6 %
6525 \space(
6526 \ifcase\VTeXOS
6527 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
6528 \fi
6529 )%
6530 \fi
6531 \fi
6532 \fi
6533 ,\space
6534 \ifnum\OpMode=\@ne PDF\else PS\fi
6535 \space backend%
6536 \ifx\gexmode\@undefined\else
6537 \ifnum\gexmode>\z@\space with GeX\fi
6538 \fi
6539 }
6540 \fi
6541 \fi

```

Current !pdfinfo key syntax:

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

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

```

6542 \def\PDF@SetupDoc{%
6543 \ifx\@pdfpagescrop\@empty
6544 \else
6545 \special{!pdfinfo b=<\@pdfpagescrop>}%
6546 \fi

```

```

6547 \special{!onopen Page\pdfstartpage}%
6548 \special{!pdfinfo p=</\pdfpagemode>}%
6549 \ifx\@baseurl\@empty
6550 \else
6551 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
6552 \fi
6553 \special{!pdfinfo v=<<<%
6554 \ifHy@toolbar\else /HideToolbar true\fi
6555 \ifHy@menubar\else /HideMenubar true\fi
6556 \ifHy@windowui\else /HideWindowUI true\fi
6557 \ifHy@fitwindow /FitWindow true\fi
6558 \ifHy@centerwindow /CenterWindow true\fi
6559 \ifHy@displaydoctitle /DisplayDocTitle true\fi
6560 \Hy@UseNameKey{NonFullScreenPageMode}\pdfnonfullscreenpagemode
6561 \Hy@UseNameKey{Direction}\pdfdirection
6562 \Hy@UseNameKey{ViewArea}\pdfviewarea
6563 \Hy@UseNameKey{ViewClip}\pdfviewclip
6564 \Hy@UseNameKey{PrintArea}\pdfprintarea
6565 \Hy@UseNameKey{PrintClip}\pdfprintclip
6566 \Hy@UseNameKey{PrintScaling}\pdfprintscaling
6567 \Hy@UseNameKey{Duplex}\pdfduplex
6568 \ifx\@pdfpicktraybypdfsize\@empty
6569 \else
6570 /PickTrayByPDFSize \pdfpicktraybypdfsize
6571 \fi
6572 \ifx\@pdfprintpagerange\@empty
6573 \else
6574 /PrintPageRange[\pdfprintpagerange]%
6575 \fi
6576 \ifx\@pdfnumcopies\@empty
6577 \else
6578 /NumCopies \pdfnumcopies
6579 \fi
6580 >>>}%
6581 \ifx\@pdfpagelayout\@empty
6582 \else
6583 \special{!pdfinfo l=</\pdfpagelayout\space>}%
6584 \fi
6585 }%
6586 \def\PDF@FinishDoc{%
6587 \Hy@UseMaketitleInfos
6588 \special{!pdfinfo a=<\pdfauthor>}%
6589 \special{!pdfinfo t=<\pdftitle>}%
6590 \special{!pdfinfo s=<\pdfsubject>}%
6591 \special{!pdfinfo c=<\pdfcreator>}%
6592 \ifx\@pdfproducer\relax
6593 \else
6594 \special{!pdfinfo r=<\pdfproducer>}%
6595 \fi
6596 \special{!pdfinfo k=<\pdfkeywords>}%
6597 \Hy@DisableOption{pdfauthor}%
6598 \Hy@DisableOption{pdftitle}%
6599 \Hy@DisableOption{pdfsubject}%
6600 \Hy@DisableOption{pdfcreator}%
6601 \Hy@DisableOption{pdfcreationdate}%
6602 \Hy@DisableOption{pdfmoddate}%
6603 \Hy@DisableOption{pdfproducer}%

```

```

6604 \Hy@DisableOption{pdfkeywords}%
6605 }
6606 \</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.

```

6607 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
6608 <package>\providecommand*\Hy@DistillerDestFix{}
6609 <*pdfmark | dviwindo>
6610 \def\Hy@DistillerDestFix{%
6611   \begingroup
6612     \let\x\literalps@out

```

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

```

6613   \ifnum \@ifundefined{OpMode}{0}{%
6614     \@ifundefined{gexmode}{0}{%
6615       \ifnum\gexmode>0 \OpMode\else 0\fi
6616     }>1 %
6617   \def\x##1{%
6618     \immediate\special{!=##1}%
6619   }%
6620 \fi
6621 \x{%
6622   /product where{%
6623     pop %
6624     product(Distiller)search{%
6625       pop pop pop %
6626       version(.)search{%
6627         exch pop exch pop%
6628         (3011)eq{%
6629           gsave %
6630           newpath 0 0 moveto closepath clip%
6631           /Courier findfont 10 scalefont setfont %
6632           72 72 moveto(.)show %
6633           grestore%
6634         }if%
6635       }{pop}ifelse%
6636     }{pop}ifelse%
6637   }if%
6638   }%
6639 \endgroup
6640 }
6641 </pdfmark | dviwindo>

```

## 45.8 Direct pdfmark support (dvi pdf and pdfmark)

Drivers that load pdfmark.def have to provide the correct macro definitions of

<code>\pdfproducer</code>	for document information
<code>\literalps@out</code>	PostScript output
<code>\headerps@out</code>	PostScript output that goes in the header area

and the correct definitions of the following PostScript procedures:

<code>H.S</code>	start of anchor, link or rect
<code>#1 H.A</code>	end of anchor, argument=baselineskip in pt
<code>#1 H.L</code>	end of link, argument=baselineskip in pt
<code>H.R</code>	end of rect
<code>H.B</code>	raw rect code

```

6642 <*pdfmark | dvipdf>
6643 \def\hyper@anchor#1{%
6644   \Hy@SaveLastskip
6645   \begingroup
6646     \pdfmark[\anchor@spot]{%
6647       pdfmark=/DEST,%
6648       linktype=anchor,%
6649       View=/\@pdfview \@pdfviewparams,%
6650       DestAnchor={#1}%
6651     }%
6652   \endgroup
6653   \Hy@RestoreLastskip
6654 }
6655 <*dvipdf>
6656 \def\hyper@anchorstart#1{\Hy@activeanchortrue}
6657 \def\hyper@anchorend{\Hy@activeanchorfalse}
6658 \def\hyper@linkstart#1#2{%
6659   \expandafter\Hy@colorlink\csname @#1color\endcsname
6660   \xdef\hyper@currentanchor{#2}%
6661 }
6662 \def\hyper@linkend{%
6663   \Hy@endcolorlink
6664 }
6665 </dvipdf>
6666 <*pdfmark>
6667 \ifundefined{hyper@anchorstart}{\endinput}
6668 \def\hyper@anchorstart#1{%
6669   \Hy@SaveLastskip
6670   \literalps@out{H.S}%
6671   \xdef\hyper@currentanchor{#1}%
6672   \Hy@activeanchortrue
6673 }
6674 \def\hyper@anchorend{%
6675   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
6676   \pdfmark{%
6677     pdfmark=/DEST,%
6678     linktype=anchor,%
6679     View=/\@pdfview \@pdfviewparams,%
6680     DestAnchor=\hyper@currentanchor,%
6681     Raw=H.B%
6682   }%
6683   \Hy@activeanchorfalse
6684   \Hy@RestoreLastskip
6685 }
6686 \def\hyper@linkstart#1#2{%
6687   \ifHy@breaklinks

```

```

6688 \else
6689 \leavevmode\hbox\bgroup
6690 \fi
6691 \expandafter\Hy@colorlink\csname @#1color\endcsname
6692 \literalps@out{H.S}%
6693 \xdef\hyper@currentanchor{#2}%
6694 \gdef\hyper@currentlinktype{#1}%
6695 }
6696 \def\hyper@linkend{%
6697 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
6698 \edef\Hy@tempcolor{\csname @\hyper@currentlinktype bordercolor\endcsname}%
6699 \pdfmark{%
6700 pdfmark=/ANN,%
6701 linktype=link,%
6702 Subtype=/Link,%
6703 Dest=\hyper@currentanchor,%
6704 AcroHighlight=\@pdfhighlight,%
6705 Border=\@pdfborder,%
6706 BorderStyle=\@pdfborderstyle,%
6707 Color=\Hy@tempcolor,%
6708 Raw=H.B%
6709 }%
6710 \Hy@endcolorlink
6711 \ifHy@breaklinks
6712 \else
6713 \egroup
6714 \fi
6715 }
6716 \<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.

```

6717 \begingroup
6718 \catcode'P=12
6719 \catcode'T=12
6720 \lowercase{\endgroup
6721 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
6722 }
6723 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
6724 \</pdfmark>

```

\hyper@pagetransition

```

6725 \def\hyper@pagetransition{%
6726 \ifx\@pdfpagetransition\relax
6727 \else
6728 \ifx\@pdfpagetransition\@empty
6729 % 1. Does an old entry have to be deleted?
6730 % 2. If 1=yes, how to delete?
6731 \else
6732 \pdfmark{%
6733 pdfmark=/PUT,%
6734 Raw={%
6735 \string{ThisPage\string}%
6736 <</Trans << /S /\@pdfpagetransition\space >> >>%
6737 }%
6738 }%

```

```

6739 \fi
6740 \fi
6741 }

```

\hyper@pageduration

```

6742 \def\hyper@pageduration{%
6743 \ifx\@pdfpageduration\relax
6744 \else
6745 \ifx\@pdfpageduration\@empty
6746 % 1. Does an old entry have to be deleted?
6747 % 2. If 1=yes, how to delete?
6748 \else
6749 \pdfmark{%
6750 pdfmark=/PUT,%
6751 Raw={%
6752 \string{ThisPage\string}%
6753 <</Dur \@pdfpageduration>>%
6754 }%
6755 }%
6756 \fi
6757 \fi
6758 }

```

\hyper@pagehidden

```

6759 \def\hyper@pagehidden{%
6760 \ifHy@useHidKey
6761 \pdfmark{%
6762 pdfmark=/PUT,%
6763 Raw={%
6764 \string{ThisPage\string}%
6765 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
6766 }%
6767 }%
6768 \fi
6769 }

6770 </pdfmark>
6771 \def\hyper@image#1#2{%
6772 \hyper@linkurl{#2}{#1}}
6773 \def\Hy@undefinedname{UNDEFINED}
6774 \def\hyper@link#1#2#3{%
6775 \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
6776 \begin{group}
6777 \protected@edef\Hy@testname{#2}%
6778 \ifx\Hy@testname\@empty
6779 \let\Hy@testname\Hy@undefinedname
6780 \fi
6781 <*\dvi{pdf}
6782 \pdfmark[{#3}]{%
6783 pdfmark=/LNK,%
6784 {},%
6785 linktype={#1},%
6786 AcroHighlight=\@pdfhighlight,%
6787 Border=\@pdfborder,%
6788 BorderStyle=\@pdfborderstyle,%
6789 Color=\Hy@tempcolor,%
6790 Dest=\Hy@testname

```

```

6791     }%
6792 </dvipdf>
6793 <*pdfmarkbase>
6794     \pdfmark[#{3}]{%
6795         Color=\Hy@tempcolor,%
6796         linktype={#1},%
6797         AcroHighlight=\@pdfhighlight,%
6798         Border=\@pdfborder,%
6799         BorderStyle=\@pdfborderstyle,%
6800         pdfmark=/ANN,%
6801         Subtype=/Link,%
6802         Dest=\Hy@testname
6803     }%
6804 </pdfmarkbase>
6805 \endgroup
6806 }
6807 \newtoks\pdf@docset
6808 \def\PDF@FinishDoc{%
6809     \Hy@UseMaketitleInfos
6810     \let\Hy@temp\@empty
6811     \ifx\@pdfcreationdate\@empty
6812     \else
6813         \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
6814     \fi
6815     \ifx\@pdfmoddate\@empty
6816     \else
6817         \expandafter\def\expandafter\Hy@temp\expandafter{%
6818             \Hy@temp
6819             ModDate=\@pdfmoddate,%
6820         }%
6821     \fi
6822     \ifx\@pdfproducer\relax
6823     \else
6824         \expandafter\def\expandafter\Hy@temp\expandafter{%
6825             \Hy@temp
6826             Producer=\@pdfproducer,%
6827         }%
6828     \fi
6829     \expandafter
6830 \pdfmark\expandafter{%
6831     \Hy@temp
6832     pdfmark=/DOCINFO,%
6833     Title=\@pdftitle,%
6834     Subject=\@pdfsubject,%
6835     Creator=\@pdfcreator,%
6836     Author=\@pdfauthor,%
6837     Keywords=\@pdfkeywords
6838 }%
6839 \Hy@DisableOption{pdfauthor}%
6840 \Hy@DisableOption{pdftitle}%
6841 \Hy@DisableOption{pdfsubject}%
6842 \Hy@DisableOption{pdfcreator}%
6843 \Hy@DisableOption{pdfcreationdate}%
6844 \Hy@DisableOption{pdfmoddate}%
6845 \Hy@DisableOption{pdfproducer}%
6846 \Hy@DisableOption{pdfkeywords}%
6847 }

```



```

6848 \def\PDF@SetupDoc{%
6849   \pdfmark{%
6850     pdfmark=/DOCVIEW,%
6851     Page=\@pdfstartpage,%
6852     View=\@pdfstartview,%
6853     PageMode=/\@pdfpagemode
6854   }%
6855   \ifx\@pdfpagescrop\@empty
6856   \else
6857     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
6858   \fi
6859   \edef\Hy@temp{%
6860     \ifHy@toolbar\else /HideToolbar true\fi
6861     \ifHy@menubar\else /HideMenubar true\fi
6862     \ifHy>windowui\else /HideWindowUI true\fi
6863     \ifHy@fitwindow /FitWindow true\fi
6864     \ifHy@centerwindow /CenterWindow true\fi
6865     \ifHy@displaydoctitle /DisplayDocTitle true\fi
6866     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
6867     \Hy@UseNameKey{Direction}\@pdfdirection
6868     \Hy@UseNameKey{ViewArea}\@pdfviewarea
6869     \Hy@UseNameKey{ViewClip}\@pdfviewclip
6870     \Hy@UseNameKey{PrintArea}\@pdfprintarea
6871     \Hy@UseNameKey{PrintClip}\@pdfprintclip
6872     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6873     \Hy@UseNameKey{Duplex}\@pdfduplex
6874     \ifx\@pdfpicktraybypdfsize\@empty
6875     \else
6876       /PickTrayByPDFSize \@pdfpicktraybypdfsize
6877     \fi
6878     \ifx\@pdfprintpagerange\@empty
6879     \else
6880       /PrintPageRange[\@pdfprintpagerange]%
6881     \fi
6882     \ifx\@pdfnumcopies\@empty
6883     \else
6884       /NumCopies \@pdfnumcopies
6885     \fi
6886   }%
6887   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6888   \pdfmark{%
6889     pdfmark=/PUT,%
6890     Raw={%
6891       \string{Catalog\string} <<
6892       \ifx\Hy@temp\@empty
6893       \else
6894         /ViewerPreferences<<\Hy@temp>>%
6895       \fi
6896       \Hy@UseNameKey{PageLayout}\@pdfpagelayout
6897       \ifx\@pdflang\@empty
6898       \else
6899         /Lang(\@pdflang)%
6900       \fi
6899       \ifx\@baseurl\@empty
6900       \else
6901         /URI << /Base (\Hy@pstringB) >>%
6902       \fi

```

```

6905      >>%
6906    }%
6907  }%
6908 }
6909 </pdfmark | dvipdf>
6910 <*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.

```

6911 \newif\ifHy@pdfmarkerror
6912 \def\pdfmark{\ifnextchar[{\pdfmark@}{\pdfmark@[]}}
6913 \def\pdfmark@[#1]#2{%
6914   \Hy@pdfmarkerrorfalse
6915   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
6916   \@processme
6917   \let\pdf@type\relax
6918   \setkeys{PDF}{#2}%
6919   \ifHy@pdfmarkerror
6920   \else
6921     \ifx\pdf@type\relax
6922       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
6923       \ifx\#1\relax\else\pdf@rect{#1}\fi
6924     \else
6925       \ifx\#1\relax
6926         \pdfmarkbase\literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark]}%
6927         \dvipdf\literalps@out{/ANN >>}%
6928       \else
6929         \ifundefined{@\pdf@linktype color}{%
6930           \Hy@colorlink\@linkcolor
6931         }{%
6932           \expandafter\Hy@colorlink
6933             \csname @\pdf@linktype color\endcsname
6934         }%
6935         \pdf@rect{#1}%
6936         \pdfmarkbase\literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark]}%
6937         \dvipdf\literalps@out{/ANN >>}%
6938         \Hy@endcolorlink
6939       \fi
6940     \fi
6941   \fi
6942 }

```

The complicated bit is working out the right enclosing rectangle of some piece of T<sub>E</sub>X text, needed by the /Rect key. This solution originates with Toby Thain (toby@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}

6943 \newsavebox{\pdf@box}

```

```

6944 \providecommand{\Hy@setouterhbox}{\sbox}
6945 \providecommand{\Hy@breaklinksunhbox}{\unhbox}
6946 \def\pdf@rect#1{%
6947   \dviptf \literalps@out{/ANN \pdf@type\space\the\pdf@toks\space <<}&#1%
6948   \leavevmode
6949   \ifHy@breaklinks
6950     \Hy@setouterhbox\pdf@box{#1}%
6951   \else
6952     \sbox\pdf@box{#1}%
6953   \fi
6954   \dimen@ht\pdf@box
6955   \ifdim\dp\pdf@box=\z@
6956     \literalps@out{H.S}%
6957   \else
6958     \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
6959   \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...).

```

6960 \ifHy@breaklinks
6961   \expandafter\Hy@breaklinksunhbox
6962 \else
6963   \expandafter\box
6964 \fi
6965 \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

6966 \ifdim\dimen@=\z@
6967   \literalps@out{H.R}%
6968 \else
6969   \raise\dimen@\hbox{\literalps@out{H.R}}%
6970 \fi
6971 \pdf@addtoksx{H.B}%
6972 }

```

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.

```

6973 \newtoks\pdf@toks
6974 \newtoks\pdf@defaulttoks
6975 \pdf@defaulttoks={}
6976 \def\pdf@addtoks#1#2{%
6977   \edef\@processme{\pdf@toks{\the\pdf@toks\space /#2 #1}}%
6978   \@processme
6979 }
6980 \def\pdf@addtoksx#1{%
6981   \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
6982   \@processme
6983 }
6984 \def\PDFdefaults#1{%
6985   \pdf@defaulttoks={#1}%
6986 }

```

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

```

6987 % what is the type of pdfmark?

```

```

6988 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
6989 % what is the link type?
6990 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
6991 \def\pdf@linktype{link}
6992 % parameter is a stream of PDF
6993 \define@key{PDF}{Raw}{\pdf@addtoks{#1}}
6994 % parameter is a name
6995 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
6996 % parameter is a array
6997 \define@key{PDF}{Border}{%
6998   \edef\Hy@temp{#1}%
6999   \ifx\Hy@temp\@empty
7000     \else
7001       \pdf@addtoks{#1}{Border}%
7002     \fi
7003 }
7004 % parameter is a dictionary
7005 \define@key{PDF}{BorderStyle}{%
7006   \edef\Hy@temp{#1}%
7007   \ifx\Hy@temp\@empty
7008     \else
7009       \pdf@addtoks{<<#1>>}{BS}%
7010     \fi
7011 }
7012 % parameter is a array
7013 \define@key{PDF}{Color}{\pdf@addtoks{#1}{Color}}
7014 % parameter is a string
7015 \define@key{PDF}{Contents}{\pdf@addtoks{#1}{Contents}}
7016 % parameter is a integer
7017 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
7018 % parameter is a array
7019 \define@key{PDF}{CropBox}{\pdf@addtoks{#1}{CropBox}}
7020 % parameter is a string
7021 \define@key{PDF}{DOSFile}{\pdf@addtoks{#1}{DOSFile}}
7022 % parameter is a string or file
7023 \define@key{PDF}{DataSource}{\pdf@addtoks{#1}{DataSource}}
7024 % parameter is a destination
7025 \define@key{PDF}{Dest}{%
7026   \Hy@pstringdef\Hy@pstringDest{#1}%
7027   \ifx\Hy@pstringDest\@empty
7028     \Hy@pdfmarkerrortrue
7029     \Hy@Warning{Destination with empty name ignored}%
7030   \else
7031     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
7032   \fi
7033 }
7034 \define@key{PDF}{DestAnchor}{%
7035   \Hy@pstringdef\Hy@pstringDest{#1}%
7036   \ifx\Hy@pstringDest\@empty
7037     \Hy@pdfmarkerrortrue
7038     \Hy@Warning{Destination with empty name ignored}%
7039   \else
7040     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
7041   \fi
7042 }
7043 % parameter is a string
7044 \define@key{PDF}{Dir}{\pdf@addtoks{#1}{Dir}}

```

```

7045 % parameter is a string
7046 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
7047 % parameter is a int
7048 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
7049 % parameter is a name
7050 \define@key{PDF}{AcroHighlight}{%
7051   \begingroup
7052     \edef\x{#1}%
7053     \expandafter\endgroup\ifx\x\@empty
7054       \else
7055         \pdf@addtoks{#1}{H}%
7056       \fi
7057 }
7058 % parameter is a string
7059 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}
7060 % parameter is a string
7061 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
7062 % parameter is a string
7063 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
7064 % parameter is a string
7065 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
7066 % parameter is a Boolean
7067 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
7068 % parameter is a integer or name
7069 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
7070 % parameter is a name
7071 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
7072 % parameter is a string
7073 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
7074 % parameter is a array
7075 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}
7076 % parameter is a integer
7077 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
7078 % parameter is a name
7079 \pdfmarkbase\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
7080 \dvipdf\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{}}
7081 % parameter is a string
7082 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
7083 % parameter is a string
7084 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
7085 % parameter is a string
7086 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
7087 % parameter is an array
7088 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}
7089 % parameter is a string
7090 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

7091 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
7092 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
7093 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
7094 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
7095 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
7096 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
7097 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
7098 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
7099 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
7100 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}

```

```

7101 </pdfmarkbase | dvipdf>
7102 <*pdfmark | dvipdf>
7103 \def\Acrobatmenu#1#2{%
7104   \pdfmark[{#2}] {%
7105     linktype=menu,%
7106     pdfmark=/ANN,%
7107     AcroHighlight=\@pdfhighlight,%
7108     Border=\@pdfborder,%
7109     BorderStyle=\@pdfborderstyle,%
7110     Action={<< /Subtype /Named /N /#1 >>},%
7111     Subtype=/Link%
7112   }%
7113 }

```

And now for some useful examples:

```

7114 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
7115 \def\PDFNextPage@[#1]#2{%
7116   \pdfmark[{#2}] {%
7117     #1,%
7118     Border=\@pdfborder,%
7119     BorderStyle=\@pdfborderstyle,%
7120     Color=.2 .1 .5,%
7121     pdfmark=/ANN,%
7122     Subtype=/Link,%
7123     Page=/Next%
7124   }%
7125 }
7126 \def\PDFPreviousPage{%
7127   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}]%
7128 }
7129 \def\PDFPreviousPage@[#1]#2{%
7130   \pdfmark[{#2}] {%
7131     #1,%
7132     Border=\@pdfborder,%
7133     BorderStyle=\@pdfborderstyle,%
7134     Color=.4 .4 .1,%
7135     pdfmark=/ANN,%
7136     Subtype=/Link,%
7137     Page=/Prev%
7138   }%
7139 }
7140 \def\PDFOpen#1{%
7141   \pdfmark{#1,pdfmark=/DOCVIEW}%
7142 }

```

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!

```

7143 \def\PDFPage{\@ifnextchar[{\PDFPage@}{\PDFPage@[]}}
7144 \def\PDFPage@[#1]#2#3{%
7145   \let\pageref\simple@pageref
7146   \pdfmark[{#3}] {%
7147     #1,%
7148     Page={#2},%
7149     AcroHighlight=\@pdfhighlight,%
7150     Border=\@pdfborder,%
7151     BorderStyle=\@pdfborderstyle,%
7152     Color=\@pagebordercolor,%

```

```

7153 pdfmark=/ANN,%
7154 Subtype=/Link%
7155 }%
7156 }
7157 \def\simple@pageref#1{%
7158 \expandafter\ifx\csname r@#1\endcsname\relax
7159 0%
7160 \else
7161 \expandafter\expandafter\expandafter
7162 \@secondoffive\csname r@#1\endcsname
7163 \fi}

```

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

```

7164 \def\hyper@linkurl#1#2{%
7165 \begingroup
7166 \Hy@pstringdef\Hy@pstringURI{#2}%
7167 \hyper@chars
7168 \leavevmode
7169 \pdfmarkbase{
7170 \pdfmark[{#1}]{%
7171 pdfmark=/ANN,%
7172 linktype=url,%
7173 AcroHighlight=\pdfhighlight,%
7174 Border=\pdfborder,%
7175 BorderStyle=\pdfborderstyle,%
7176 Color=\urlbordercolor,%
7177 Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
7178 Subtype=/Link%
7179 }%
7180 \pdfmarkbase}
7181 \dvipdf{
7182 \pdfmark[{#1}]{%
7183 pdfmark=/LNK,%
7184 linktype=url,%
7185 AcroHighlight=\pdfhighlight,%
7186 Border=\pdfborder,%
7187 BorderStyle=\pdfborderstyle,%
7188 Color=\urlbordercolor,%
7189 Action={URI /URI <\Hy@hstringURI>}%
7190 }%
7191 \dvipdf}
7192 \endgroup
7193 }
7194 \def\hyper@linkfile#1#2#3{%
7195 \begingroup
7196 \Hy@pstringdef\Hy@pstringF{#2}%
7197 \Hy@pstringdef\Hy@pstringD{#3}%
7198 \leavevmode
7199 \pdfmark{
7200 \pdfmark[{#1}]{%
7201 pdfmark=/ANN,%
7202 Subtype=/Link,%
7203 AcroHighlight=\pdfhighlight,%
7204 Border=\pdfborder,%
7205 BorderStyle=\pdfborderstyle,%
7206 linktype=file,%
7207 Color=\filebordercolor,%
7208 Action={<<

```

```

7209      /S /GoToR
7210      \ifHy@newwindow /NewWindow true \fi
7211      /F (\Hy@pstringF)
7212      /D \ifx\#3\[0 \@pdfstartview]\else(\Hy@pstringD) cvn\fi
7213      >>}%
7214  }%
7215 </pdfmark>
7216 <*dvipdf>
7217   \pdfmark[{\#1}]{%
7218     pdfmark=/LNK,%
7219     linktype=file,%
7220     AcroHighlight=\@pdfhighlight,%
7221     Border=\@pdfborder,%
7222     BorderStyle=\@pdfborderstyle,%
7223     Color=\@filebordercolor,%
7224     Action={<<
7225       /S /GoToR
7226       \ifHy@newwindow /NewWindow true \fi
7227       /F (\Hy@pstringF)
7228       /D \ifx\#3\[0 \@pdfstartview]\else(\Hy@pstringD) cvn\fi
7229       >>}%
7230   }%
7231 </dvipdf>
7232 \endgroup
7233 }
7234 \def\@hyper@launch run:#1\#2#3{%
7235   \begingroup
7236     \Hy@pstringdef\Hy@pstringF{\#1}%
7237     \Hy@pstringdef\Hy@pstringP{\#3}%
7238     \leavevmode
7239 <*pdfmark>
7240   \pdfmark[{\#2}]{%
7241     pdfmark=/ANN,%
7242     Subtype=/Link,%
7243     AcroHighlight=\@pdfhighlight,%
7244     Border=\@pdfborder,%
7245     BorderStyle=\@pdfborderstyle,%
7246     linktype=file,%
7247     Color=\@filebordercolor,%
7248     Action={<<
7249       /S /Launch
7250       \ifHy@newwindow /NewWindow true \fi
7251       /F (\Hy@pstringF)
7252       \ifx\#3\%
7253       \else
7254         /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
7255       \fi
7256       >>}%
7257   }%
7258 </pdfmark>
7259 <*dvipdf>
7260   \pdfmark[{\#2}]{%
7261     pdfmark=/LNK,%
7262     linktype=file,%
7263     AcroHighlight=\@pdfhighlight,%
7264     Border=\@pdfborder,%
7265     BorderStyle=\@pdfborderstyle,%

```



```

7266     Color=\@filebordercolor,%
7267     Action={<<
7268         /S /GoToR
7269         \ifHy@newwindow /NewWindow true \fi
7270         /F (\Hy@pstringF)
7271         \ifx\#3\%
7272         \else
7273         /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
7274         \fi
7275         >>}%
7276     }%
7277 </dvipdf>
7278 \endgroup
7279 }
7280 </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.

```

7281 <*dvips>
7282 \input{pdfmark.def}%
7283 \ifx\@pdfproducer\relax
7284   \def\@pdfproducer{dvips + Distiller}
7285 \fi
7286 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
7287 \def\headerps@out#1{\special{! #1}}%
7288 \providecommand\@pdfborder{0 0 12}
7289 \providecommand*\@pdfborderstyle{}
7290 \providecommand\@pdfview{XYZ}
7291 \providecommand\@pdfviewparams{ H.V}

7292 \AtBeginDvi{%
7293   \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.

```

7294   /DvipsToPDF { 72.27 mul Resolution div } def
7295   /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.

```

7296   /HyperBorder { 1 PDFToDvips } def

```

```

7297 /H.V {pdf@hoff pdf@voff null} def
7298 /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

```

7299 /H.S {
7300   currentpoint
7301   HyperBorder add /pdf@lly exch def
7302   dup DvipsToPDF /pdf@hoff exch def
7303   HyperBorder sub /pdf@llx exch def
7304 } 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`

```

7305 /H.L {
7306   2 sub dup
7307   /HyperBasePt exch def
7308   PDFToDvips /HyperBaseDvips exch def
7309   currentpoint
7310   HyperBaseDvips sub /pdf@ury exch def
7311   /pdf@urx exch def
7312 } def
7313 /H.A {
7314   H.L
7315 % |pdf@voff| = the distance from the top of the page to a point
7316 % |\baselineskip| above the current point in PDF coordinates
7317   currentpoint exch pop
7318   vsize 72 sub exch DvipsToPDF
7319   HyperBasePt sub % baseline skip
7320   sub /pdf@voff exch def
7321 } def
7322 /H.R {
7323   currentpoint
7324   HyperBorder sub /pdf@ury exch def
7325   HyperBorder add /pdf@urx exch def
7326 % |pdf@voff| = the distance from the top of the page to the current point, in
7327 % PDF coordinates
7328   currentpoint exch pop vsize 72 sub
7329   exch DvipsToPDF sub /pdf@voff exch def
7330 } def
7331 systemdict /pdfmark known
7332 {
7333   userdict /?pdfmark systemdict /exec get put
7334 }{
7335   userdict /?pdfmark systemdict /pop get put
7336   userdict /pdfmark systemdict /cleartomark get put
7337 }
7338 ifelse
7339 }%
7340 }
7341 \AfterBeginDocument{%
7342   \ifx\special@paper\empty\else
7343     \ifHy@setpagesize

```

```

7344     \special{papersize=\special@paper}%
7345     \fi
7346     \Hy@DisableOption{setpagesize}%
7347     \fi
7348 }
7349 </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.

```

7350 <*vtexpdfmark>
7351 \input{pdfmark.def}%
7352 \ifx\@pdfproducer\relax
7353   \ifnum\OpMode=\@ne
7354     \def\@pdfproducer{VTeX}
7355   \else
7356     \def\@pdfproducer{VTeX + Distiller}
7357   \fi
7358 \fi
7359 \def\literalps@out#1{\special{pS:#1}}%
7360 \def\headerps@out#1{\immediate\special{pS:#1}}%
7361 \providecommand\@pdfborder{0 0 1}
7362 \providecommand*\@pdfborderstyle{}
7363 \providecommand\@pdfview{XYZ}
7364 \providecommand\@pdfviewparams{ H.V}
7365 \AtBeginDvi{%
7366   \headerps@out{%
7367     /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.

```

7368     /HyperBorder {1} def
7369     /H.V {pdf@hoff pdf@voff null} def
7370     /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

7371     /H.S {
7372       currentpoint
7373       HyperBorder sub
7374       /pdf@lly exch def
7375       dup 72 add /pdf@hoff exch def
7376       HyperBorder sub
7377       /pdf@llx exch def
7378     } def

```

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

```

7379     /H.L {
7380       2 sub
7381       /HyperBasePt exch def
7382       currentpoint
7383       HyperBasePt add HyperBorder add

```

```

7384      /pdf@ury exch def
7385      HyperBorder add
7386      /pdf@urx exch def
7387    } def
7388    /H.A {
7389      H.L
7390      currentpoint exch pop
7391      vsize 72 sub exch
7392      HyperBasePt add add
7393      /pdf@voff exch def
7394    } def
pdf@ury =  $Y_c$  + HyperBorder, pdf@urx =  $X_c$  + HyperBorder
7395    /H.R {
7396      currentpoint
7397      HyperBorder add
7398      /pdf@ury exch def
7399      HyperBorder add
7400      /pdf@urx exch def
7401      currentpoint exch pop vsize 72 sub add
7402      /pdf@voff exch def
7403    } def
7404    systemdict /pdfmark known
7405    {
7406      userdict /?pdfmark systemdict /exec get put
7407    }{
7408      userdict /?pdfmark systemdict /pop get put
7409      userdict /pdfmark systemdict /cleartomark get put
7410    }
7411    ifelse
7412  }%
7413 }
7414 </vtexpdfmark>

```

## 45.11 Textures

At the suggestion of Jacques Distler (distler@golem.ph.utexas.edu), try to derive a suitable driver for Textures. This was initially a copy of dvips, with some guesses about Textures behaviour. Ross Moore (ross@maths.mq.edu.au) has added modifications for better compatibility, and to support use of pdfmark.

Start by defining a macro that expands to the end-of-line character. This will be used to format the appearance of PostScript code, to enhance readability, and avoid excessively long lines which might otherwise become broken to bad places.

`\Hy@ps@CR` The macro `\Hy@ps@CR` contains the end-of-line character.

```

7415 <*textures>
7416 \begingroup
7417   \obeylines %
7418   \gdef\Hy@ps@CR{\noexpand
7419   }%
7420 \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`.

```
7421 \def\literalps@out#1{%
7422   \special{postscript 0 0 transform}%
7423   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
7424 }%
7425 %
```

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.

```
7426 \def\headerps@out#1{%
7427   \special{%
7428     prepostscript TeXdict begin\Hy@ps@CR
7429     #1\Hy@ps@CR
7430     end%
7431   }%
7432 }%
7433 %
```

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.

```
7434 \AtBeginDvi{%
7435   \headerps@out{%
7436     /betterpdfmark {%
7437       systemdict begin
7438         dup /BP eq
7439         {cleartomark gsave nulldevice []
7440          {dup /EP eq
7441           {cleartomark cleartomark grestore}
7442           {cleartomark}
7443           ifelse
7444         }ifelse
7445       end
7446     }def\Hy@ps@CR
7447     __pdfmark__ not{/pdfmark /betterpdfmark load def}if
7448     systemdict /pdfmark known
7449     {
7450       userdict /?pdfmark systemdict /load get put
7451     }{
7452       userdict /?pdfmark systemdict /pop get put
7453     }
7454     ifelse
7455   }% end of \headerps@out
7456 }% end of \AtBeginDvi
7457 %
7458 \input{pdfmark.def}%
7459 %
7460 \ifx\@pdfproducer\relax
7461   \def\@pdfproducer{Textures + Distiller}%
7462 \fi
7463 \providecommand\@pdfborder{0 0 1}
7464 \providecommand*\@pdfborderstyle{}
7465 \providecommand\@pdfview{XYZ}
7466 \providecommand\@pdfviewparams{ H.V}
```

7467 %

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

7468 \headerps@out{%

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

```

7469 /vsize {\Hy@pageheight} def
7470 /DvipsToPDF {} def
7471 /PDFToDvips {} def
7472 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
7473 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
7474 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
7475 /H.S {
7476   currentpoint
7477   HyperBorder add /pdf@lly exch def
7478   dup DvipsToPDF /pdf@hoff exch def
7479   HyperBorder sub /pdf@llx exch def
7480 } def\Hy@ps@CR
7481 /H.L {
7482   2 sub
7483   PDFToDvips /HyperBase exch def
7484   currentpoint
7485   HyperBase sub /pdf@ury exch def
7486   /pdf@urx exch def
7487 } def\Hy@ps@CR
7488 /H.A {
7489   H.L
7490   currentpoint exch pop
7491   vsize 72 sub exch DvipsToPDF
7492   HyperBase sub % baseline skip
7493   sub /pdf@voff exch def
7494 } def\Hy@ps@CR
7495 /H.R {
7496   currentpoint
7497   HyperBorder sub /pdf@ury exch def
7498   HyperBorder add /pdf@urx exch def
7499   currentpoint exch pop vsize 72 sub
7500   exch DvipsToPDF sub /pdf@voff exch def
7501 } def\Hy@ps@CR
7502 }

7503 \AfterBeginDocument{%
7504   \ifHy@colorlinks
7505     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
7506   \fi
7507 }
```

Textures provides built-in support for HyperT<sub>E</sub>X specials so this part combines code from `hypertex.def` with what is established by loading `pdfmark.def`, or any other driver.

```

7508 \expandafter\let\expandafter\keepPDF@SetupDoc
7509 \csname PDF@SetupDoc\endcsname
7510 \def\PDF@SetupDoc{%
7511   \ifx\@baseurl\@empty
7512   \else
```

```

7513 \special{html:<base href="\@baseurl">}%
7514 \fi
7515 \keepPDF@SetupDoc
7516 }
7517 \def\hyper@anchor#1{%
7518 \Hy@SaveLastskip
7519 \begingroup
7520 \let\protect=\string
7521 \special{html:<a name=\hyper@quote #1\hyper@quote>}%
7522 \endgroup
7523 \Hy@activeanchortrue
7524 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7525 \special{html:</a>}%
7526 \Hy@activeanchorfalse
7527 \Hy@RestoreLastskip
7528 }
7529 \def\hyper@anchorstart#1{%
7530 \Hy@SaveLastskip
7531 \begingroup
7532 \hyper@chars
7533 \special{html:<a name=\hyper@quote#1\hyper@quote>}%
7534 \endgroup
7535 \Hy@activeanchortrue
7536 }
7537 \def\hyper@anchorend{%
7538 \special{html:</a>}%
7539 \Hy@activeanchorfalse
7540 \Hy@RestoreLastskip
7541 }
7542 \def\@urltype{url}
7543 \def\hyper@linkstart#1#2{%
7544 \expandafter\Hy@colorlink\csname @#1color\endcsname
7545 \def\Hy@tempa{#1}%
7546 \ifx\Hy@tempa\@urltype
7547 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7548 \else
7549 \begingroup
7550 \hyper@chars
7551 \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
7552 \endgroup
7553 \fi
7554 }
7555 \def\hyper@linkend{%
7556 \special{html:</a>}%
7557 \Hy@endcolorlink
7558 }
7559 \def\hyper@linkfile#1#2#3{%
7560 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
7561 }
7562 \def\hyper@linkurl#1#2{%
7563 \leavevmode
7564 \ifHy@raiselinks
7565 \setbox\@tempboxa=\color@hbox #1\color@endbox
7566 \@linkdim\dp\@tempboxa
7567 \lower\@linkdim\hbox{%
7568 \hyper@chars
7569 \special{html:<a href=\hyper@quote#2\hyper@quote>}%

```

```

7570 }%
7571 \Hy@colorlink\@urlcolor#1%
7572 \@linkdim\ht\@tempboxa
7573 \advance\@linkdim by -6.5\p@
7574 \raise\@linkdim\hbox{\special{html:</a>}}%
7575 \Hy@endcolorlink
7576 \else
7577 \begingroup
7578 \hyper@chars
7579 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7580 \Hy@colorlink\@urlcolor#1%
7581 \special{html:</a>}%
7582 \Hy@endcolorlink
7583 \endgroup
7584 \fi
7585 }
7586 \def\hyper@link#1#2#3{%
7587 \hyper@linkurl{#3}{\##2}%
7588 }
7589 \def\hyper@image#1#2{%
7590 \begingroup
7591 \hyper@chars
7592 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
7593 \endgroup
7594 }
7595 </textures>

```

## 45.12 dvipsone

```

7596% \subsection{dvipsone driver}
7597% Over-ride the default setup macro in pdfmark driver to use Y\&Y
7598% |\special| commands.
7599 <*dvipsone>
7600 \providecommand\@pdfborder{0 0 65781}
7601 \providecommand*\@pdfborderstyle{}
7602 \input{pdfmark.def}%
7603 \ifx\@pdfproducer\relax
7604 \def\@pdfproducer{dvipsone + Distiller}
7605 \fi
7606 \def\literalps@out#1{\special{ps:#1}}%
7607 \def\headerps@out#1{\special{! #1}}%
7608 \def\PDF@FinishDoc{%
7609 \Hy@UseMaketitleInfos
7610 \special{PDF: Keywords \@pdfkeywords}%
7611 \special{PDF: Title \@pdftitle}%
7612 \special{PDF: Creator \@pdfcreator}%
7613 \ifx\@pdfcreationdate\@empty
7614 \else
7615 \special{PDF: CreationDate \@pdfcreationdate}%
7616 \fi
7617 \ifx\@pdfmoddate\@empty
7618 \else
7619 \special{PDF: ModDate \@pdfmoddate}%
7620 \fi
7621 \special{PDF: Author \@pdfauthor}%
7622 \ifx\@pdfproducer\relax
7623 \else

```



```

7624 \special{PDF: Producer \@pdfproducer}%
7625 \fi
7626 \special{PDF: Subject \@pdfsubject}%
7627 \Hy@DisableOption{pdfauthor}%
7628 \Hy@DisableOption{pdftitle}%
7629 \Hy@DisableOption{pdfsubject}%
7630 \Hy@DisableOption{pdfcreator}%
7631 \Hy@DisableOption{pdfcreationdate}%
7632 \Hy@DisableOption{pdfmoddate}%
7633 \Hy@DisableOption{pdfproducer}%
7634 \Hy@DisableOption{pdfkeywords}%
7635 }
7636 \def\PDF@SetupDoc{%
7637 \pdfmark{%
7638 pdfmark=/DOCVIEW,
7639 Page=\@pdfstartpage,
7640 View=\@pdfstartview,
7641 PageMode=/\@pdfpagemode
7642 }%
7643 \ifx\@pdfpagescrop\@empty
7644 \else
7645 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7646 \fi
7647 \edef\Hy@temp{%
7648 \ifHy@toolbar\else /HideToolbar true\fi
7649 \ifHy@menubar\else /HideMenubar true\fi
7650 \ifHy>windowui\else /HideWindowUI true\fi
7651 \ifHy@fitwindow /FitWindow true\fi
7652 \ifHy@centerwindow /CenterWindow true\fi
7653 \ifHy@displaydoctitle /DisplayDocTitle true\fi
7654 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7655 \Hy@UseNameKey{Direction}\@pdfdirection
7656 \Hy@UseNameKey{ViewArea}\@pdfviewarea
7657 \Hy@UseNameKey{ViewClip}\@pdfviewclip
7658 \Hy@UseNameKey{PrintArea}\@pdfprintarea
7659 \Hy@UseNameKey{PrintClip}\@pdfprintclip
7660 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7661 \Hy@UseNameKey{Duplex}\@pdfduplex
7662 \ifx\@pdfpicktraybypdfsize\@empty
7663 \else
7664 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7665 \fi
7666 \ifx\@pdfprintpagerange\@empty
7667 \else
7668 /PrintPageRange[\@pdfprintpagerange]%
7669 \fi
7670 \ifx\@pdfnumcopies\@empty
7671 \else
7672 /NumCopies \@pdfnumcopies
7673 \fi
7674 }%
7675 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7676 \pdfmark{%
7677 pdfmark=/PUT,%
7678 Raw={%
7679 \string{Catalog\string} <<
7680 \ifx\Hy@temp\@empty

```

```

7681      \else
7682      /ViewerPreferences<<\Hy@temp>>%
7683      \fi
7684      \Hy@UseNameKey{PageLayout}\pdfpagelayout
7685      \ifx\@pdflang\@empty
7686      \else
7687      /Lang(\@pdflang)%
7688      \fi
7689      \ifx\@baseurl\@empty
7690      \else
7691      /URI << /Base (\Hy@pstringB) >>%
7692      \fi
7693      >>%
7694    }%
7695  }%
7696 }
7697 \providecommand\pdfview{XYZ}
7698 \providecommand\pdfviewparams{ %
7699   gsave revscl currentpoint grestore
7700   72 add exch pop null exch null
7701 }

```

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

```
7702 \special{headertext=
```

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

```

7703 /DvipsToPDF { 65781 div } def
7704 /PDFToDvips { 65781 mul } def
7705 /HyperBorder { 1 PDFToDvips } def
7706 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def
7707 /H.S {
7708   currentpoint
7709   HyperBorder add /pdf@lly exch def
7710   dup DvipsToPDF /pdf@hoff exch def
7711   HyperBorder sub /pdf@llx exch def
7712 } def
7713 /H.L {
7714   2 sub
7715   PDFToDvips /HyperBase exch def
7716   currentpoint
7717   HyperBase sub /pdf@ury exch def
7718   /pdf@urx exch def
7719 } def
7720 /H.A {
7721   H.L
7722   currentpoint exch pop
7723   HyperBase sub % baseline skip
7724   DvipsToPDF /pdf@voff exch def
7725 } def
7726 /H.R {
7727   currentpoint
7728   HyperBorder sub /pdf@ury exch def
7729   HyperBorder add /pdf@urx exch def
7730   currentpoint exch pop DvipsToPDF /pdf@voff exch def

```

```

7731 } def
7732 systemdict
7733 /pdfmark known
7734 {
7735   userdict /?pdfmark /exec load put
7736 }{
7737   userdict /?pdfmark /pop load put
7738   userdict /pdfmark systemdict /cleartomark get put
7739 }
7740 ifelse
7741 }
7742 </dvipsone>
7743 <*dvipdf>
7744 \def\literalps@out#1{\special{pdf: #1}}%
7745 \providecommand\@pdfborder{0 0 1}
7746 \providecommand*\@pdfborderstyle{}
7747 </dvipdf>

```

### 45.13 TeX4ht

```

7748 <*tex4ht>
7749 \@ifpackageloaded{tex4ht}
7750 { \typeout{hyperref tex4ht: tex4ht already loaded}}%
7751 { \RequirePackage[htex4ht]{tex4ht}}
7752 \def\PDF@FinishDoc{}
7753 \def\PDF@SetupDoc{%
7754   \ifx\@baseurl\@empty
7755   \else
7756     \special{t4ht=<base href="\@baseurl">}%
7757   \fi
7758 }
7759 \def\hyper@anchor#1{%
7760   \Hy@SaveLastskip
7761   \begingroup
7762     \let\protect=\string
7763     \special{t4ht=<a name=\hyper@quote #1\hyper@quote>}%
7764   \endgroup
7765   \Hy@activeanchortrue
7766   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7767   \special{t4ht=</a>}%
7768   \Hy@activeanchorfalse
7769   \Hy@RestoreLastskip
7770 }
7771 \def\hyper@anchorstart#1{%
7772   \Hy@SaveLastskip
7773   \begingroup
7774     \hyper@chars\special{t4ht=<a name=\hyper@quote#1\hyper@quote>}%
7775   \endgroup
7776   \Hy@activeanchortrue
7777 }
7778 \def\hyper@anchorend{%
7779   \special{t4ht=</a>}%
7780   \Hy@activeanchorfalse
7781   \Hy@RestoreLastskip
7782 }
7783 \def\@urltype{url}
7784 \def\hyper@linkstart#1#2{%
7785   \expandafter\Hy@colorlink\csname @#1color\endcsname

```

```

7786 \def\Hy@tempa{#1}%
7787 \ifx\Hy@tempa\@urltype
7788   \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7789 \else
7790   {\hyper@chars\special{t4ht=<a href=\hyper@quote\##2\hyper@quote>}}%
7791 \fi
7792 }
7793 \def\hyper@linkend{%
7794   \special{t4ht=</a>}%
7795   \Hy@endcolorlink
7796 }
7797 \def\hyper@linkfile#1#2#3{%
7798   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\##3\\\else\##3\fi}%
7799 }
7800 \def\hyper@linkurl#1#2{%
7801   \leavevmode
7802   \ifHy@raiselinks
7803     \setbox\@tempboxa=\color@hbox #1\color@endbox
7804     \@linkdim\dp\@tempboxa
7805     \lower\@linkdim\hbox{%
7806       \begingroup
7807         \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
7808       \endgroup
7809     }%
7810     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7811     \@linkdim\ht\@tempboxa
7812     \advance\@linkdim by -6.5\p@
7813     \raise\@linkdim\hbox{\special{t4ht=</a>}}%
7814 \else
7815   \begingroup
7816     \hyper@chars
7817     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7818     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7819     \special{t4ht=</a>}%
7820   \endgroup
7821 \fi
7822 }
7823 \def\hyper@link#1#2#3{%
7824   \hyper@linkurl{#3}{\##2}%
7825 }
7826 \def\hyper@image#1#2{%
7827   \begingroup
7828     \hyper@chars
7829     \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
7830   \endgroup
7831 }
7832 \let\autoref\ref
7833 \ifx\rEfLiNK\UnDef
7834   \def\rEfLiNK #1#2{#2}%
7835 \fi
7836 \def\backref#1{}
7837 </tex4ht>
7838 <*tex4htcfg>
7839 \IfFileExists{\jobname.cfg}{\endinput}{}
7840 \Preamble{html}
7841 \begin{document}
7842 \EndPreamble

```

```

7843 \def\TeX{\TeX}
7844 \def\OMEGA{\Omega}
7845 \def\LaTeX{\LaTeX}
7846 \def\LaTeXe{\LaTeX2e}
7847 \def\eTeX{e-TeX}
7848 \def\MF{Metafont}
7849 \def\MP{Metapost}
7850 \</tex4htcfig>

```

## 46 Driver-specific form support

### 46.1 pdfmarks

```

7851 \<*pdfmark>
7852 \long\def\@Form[#1]{%
7853 \AtBeginDvi{%
7854   \headerps@out{%
7855 [ /_objdef {pdfDocEncoding}
7856   /type /dict
7857 /OBJ pdfmark
7858 [ {pdfDocEncoding}
7859 << /Type /Encoding
7860   /Differences [ 24 /breve /caron /circumflex /dotaccent
7861 /hungarumlaut /ogonek /ring /tilde 39 /quotesingle 96 /grave 128
7862 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin /fraction
7863 /guilsinglleft /guilsinglright /minus /perthousand /quotedblbase
7864 /quotedblleft /quotedblright /quoteleft /quoteright /quotesinglbase
7865 /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis /Zcaron /dotlessi
7866 /lslash /oe /scaron /zcaron 164 /currency 166 /brokenbar 168 /dieresis
7867 /copyright /ordfeminine 172 /logicalnot /.notdef /registered /macron
7868 /degree /plusminus /twosuperior /threesuperior /acute /mu 183
7869 /periodcentered /cedilla /onesuperior /ordmasculine 188 /onequarter
7870 /onehalf /threequarters 192 /Agrave /Aacute /Acircumflex /Atilde
7871 /Adieresis /Aring /AE /Ccedilla /Egrave /Eacute /Ecircumflex
7872 /Edieresis /Igrave /Iacute /Icircumflex /Idieresis /Eth /Ntilde
7873 /Ograve /Oacute /Ocircumflex /Otilde /Odieresis /multiply /Oslash
7874 /Ugrave /Uacute /Ucircumflex /Udieresis /Yacute /Thorn /germandbls
7875 /agrave /aacute /acircumflex /atilde /adieresis /aring /ae /ccedilla
7876 /egrave /eacute /ecircumflex /edieresis /igrave /iacute /icircumflex
7877 /idieresis /eth /ntilde /ograve /oacute /ocircumflex /otilde
7878 /odieresis /divide /oslash /ugrave /uacute /ucircumflex /udieresis
7879 /yacute /thorn /ydieresis ]
7880 >>
7881 /PUT pdfmark
7882 [ /_objdef {ZaDb}
7883   /type /dict
7884 /OBJ pdfmark
7885 [ {ZaDb}
7886 <<
7887   /Type /Font
7888   /Subtype /Type1
7889   /Name /ZaDb
7890   /BaseFont /ZapfDingbats
7891 >>
7892 /PUT pdfmark
7893 [ /_objdef {Helv}
7894   /type /dict
7895 /OBJ pdfmark

```

```

7896 [ {Helv}
7897 <<
7898 /Type /Font
7899 /Subtype /Type1
7900 /Name /Helv
7901 /BaseFont /Helvetica
7902 /Encoding {pdfDocEncoding}
7903 >>
7904 /PUT pdfmark
7905 [ /_objdef {aform}
7906 /type /dict
7907 /OBJ pdfmark
7908 [ /_objdef {afields}
7909 /type /array
7910 /OBJ pdfmark
7911 {
7912 [/BBox [0 0 100 100] /_objdef {Check} /BP pdfmark
7913 1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (4) show
7914 [/EP pdfmark
7915 [/BBox [0 0 100 100] /_objdef {Cross} /BP pdfmark
7916 1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (8) show
7917 [/EP pdfmark
7918 [/BBox [0 0 250 100] /_objdef {Submit} /BP pdfmark 0.6 setgray 0 0 250
7919 100 rectfill 1 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246 96
7920 lineto 4 96 lineto 4 4 lineto fill 0.34 setgray 248 98 moveto 248 2
7921 lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
7922 /Helvetica 76 selectfont 0 setgray 8 22.5 moveto (Submit) show
7923 [/EP pdfmark
7924 [/BBox [0 0 250 100] /_objdef {SubmitP} /BP pdfmark 0.6 setgray 0 0
7925 250 100 rectfill 0.34 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246
7926 96 lineto 4 96 lineto 4 4 lineto fill 1 setgray 248 98 moveto 248 2
7927 lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
7928 /Helvetica 76 selectfont 0 setgray 10 20.5 moveto (Submit) show
7929 [/EP pdfmark
7930 } ?pdfmark
7931 [ {aform}
7932 <<
7933 /Fields {afields}
7934 /DR << /Font << /ZaDb {ZaDb} /Helv {Helv} >> >>
7935 /DA (/Helv 10 Tf 0 g )
7936 /CO {corder}
7937 /NeedAppearances true
7938 >>
7939 /PUT pdfmark
7940 [ \string{Catalog\string}
7941 <<
7942 /AcroForm {aform}
7943 >>
7944 /PUT pdfmark
7945 [ /_objdef {corder} /type /array /OBJ pdfmark % dps
7946 }}%
7947 \setkeys{Form}{#1}%
7948 }
7949 \def\@endForm{}
7950 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7951 \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
7952 }

```

```

7953 \def\@TextField[#1]#2{% parameters, label
7954   \def\Fld@name{#2}%
7955   \def\Fld@default{}%
7956   \let\Fld@value\@empty
7957   \def\Fld@width{\DefaultWidthofText}%
7958   \def\Fld@height{\DefaultHeightofText}%
7959   \ifFld@multiline
7960     \begingroup
7961       \dimen@=\DefaultHeightofText
7962       \dimen@=4\dimen@
7963       \edef\x{\endgroup
7964         \def\noexpand\Fld@height{\the\dimen@}%
7965       }%
7966     \x
7967   \fi
7968   \bgroup
7969     \Field@toks={ }%
7970     \setkeys{Field}{#1}%
7971     \ifFld@hidden\def\Fld@width{1sp}\fi
7972     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
7973     \LayoutTextField{#2}{%
7974       \Hy@escapeform\PDFForm@Text
7975       \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
7976         pdfmark=/ANN,Raw={\PDFForm@Text}%
7977       }%
7978     }%
7979   \egroup
7980 }
7981 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7982   \def\Fld@name{#2}%
7983   \def\Fld@default{}%
7984   \def\Fld@width{\DefaultWidthofChoiceMenu}%
7985   \def\Fld@height{\DefaultHeightofChoiceMenu}%
7986   \bgroup
7987     \Fld@menulength=0
7988     \@tempdima\z@
7989     \@for\@curropt:=#3\do{%
7990       \expandafter\Fld@checkequals\@curropt==\%
7991       \Hy@StepCount\Fld@menulength
7992       \settowidth{\@tempdimb}{\@currDisplay}%
7993       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
7994     }%
7995     \advance\@tempdima by 15\p@
7996     \Field@toks={ }%
7997     \setkeys{Field}{#1}%
7998     \ifFld@hidden\def\Fld@width{1sp}\fi
7999     \LayoutChoiceField{#2}{%
8000       \ifFld@radio
8001         \@@Radio{#3}%
8002       \else
8003         {%
8004           \ifdim\Fld@width<\@tempdima
8005             \ifdim\@tempdima<1cm\@tempdima1cm\fi
8006             \edef\Fld@width{\the\@tempdima}%
8007           \fi
8008           \def\Fld@flags{}%
8009           \ifFld@combo\def\Fld@flags{/Ff 917504}\fi

```

```

8010         \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8011         \ifx\Fld@flags\@empty
8012             \@tempdima=\the\Fld@menulength\Fld@charsize
8013             \advance\@tempdima by \Fld@borderwidth bp
8014             \advance\@tempdima by \Fld@borderwidth bp
8015             \edef\Fld@height{\the\@tempdima}%
8016         \fi
8017         \@@ListBox{#3}%
8018     }%
8019 \fi
8020 }%
8021 \egroup
8022 }
8023 \def\@@Radio#1{%
8024     \Fld@listcount=0
8025     \@for\@curropt:=#1\do{%
8026         \expandafter\Fld@checkequals\@curropt==\%
8027         \Hy@StepCount\Fld@listcount
8028         \@currDisplay\space
8029         \Hy@escapeform\PDFForm@Radio
8030         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
8031             pdfmark=/ANN,%
8032             Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
8033         } % deliberate space between radio buttons
8034     }%
8035 }
8036 \newcount\Fld@listcount
8037 \def\@@ListBox#1{%
8038     \Choice@toks={ }%
8039     \Fld@listcount=0
8040     \@for\@curropt:=#1\do{%
8041         \expandafter\Fld@checkequals\@curropt==\%
8042         \Hy@StepCount\Fld@listcount
8043         \edef\@processme{%
8044             \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8045         }\@processme
8046     }%
8047     \Hy@escapeform\PDFForm@List
8048     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
8049         pdfmark=/ANN,Raw={\PDFForm@List}%
8050     }%
8051 }
8052 \def\@PushButton[#1]#2{% parameters, label
8053     \def\Fld@name{#2}%
8054     \bgroup
8055         \Field@toks={ }%
8056         \setkeys{Field}{#1}%
8057         \ifFld@hidden\def\Fld@width{1sp}\fi
8058         \LayoutPushButtonField{%
8059             \Hy@escapeform\PDFForm@Push
8060             \pdfmark[\MakeButtonField{#2}]{%
8061                 pdfmark=/ANN,Raw={\PDFForm@Push}%
8062             }%
8063         }%
8064     \egroup
8065 }
8066 \def\@Submit[#1]#2{%

```



```

8067 \Field@toks={ }%
8068 \def\Fld@width{\DefaultWidthofSubmit}%
8069 \def\Fld@height{\DefaultHeightofSubmit}%
8070 \bgroup
8071 \def\Fld@name{Submit}%
8072 \setkeys{Field}{#1}%
8073 \ifFld@hidden\def\Fld@width{1sp}\fi
8074 \Hy@escapeform\PDFForm@Submit
8075 \pdfmark[\MakeButtonField{#2}]{%
8076 pdfmark=/ANN,%
8077 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}}%
8078 }%
8079 \egroup
8080 }
8081 \def\@Reset[#1]#2{%
8082 \Field@toks={ }%
8083 \def\Fld@width{\DefaultWidthofReset}%
8084 \def\Fld@height{\DefaultHeightofReset}%
8085 \bgroup
8086 \def\Fld@name{Reset}%
8087 \setkeys{Field}{#1}%
8088 \ifFld@hidden\def\Fld@width{1sp}\fi
8089 \Hy@escapeform\PDFForm@Reset
8090 \pdfmark[\MakeButtonField{#2}]{%
8091 pdfmark=/ANN,Raw={\PDFForm@Reset}%
8092 }%
8093 \egroup
8094 }
8095 \def\@CheckBox[#1]#2{% parameters, label
8096 \def\Fld@name{#2}%
8097 \def\Fld@default{0}%
8098 \bgroup
8099 \def\Fld@width{\DefaultWidthofCheckBox}%
8100 \def\Fld@height{\DefaultHeightofCheckBox}%
8101 \Field@toks={ }%
8102 \setkeys{Field}{#1}%
8103 \ifFld@hidden\def\Fld@width{1sp}\fi
8104 \LayoutCheckField{#2}{%
8105 \Hy@escapeform\PDFForm@Check
8106 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
8107 pdfmark=/ANN,Raw={\PDFForm@Check}%
8108 }%
8109 }%
8110 \egroup
8111 }
8112 \pdfmark

```

## 46.2 dvipdf

```

8113 \dvipdf
8114 \def\@Form[#1]{\typeout{Sorry, I do not support FORMs}}
8115 \def\@endForm{}
8116 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8117 \typeout{Sorry, dvipdf does not support FORM gauges}%
8118 }
8119 \def\@TextField[#1]#2{% parameters, label
8120 \typeout{Sorry, dvipdf does not support FORM text fields}%
8121 }

```

```

8122 \def \@CheckBox[#1]#2{% parameters, label
8123   \typeout{Sorry, dvipdf does not support FORM checkboxes}%
8124 }
8125 \def \@ChoiceMenu[#1]#2#3{% parameters, label, choices
8126   \typeout{Sorry, dvipdf does not support FORM choice menus}%
8127 }
8128 \def \@PushButton[#1]#2{% parameters, label
8129   \typeout{Sorry, dvipdf does not support FORM pushbuttons}%
8130 }
8131 \def \@Reset[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
8132 \def \@Submit[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
8133 \end{dvipdf}

```

### 46.3 HyperTeX

```

8134 \def \hypertex{}
8135 \def \@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
8136 \def \@endForm{}
8137 \def \@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8138   \typeout{Sorry, HyperTeX does not support FORM gauges}%
8139 }
8140 \def \@TextField[#1]#2{% parameters, label
8141   \typeout{Sorry, HyperTeX does not support FORM text fields}%
8142 }
8143 \def \@CheckBox[#1]#2{% parameters, label
8144   \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
8145 }
8146 \def \@ChoiceMenu[#1]#2#3{% parameters, label, choices
8147   \typeout{Sorry, HyperTeX does not support FORM choice menus}%
8148 }
8149 \def \@PushButton[#1]#2{% parameters, label
8150   \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
8151 }
8152 \def \@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
8153 \def \@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
8154 \end{hypertex}

```

### 46.4 TeX4ht

```

8155 \def \tex4ht{}
8156 \def \@Form[#1]{%
8157   \setkeys{Form}{#1}%
8158   \HCode{<form action="\Form@action" method="\Form@method">}%
8159 }
8160 \def \@endForm{\HCode{</form>}}
8161 \def \@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8162   \typeout{Sorry, TeX4ht does not support gauges}%
8163 }
8164 \def \@TextField[#1]#2{% parameters, label
8165   \let\Hy@reserved@a\@empty
8166   \def\Fld@name{#2}%
8167   \def\Fld@default{}%
8168   \bgroup
8169     \Field@toks={ }%
8170     \setkeys{Field}{#1}%
8171     \HCode{<label for="\Fld@name">#2</label>}%
8172     \ifFld@password
8173       \@@PasswordField
8174     \else

```

```

8175     \@@TextField
8176     \fi
8177 \egroup
8178 }
8179 \def\@@PasswordField{%
8180   \HCode{%
8181     <input type="password"
8182       id="\Fld@name"
8183       name="\Fld@name"
8184       \ifFld@hidden type="hidden"\fi
8185       value="\Fld@default"
8186       \the\Field@toks
8187     >%
8188   }%
8189 }
8190 \def\@@TextField{%
8191   \ifFld@multiline
8192     \HCode{<textarea
8193       \ifFld@readonly readonly \fi
8194       id="\Fld@name"
8195       name="\Fld@name"
8196       \ifFld@hidden type="hidden"\fi
8197       \the\Field@toks>%
8198   }%
8199   \Fld@default
8200   \HCode{</textarea>}%
8201 \else
8202   \HCode{<input type="text"
8203     \ifFld@readonly readonly \fi
8204     id="\Fld@name"
8205     name="\Fld@name"
8206     \ifFld@hidden type="hidden"\fi
8207     value="\Fld@default" \the\Field@toks>
8208   }%
8209 \fi
8210 }
8211 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8212   \def\Fld@name{#2}%
8213   \def\Fld@default{}%
8214   \let\Hy@reserved@a\relax
8215   \bgroup
8216   \expandafter\Fld@findlength#3\\%
8217   \Field@toks={ }%
8218   \setkeys{Field}{#1}%
8219   #2%
8220   \ifFld@radio
8221     \expandafter\@@Radio#3\\%
8222   \else
8223     \expandafter\@@Menu#3\\%
8224   \fi
8225 \egroup
8226 }
8227 \def\Fld@findlength#1\\{%
8228   \Fld@menulength=0
8229   \for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
8230 }
8231 \def\@@Menu#1\\{%

```

```

8232 \HCode{<select size="\the\Fld@menulength"
8233   name="\Fld@name" \the\Field@toks>}%
8234 \@for\@curropt:=#1\do{%
8235   \expandafter\Fld@checkequals\@curropt==\\%
8236   \HCode{<option
8237     \ifx\@curropt\Fld@default selected \fi
8238     value="\@currValue">\@currDisplay</option>%
8239   }%
8240 }%
8241 \HCode{</select>}%
8242 }
8243 \def\@Radio#1\\{%
8244   \@for\@curropt:=#1\do{%
8245     \expandafter\Fld@checkequals\@curropt==\\%
8246     \HCode{<input type="radio"
8247       \ifx\@curropt\Fld@default checked \fi
8248       name="\Fld@name"
8249       value="\@currValue"
8250       \the\Field@toks>%
8251     }%
8252     \@currDisplay
8253   }%
8254 }
8255 \def\@PushButton[#1]#2{% parameters, label
8256   \def\Fld@name{#2}%
8257   \bgroup
8258     \Field@toks={ }%
8259     \setkeys{Field}{#1}%
8260     \HCode{<input type="button"
8261       name="\Fld@name"
8262       value="#2"
8263       \the\Field@toks>%
8264     }%
8265     \HCode{</button>}%
8266   \egroup
8267 }
8268 \def\@Submit[#1]#2{%
8269   \HCode{<button type="submit">#2</button>}%
8270 }
8271 \def\@Reset[#1]#2{%
8272   \HCode{<button type="reset">#2</button>}%
8273 }
8274 \def\@CheckBox[#1]#2{% parameters, label
8275   \let\Hy@reserved@a\@empty
8276   \def\Fld@name{#2}%
8277   \def\Fld@default{0}%
8278   \bgroup
8279     \Field@toks={ }%
8280     \setkeys{Field}{#1}%
8281     \HCode{<input type="checkbox"
8282       \ifFld@checked checked \fi
8283       \ifFld@disabled disabled \fi
8284       \ifFld@readonly readonly \fi
8285       name="\Fld@name"
8286       \ifFld@hidden type="hidden"\fi
8287       value="\Fld@default"
8288       \the\Field@toks>%

```

```

8289      #2%
8290    }%
8291  \egroup
8292 }
8293 </tex4ht>

```

## 46.5 pdfTeX

```

8294 <*pdfTeX>
8295 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8296   \typeout{Sorry, pdfTeX does not support FORM gauges}%
8297 }
8298 \def\MakeFieldObject#1#2{\sbox0{#1}%
8299   \immediate\pdfxform0 %
8300   \expandafter\edef\csname #2Object\endcsname{%
8301     \the\pdflastxform\space 0 R%
8302   }%
8303 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
8304 }%
8305 \def\@Form[#1]{%
8306   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
8307   \setkeys{Form}{#1}%
8308   \ifnum\pdfTeXversion>13
8309     \pdfrefobj\OBJ@pdfdocencoding
8310     \pdfrefobj\OBJ@ZaDb
8311     \pdfrefobj\OBJ@Helv
8312     \pdfrefobj\OBJ@acroform
8313   \fi
8314   \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
8315   \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

8316   \begingroup
8317     \fontfamily{pzd}%
8318     \fontencoding{U}%
8319     \fontseries{m}%
8320     \fontshape{n}%
8321     \selectfont
8322     \char123 %
8323   \endgroup
8324 }{Ding}%
8325 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{Submit}}}}{Submit}%
8326 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{SubmitP}}}}{SubmitP}%
8327 }
8328 \def\@endForm{}
8329 \def\@TextField[#1]#2{% parameters, label
8330   \def\Fld@name{#2}%
8331   \def\Fld@default{}%
8332   \let\Fld@value\@empty
8333   \def\Fld@width{\DefaultWidthofText}%
8334   \def\Fld@height{\DefaultHeightofText}%
8335   \ifFld@multiline
8336     \begingroup
8337       \dimen@=\DefaultHeightofText
8338       \dimen@=4\dimen@
8339     \edef\x{\endgroup
8340       \def\noexpand\Fld@height{\the\dimen@}%
8341     }%
8342     \x

```

```

8343 \fi
8344 \bgroup
8345 \Field@toks={ }%
8346 \setkeys{Field}{#1}%
8347 \ifFld@hidden\def\Fld@width{1sp}\fi
8348 \ifx\Fld@value\empty\def\Fld@value{\Fld@default}\fi
8349 \LayoutTextField{#2}{%
8350 \Hy@escapeform\PDFForm@Text
8351 \pdfstartlink user {\PDFForm@Text}\relax
8352 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
8353 }%
8354 \egroup
8355 }
8356 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8357 \def\Fld@name{#2}%
8358 \def\Fld@default{}%
8359 \def\Fld@width{\DefaultWidthofChoiceMenu}%
8360 \def\Fld@height{\DefaultHeightofChoiceMenu}%
8361 \bgroup
8362 \Fld@menulength=0
8363 \@tempdima\z@
8364 \@for\@curropt:=#3\do{%
8365 \expandafter\Fld@checkequals\@curropt==\%
8366 \Hy@StepCount\Fld@menulength
8367 \settowidth{\@tempdimb}{\@currDisplay}%
8368 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8369 }%
8370 \advance\@tempdima by 15\p@
8371 \Field@toks={ }%
8372 \setkeys{Field}{#1}%
8373 \ifFld@hidden\def\Fld@width{1sp}\fi
8374 \LayoutChoiceField{#2}{%
8375 \ifFld@radio
8376 \@@Radio{#3}%
8377 \else
8378 {%
8379 \ifdim\Fld@width<\@tempdima
8380 \ifdim\@tempdima<1cm\@tempdima1cm\fi
8381 \edef\Fld@width{\the\@tempdima}%
8382 \fi
8383 \def\Fld@flags{}%
8384 \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8385 \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8386 \ifx\Fld@flags\empty
8387 \@tempdima=\the\Fld@menulength\Fld@charsize
8388 \advance\@tempdima by \Fld@borderwidth bp
8389 \advance\@tempdima by \Fld@borderwidth bp
8390 \edef\Fld@height{\the\@tempdima}%
8391 \fi
8392 \@@ListBox{#3}%
8393 }%
8394 \fi
8395 }%
8396 \egroup
8397 }
8398 \def\@@Radio#1{%
8399 \Fld@listcount=0

```

```

8400 \@for\@curropt:=#1\do{%
8401   \expandafter\Fld@checkequals\@curropt==\%
8402   \Hy@StepCount\Fld@listcount
8403   \@currDisplay\space
8404   \leavevmode
8405   \Hy@escapeform\PDFForm@Radio
8406   \pdfstartlink user {%
8407     \PDFForm@Radio
8408     /AP <<
8409     /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.

```

8410       /\@currValue\space \DingObject
8411       >>
8412       >>
8413     }%
8414     \relax
8415     \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
8416     \space% deliberate space between radio buttons
8417   }%
8418 }
8419 \newcount\Fld@listcount
8420 \def\@@ListBox#1{%
8421   \Choice@toks={ }%
8422   \Fld@listcount=0
8423   \@for\@curropt:=#1\do{%
8424     \expandafter\Fld@checkequals\@curropt==\%
8425     \Hy@StepCount\Fld@listcount
8426     \edef\@processme{%
8427       \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8428     }\@processme
8429   }%
8430   \leavevmode
8431   \Hy@escapeform\PDFForm@List
8432   \pdfstartlink user {\PDFForm@List}\relax
8433   \MakeChoiceField{\Fld@width}{\Fld@height}%
8434   \pdfendlink
8435 }
8436 \def\@PushButton[#1]#2{% parameters, label
8437   \def\Fld@name{#2}%
8438   \bgroup
8439     \Field@toks={ }%
8440     \setkeys{Field}{#1}%
8441     \ifFld@hidden\def\Fld@width{1sp}\fi
8442     \LayoutPushButtonField{%
8443       \leavevmode
8444       \Hy@escapeform\PDFForm@Push
8445       \pdfstartlink user {\PDFForm@Push}\relax
8446       \MakeButtonField{#2}%
8447       \pdfendlink
8448     }%
8449   \egroup
8450 }
8451 \def\@Submit[#1]#2{%
8452   \Field@toks={ }%
8453   \def\Fld@width{\DefaultWidthofSubmit}%

```

```

8454 \def\Fld@height{\DefaultHeightofSubmit}%
8455 \bgroup
8456 \def\Fld@name{Submit}%
8457 \setkeys{Field}{#1}%
8458 \ifFld@hidden\def\Fld@width{1sp}\fi
8459 \leavevmode
8460 \Hy@escapeform\PDFForm@Submit
8461 \pdfstartlink user {%
8462 \PDFForm@Submit
8463 /AP << /N \SubmitObject\space /D \SubmitPObject >>
8464 }%
8465 \relax
8466 \MakeButtonField{#2}%
8467 \pdfendlink
8468 \egroup
8469 }
8470 \def\@Reset[#1]#2{%
8471 \Field@toks={ }%
8472 \def\Fld@width{\DefaultWidthofReset}%
8473 \def\Fld@height{\DefaultHeightofReset}%
8474 \bgroup
8475 \def\Fld@name{Reset}%
8476 \setkeys{Field}{#1}%
8477 \ifFld@hidden\def\Fld@width{1sp}\fi
8478 \leavevmode
8479 \Hy@escapeform\PDFForm@Reset
8480 \pdfstartlink user {\PDFForm@Reset}\relax
8481 \MakeButtonField{#2}%
8482 \pdfendlink
8483 \egroup
8484 }
8485 \def\@CheckBox[#1]#2{% parameters, label
8486 \def\Fld@name{#2}%
8487 \def\Fld@default{0}%
8488 \bgroup
8489 \def\Fld@width{\DefaultWidthofCheckBox}%
8490 \def\Fld@height{\DefaultHeightofCheckBox}%
8491 \Field@toks={ }%
8492 \setkeys{Field}{#1}%
8493 \ifFld@hidden\def\Fld@width{1sp}\fi
8494 \LayoutCheckField{#2}{%
8495 \Hy@escapeform\PDFForm@Check
8496 \pdfstartlink user {\PDFForm@Check}\relax
8497 \MakeCheckField{\Fld@width}{\Fld@height}%
8498 \pdfendlink
8499 }%
8500 \egroup
8501 }
8502 \pdfobj { << /Type /Encoding /Differences [ 24 /breve /caron
8503 /circumflex /dotaccent /hungarumlaut /ogonek /ring /tilde 39
8504 /quotesingle 96 /grave 128 /bullet /dagger /daggerdbl /ellipsis
8505 /emdash /endash /florin /fraction /guilsinglleft /guilsinglright
8506 /minus /perthousand /quotedblbase /quotedblleft /quotedblright
8507 /quoteleft /quoteright /quotesinglbase /trademark /fi /fl /Lslash /OE
8508 /Scaron /Ydieresis /Zcaron /dotlessi /lslash /oe /scaron /zcaron 164
8509 /currency 166 /brokenbar 168 /dieresis /copyright /ordfeminine 172
8510 /logicalnot /.notdef /registered /macron /degree /plusminus

```



```

8511 /twosuperior /threesuperior /acute /mu 183 /periodcentered /cedilla
8512 /onesuperior /ordmasculine 188 /onequarter /onehalf /threequarters 192
8513 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE /Ccedilla
8514 /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute /Icircumflex
8515 /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex /Otilde
8516 /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex /Udieresis
8517 /Yacute /Thorn /germandbls /agrave /aacute /acircumflex /atilde
8518 /adieresis /aring /ae /ccedilla /egrave /eacute /ecircumflex
8519 /edieresis /igrave /iacute /icircumflex /idieresis /eth /ntilde
8520 /ograve /oacute /ocircumflex /otilde /odieresis /divide /oslash
8521 /ugrave /uacute /ucircumflex /udieresis /yacute /thorn /ydieresis ] >>
8522 }
8523 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
8524 \pdfobj {
8525   <<
8526     /Type /Font
8527     /Subtype /Type1
8528     /Name /ZaDb
8529     /BaseFont /ZapfDingbats
8530 >>
8531 }
8532 \edef\OBJ@ZaDb{\the\pdflastobj}
8533 \pdfobj { <<
8534   /Type /Font
8535   /Subtype /Type1
8536   /Name /Helv
8537   /BaseFont /Helvetica
8538   /Encoding \OBJ@pdfdocencoding\space 0 R
8539 >>
8540 }
8541 \edef\OBJ@Helv{\the\pdflastobj}
8542 \pdfobj {
8543   <<
8544     /Fields []
8545     /DR <<
8546       /Font << /ZaDb \OBJ@ZaDb\space 0 R /Helv \OBJ@Helv\space 0 R >>
8547     >>
8548     /DA (/Helv 10 Tf 0 g )
8549     /NeedAppearances true
8550 >>
8551 }
8552 \edef\OBJ@acroform{\the\pdflastobj}
8553 \pdfobj {

```

## 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.

```

8554 \def\*dvipdfm\

```

\@Gauge

```

8555 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8556   \typeout{Sorry, dvipdfm does not support FORM gauges}%
8557 }

```

\@Form

```

8558 \def\@Form[#1]{%

```

```

8559 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
8560 \setkeys{Form}{#1}%
8561 \@pdfm@mark{obj @afields [ ]}%
8562 \@pdfm@mark{obj @corder [ ]}%
8563 \@pdfm@mark{%
8564   obj @aform <<
8565     /Fields @afields
8566     /DR << /Font << /ZaDb @OBJZaDb /Helv @OBJHelv >> >>
8567     /DA (/Helv 10 Tf 0 g )
8568     /CO @corder
8569     /NeedAppearances true
8570   >>%
8571 }%
8572 \@pdfm@mark{put @catalog << /AcroForm @aform >>}%
8573 }

```

\@endForm

```

8574 \def\@endForm{}

```

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

```

8575 \def\dvipdfm@setdim{%
8576   height \the\ht\pdfm@box\space
8577   width \the\wd\pdfm@box\space
8578   depth \the\dp\pdfm@box\space
8579 }

```

\@TextField

```

8580 \def\@TextField[#1]#2{% parameters, label
8581   \def\Fld@name{#2}%
8582   \def\Fld@default{}%
8583   \let\Fld@value\@empty
8584   \def\Fld@width{\DefaultWidthofText}%
8585   \def\Fld@height{\DefaultHeightofText}%
8586   \ifFld@multiline
8587     \begingroup
8588       \dimen@=\DefaultHeightofText
8589       \dimen@=4\dimen@
8590       \edef\x{\endgroup
8591         \def\noexpand\Fld@height{\the\dimen@}%
8592       }%
8593     \x
8594   \fi
8595   \bgroup
8596     \Field@toks={ }%
8597     \setkeys{Field}{#1}%
8598     \ifFld@hidden\def\Fld@width{1sp}\fi
8599     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
8600     \setbox\pdfm@box=\hbox{%
8601       \MakeTextField{\Fld@width}{\Fld@height}%
8602     }%
8603     \LayoutTextField{#2}{%
8604       \Hy@escapeform\PDFForm@Text
8605       \@pdfm@mark{%
8606         ann @\Fld@name\space \dvipdfm@setdim << \PDFForm@Text >>%
8607       }%
8608     }%
8609     \unhbox\pdfm@box

```

```

8610 \pdfmark{put @afields @\Fld@name}% record in @afields array
8611 \egroup
8612 }

```

\@ChoiceMenu

```

8613 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8614 \def\Fld@name{#2}%
8615 \def\Fld@default{}%
8616 \def\Fld@width{\DefaultWidthofChoiceMenu}%
8617 \def\Fld@height{\DefaultHeightofChoiceMenu}%
8618 \bgroup
8619 \Fld@menulength=0
8620 \@tempdima\z@
8621 \@for\@curropt:=#3\do{%
8622 \expandafter\Fld@checkequals\@curropt==\%
8623 \Hy@StepCount\Fld@menulength
8624 \settowidth{\@tempdimb}{\@currDisplay}%
8625 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8626 }%
8627 \advance\@tempdima by 15\p@
8628 \Field@toks={ }%
8629 \setkeys{Field}{#1}%
8630 \ifFld@hidden\def\Fld@width{1sp}\fi
8631 \LayoutChoiceField{#2}{%
8632 \ifFld@radio
8633 \@@Radio{#3}%
8634 \else
8635 {%
8636 \ifdim\Fld@width<\@tempdima
8637 \ifdim\@tempdima<1cm\@tempdima1cm\fi
8638 \edef\Fld@width{\the\@tempdima}%
8639 \fi
8640 \def\Fld@flags{}%
8641 \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8642 \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8643 \ifx\Fld@flags\@empty
8644 \@tempdima=\the\Fld@menulength\Fld@charsize
8645 \advance\@tempdima by \Fld@borderwidth bp
8646 \advance\@tempdima by \Fld@borderwidth bp
8647 \edef\Fld@height{\the\@tempdima}%
8648 \fi
8649 \@@ListBox{#3}%
8650 }%
8651 \fi
8652 }%
8653 \egroup
8654 }

```

\@@Radio

```

8655 \def\@@Radio#1{%
8656 \Fld@listcount=0
8657 \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
8658 \@for\@curropt:=#1\do{%
8659 \expandafter\Fld@checkequals\@curropt==\%
8660 \Hy@StepCount\Fld@listcount
8661 \@currDisplay\space
8662 \leavevmode

```

```

8663 \Hy@escapeform\PDFForm@Radio
8664 \@pdfm@mark{%
8665   ann \ifnum\Fld@listcount=1 @\Fld@name\space\fi
8666   \dvipdfm@setdim
8667   <<
8668     \PDFForm@Radio\space
8669     /AP << /N << /\@currValue /null >> >>
8670   >>%
8671 }%
8672 \unhcopy\pdfm@box\space% deliberate space between radio buttons
8673 \ifnum\Fld@listcount=1\@pdfm@mark{put @afields @\Fld@name}\fi
8674 }%
8675 }

```

\Fld@listcount

```
8676 \newcount\Fld@listcount
```

\@@ListBox

```

8677 \def\@@ListBox#1{%
8678   \Choice@toks={ }%
8679   \Fld@listcount=0
8680   \@for\@curropt:=#1\do{%
8681     \expandafter\Fld@checkequals\@curropt==\\%
8682     \Hy@StepCount\Fld@listcount
8683     \edef\@processme{%
8684       \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8685     }\@processme
8686   }%
8687   \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
8688   \leavevmode
8689   \Hy@escapeform\PDFForm@List
8690   \@pdfm@mark{%
8691     ann @\Fld@name\space\dvipdfm@setdim
8692     << \PDFForm@List >>%
8693   }%
8694   \unhbox\pdfm@box
8695   \@pdfm@mark{put @afields @\Fld@name}%
8696 }

```

\@PushButton

```

8697 \def\@PushButton[#1]#2{% parameters, label
8698   \def\Fld@name{#2}%
8699   \bgroup
8700     \Field@toks={ }%
8701     \setkeys{Field}{#1}%
8702     \ifFld@hidden\def\Fld@width{1sp}\fi
8703     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8704     \LayoutPushButtonField{%
8705       \leavevmode
8706       \Hy@escapeform\PDFForm@Push
8707       \@pdfm@mark{%
8708         ann @\Fld@name\space\dvipdfm@setdim
8709         << \PDFForm@Push >>%
8710       }%
8711     }%
8712     \unhbox\pdfm@box
8713     \@pdfm@mark{put @afields @\Fld@name}%

```

```

8714 \egroup
8715 }

\@Submit
8716 \def\@Submit[#1]#2{%
8717   \Field@toks={ }%
8718   \def\Fld@width{\DefaultWidthofSubmit}%
8719   \def\Fld@height{\DefaultHeightofSubmit}%
8720   \bgroup
8721     \def\Fld@name{Submit}%
8722     \setkeys{Field}{#1}%
8723     \ifFld@hidden\def\Fld@width{1sp}\fi
8724     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8725     \leavevmode
8726     \Hy@escapeform\PDFForm@Submit
8727     \@pdfm@mark{%
8728       ann @\Fld@name\space\dvipdfm@setdim
8729       << \PDFForm@Submit >>%
8730     }%
8731     \unhbox\pdfm@box%
8732     \@pdfm@mark{put @afields @\Fld@name}%
8733   \egroup
8734 }

\@Reset
8735 \def\@Reset[#1]#2{%
8736   \Field@toks={ }%
8737   \def\Fld@width{\DefaultWidthofReset}%
8738   \def\Fld@height{\DefaultHeightofReset}%
8739   \bgroup
8740     \def\Fld@name{Reset}%
8741     \setkeys{Field}{#1}%
8742     \ifFld@hidden\def\Fld@width{1sp}\fi
8743     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8744     \leavevmode
8745     \Hy@escapeform\PDFForm@Reset
8746     \@pdfm@mark{%
8747       ann @\Fld@name\space\dvipdfm@setdim
8748       << \PDFForm@Reset >>%
8749     }%
8750     \unhbox\pdfm@box
8751     \@pdfm@mark{put @afields @\Fld@name}%
8752   \egroup
8753 }

\@CheckBox
8754 \def\@CheckBox[#1]#2{% parameters, label
8755   \def\Fld@name{#2}%
8756   \def\Fld@default{0}%
8757   \bgroup
8758     \def\Fld@width{\DefaultWidthofCheckBox}%
8759     \def\Fld@height{\DefaultHeightofCheckBox}%
8760     \Field@toks={ }%
8761     \setkeys{Field}{#1}%
8762     \ifFld@hidden\def\Fld@width{1sp}\fi
8763     \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
8764     \LayoutCheckField{#2}{%

```

```

8765     \Hy@escapeform\PDFForm@Check
8766     \@pdfm@mark{%
8767         ann @\Fld@name\space\dvipdfm@setdim
8768         << \PDFForm@Check >>%
8769     }%
8770     \unhbox\pdfm@box
8771     \@pdfm@mark{put @afields @\Fld@name}%
8772 }%
8773 \egroup
8774 }

8775 \@pdfm@mark{obj @OBJpdfdocencoding << /Type /Encoding /Differences [%
8776     24 /breve /caron /circumflex /dotaccent /hungarumlaut /ogonek /ring
8777     /tilde
8778     39 /quotesingle
8779     96 /grave
8780     128 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin
8781     /fraction /guilsinglleft /guilsinglright /minus /perthousand
8782     /quotedblbase /quotedblleft /quotedblright /quoteleft /quoteright
8783     /quotesinglbase /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis
8784     /Zcaron /dotlessi /lslash /oe /scaron /zcaron
8785     164 /currency
8786     166 /brokenbar
8787     168 /dieresis /copyright /ordfeminine
8788     172 /logicalnot /.notdef /registered /macron /degree /plusminus
8789     /twosuperior /threesuperior /acute /mu
8790     183 /periodcentered /cedilla /onesuperior /ordmasculine
8791     188 /onequarter /onehalf /threequarters
8792     192 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE
8793     /Ccedilla /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute
8794     /Icircumflex /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex
8795     /Otilde /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex
8796     /Udieresis /Yacute /Thorn /germandbls /agrave /aacute /acircumflex
8797     /atilde /adieresis /aring /ae /ccedilla /egrave /eacute
8798     /ecircumflex /edieresis /igrave /iacute /icircumflex /idieresis
8799     /eth /ntilde /ograde /oacute /ocircumflex /otilde /odieresis
8800     /divide /oslash /ugrave /uacute /ucircumflex /udieresis /yacute
8801     /thorn /ydieresis%
8802 ] >>
8803 }

8804 \@pdfm@mark{obj @OBJZaDb
8805     <<
8806         /Type /Font
8807         /Subtype /Type1
8808         /Name /ZaDb
8809         /BaseFont /ZapfDingbats
8810     >>
8811 }

8812 \@pdfm@mark{obj @OBJHelv
8813     <<
8814         /Type /Font
8815         /Subtype /Type1
8816         /Name /Helv
8817         /BaseFont /Helvetica
8818         /Encoding @OBJpdfdocencoding
8819     >>
8820 }
8821 </dvipdfm>

```

## 46.7 Common forms part

8822  $\langle$ \*pdfform $\rangle$

\Hy@escapestring

```
8823 \begingroup\expandafter\expandafter\expandafter\endgroup
8824 \expandafter\ifx\csname pdfescapestring\endcsname\relax
8825   \let\Hy@escapestring\@firstofone
8826   \def\Hy@escapeform#1{%
8827     \ifHy@escapeform
8828       \def\Hy@escapestring##1{%
8829         \noexpand\Hy@escapestring{\noexpand##1}%
8830       }%
8831       \edef\Hy@temp{#1}%
8832       \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
8833     \def\Hy@escapestring##1{%
8834       \ifundefined{Hy@esc@\string##1}{%
8835         ##1%
8836         \ThisShouldNotHappen
8837       }{%
8838         \csname Hy@esc@\string##1\endcsname
8839       }%
8840     }%
8841   \else
8842     \let\Hy@escapestring\@firstofone
8843   \fi
8844 }%
8845 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
8846   \ifx\#3\%
8847   \else
8848     \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
8849     \Hy@ReturnAfterFi{%
8850       \Hy@@escapeform#3\@nil
8851     }%
8852   \fi
8853 }%
8854 \else
8855   \def\Hy@escapeform#1{%
8856     \ifHy@escapeform
8857       \let\Hy@escapestring\pdfescapestring
8858     \else
8859       \let\Hy@escapestring\@firstofone
8860     \fi
8861   }%
8862   \Hy@escapeform{}%
8863 \fi
```

\PDFForm@Check

```
8864 \def\PDFForm@Check{%
8865   /Subtype /Widget
8866   \ifFld@hidden /F 6 \else /F 4 \fi
8867   /T (\Hy@escapestring{Fld@name})
8868   /Q \Fld@align\space
8869   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8870   /MK <<
8871     /BC [\Fld@bordercolor]
8872     \ifx\Fld@bcolor\@empty
8873     \else
```

```

8874      /BG [\Fld@bcolor]
8875      \fi
8876      /CA (\Hy@escapestring{\Fld@cbsymbol})
8877      >>
8878      /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
8879      /FT /Btn
8880      /H /P
8881      \ifFld@checked /V /Yes \else /V /Off \fi
8882 }

```

#### \PDFForm@Push

```

8883 \def\PDFForm@Push{%
8884   /Subtype /Widget
8885   \ifFld@hidden /F 6 \else /F 4 \fi
8886   /T (\Hy@escapestring{\Fld@name})
8887   /FT /Btn
8888   /Ff 65540
8889   /H /P
8890   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8891   /MK <<
8892     /BC [\Fld@bordercolor]
8893   >>
8894   /A << /S /JavaScript /JS (\Hy@escapestring{\Fld@onclick}) >>
8895 }

```

#### \Fld@additionalactions

```

8896 \def\Fld@additionalactions{%
8897   /AA <<

```

K input (keystroke) format

```

8898     \ifx\Fld@keystroke@code\@empty
8899     \else
8900       /K << /S /JavaScript /JS (\Hy@escapestring{\Fld@keystroke@code}) >>
8901     \fi

```

#### F display format

```

8902     \ifx\Fld@format@code\@empty
8903     \else
8904       /F << /S /JavaScript /JS (\Hy@escapestring{\Fld@format@code}) >>
8905     \fi

```

#### V validation

```

8906     \ifx\Fld@validate@code\@empty
8907     \else
8908       /V << /S /JavaScript /JS (\Hy@escapestring{\Fld@validate@code}) >>
8909     \fi

```

#### C calculation

```

8910     \ifx\Fld@calculate@code\@empty
8911     \else
8912       /C << /S /JavaScript /JS (\Hy@escapestring{\Fld@calculate@code}) >>
8913     \fi

```

#### Fo receiving the input focus

```

8914     \ifx\Fld@onfocus@code\@empty
8915     \else
8916       /Fo << /S /JavaScript /JS (\Hy@escapestring{\Fld@onfocus@code}) >>
8917     \fi

```



Bl loosing the input focus (blurred)

```
8918     \ifx\Fld@onblur@code\@empty
8919     \else
8920     /Bl << /S /JavaScript /JS (\Hy@escapestring{\Fld@onblur@code}) >>
8921     \fi
```

D pressing the mouse button (down)

```
8922     \ifx\Fld@onmousedown@code\@empty
8923     \else
8924     /D << /S /JavaScript /JS (\Hy@escapestring{\Fld@onmousedown@code}) >>
8925     \fi
```

U releasing the mouse button (up)

```
8926     \ifx\Fld@onmouseup@code\@empty
8927     \else
8928     /U << /S /JavaScript /JS (\Hy@escapestring{\Fld@onmouseup@code}) >>
8929     \fi
```

E cursor enters the annotation's active area.

```
8930     \ifx\Fld@onenter@code\@empty
8931     \else
8932     /E << /S /JavaScript /JS (\Hy@escapestring{\Fld@onenter@code}) >>
8933     \fi
```

X cursor exits the annotation's active area.

```
8934     \ifx\Fld@onexit@code\@empty
8935     \else
8936     /X << /S /JavaScript /JS (\Hy@escapestring{\Fld@onexit@code}) >>
8937     \fi
8938 >>
8939 }
```

\PDFForm@List

```
8940 \def\PDFForm@List{%
8941 /Subtype /Widget
8942 \ifFld@hidden /F 6 \else /F 4 \fi
8943 /T (\Hy@escapestring{\Fld@name})
8944 /FT /Ch
8945 /Q \Fld@align\space
8946 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8947 /MK <<
8948 /BC [\Fld@bordercolor]
8949 \ifx\Fld@bcolor\@empty
8950 \else
8951 /BG [\Fld@bcolor]
8952 \fi
8953 >>
8954 /DA (/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg )
8955 /Opt [\the\Choice@toks]
8956 /DV (\Hy@escapestring{\Fld@default})
8957 \Fld@additionalactions
8958 \Fld@flags
8959 }
```

\PDFForm@Radio

```
8960 \def\PDFForm@Radio{%
8961 /Subtype /Widget
8962 \ifFld@hidden /F 6 \else /F 4 \fi
```

```

8963 /T (\Hy@escapestring{\Fld@name})
8964 /FT /Btn
8965 /Ff 49152
8966 /H /P
8967 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8968 /MK <<
8969 /BC [\Fld@bordercolor]
8970 \ifx\Fld@bcolor\@empty
8971 \else
8972 /BG [\Fld@bcolor]
8973 \fi
8974 /CA (H)
8975 >>
8976 /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
8977 \ifx\@currValue\Fld@default
8978 /V /\Fld@default\space
8979 \else
8980 /V /Off
8981 \fi
8982 \Fld@additionalactions
8983 }

```

#### \PDFForm@Text

```

8984 \def\PDFForm@Text{%
8985 /Subtype /Widget
8986 \ifFld@hidden /F 6 \else /F 4 \fi
8987 /T (\Hy@escapestring{\Fld@name})
8988 /Q \Fld@align\space
8989 /FT /Tx
8990 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8991 /MK <<
8992 /BC [\Fld@bordercolor]
8993 \ifx\Fld@bcolor\@empty
8994 \else
8995 /BG [\Fld@bcolor]
8996 \fi
8997 >>
8998 /DA (/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg )
8999 /DV (\Hy@escapestring{\Fld@default})
9000 /V (\Hy@escapestring{\Fld@value})
9001 \Fld@additionalactions
9002 \ifFld@multiline
9003 \ifFld@readonly /Ff 4097 \else /Ff 4096 \fi
9004 \else
9005 \ifFld@password
9006 \ifFld@readonly /Ff 8193 \else /Ff 8192 \fi
9007 \else
9008 \ifFld@readonly /Ff 1 \fi
9009 \fi
9010 \fi
9011 \ifnum\Fld@maxlen>0/MaxLen \Fld@maxlen \fi
9012 }

```

#### \PDFForm@Submit

```

9013 \def\PDFForm@Submit{%
9014 /Subtype /Widget
9015 \ifFld@hidden /F 6 \else /F 4 \fi

```

```

9016 /T (\Hy@escapestring{\Fld@name})
9017 /FT /Btn
9018 /Ff 65540
9019 /H /P
9020 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
9021 /MK <<
9022 /BC [\Fld@bordercolor]
9023 >>
9024 /A <<
9025 /S /SubmitForm
9026 /F <<
9027 /FS /URL
9028 /F (\Hy@escapestring{\Form@action})
9029 >>
9030 \ifForm@html /Flags 4 \fi
9031 >>
9032 }

```

\PDFForm@Reset

```

9033 \def\PDFForm@Reset{%
9034 /Subtype /Widget
9035 \ifFld@hidden /F 6 \else /F 4 \fi
9036 /T (\Hy@escapestring{\Fld@name})
9037 /FT /Btn
9038 /H /P
9039 /DA (/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)
9040 /Ff 65540
9041 /MK <<
9042 /BC [\Fld@bordercolor]
9043 % /CA (Clear)
9044 % /AC (Done)
9045 >>
9046 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
9047 /A << /S /ResetForm >>
9048 }

9049 </pdfform>
9050 <*package>

```

## 47 Bookmarks in the PDF file

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

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

```

9051 \def\phantomsection{%
9052 \Hy@GlobalStepCount\Hy@linkcounter
9053 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
9054 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9055 }
9056 </package>

```

## 47.1 Bookmarks

9057 `<*outlines>`

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper.pdf and slides.pdf in the doc directory of hyperref.

```
9058 \def\Hy@writebookmark#1#2#3#4#5{% section number, text, label, level, file
9059 \ifx\WriteBookmarks\relax%
9060 \else
9061 \ifnum#4>\Hy@bookmarksdepth\relax
9062 \else
9063 \@@writetorep{#1}{#2}{#3}{#4}{#5}%
9064 \fi
9065 \fi}
9066 \def\Hy@currentbookmarklevel{0}
9067 \def\Hy@numberline#1{#1 }
9068 \def\@@writetorep#1#2#3#4#5{%
9069 \begingroup
9070 \edef\Hy@tempa{#5}%
9071 \ifx\Hy@tempa\Hy@bookmarkstype
9072 \edef\Hy@level{#4}%
9073 \ifx\Hy@levelcheck Y%
9074 \@tempcnta\Hy@level\relax
9075 \advance\@tempcnta by -1
9076 \ifnum\Hy@currentbookmarklevel<\@tempcnta
9077 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
9078 \advance\@tempcnta by 1
9079 \Hy@Warning{%
9080 Difference (\the\@tempcnta) between bookmark levels is %
9081 greater \MessageBreak than one, level fixed%
9082 }%
9083 \@tempcnta\Hy@currentbookmarklevel
9084 \advance\@tempcnta by 1
9085 \edef\Hy@level{\the\@tempcnta}%
9086 \fi
9087 \else
9088 \global\let\Hy@levelcheck Y%
9089 \fi
9090 \global\let\Hy@currentbookmarklevel\Hy@level
9091 \@tempcnta\Hy@level\relax
9092 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
9093 \advance\@tempcnta by -1
9094 \edef\Hy@tempa{#3}%
9095 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
9096 \ifx\Hy@tempa\Hy@tempb
9097 \Hy@Warning{%
9098 The anchor of a bookmark and its parent's must not%
9099 \MessageBreak be the same. Added a new anchor%
9100 }%
9101 \phantomsection
9102 \fi
9103 \ifHy@bookmarksnumbered
9104 \let\numberline\Hy@numberline
9105 \let\partnumberline\Hy@numberline
9106 \let\chapternumberline\Hy@numberline
```

```

9107 \else
9108 \let\numberline\@gobble
9109 \let\partnumberline\@gobble
9110 \let\chapternumberline\@gobble
9111 \fi
9112 \pdfstringdef\Hy@tempa{#2}%
9113 \if@files
9114 \protected@write\@outlinefile{}\{%
9115 \protect\BOOKMARK
9116 [\Hy@level] [\@bookmarkopenstatus{\Hy@level}]{#3}%
9117 {\Hy@tempa}{\Hy@tempb}%
9118 }%
9119 \fi
9120 \fi
9121 \endgroup
9122 }

```

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

```

9123 \newcommand{\currentpdfbookmark}{\%
9124 \pdfbookmark[\Hy@currentbookmarklevel]%
9125 }
9126 \newcommand{\subpdfbookmark}{\%
9127 \@tempcnta\Hy@currentbookmarklevel
9128 \Hy@StepCount\@tempcnta
9129 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
9130 }
9131 \newcommand{\belowpdfbookmark}[2]{\%
9132 \@tempcnta\Hy@currentbookmarklevel
9133 \Hy@StepCount\@tempcnta
9134 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
9135 \advance\@tempcnta by -1
9136 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
9137 }

```

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.

```

9138 \renewcommand\pdfbookmark[3][0]{\%
9139 \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
9140 \hyper@anchorstart{#3.#1}\hyper@anchorend
9141 }
9142 \def\BOOKMARK{\@ifnextchar[{\@BOOKMARK[1][-]}
9143 \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.

```

9144 \<vtex>
9145 \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.

```

9146 \begin{group}

```

```

9147 \catcode'\'=12
9148 \ifnum\Hy@VTeXversion<650 %
9149 \catcode'\=12
9150 \gdef\hv@pdf@char#1#2#3{%
9151 \char
9152 \ifcase'#1#2#3
9153 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
9154 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
9155 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
9156 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
9157 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
9158 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
9159 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
9160 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
9161 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
9162 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
9163 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
9164 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
9165 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
9166 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
9167 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
9168 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
9169 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
9170 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
9171 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
9172 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
9173 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
9174 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
9175 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
9176 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
9177 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
9178 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
9179 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
9180 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
9181 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
9182 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
9183 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
9184 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
9185 \fi
9186 }
9187 \else
9188 \gdef\hv@pdf@char{\char'}
9189 \fi
9190 \endgroup

```

\@@BOOKMARK

```

9191 \def\@@BOOKMARK[#1][#2]#3#4#5{%
9192 \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
9193 \edef\@mycount{\the\@serial@counter}%
9194 \Hy@StepCount\@serial@counter
9195 \edef\@parcount{%
9196 \expandafter\ifx\csname @count@#5\endcsname\relax
9197 0%
9198 \else
9199 \csname @count@#5\endcsname
9200 \fi
9201 }%

```

```

9202 \immediate\special{!outline #3;p=\@parcount,i=\@mycount,s=\ifx#2-c\else
9203 o\fi,t=#4}%
9204 }%

```

# \ReadBookmarks

```

9205 \def\ReadBookmarks{%
9206   \begingroup
9207     \def\O{\hv@pdf@char 0}%
9208     \def\1{\hv@pdf@char 1}%
9209     \def\2{\hv@pdf@char 2}%
9210     \def\3{\hv@pdf@char 3}%
9211     \def\{({}%
9212     \def\)}{)%
9213     \def\do##1{%
9214       \ifnum\the\catcode'##1=\active
9215         \makeother##1%
9216       \fi
9217     }%
9218     \dospecials
9219     \InputIfFileExists{\jobname.out}{\}{}%
9220   \endgroup
9221   \ifx\WriteBookmarks\relax
9222   \else
9223     \if@files
9224       \newwrite\@outlinefile
9225       \immediate\openout\@outlinefile=\jobname.out
9226       \ifHy@typexml
9227         \immediate\write\@outlinefile{<relaxxml>\relax}%
9228       \fi
9229     \fi
9230   \fi
9231 }

9232 </vtex>

9233 <*\vtex>
9234 \def\ReadBookmarks{%
9235   \begingroup
9236     \escapechar='\\%
9237     \let\escapechar\@gobble %
9238     \def\@@BOOKMARK [##1][##2]##3##4##5{\calc@bm@number{##5}}%
9239     \InputIfFileExists{\jobname.out}{\}{}%
9240     \ifx\WriteBookmarks\relax
9241       \global\let\WriteBookmarks\relax
9242     \fi
9243     \def\@@BOOKMARK [##1][##2]##3##4##5{%
9244       \def\Hy@temp{##4}%
9245     <*\pdfte
9246       \Hy@pstringdef\Hy@pstringName{##3}%
9247       \Hy@OutlineName{\Hy@pstringName{
9248         ##2\check@bm@number{##3}%
9249       }{%
9250         \expandafter\strip@prefix\meaning\Hy@temp
9251       }%
9252 </pdfte
9253 <*\pdfmark
9254       \Hy@pstringdef\Hy@pstringName{##3}%
9255       \pdfmark{

```

```

9256 pdfmark=/OUT,%
9257 Count={##2\check@bm@number{##3}},%
9258 Dest={\Hy@pstringName},%
9259 Title=\expandafter\strip@prefix\meaning\Hy@temp
9260 }%
9261 \pdfmark>
9262 \*dvipdfm>
9263 \Hy@pstringdef\Hy@pstringName{##3}%
9264 \@pdfm@mark{%
9265 outline ##1 <<
9266 /Title (\expandafter\strip@prefix\meaning\Hy@temp)
9267 /A <<
9268 /S /GoTo
9269 /D (\Hy@pstringName)
9270 >>
9271 >>
9272 }%
9273 \dvipdfm>
9274 }%
9275 {%
9276 \def\WriteBookmarks{0}%
9277 \InputIfFileExists{\jobname.out}{-}{-}%
9278 }%
9279 {%\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
9280 \ifx\WriteBookmarks\relax
9281 \else
9282 \if@files
9283 \newwrite\@outlinefile
9284 \immediate\openout\@outlinefile=\jobname.out
9285 \ifHy@typexml
9286 \immediate\write\@outlinefile{<relaxxml>\relax}%
9287 \fi
9288 \fi
9289 \fi
9290 \endgroup
9291 }
9292 \*pdfTeX>
9293 \def\Hy@OutlineName#1#2#3#4{%
9294 \pdfoutline goto name{#2}count#3{#4}%
9295 }
9296 \pdfTeX>
9297 \def\check@bm@number#1{%
9298 \expandafter\ifx\csname B_#1\endcsname\relax
9299 0%
9300 \else
9301 \csname B_#1\endcsname
9302 \fi
9303 }
9304 \def\calc@bm@number#1{%
9305 \@tempcnta=\check@bm@number{#1}\relax
9306 \advance\@tempcnta by1
9307 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
9308 }
9309 \!/vtex>

```

This code is added, so that option ‘pdfpagenumbers’ works with option ‘implicit’ (suggestion of Sebastian Rahtz).

```

9310 \ifHy@implicit

```



```

9311 \else
9312   \def\@begindvi{%
9313     \unvbox\@begindvibox
9314     \HyPL@EveryPage
9315     \global\let\@begindvi\HyPL@EveryPage
9316   }%
9317   \expandafter\endinput
9318 \fi

9319 </outlines>
9320 <*outlines | hypertex>

9321 \let\H@old@ssect\@ssect
9322 \def\@ssect#1#2#3#4#5{%
9323   \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
9324   \phantomsection
9325 }
9326 \let\H@old@schapter\@schapter
9327 \def\@schapter#1{%
9328   \H@old@schapter{#1}%
9329   \begingroup
9330     \let\@mkboth\@gobbletwo
9331     \Hy@GlobalStepCount\Hy@linkcounter
9332     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9333     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9334   \endgroup
9335 }

```

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:

```

9336 \@ifundefined{chapter}{%
9337   \let\Hy@org@chapter\@chapter
9338   \def\@chapter{%
9339     \def\Hy@next{%
9340       \Hy@GlobalStepCount\Hy@linkcounter
9341       \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9342       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9343     }%
9344     \ifnum\c@secnumdepth>\m@ne
9345       \@ifundefined{if@mainmatter}%
9346       \iftrue{\csname if@mainmatter\endcsname}
9347       \let\Hy@next\relax
9348     \fi
9349   \fi
9350   \Hy@next
9351   \Hy@org@chapter
9352 }%
9353 }

9354 \let\H@old@part\@part
9355 \begingroup\expandafter\expandafter\expandafter\endgroup
9356 \expandafter\ifx\csname chapter\endcsname\relax
9357   \let\Hy@secnum@part\z@
9358 \else
9359   \let\Hy@secnum@part\m@ne
9360 \fi
9361 \def\@part{%
9362   \ifnum\Hy@secnum@part>\c@secnumdepth

```

```

9363 \phantomsection
9364 \fi
9365 \H@old@part
9366 }

9367 \let\H@old@spart\@spart
9368 \def\@spart#1{%
9369 \H@old@spart{#1}%
9370 \Hy@GlobalStepCount\Hy@linkcounter
9371 \xdef\@currentHref{part*.\the\Hy@linkcounter}%
9372 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9373 }

9374 \let\H@old@sect\@sect
9375 \def\@sect#1#2#3#4#5#6[#7]#8{%
9376 \ifnum #2>\c@secnumdepth
9377 \Hy@GlobalStepCount\Hy@linkcounter
9378 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
9379 \fi
9380 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}%
9381 \ifnum #2>\c@secnumdepth
9382 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9383 \fi
9384 }

9385 </outlines | hypertex>
9386 <*outlines>

9387 \expandafter\def\csname Parent-4\endcsname{}
9388 \expandafter\def\csname Parent-3\endcsname{}
9389 \expandafter\def\csname Parent-2\endcsname{}
9390 \expandafter\def\csname Parent-1\endcsname{}
9391 \expandafter\def\csname Parent0\endcsname{}
9392 \expandafter\def\csname Parent1\endcsname{}
9393 \expandafter\def\csname Parent2\endcsname{}
9394 \expandafter\def\csname Parent3\endcsname{}
9395 \expandafter\def\csname Parent4\endcsname{}

9396 </outlines>

```

## 48 Compatibility with koma-script classes

```

9397 <*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.

```

9398 \def\Hy@tempa{%
9399 \def\@addchap[##1]##2{%
9400 \typeout{##2}%
9401 \if@twoside
9402 \@mkboth{##1}{}%
9403 \else
9404 \@mkboth{}{##1}%
9405 \fi
9406 \addtocontents{lof}{\protect\addvspace{10\p@}}%
9407 \addtocontents{lot}{\protect\addvspace{10\p@}}%
9408 \Hy@GlobalStepCount\Hy@linkcounter
9409 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9410 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%

```

```

9411 \if@twocolumn
9412 \topnewpage[\@makeschapterhead{##2}]%
9413 \else
9414 \@makeschapterhead{##2}%
9415 \afterheading
9416 \fi
9417 \addcontentsline{toc}{chapter}{##1}%
9418 }%
9419 }
9420 \@ifclassloaded{scrbook}{%
9421 \@ifclasslater{scrbook}{2001/01/01}{%
9422 \let\Hy@tempa\@empty
9423 }{}%
9424 }{%
9425 \@ifclassloaded{scrreprt}{%
9426 \@ifclasslater{scrreprt}{2001/01/01}{%
9427 \let\Hy@tempa\@empty
9428 }{}%
9429 }{%
9430 \let\Hy@tempa\@empty
9431 }%
9432 }%
9433 \Hy@tempa
9434 </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

```

9435 < *pd1enc >
9436 \DeclareFontEncoding{PD1}{}{}

```

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

```

9437 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
9438 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
9439 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
9440 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
9441 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed

```

Accents

```

9442 \DeclareTextAccent{\`}{PD1}{\textgrave}
9443 \DeclareTextAccent{\'}{PD1}{\textacute}
9444 \DeclareTextAccent{\`}{PD1}{\textcircumflex}
9445 \DeclareTextAccent{\~}{PD1}{\texttilde}
9446 \DeclareTextAccent{\"}{PD1}{\textdieresis}
9447 \DeclareTextAccent{\r}{PD1}{\textring}
9448 \DeclareTextAccent{\v}{PD1}{\textcaron}
9449 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
9450 \DeclareTextAccent{\c}{PD1}{\textcedilla}
9451 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textgrave}
9452 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
9453 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textcircumflex}
9454 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
9455 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textdieresis}
9456 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
9457 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}

```

```

9458 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
9459 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
9460 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}

Accent glyph names
9461 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve
9462 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
9463 \DeclareTextCommand{\textcirc{}}{PD1}{\032} % circumflex
9464 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
9465 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
9466 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
9467 \DeclareTextCommand{\textring}{PD1}{\036} % ring
9468 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde

\040: space
\041: exclam
9469 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042
9470 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign
9471 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar
9472 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent
9473 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand

\047: quotesingle
9474 \DeclareTextCommand{\textparenleft}{PD1}{\string\()} % parenleft \050
9475 \DeclareTextCommand{\textparenright}{PD1}{\string\)} % parenright \051

\052: asterisk
\053: plus
\054: comma
\055: hyphen
\056: period
\057: slash
\060... \071: 0...9
\072: colon
\073: semicolon
9476 \DeclareTextCommand{\textless}{PD1}{<} % less \074

\075: equal
9477 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076

\077: question
\100: at
\101... \132: A...Z
\133: bracketleft
9478 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash

\135: bracketright
9479 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum
9480 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
9481 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave

\141... \172: a...z
9482 \DeclareTextCompositeCommand{\.}{PD1}{i}{i} % i
9483 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
9484 \DeclareTextCommand{\textbar}{PD1}{|} % bar
9485 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
9486 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde

No glyph \177 in PDFDocEncoding.
9487 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
9488 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
9489 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl

```

```

9490 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis
9491 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
9492 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
9493 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
9494 \DeclareTextCommand{\textfractionmark}{PD1}{/} % fraction, \207
9495 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft
9496 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
9497 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
9498 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
9499 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
9500 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
9501 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright
9502 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
9503 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
9504 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
9505 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark
9506 \DeclareTextCommand{\textfi}{PD1}{fi} % fi ?? \223
9507 \DeclareTextCommand{\textfl}{PD1}{fl} % fl ?? \224
9508 \DeclareTextCommand{\L}{PD1}{L} % Lslash, \225
9509 \DeclareTextCommand{\OE}{PD1}{\226} % OE
9510 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron
9511 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230} % Ydieresis
9512 \DeclareTextCommand{\IJ}{PD1}{\230}
9513 \DeclareTextCompositeCommand{\v}{PD1}{Z}{Z} % Zcaron, \231
9514 \DeclareTextCommand{\i}{PD1}{i} % dotlessi, \232
9515 \DeclareTextCommand{\l}{PD1}{l} % lslash, \233
9516 \DeclareTextCommand{\oe}{PD1}{\234} % oe
9517 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
9518 \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.

```

9519 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
9520 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown
9521 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
9522 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
9523 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
9524 \DeclareTextCommand{\textyen}{PD1}{\245} % yen
9525 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
9526 \DeclareTextCommand{\textsection}{PD1}{\247} % section
9527 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
9528 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
9529 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
9530 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
9531 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

```

No glyph \255 in PDFDocEncoding.

```

9532 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
9533 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
9534 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
9535 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
9536 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
9537 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
9538 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
9539 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
9540 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
9541 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
9542 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
9543 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior

```

```

9544 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine
9545 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright
9546 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter
9547 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf
9548 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters
9549 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown
9550 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300} % Agrave
9551 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301} % Acute
9552 \DeclareTextCompositeCommand{\~}{PD1}{A}{\302} % Acircumflex
9553 \DeclareTextCompositeCommand{\`}{PD1}{A}{\303} % Atilde
9554 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304} % Adieresis
9555 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring
9556 \DeclareTextCommand{\AE}{PD1}{\306} % AE
9557 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla
9558 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310} % Egrave
9559 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311} % Eacute
9560 \DeclareTextCompositeCommand{\~}{PD1}{E}{\312} % Ecircumflex
9561 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313} % Edieresis
9562 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314} % Igrave
9563 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315} % Iacute
9564 \DeclareTextCompositeCommand{\~}{PD1}{I}{\316} % Icircumflex
9565 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317} % Idieresis
9566 \DeclareTextCommand{\DH}{PD1}{\320} % Eth
9567 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth
9568 \DeclareTextCompositeCommand{\`}{PD1}{N}{\321} % Ntilde
9569 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322} % Ograve
9570 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323} % Oacute
9571 \DeclareTextCompositeCommand{\~}{PD1}{O}{\324} % Ocircumflex
9572 \DeclareTextCompositeCommand{\`}{PD1}{O}{\325} % Otilde
9573 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326} % Odieresis
9574 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply
9575 \DeclareTextCommand{\O}{PD1}{\330} % Oslash
9576 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331} % Ugrave
9577 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute
9578 \DeclareTextCompositeCommand{\~}{PD1}{U}{\333} % Ucircumflex
9579 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis
9580 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335} % Yacute
9581 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn
9582 \DeclareTextCommand{\ss}{PD1}{\337} % germandbls
9583 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340} % agrave
9584 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute
9585 \DeclareTextCompositeCommand{\~}{PD1}{a}{\342} % acircumflex
9586 \DeclareTextCompositeCommand{\`}{PD1}{a}{\343} % atilde
9587 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344} % adieresis
9588 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring
9589 \DeclareTextCommand{\ae}{PD1}{\346} % ae
9590 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla
9591 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350} % egrave
9592 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute
9593 \DeclareTextCompositeCommand{\~}{PD1}{e}{\352} % ecircumflex
9594 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353} % edieresis
9595 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354} % igrave
9596 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
9597 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
9598 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
9599 \DeclareTextCompositeCommand{\~}{PD1}{i}{\356} % icircumflex
9600 \DeclareTextCompositeCommand{\~}{PD1}{i}{\356} % icircumflex

```

```

9601 \DeclareTextCompositeCommand{"}{PD1}{i}{\357} % idieresis
9602 \DeclareTextCompositeCommand{"}{PD1}{\i}{\357} % idieresis
9603 \DeclareTextCommand{\dh}{PD1}{\360} % eth
9604 \DeclareTextCompositeCommand{~}{PD1}{n}{\361} % ntilde
9605 \DeclareTextCompositeCommand{'}{PD1}{o}{\362} % ograve
9606 \DeclareTextCompositeCommand{'}{PD1}{o}{\363} % oacute
9607 \DeclareTextCompositeCommand{^}{PD1}{o}{\364} % ocircumflex
9608 \DeclareTextCompositeCommand{~}{PD1}{o}{\365} % otilde
9609 \DeclareTextCompositeCommand{"}{PD1}{o}{\366} % odieresis
9610 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
9611 \DeclareTextCommand{\o}{PD1}{\370} % oslash
9612 \DeclareTextCompositeCommand{'}{PD1}{u}{\371} % ugrave
9613 \DeclareTextCompositeCommand{'}{PD1}{u}{\372} % uacute
9614 \DeclareTextCompositeCommand{^}{PD1}{u}{\373} % ucircumflex
9615 \DeclareTextCompositeCommand{"}{PD1}{u}{\374} % udieresis
9616 \DeclareTextCompositeCommand{'}{PD1}{y}{\375} % yacute
9617 \DeclareTextCommand{\th}{PD1}{\376} % thorn
9618 \DeclareTextCompositeCommand{"}{PD1}{y}{\377} % ydieresis
9619 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

9620 \DeclareTextCommand{\SS}{PD1}{SS}
9621 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

9622 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
9623 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
9624 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
9625 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
9626 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
9627 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
9628 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
9629 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

9630 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
9631 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
9632 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
9633 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
9634 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
9635 \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;

```

9636 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
9637 \DeclareTextCompositeCommand{'}{PD1}{c}{c} % cacute
9638 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
9639 \DeclareTextCompositeCommand{'}{PD1}{n}{n} % nacute
9640 \DeclareTextCompositeCommand{'}{PD1}{s}{s} % sacute
9641 \DeclareTextCompositeCommand{'}{PD1}{z}{z} % zacute
9642 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot

9643 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
9644 \DeclareTextCompositeCommand{'}{PD1}{C}{C} % Cacute
9645 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
9646 \DeclareTextCompositeCommand{'}{PD1}{N}{N} % Nacute
9647 \DeclareTextCompositeCommand{'}{PD1}{S}{S} % Sacute
9648 \DeclareTextCompositeCommand{'}{PD1}{Z}{Z} % Zacute
9649 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot

```

```

9650 (/pd1enc)

```

## 49.2 PU encoding

```
9651 ⟨*puenc⟩
9652 \DeclareFontEncoding{PU}{-}{-}
```

### 49.2.1 Basic Latin

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

```
9653 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
9654 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
9655 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
9656 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
9657 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed
```

#### Accents

```
9658 \DeclareTextAccent{\`}{PU}{\textgrave}
9659 \DeclareTextAccent{\'}{PU}{\textacute}
9660 \DeclareTextAccent{\~}{PU}{\textcircumflex}
9661 \DeclareTextAccent{\~}{PU}{\texttilde}
9662 \DeclareTextAccent{\\"}{PU}{\textdieresis}
9663 \DeclareTextAccent{\r}{PU}{\textring}
9664 \DeclareTextAccent{\v}{PU}{\textcaron}
9665 \DeclareTextAccent{\.}{PU}{\textdotaccent}
9666 \DeclareTextAccent{\c}{PU}{\textcedilla}
9667 \DeclareTextAccent{\U}{PU}{\textbreve}
9668 \DeclareTextAccent{\C}{PU}{\textdoublegrave}
9669 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textgrave}
9670 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
9671 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textcircumflex}
9672 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
9673 \DeclareTextCompositeCommand{\\"}{PU}{\@empty}{\textdieresis}
9674 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
9675 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
9676 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
9677 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
9678 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
9679 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}
9680 \DeclareTextCommand{=}{PU}[1]{\TextSymbolUnavailable{=#1}}#1
9681 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
9682 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
9683 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}
```

#### Accent glyph names

```
9684 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
9685 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
9686 \DeclareTextCommand{\textcircumflex}{PU}{\80\032} % circumflex
9687 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
9688 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
9689 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
9690 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
9691 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
9692 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave
```

\040: space

\041: exclam

```
9693 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
9694 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
9695 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
9696 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
9697 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand
```



\047: quotesingle  
 9698 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft  
 9699 \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  
 9700 \DeclareTextCommand{\textless}{PU}{<} % less \80\074  
 \075: equal  
 9701 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076  
 \077: question  
 \100: at  
 \101... \132: A...Z  
 \133: bracketleft  
 9702 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash  
 \135: bracketright  
 9703 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum  
 9704 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore  
 9705 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave  
 \141... \172: a...z  
 9706 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % i  
 9707 \DeclareTextCommand{\j}{PU}{j} % jdotless  
 9708 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft  
 9709 \DeclareTextCommand{\textbar}{PU}{|} % bar  
 9710 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright  
 9711 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde  
 No glyph \177 in PDFDocEncoding.

## 49.2.2 Latin-1 Supplement

9712 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212  
 9713 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223  
 9714 \DeclareTextCommand{\textfl}{PU}{fl} % fl ?? \80\224

There are two positions for the glyphs from \80\225 until \80\236. See the test files testbmoe., testbml, testbmisc, testbmzc, and testbmyi for details. Problematic are all positions, but especially \OE, \oe, and \i.

9715 %\DeclareTextCommand{\OE}{PU}{OE} % OE  
 9716 %\DeclareTextCommand{\oe}{PU}{oe} % oe

The euro \240 is inserted in version 1.3 of the pdf specification.

9717 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown  
 9718 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent  
 9719 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling  
 9720 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency  
 9721 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen  
 9722 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar  
 9723 \DeclareTextCommand{\textsection}{PU}{\80\247} % section  
 9724 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis

9725 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright  
 9726 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine  
 9727 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft  
 9728 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot

No glyph \255 in PDFDocEncoding.

9729 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered  
 9730 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron  
 9731 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree  
 9732 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus  
 9733 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior  
 9734 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior  
 9735 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute  
 9736 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu  
 9737 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph  
 9738 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered  
 9739 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla  
 9740 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior  
 9741 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine  
 9742 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright  
 9743 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter  
 9744 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf  
 9745 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters  
 9746 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown  
 9747 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300} % Agrave  
 9748 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute  
 9749 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\302} % Acircumflex  
 9750 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\303} % Atilde  
 9751 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis  
 9752 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring  
 9753 \DeclareTextCommand{\AE}{PU}{\80\306} % AE  
 9754 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla  
 9755 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310} % Egrave  
 9756 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311} % Eacute  
 9757 \DeclareTextCompositeCommand{\~}{PU}{E}{\80\312} % Ecircumflex  
 9758 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis  
 9759 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314} % Igrave  
 9760 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315} % Iacute  
 9761 \DeclareTextCompositeCommand{\~}{PU}{I}{\80\316} % Icircumflex  
 9762 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317} % Idieresis  
 9763 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth  
 9764 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321} % Ntilde  
 9765 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322} % Ograve  
 9766 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323} % Oacute  
 9767 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\324} % Ocircumflex  
 9768 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325} % Otilde  
 9769 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326} % Odieresis  
 9770 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply  
 9771 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash  
 9772 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331} % Ugrave  
 9773 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332} % Uacute  
 9774 \DeclareTextCompositeCommand{\~}{PU}{U}{\80\333} % Ucircumflex  
 9775 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334} % Udieresis  
 9776 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335} % Yacute  
 9777 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn  
 9778 \DeclareTextCommand{\ss}{PU}{\80\337} % germandbls  
 9779 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340} % agrave  
 9780 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341} % aacute

```

9781 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\342} % acircumflex
9782 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343} % atilde
9783 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344} % adieresis
9784 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
9785 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
9786 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
9787 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350} % egrave
9788 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351} % eacute
9789 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\352} % ecircumflex
9790 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353} % edieresis
9791 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354} % igrave
9792 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave
9793 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
9794 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
9795 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\356} % icircumflex
9796 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\356} % icircumflex
9797 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
9798 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
9799 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
9800 \DeclareTextCompositeCommand{\`}{PU}{n}{\80\361} % ntilde
9801 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362} % ograve
9802 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363} % oacute
9803 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\364} % ocircumflex
9804 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\365} % otilde
9805 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366} % odieresis
9806 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
9807 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
9808 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371} % ugrave
9809 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372} % uacute
9810 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\373} % ucircumflex
9811 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374} % udieresis
9812 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375} % yacute
9813 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
9814 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377} % ydieresis
9815 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```
9816 \DeclareTextCommand{\SS}{PU}{SS}
```

Aliases (german.sty)

```

9817 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
9818 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
9819 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
9820 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
9821 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
9822 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
9823 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
9824 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

9825 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
9826 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
9827 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
9828 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
9829 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

### 49.2.3 Latin Extended-A

```

9830 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% Amacron
9831 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% amacron

```

```

9832 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% Abreve
9833 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% abreve
9834 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% Aogonek
9835 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% aogonek
9836 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% Cacute
9837 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% cacute
9838 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% Ccircumflex
9839 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% ccircumflex
9840 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% Cdot
9841 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% cdot
9842 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% Ccaron
9843 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% ccaron
9844 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% Dcaron
9845 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% dcaron
9846 \DeclareTextCommand{\DJ}{PU}{\81\020}% Dslash
9847 \DeclareTextCommand{\dj}{PU}{\81\021}% dslash
9848 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% Emacron
9849 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% emacron
9850 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% Ebreve
9851 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% ebreve
9852 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% Edot
9853 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% edot
9854 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% Eogonek
9855 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% eogonek
9856 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% Ecaron
9857 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% ecaron
9858 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% Gcircumflex
9859 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% gcircumflex
9860 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% Gbreve
9861 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% gbreve
9862 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% Gdot
9863 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% gdot
9864 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% Gcedilla
9865 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% gcedilla
9866 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% Hcircumflex
9867 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% hcircumflex
9868 \DeclareTextCommand{\textHslash}{PU}{\81\046}% Hslash
9869 \DeclareTextCommand{\texthslash}{PU}{\81\047}% hslash
9870 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% Itilde
9871 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% itilde
9872 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% itilde
9873 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% Imacron
9874 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% imacron
9875 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% imacron
9876 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% Ibreve
9877 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% ibreve
9878 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% ibreve
9879 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% Iogonek
9880 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% iogonek
9881 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% iogonek
9882 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% Idot
9883 \DeclareTextCommand{\i}{PU}{\81\061}% idotless
9884 % IJlig
9885 % ijlig
9886 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% Jcircumflex
9887 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% jcircumflex
9888 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% jcircumflex

```

```

9889 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
9890 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
9891 % kgreen
9892 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
9893 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
9894 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
9895 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
9896 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
9897 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
9898 % L middle dot
9899 % l middle dot
9900 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
9901 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
9902 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute
9903 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
9904 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
9905 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
9906 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
9907 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
9908 % n apostrophe
9909 \DeclareTextCommand{\NG}{PU}{\81\112} % NG
9910 \DeclareTextCommand{\ng}{PU}{\81\113} % ng
9911 \DeclareTextCompositeCommand{=}{PU}{O}{\81\114} % Omacron
9912 \DeclareTextCompositeCommand{=}{PU}{o}{\81\115} % omacron
9913 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve
9914 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
9915 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
9916 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
9917 \DeclareTextCommand{\OE}{PU}{\81\122} % OE
9918 \DeclareTextCommand{\oe}{PU}{\81\123} % oe
9919 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
9920 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
9921 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
9922 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
9923 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
9924 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
9925 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
9926 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
9927 \DeclareTextCompositeCommand{\`}{PU}{S}{\81\134} % Scircumflex
9928 \DeclareTextCompositeCommand{\`}{PU}{s}{\81\135} % scircumflex
9929 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
9930 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
9931 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
9932 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
9933 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
9934 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
9935 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
9936 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
9937 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
9938 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
9939 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150} % Utilde
9940 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151} % utilde
9941 \DeclareTextCompositeCommand{=}{PU}{U}{\81\152} % Umacron
9942 \DeclareTextCompositeCommand{=}{PU}{u}{\81\153} % umacron
9943 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
9944 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
9945 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring

```

```

9946 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
9947 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
9948 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute
9949 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Uogonek
9950 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % uogonek
9951 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164} % Wcircumflex
9952 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165} % wcircumflex
9953 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166} % Ycircumflex
9954 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167} % ycircumflex
9955 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170} % Ydieresis
9956 \DeclareTextCommand{\IJ}{PU}{\81\170}
9957 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
9958 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
9959 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
9960 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
9961 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
9962 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

```

#### 49.2.4 Latin Extended-B

```

9963 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
9964 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
9965 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
9966 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
9967 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
9968 \DeclareTextCompositeCommand{\v}{PU}{\i}{\81\320} % icaron
9969 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
9970 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
9971 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
9972 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
9973 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
9974 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
9975 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
9976 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
9977 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
9978 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
9979 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Oogonek
9980 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

```

#### 49.2.5 Greek

```

9981 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
9982 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
9983 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}
9984 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
9985 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
9986 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
9987 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
9988 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
9989 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}
9990 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
9991 \DeclareTextCommand{\textBeta}{PU}{\83\222}
9992 \DeclareTextCommand{\textGamma}{PU}{\83\223}
9993 \DeclareTextCommand{\textDelta}{PU}{\83\224}
9994 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
9995 \DeclareTextCommand{\textZeta}{PU}{\83\226}
9996 \DeclareTextCommand{\textEta}{PU}{\83\227}
9997 \DeclareTextCommand{\textTheta}{PU}{\83\230}
9998 \DeclareTextCommand{\textIota}{PU}{\83\231}

```

```

9999 \DeclareTextCommand{\textKappa}{PU}{\83\232}
10000 \DeclareTextCommand{\textLambda}{PU}{\83\233}
10001 \DeclareTextCommand{\textMu}{PU}{\83\234}
10002 \DeclareTextCommand{\textNu}{PU}{\83\235}
10003 \DeclareTextCommand{\textXi}{PU}{\83\236}
10004 \DeclareTextCommand{\textOmicron}{PU}{\83\237}
10005 \DeclareTextCommand{\textPi}{PU}{\83\240}
10006 \DeclareTextCommand{\textRho}{PU}{\83\241}
10007 \DeclareTextCommand{\textSigma}{PU}{\83\243}
10008 \DeclareTextCommand{\textTau}{PU}{\83\244}
10009 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}
10010 \DeclareTextCommand{\textPhi}{PU}{\83\246}
10011 \DeclareTextCommand{\textChi}{PU}{\83\247}
10012 \DeclareTextCommand{\textPsi}{PU}{\83\250}
10013 \DeclareTextCommand{\textOmega}{PU}{\83\251}
10014 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}
10015 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}
10016 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}
10017 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}
10018 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}
10019 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}
10020 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}
10021 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}
10022 \DeclareTextCommand{\textalpha}{PU}{\83\261}
10023 \DeclareTextCommand{\textbeta}{PU}{\83\262}
10024 \DeclareTextCommand{\textgamma}{PU}{\83\263}
10025 \DeclareTextCommand{\textdelta}{PU}{\83\264}
10026 \DeclareTextCommand{\textepsilon}{PU}{\83\265}
10027 \DeclareTextCommand{\textzeta}{PU}{\83\266}
10028 \DeclareTextCommand{\texteta}{PU}{\83\267}
10029 \DeclareTextCommand{\texttheta}{PU}{\83\270}
10030 \DeclareTextCommand{\textiota}{PU}{\83\271}
10031 \DeclareTextCommand{\textkappa}{PU}{\83\272}
10032 \DeclareTextCommand{\textlambda}{PU}{\83\273}
10033 \DeclareTextCommand{\textmu}{PU}{\83\274}
10034 \DeclareTextCommand{\textnu}{PU}{\83\275}
10035 \DeclareTextCommand{\textxi}{PU}{\83\276}
10036 \DeclareTextCommand{\textomicron}{PU}{\83\277}
10037 \DeclareTextCommand{\textpi}{PU}{\83\300}
10038 \DeclareTextCommand{\textrho}{PU}{\83\301}
10039 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
10040 \DeclareTextCommand{\textsigma}{PU}{\83\303}
10041 \DeclareTextCommand{\texttau}{PU}{\83\304}
10042 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
10043 \DeclareTextCommand{\textphi}{PU}{\83\306}
10044 \DeclareTextCommand{\textchi}{PU}{\83\307}
10045 \DeclareTextCommand{\textpsi}{PU}{\83\310}
10046 \DeclareTextCommand{\textomega}{PU}{\83\311}
10047 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}
10048 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}
10049 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}
10050 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}
10051 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}
10052 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}
10053 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}
10054 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}
10055 %\DeclareTextCommand{\textdigamma}{PU}{\83\334}

```

```
10056 \DeclareTextCommand{\textvarkappa}{PU}{\83\360}
10057 \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.

```
10058 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
10059 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}%
10060 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
10061 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% GJE
10062 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
10063 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
10064 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
10065 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI
10066 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
10067 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
10068 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE
10069 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
10070 \DeclareTextCompositeCommand{'}{PU}{\CYRK}{\84\014}% KJE
10071 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
10072 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
10073 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A
10074 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
10075 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
10076 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
10077 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
10078 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
10079 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
10080 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
10081 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I
10082 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
10083 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}%
10084 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
10085 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
10086 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM
10087 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN
10088 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O
10089 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE
10090 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER
10091 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES
10092 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE
10093 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U
10094 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF
10095 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA
10096 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE
10097 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE
10098 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA
10099 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA
10100 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN
10101 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU
10102 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN
10103 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E
10104 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU
10105 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA
10106 \DeclareTextCommand{\cyra}{PU}{\84\060}% a
10107 \DeclareTextCommand{\cyrb}{PU}{\84\061}% be
10108 \DeclareTextCommand{\cyrv}{PU}{\84\062}% ve
```



10109 \DeclareTextCommand{\cyrg}{PU}{\84\063}% ghe  
10110 \DeclareTextCommand{\cyrd}{PU}{\84\064}% de  
10111 \DeclareTextCommand{\cyre}{PU}{\84\065}% ie  
10112 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% zhe  
10113 \DeclareTextCommand{\cyrz}{PU}{\84\067}% ze  
10114 \DeclareTextCommand{\cyri}{PU}{\84\070}% i  
10115 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i  
10116 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}%  
10117 \DeclareTextCommand{\cyrk}{PU}{\84\072}% ka  
10118 \DeclareTextCommand{\cyrk}{PU}{\84\073}% el  
10119 \DeclareTextCommand{\cyrn}{PU}{\84\074}% em  
10120 \DeclareTextCommand{\cyrn}{PU}{\84\075}% en  
10121 \DeclareTextCommand{\cyro}{PU}{\84\076}% o  
10122 \DeclareTextCommand{\cyrp}{PU}{\84\077}% pe  
10123 \DeclareTextCommand{\cyrr}{PU}{\84\100}% er  
10124 \DeclareTextCommand{\cyr{s}}{PU}{\84\101}% es  
10125 \DeclareTextCommand{\cyrt}{PU}{\84\102}% te  
10126 \DeclareTextCommand{\cyru}{PU}{\84\103}% u  
10127 \DeclareTextCommand{\cyrf}{PU}{\84\104}% ef  
10128 \DeclareTextCommand{\cyrh}{PU}{\84\105}% ha  
10129 \DeclareTextCommand{\cyr{c}}{PU}{\84\106}% tse  
10130 \DeclareTextCommand{\cyr{ch}}{PU}{\84\107}% che  
10131 \DeclareTextCommand{\cyr{sh}}{PU}{\84\110}% sha  
10132 \DeclareTextCommand{\cyr{shch}}{PU}{\84\111}% shcha  
10133 \DeclareTextCommand{\cyr{hrdsn}}{PU}{\84\112}% hard sign  
10134 \DeclareTextCommand{\cyr{ery}}{PU}{\84\113}% yeru  
10135 \DeclareTextCommand{\cyr{sftsn}}{PU}{\84\114}% soft sign  
10136 \DeclareTextCommand{\cyr{erev}}{PU}{\84\115}% e  
10137 \DeclareTextCommand{\cyr{yu}}{PU}{\84\116}% yu  
10138 \DeclareTextCommand{\cyr{ya}}{PU}{\84\117}% ya  
10139 \DeclareTextCommand{\cyr{yo}}{PU}{\84\121}% io  
10140 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}%  
10141 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% dje  
10142 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% gje  
10143 \DeclareTextCommand{\cyrie}{PU}{\84\124}% ukrainian ie  
10144 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% dze  
10145 \DeclareTextCommand{\cyrii}{PU}{\84\126}% byelorussian-ukrainian i  
10146 \DeclareTextCommand{\cyryi}{PU}{\84\127}% yi  
10147 \DeclareTextCommand{\cyrje}{PU}{\84\130}% je  
10148 \DeclareTextCommand{\cyr{lje}}{PU}{\84\131}%lje  
10149 \DeclareTextCommand{\cyr{nje}}{PU}{\84\132}%nje  
10150 \DeclareTextCommand{\cyr{tshe}}{PU}{\84\133}%tshe  
10151 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}%kje  
10152 \DeclareTextCommand{\cyr{ushrt}}{PU}{\84\136}%short u  
10153 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}%dzhe  
10154 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA  
10155 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega  
10156 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT  
10157 \DeclareTextCommand{\cyryat}{PU}{\84\143}% yat  
10158 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E  
10159 \DeclareTextCommand{\cyriote}{PU}{\84\145}% iotified e  
10160 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS  
10161 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% little yus  
10162 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS  
10163 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% iotified little yus  
10164 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS  
10165 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% big yus

10166 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS  
10167 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% iotified big yus  
10168 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI  
10169 \DeclareTextCommand{\cyrkxi}{PU}{\84\157}% ksi  
10170 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI  
10171 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi  
10172 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA  
10173 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita  
10174 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA  
10175 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa  
10176 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave  
10177 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave  
10178 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK  
10179 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk  
10180 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA  
10181 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega  
10182 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo  
10183 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo  
10184 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT  
10185 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot  
10186 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA  
10187 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa  
10188 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign  
10189 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO  
10190 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION  
10191 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA  
10192 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA  
10193 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn  
10194 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn  
10195 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke  
10196 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke  
10197 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook  
10198 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook  
10199 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender  
10200 \DeclareTextCommand{\cyrzhds}{PU}{\84\227}% zhe descender  
10201 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender  
10202 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender  
10203 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender  
10204 \DeclareTextCommand{\cyrkds}{PU}{\84\233}% ka descender  
10205 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke  
10206 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke  
10207 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke  
10208 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% ka stroke  
10209 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA  
10210 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka  
10211 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender  
10212 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender  
10213 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE  
10214 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe  
10215 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook  
10216 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook  
10217 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA  
10218 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha  
10219 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender  
10220 \DeclareTextCommand{\cyrsds}{PU}{\84\253}% es descender  
10221 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender  
10222 \DeclareTextCommand{\cyrtds}{PU}{\84\255}% te descender

10223 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U  
10224 \DeclareTextCommand{\cyry}{PU}{\84\257}% straight u  
10225 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke  
10226 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% straight u stroke  
10227 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender  
10228 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% ha descender  
10229 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE  
10230 \DeclareTextCommand{\cyrтетse}{PU}{\84\265}% ligature te tse  
10231 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender  
10232 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender  
10233 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke  
10234 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% che vertical stroke  
10235 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA  
10236 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha  
10237 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhassian CHE  
10238 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhassian che  
10239 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% abkhassian CHE descender  
10240 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhassian che descender  
10241 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% palochka  
10242 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve  
10243 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% zhe breve  
10244 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook  
10245 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% ka hook  
10246 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook  
10247 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% en hook  
10248 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE  
10249 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che  
10250 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve  
10251 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve  
10252 \DeclareTextCompositeCommand{\"}{PU}{\CYRA}{\84\322}% A diaeresis  
10253 \DeclareTextCompositeCommand{\"}{PU}{\cyra}{\84\323}% a diaeresis  
10254 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE  
10255 \DeclareTextCommand{\cyrae}{PU}{\84\325}% ligature a ie  
10256 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve  
10257 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve  
10258 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA  
10259 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% schwa  
10260 \DeclareTextCompositeCommand{\"}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis  
10261 \DeclareTextCompositeCommand{\"}{PU}{\cyrswa}{\84\333}% schwa diaeresis  
10262 \DeclareTextCompositeCommand{\"}{PU}{\CYRZH}{\84\334}% ZHE diaeresis  
10263 \DeclareTextCompositeCommand{\"}{PU}{\cyrzh}{\84\335}% zhe diaeresis  
10264 \DeclareTextCompositeCommand{\"}{PU}{\CYRZ}{\84\336}% ZE diaeresis  
10265 \DeclareTextCompositeCommand{\"}{PU}{\cyrz}{\84\337}% ze diaeresis  
10266 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhassian DZE  
10267 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhassian dze  
10268 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% I macron  
10269 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% i macron  
10270 \DeclareTextCompositeCommand{\"}{PU}{\CYRI}{\84\344}% I diaeresis  
10271 \DeclareTextCompositeCommand{\"}{PU}{\cyri}{\84\345}% i diaeresis  
10272 \DeclareTextCompositeCommand{\"}{PU}{\CYRO}{\84\346}% O diaeresis  
10273 \DeclareTextCompositeCommand{\"}{PU}{\cyro}{\84\347}% o diaeresis  
10274 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O  
10275 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% barred o  
10276 \DeclareTextCompositeCommand{\"}{PU}{\CYROTLD}{\84\352}% barred O diaeresis  
10277 \DeclareTextCompositeCommand{\"}{PU}{\cyrotld}{\84\353}% barred o diaeresis  
10278 \DeclareTextCompositeCommand{\=}{PU}{\CYRU}{\84\356}% U macron  
10279 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% u macron

```

10280 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U diaeresis
10281 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% u diaeresis
10282 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U double acute
10283 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% u double acute
10284 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% CHE diaeresis
10285 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% che diaeresis
10286 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% YERU diaeresis
10287 \DeclareTextCompositeCommand{"}{PU}{\cyrery}{\84\371}% yeru diaeresis

```

### 49.2.7 Symbols

```

10288 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash
10289 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash
10290 \DeclareTextCommand{\textquotelleft}{PU}{\9040\030} % quoteleft
10291 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright
10292 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase
10293 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
10294 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
10295 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
10296 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
10297 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
10298 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet
10299 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
10300 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
10301 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
10302 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
10303 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
10304 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
10305 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
10306 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}
10307 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
10308 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
10309 \DeclareTextCommand{\cyrlangle}{PU}{\9043\051}
10310 \DeclareTextCommand{\cyrrangle}{PU}{\9043\052}
10311 </puenc>

```

## 49.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

10312 < *puvnenc >
10313 \DeclareTextCommand{\abreve}{PU}{\81\003}
10314 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
10315 \DeclareTextCommand{\dj}{PU}{\81\021}
10316 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
10317 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
10318 \DeclareTextCommand{\ohorn}{PU}{\81\241}
10319 \DeclareTextCommand{\uhorn}{PU}{\81\260}
10320 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
10321 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
10322 \DeclareTextCommand{\DJ}{PU}{\81\020}
10323 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
10324 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
10325 \DeclareTextCommand{\OHORN}{PU}{\81\240}
10326 \DeclareTextCommand{\UHORN}{PU}{\81\257}
10327 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
10328 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}

```

10329 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}  
10330 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}  
10331 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}  
10332 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}  
10333 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}  
10334 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}  
10335 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}  
10336 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}  
10337 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}  
10338 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}  
10339 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}  
10340 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
10341 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}  
10342 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
10343 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
10344 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
10345 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
10346 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
10347 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
10348 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
10349 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
10350 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
10351 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
10352 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
10353 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
10354 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
10355 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
10356 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
10357 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
10358 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
10359 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
10360 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
10361 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
10362 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
10363 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
10364 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
10365 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
10366 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
10367 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
10368 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
10369 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
10370 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
10371 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
10372 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
10373 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
10374 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
10375 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
10376 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
10377 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
10378 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
10379 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
10380 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
10381 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
10382 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
10383 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
10384 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
10385 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}

10386 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
10387 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
10388 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
10389 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
10390 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
10391 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
10392 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
10393 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
10394 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
10395 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
10396 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}  
10397 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}  
10398 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}  
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10404 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}  
10405 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}  
10406 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}  
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10409 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}  
10410 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}  
10411 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}  
10412 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}  
10413 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}  
10414 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}  
10415 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}  
10416 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}  
10417 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}  
10418 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}  
10419 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}  
10420 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}  
10421 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}  
10422 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}  
10423 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}  
10424 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}  
10425 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}  
10426 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}  
10427 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}  
10428 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}  
10429 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}  
10430 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}  
10431 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}  
10432 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}  
10433 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}  
10434 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}  
10435 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}  
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10437 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}  
10438 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}  
10439 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}  
10440 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}  
10441 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}  
10442 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}

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10443 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
10444 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
10445 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
10446 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
10447 </puvnenc>

```

## 49.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

10448 <*puarenc>
10449 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LETTER HAMZA
10450 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADDA
10451 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA
10452 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afii57412;ARABIC LETTER WAW WITH HAMZA
10453 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HAMZA ABOVE
10454 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
10455 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF
10456 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH
10457 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA
10458 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH
10459 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH
10460 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM
10461 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH
10462 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH
10463 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL
10464 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL
10465 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH
10466 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN
10467 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN
10468 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN
10469 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD
10470 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD
10471 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH
10472 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH
10473 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN
10474 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN
10475 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEL
10476 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afii57441;ARABIC LETTER FEH
10477 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF
10478 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF
10479 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM
10480 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LETTER MEEM
10481 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON
10482 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH
10483 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afii57448;ARABIC LETTER WAW
10484 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afii57449;ARABIC LETTER ALEF MAKSURA
10485 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afii57450;ARABIC LETTER YEH
10486 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afii57451;ARABIC FATHATAN
10487 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afii57452;ARABIC DAMMATAN
10488 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN
10489 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afii57454;ARABIC FATHA
10490 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afii57455;ARABIC DAMMA
10491 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA
10492 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA
10493 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afii57458;ARABIC SUKUN

```

## Farsi

```

10494 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afii57506;ARABIC LETTER PEH
10495 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afii57507;ARABIC LETTER TCHEH
10496 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afii57508;ARABIC LETTER JEH
10497 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afii????;FARSI LETTER KAF
10498 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF
10499 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afii????;FARSI LETTER YEH

10500 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
10501 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ%
10502 </puarenc>

```

## 50 End of file hyccheck.tex

```

10503 <*check>
10504 \typeout{}
10505 \begin{document}
10506 \end{document}
10507 </check>

```

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