

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

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

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

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

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

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

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

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

`\HyC@checkPackage`

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

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

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

`\HyC@meaning`

```

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

```

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

```

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

```

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

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

\Hy@RestoreCatcodes

```

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

```

```

216 \x\)%
217 \x\[%
218 \x\]%
219 \x\/%
220 \x\!%
221 \x\<%
222 \x\>%
223 \x\.%
224 \x;%
225 \x\+%
226 \x\-%
227 \x\"%
228 \x\'%
229 }%
230 \endgroup

```

```
231 \Hy@SetCatcodes
```

It needs the December 95 release of L<sup>A</sup>T<sub>E</sub>X, because it uses `\protected@write`, and it defines commands in options; and the page setup internal code changed at that point. It'll probably break with the later releases!

```

232 \RequirePackage{keyval}[1997/11/10]
233 \RequirePackage{hycolor}
234 \def\Hy@Warning#1{\PackageWarning{hyperref}{#1}}
235 \def\Hy@WarningNoLine#1{\PackageWarningNoLine{hyperref}{#1}}
236 \def\Hy@Info#1{\PackageInfo{hyperref}{#1}}

```

## 4.2 Compatibility with format dumps

`\AfterBeginDocument` For use with pre-compiled formats, created using the `ldump` package, there needs to be 2 hooks for adding material delayed until `\begin{document}`. These are called `\AfterBeginDocument` and `\AtBeginDocument`. If `ldump` is not loaded, then a single hook suffices for normal L<sup>A</sup>T<sub>E</sub>X processing.

The default definition of `\AfterBeginDocument` cannot be done by `\let` because of problems with `xypic`.

```

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

```

## 4.3 Switches

```

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

```

```

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

```

Defaults for the switches are now set.

```

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

```

```

312 \Hy@usetitlefalse
313 \Hy@verbosefalse
314 \Hy>windowuitrue
315 \Hy@displaydoctitlefalse

```

## 5 Common help macros

`\Hy@StepCount`

```

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

```

`\Hy@GlobalStepCount`

```

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

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

```

325 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
326 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

327 \let\Hy@ReturnEnd\@empty
328 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
329 \long\def\Hy@ReturnAfterElseFiFiEnd#1\else#2\Hy@ReturnEnd{\fi\fi#1}

```

### 5.2 Babel's protection of shorthand characters

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

```

330 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
331 \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
332 \begingroup\expandafter\expandafter\expandafter\endgroup
333 \expandafter\ifx\csname dimexpr\endcsname\relax
334   \def\hypercalcbpdef#1#2{%
335     \begingroup
336       \toks@{}%
337       \HyCal@scan#2\hypercalcbp\@nil
338       \expandafter\endgroup
339       \expandafter\def\expandafter#1\expandafter{\the\toks@}%
340   }%
341   \def\HyCal@scan#1\hypercalcbp#2\@nil{%
342     \toks@\expandafter{\the\toks@ #1}%
343     \ifx\#2\%
344       \else
345         \Hy@ReturnAfterFi{%
346           \HyCal@do#2\@nil
347         }%
348       \fi
349     }%
350     \def\HyCal@do#1#2\@nil{%
351       \@ifpackageloaded{calc}{}{%
352         \Hy@Warning{%
353           For calculations \string\hypercalcbp\space needs\MessageBreak
354           package calc or e-TeX%
355         }%
356       }%
357       \setlength{\dimen@}{#1}%
358       \setlength{\dimen@}{0.99626401\dimen@}%
359       \edef\x{%
360         \toks@{%
361           \the\toks@
362           \strip@pt\dimen@
363         }%
364       }\x
365       \HyCal@scan#2\@nil
366     }%
367   \else
368     \def\hypercalcbp#1{%
369       \strip@pt\dimexpr 0.99626401\dimexpr #1\relax\relax
370     }%
371     \def\hypercalcbpdef{\def}%
372   \fi

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

### 6.1 Description of PDF strings

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

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

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

### 6.2 Definition of `\pdfstringdef`

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

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

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

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

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

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

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

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

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

```
374 \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.

```
375 \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.

```
376 \edef\0{\string\0}%  
377 \edef\1{\string\1}%  
378 \edef\2{\string\2}%  
379 \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.

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

```
389 \@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).

```
390 \let\@inmathwarn\HyPsd@inmathwarn
```



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

```
391 \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.

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

```
404 \def\{\pdfstringdefWarn\\}%
405 \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.

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

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

```
412 \let\emph\@firstofone
413 \let\textbf\@firstofone
414 \let\textit\@firstofone
415 \let\textmd\@firstofone
416 \let\textnormal\@firstofone
417 \let\textrm\@firstofone
418 \let\textsc\@firstofone
419 \let\textsf\@firstofone
420 \let\textsl\@firstofone
```

```

421 \let\texttt\@firstofone
422 \let\textup\@firstofone
423 \let\ttfamily\@empty
424 \let\sffamily\@empty
425 \let\itshape\@empty
426 \let\upshape\@empty
427 \let\bfseries\@empty
428 \let\rm\@empty
429 \let\Huge\@empty
430 \let\LARGE\@empty
431 \let\Large\@empty
432 \let\footnotesize\@empty
433 \let\huge\@empty
434 \let\large\@empty
435 \let\normalsize\@empty
436 \let\scriptsize\@empty
437 \let\small\@empty
438 \let\tiny\@empty

```

**Package color.**

```

439 \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).

```

440 \let\textlatin\@firstofone
441 \@ifundefined{language@group}{-}{%
442   \csname HyPsd@babel@language@group\endcsname
443 }%
444 \HyPsd@GreekPatch
445 \let\@safe@activetrue\relax
446 \let\@safe@activesfalse\relax

```

Disable \cyr, used in russianb.ldf.

```

447 \let\cyr\relax

```

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

```

448 \let\es@roman\@Roman

```

**Package german.**

```

449 \let\glqq\textglqq
450 \let\grqq\textgrqq
451 \let\glq\textglq
452 \let\grq\textgrq
453 \let\flqq\textflqq
454 \let\frqq\textfrqq
455 \let\flq\textflq
456 \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}
457 \let\if@mid@expandable\@firstoftwo

```

### AMS classes.

```
458 \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.

```
459 \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.

```
460 \let\label\@gobble
461 \let\index\@gobble
462 \let\glossary\@gobble
463 \let\href\@secondoftwo
```

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

```
464 \let\ref\HyPsd@ref
465 \let\pageref\HyPsd@pageref
466 \let\autoref\HyPsd@autoref
```

### Miscellaneous commands.

```
467 \let\leavevmode\@empty
468 \let\mbox\@empty
```

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

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

### Patch for cjk bookmarks.

```
470 \ifHy@CJKbookmarks
471 \HyPsd@CJKhook
472 \fi
```

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

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

```
473 \Hy@pdfstringtrue
474 \pdfstringdefPreHook
```

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

```
475 \HyPsd@LetUnexpandableSpace\space
476 \HyPsd@LetUnexpandableSpace\ %
477 \HyPsd@LetUnexpandableSpace~%
478 \HyPsd@LetUnexpandableSpace\nobreakspace
```

### Package xspace.

```
479 \ifundefined{@xspace}{%
480 \let\xspace\HyPsd@ITALCORR
481 }{%
482 \let\xspace\HyPsd@XSPACE
483 }%
484 \let\/\HyPsd@ITALCORR
485 \let\bgroup\/%
486 \let\egroup\/%
```

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

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

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

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

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

```
488 \let\@ifnextchar\HyPsd@ifnextchar
489 \let\@ifnextchar\HyPsd@new@ifnextchar
490 \let\@protected@testopt\HyPsd@protected@testopt
```

### 6.2.2 Expansion

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

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

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

\edef This version uses this standard form for expansion. It is stronger than L<sup>A</sup>T<sub>E</sub>X's \protected@edef. So the font encoding mechanism works and the glyph commands are converted to the correct tokens for PDF strings with the definitions of the PD1 encoding. Because the protecting mechanism of L<sup>A</sup>T<sub>E</sub>X doesn't work within an \edef, there are situations thinkable where code can break. For example, assignments and definitions aren't performed and so undefined command errors or argument parsing errors can occur. But this is only a compatibility problem with old texts. Now there are possibilities to write code that gives correct PDF strings (see \texorpdfstring). In the most cases unexpandable commands and tokens (math shift, grouping characters) remains. They don't cause an error like with

`\csname`. However a PDF reader isn't  $\TeX$ , 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).

```
491 \begingroup
492 \let\GenericError\@gobblefour
493 \let\GenericWarning\@gobbletwo
494 \let\GenericInfo\@gobbletwo
```

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

```
495 \ifx\nofrenchguillemets\undefined
496 \else
497 \nofrenchguillemets
498 \fi
```

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

```
499 \let\Hy@temp\xdef
500 \let\def\HyPsd@DefCommand
501 \let\gdef\HyPsd@DefCommand
502 \let\edef\HyPsd@DefCommand
503 \let\xdef\HyPsd@DefCommand
504 \let\futurelet\HyPsd@LetCommand
505 \let\let\HyPsd@LetCommand
506 \Hy@temp#1{#2}%
507 \endgroup
```

### 6.2.3 Postprocessing

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

```
508 \ifx#1\@empty
509 \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 outmost pair of braces of an argument. To prevent this on unwanted places, in the following the character | is appended to the string to make an outer brace to an inner one.

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

```

510      \HyPsd@ProtectSpaces#1%
511      \let\HyPsd@String\@empty
512      \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
513      \global\let#1\HyPsd@String

```

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

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

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

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

```

514      \let\HyPsd@SPACEOPTI\relax
515      {%
516          \let\HyPsd@String\@empty
517          \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
518          \global\let#1\HyPsd@String
519      }%
520      \expandafter\HyPsd@RemoveMask\expandafter
521          \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.

```

522      \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
523      \let\HyPsd@String\@empty
524      \expandafter\HyPsd@GlyphProcess#1\relax\@empty
525      \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.

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

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

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

```

527 \ifHy@unicode
528 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
529 \HyPsd@SPACEOPTI#1%
530 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
531 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
532 {\HyPsd@SPACEOPTI\80\273}#1%
533 \else
534 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
535 \expandafter\HyPsd@Subst\expandafter{%
536 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
537 \string\273}\HyPsd@SPACEOPTI\273}#1%
538 \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.

```

539 \ifHy@unicode
540 \HyPsd@StringSubst{\}){\80\051}#1%
541 \HyPsd@Subst){\80\051}#1%
542 \let\HyPsd@empty\relax
543 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
544 {\HyPsd@empty\80\051}#1%
545 \else
546 \HyPsd@StringSubst{\}){\051}#1%
547 \HyPsd@Subst){\051}#1%
548 \let\HyPsd@empty\relax
549 \HyPsd@StringSubst{\051}\HyPsd@empty\string\})#1%
550 \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`.

```

551 \expandafter\HyPsd@Subst\expandafter{\//}\HyPsd@empty#1%
552 \@ifundefined{xspace}{%
553 }{%
554 \let\HyPsd@xspace\relax

```

```

555         \expandafter\HyPsd@Subst\expandafter
556         {\HyPsd@XSPACE}\HyPsd@xspace#1%
557         \let\HyPsd@xspace\HyPsd@doxspace
558     }%
559     \xdef#1{#1\HyPsd@empty}%

```

**Ligatures.** T<sub>E</sub>X forms ligatures in its stomach, but the PDF strings are treated only by T<sub>E</sub>X'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.

```

560 %     \HyPsd@Subst{---}\textemdash#1%
561 %     \HyPsd@Subst{--}\textendash#1%
562 %     \HyPsd@Subst{fi}\textfi#1%
563 %     \HyPsd@Subst{fl}\textfl#1%
564     \HyPsd@Subst{!'}\textexclamdown#1%
565     \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

566     \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 T<sub>E</sub>X memory and time.

```

567     \ifHy@unicode
568         \HyPsd@StringSubst\(\textparenleft#1%
569         \HyPsd@Subst(\textparenleft#1%
570     \else
571         \HyPsd@StringSubst\({\050}#1%
572         \HyPsd@Subst({\050}#1%
573         \HyPsd@StringSubst{\050}{\string\()}#1%
574     \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.

```

575     \ifHy@unicode
576         \edef\HyPsd@SPACEOPTI{\80\040}%
577     \else
578         \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
579     \fi
580     \xdef#1{#1\@empty}%
581 \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.

```

582     \ifHy@unicode
583         \HyPsd@ConvertToUnicode#1%

```



```
584 \fi
```

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

```
585 \pdfstringdefPostHook#1%
586 \endgroup
587 }
```

## 6.3 Encodings

### 6.3.1 PD1 encoding

The PD1 encoding implements the PDFDocEncoding for use with L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>'s NFSS. Because the informational strings are not set by T<sub>E</sub>X's typesetting mechanism but for interpreting by the PDF reader, the glyphs of the PD1 encoding are implemented to be safely written to a file (PDF output file, .out file).

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

```
588 \@ifundefined{T@PD1}{\input{pd1enc.def}}{}
589 \DeclareFontFamily{PD1}{pdf}{}
590 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
591 \DeclareFontSubstitution{PD1}{pdf}{m}{n}
```

### 6.3.2 PU encoding

The PU encoding implements the Unicode encoding for use with L<sup>A</sup>T<sub>E</sub>X's NFSS. Because of large memory requirements the encoding file for Unicode support is only loaded, if option `unicode` is specified as package option.

`\HyPsd@InitUnicode` Because the file `puenc.def` takes a lot of memory, the loading is defined in the macro `\HyPsd@InitUnicode` called by the package option `unicode`.

```
592 \def\HyPsd@InitUnicode{%
593 \ifundefined{T@PU}{\input{puenc.def}}{}%
594 \DeclareFontFamily{PU}{pdf}{}%
595 \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
596 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
597 \let\HyPsd@InitUnicode\relax
598 }
```

## 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.

```
599 \newcommand*{\texorpdfstring}{%
600 \ifHy@pdfstring
601 \expandafter\@secondoftwo
602 \else
603 \expandafter\@firstoftwo
604 \fi
605 }
```

## 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`.

```
606 \@ifundefined{pdfstringdefPreHook}{%
607   \let\pdfstringdefPreHook\@empty
608 }{}
609 \@ifundefined{pdfstringdefPostHook}{%
610   \let\pdfstringdefPostHook\@gobble
611 }{}
```

`\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  $\LaTeX$  commands like `\@gobble` or `\@firstofone`.

```
612 \def\pdfstringdefDisableCommands{%
613   \begingroup
614     \makeatletter
615     \HyPsd@DisableCommands
616 }
```

`\HyPsd@DisableCommands`

```
617 \long\def\HyPsd@DisableCommands#1{%
618   \toks0=\expandafter{\pdfstringdefPreHook}%
619   \toks1={#1}%
620   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
621   \endgroup
622 }
```

`\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`.

```
623 \def\pdfstringdefWarn#1{%
624   \expandafter\noexpand\csname\<>-string#1\endcsname
625 }
```

## 6.5 Help macros for expansion

### 6.5.1 Babel languages

```

626 \newif\ifHy@next

    Nothing to do for english.
627 \@ifundefined{danish@sh@"@sel}{-}{%
628   \def\HyPsd@babel@danish{%
629     \declare@shorthand{danish}{-}{-}%
630     \declare@shorthand{danish}{-}{-}%
631   }%
632 }
633 \@ifundefined{dutch@sh@"@sel}{-}{%
634   \def\HyPsd@babel@dutch{%
635     \declare@shorthand{dutch}{-}{-}%
636     \declare@shorthand{dutch}{-}{-}%
637   }%
638 }
639 \@ifundefined{finnish@sh@"@sel}{-}{%
640   \def\HyPsd@babel@finnish{%
641     \declare@shorthand{finnish}{-}{-}%
642   }%
643 }
644 \@ifundefined{french@sh@:@sel}{-}{%
645   \def\HyPsd@babel@frenchb{%
646     \def\guill@spacing{ }%
647   }%
648 }
649 \@ifundefined{german@sh@"@sel}{-}{%
650   \def\HyPsd@babel@german{%
651     \declare@shorthand{german}{f}{f}%
652     \declare@shorthand{german}{-}{-}%
653     \declare@shorthand{german}{-}{-}%
654   }%
655 }
656 \@ifundefined{macedonian@sh@"@sel}{-}{%
657   \def\HyPsd@babel@macedonian{%
658     \declare@shorthand{macedonian}{-}{-}%
659     \declare@shorthand{macedonian}{-}{-}%
660   }%
661 }{}
662 \@ifundefined{ngerman@sh@"@sel}{-}{%
663   \def\HyPsd@babel@ngerman{%
664     \declare@shorthand{ngerman}{-}{-}%
665     \declare@shorthand{ngerman}{-}{-}%
666   }%
667 }
668 \@ifundefined{portuges@sh@"@sel}{-}{%
669   \def\HyPsd@babel@portuges{%
670     \declare@shorthand{portuges}{-}{-}%
671   }%
672 }
673 \@ifundefined{russian@sh@"@sel}{-}{%
674   \def\HyPsd@babel@russian{%
675     \declare@shorthand{russian}{-}{-}%
676     \declare@shorthand{russian}{-}{-}%
677   }%
678 }
679 \@ifundefined{slovene@sh@"@sel}{-}{%
680   \def\HyPsd@babel@slovene{%
681     \declare@shorthand{slovene}{-}{-}%

```

```

682 }%
683 }

```

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

```

684 \@ifundefined{spanish@sh@>@sel}{ }{%
685   \def\HyPsd@babel@spanish{%
686     \declare@shorthand{spanish}{<<}{\guillemotleft}%
687     \declare@shorthand{spanish}{>>}{\guillemotright}%
688     \declare@shorthand{spanish}{=}{{-}}%
689     \declare@shorthand{spanish}{~}{-}%
690     \declare@shorthand{spanish}{!}{\textexclamdown}%
691     \declare@shorthand{spanish}{?}{\textquestiondown}%
692   }%
693 }
694 \@ifundefined{swedish@sh@"@sel}{ }{%
695   \def\HyPsd@babel@swedish{%
696     \declare@shorthand{swedish}{|}{ }%
697     \declare@shorthand{swedish}{~}{-}%
698   }%
699 }
700 \@ifundefined{ukrainian@sh@"@sel}{ }{%
701   \def\HyPsd@babel@ukrainian{%
702     \declare@shorthand{ukrainian}{|}{ }%
703     \declare@shorthand{ukrainian}{~}{-}%
704   }%
705 }
706 \@ifundefined{usorbian@sh@"@sel}{ }{%
707   \def\HyPsd@babel@usorbian{%
708     \declare@shorthand{usorbian}{f}{f}%
709     \declare@shorthand{usorbian}{|}{ }%
710   }%
711 }
712 \@ifundefined{greek@sh@\string~@sel}{ }{%
713   \let\HyPsd@GreekPatch\empty
714 }{%
715   \def\HyPsd@GreekPatch{%
716     \let\greeknumeral\HyPsd@greeknumeral
717     \let\Greeknnumeral\HyPsd@Greeknnumeral
718   }%
719 }
720 \def\HyPsd@greeknumeral#1{%
721   \HyPsd@GreekNum\@firstoftwo{#1}%
722 }
723 \def\HyPsd@Greeknnumeral#1{%
724   \HyPsd@GreekNum\@secondoftwo{#1}%
725 }
726 \def\HyPsd@GreekNum#1#2{%
727   \ifHy@unicode
728     \ifnum#2<\@ne
729       \@arabic{#2}%
730     \else
731       \ifnum#2<1000000 %
732         \HyPsd@@GreekNum#1{#2}%
733       \else
734         \@arabic{#2}%
735       \fi
736     \fi
737   \else

```

```

738 \@arabic{#2}%
739 \fi
740 }
741 \def\HyPsd@GreeNum#1#2{%
742 \ifnum#2<\@m
743 \ifnum#2<10 %
744 \expandafter\HyPsd@GreeNumI
745 \expandafter\@gobble\expandafter#1\number#2%
746 \else
747 \ifnum#2<100 %
748 \expandafter\HyPsd@GreeNumII
749 \expandafter\@gobble\expandafter#1\number#2%
750 \else
751 \expandafter\HyPsd@GreeNumIII
752 \expandafter\@gobble\expandafter#1\number#2%
753 \fi
754 \fi
755 \ifnum#2>\z@
756 \textnumeralsigngreek
757 \fi
758 \else
759 \ifnum#2<\@M
760 \expandafter\HyPsd@GreeNumIV\expandafter#1\number#2%
761 \else
762 \ifnum#2<100000 %
763 \expandafter\HyPsd@GreeNumV\expandafter#1\number#2%
764 \else
765 \expandafter\HyPsd@GreeNumVI\expandafter#1\number#2%
766 \fi
767 \fi
768 \fi
769 }
770 \def\HyPsd@GreeNumI#1#2#3{%
771 #1{%
772 \ifnum#3>\z@
773 \textnumeralsignlowergreek
774 \fi
775 }%
776 \expandafter#2%
777 \ifcase#3 %
778 {}{}%
779 \or\textalpha\textAlpha
780 \or\textbeta\textBeta
781 \or\textgamma\textGamma
782 \or\textdelta\textDelta
783 \or\textepsilon\textEpsilon
784 \or\textstigmagreek\textStigmagreek
785 \or\textzeta\textZeta
786 \or\texteta\textEta
787 \or\texttheta\textTheta
788 \else
789 {}{}%
790 \fi
791 }
792 \def\HyPsd@GreeNumII#1#2#3#4{%
793 #1{%
794 \ifnum#3>\z@

```

```

795     \textnumeralsignlowergreek
796     \fi
797 }%
798 \expandafter#2%
799 \ifcase#3 %
800     {}{}%
801 \or\textiota\textIota
802 \or\textkappa\textKappa
803 \or\textlambda\textLambda
804 \or\textmu\textMu
805 \or\textnu\textNu
806 \or\textxi\textXi
807 \or\textomicron\textOmicron
808 \or\textpi\textPi
809 \or\textkoppagreek\textKoppagreek
810 \else
811     {}{}%
812 \fi
813 \HyPsd@GreekNumI#1#2#4%
814 }
815 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
816     #1{%
817         \ifnum#3>\z@
818             \textnumeralsignlowergreek
819             \fi
820         }%
821     \expandafter#2%
822     \ifcase#3 %
823         {}{}%
824 \or\textrho\textRho
825 \or\textsigma\textSigma
826 \or\texttau\textTau
827 \or\textupsilon\textUpsilon
828 \or\textphi\textPhi
829 \or\textchi\textChi
830 \or\textpsi\textPsi
831 \or\textomega\textOmega
832 \or\textsampigreek\textSampigreek
833 \else
834     {}{}%
835 \fi
836 \HyPsd@GreekNumII#1#2#4#5%
837 }
838 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
839     \HyPsd@GreekNumI\@firstofone#1#2%
840     \HyPsd@@GreekNum#1{#3#4#5}%
841 }
842 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
843     \HyPsd@GreekNumII\@firstofone#1#2#3%
844     \HyPsd@@GreekNum#1{#4#5#6}%
845 }
846 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
847     \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
848     \HyPsd@@GreekNum#1{#5#6#7}%
849 }

```

## 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 ( $\geq 0x40$ ).

```

850 \begingroup
851   \catcode"7F=\active
852   \toks@{%
853     \let\CJK@ignorespaces\empty
854     \def\CJK@char#1{\@gobbletwo}%
855     \let\CJK@charx\@gobblefour
856     \let\CJK@punctchar\@gobblefour
857     \def\CJK@punctcharx#1{\@gobblefour}%
858     \catcode"7F=\active
859     \def^^7f#1^^7f#2^^7f{%
860       \string #1\HyPsd@DecimalToOctal{#2}%
861     }%
862     % ... ?
863     \ifHy@unicode
864       \def\Hy@cjkpu{\80}%
865     \else
866       \let\Hy@cjkpu\empty
867     \fi
868     \HyPsd@CJKActiveChars
869   }%
870   \count@=127 %
871   \@whilenum\count@<255 \do{%
872     \advance\count@ by 1 %
873     \lccode'\~= \count@
874     \lowercase{%
875       \toks@\expandafter{\the\toks@ ~}%
876     }%
877   }%
878   \toks@\expandafter{\the\toks@ !}%
879   \xdef\HyPsd@CJKhook{\the\toks@}%
880 \endgroup

```

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

```

881 \def\HyPsd@CJKActiveChars#1{%
882   \ifx#1!%
883     \let\HyPsd@CJKActiveChars\relax
884   \else
885     \edef#1{\noexpand\Hy@cjkpu\string#1}%
886   \fi
887   \HyPsd@CJKActiveChars
888 }

```

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

```
889 \def\HyPsd@DecimalToOctal#1{%
```

```

890 \ifcase #1 %
891     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
892     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
893     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
894     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
895     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
896     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
897     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
898     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
899     \or @\or A\or B\or C\or D\or E\or F\or G%
900     \or H\or I\or J\or K\or L\or M\or N\or O%
901     \or P\or Q\or R\or S\or T\or U\or V\or W%
902     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
903     \or \140\or a\or b\or c\or d\or e\or f\or g%
904     \or h\or i\or j\or k\or l\or m\or n\or o%
905     \or p\or q\or r\or s\or t\or u\or v\or w%
906     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
907     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
908     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
909     \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
910     \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
911     \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
912     \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
913     \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
914     \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
915     \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
916     \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
917     \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
918     \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
919     \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
920     \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
921     \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
922     \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
923 \fi
924 }

```

### 6.5.3 \@inmathwarn-Patch

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

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

```

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

```



```

\expandafter\def\csname ?\string#1\endcsname{%
  \TextSymbolUnavailable#1%
}%
\fi
\global\expandafter\let
  \csname\cf@encoding\string#1\expandafter\endcsname
  \csname ?\string#1\endcsname
\fi
\csname\cf@encoding\string#1%
  \expandafter\endcsname
\else
  \noexpand#1%
\fi}
\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}

925 \def\HyPsd@inmathwarn#1#2{%
926   \ifx#2\expandafter
927     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
928       \HyPsd@GLYPHERR
929       \expandafter\@gobble\string#1%
930     >%
931     \expandafter\expandafter\expandafter\HyPsd@EndWithElse
932   \else
933     \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
934   \fi
935 \else
936   \expandafter#2%
937 \fi
938 }
939 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
940 \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

```

941 \def\HyPsd@add@accent#1#2{%
942   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
943   #2%
944 }%

```

#### 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.

```
945 \def\HyPsd@LetUnexpandableSpace#1{%
946   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
947 }
```

\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.

```
948 \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.

```
949 \edef\HyPsd@XSPACE{\string#\string X}
950 \edef\HyPsd@ITALCORR{\string#\string I}
951 \edef\HyPsd@GLYPHERR{\string#\string G}
```

### 6.5.7 \hspace fix

\HyPsd@hspace

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

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

```
953 \def\HyPsd@@hspace#1*#2\END{%
954   \ifx\#2\%
955     \HyPsd@hspacetest{#1}%
956   \else
957     \expandafter\HyPsd@hspacetest
958   \fi
959 }
```

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

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

### 6.5.8 Fix for AMS classes

```
961 \@ifundefined{tocsection}{%
962   \let\HyPSD@AMSclassfix\relax
963 }{%
964   \def\HyPSD@AMSclassfix{%
965     \let\tocpart\HyPSD@tocsection
966     \let\tocchapter\HyPSD@tocsection
967     \let\tocappendix\HyPSD@tocsection
968     \let\tocsection\HyPSD@tocsection
969     \let\tocsubsection\HyPSD@tocsection
970     \let\tocsubsubsection\HyPSD@tocsection
971     \let\tocparagraph\HyPSD@tocsection
972   }%
973   \def\HyPSD@tocsection#1#2#3{%
974     \if @#2@ \else \if @#1@ \else #1 \fi #2. \fi
975     #3%
```

```

976 }%
977 }

```

### 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.

```

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

```

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

```

979 \def\HyPsd@@ref#1*#2\END{%
980   \ifx\#2\%
981     \HyPsd@@@ref{#1}%
982   \else
983     \expandafter\HyPsd@@@ref
984   \fi
985 }%

```

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

```

986 \def\HyPsd@@@ref#1{%
987   \expandafter\ifx\csname r@#1\endcsname\relax
988     ??%
989   \else
990     \expandafter\expandafter\expandafter\@car\csname r@#1\endcsname\@nil
991   \fi
992 }

```

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

```

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

```

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

```

994 \def\HyPsd@@pageref#1*#2\END{%
995   \ifx\#2\%
996     \HyPsd@@@pageref{#1}%
997   \else
998     \expandafter\HyPsd@@@pageref
999   \fi
1000 }

```

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

```

1001 \def\HyPsd@@@pageref#1{%
1002   \expandafter\ifx\csname r@#1\endcsname\relax
1003     ??%
1004   \else
1005     \expandafter\expandafter\expandafter\expandafter
1006     \expandafter\expandafter\expandafter\@car
1007     \expandafter\expandafter\expandafter\@gobble
1008     \csname r@#1\endcsname\@nil
1009   \fi
1010 }

```

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

```

1011 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}

```

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

```
1012 \def\HyPsd@@autoref#1*#2\END{%
1013   \ifx\#2\%
1014     \HyPsd@@autoref{#1}%
1015   \else
1016     \expandafter\HyPsd@@autoref
1017   \fi
1018 }
```

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

```
1019 \def\HyPsd@@@autoref#1{%
1020   \expandafter\ifx\csname r@#1\endcsname\relax
1021     ??%
1022   \else
1023     \expandafter\expandafter\expandafter\HyPsd@autorefname
1024       \csname r@#1\endcsname{}{}{}{}\@nil
1025     \expandafter\expandafter\expandafter\@car\csname r@#1\endcsname\@nil
1026   \fi
1027 }
```

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

```
1028 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1029   \ifx\#4\%
1030   \else
1031     \HyPsd@@autorefname#4.\@nil
1032   \fi
1033 }
```

`\HyPsd@@autorefname`

```
1034 \def\HyPsd@@autorefname#1.#2\@nil{%
1035   \@ifundefined{#1autorefname}{%
1036     \@ifundefined{#1name}{%
1037       }{%
1038         \csname#1name\endcsname\space
1039       }%
1040   }{%
1041     \csname#1autorefname\endcsname\space
1042   }%
1043 }
```

### 6.5.10 Redefining the defining commands

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

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

`\HyPsd@DefCommand` and `\HyPsd@LetCommand` expands to the commands `\<def>-command` and `\<let>-command` with the meaning of `\def` and `\let`. So it is detected by

\HyPsd@CheckCatcodes and the command name \<def>-command or \<let>-command should indicate a forbidden definition command.

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

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

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

```

\HyPsd@DefCommand
\HyPsd@LetCommand
1044 \begingroup
1045   \def\x#1#2{%
1046     \endgroup
1047     \let#1\def
1048     \def\HyPsd@DefCommand##1##2##{%
1049       #1%
1050       \expandafter\noexpand
1051       \csname\expandafter\@gobble\string##1\@empty\endcsname
1052       \@gobble
1053     }%
1054     \let#2\let
1055     \def\HyPsd@@LetCommand##1{%
1056       \expandafter\ifx\csname##1\expandafter\endcsname
1057         \csname iftrue\endcsname
1058         \pdfstringdefWarn\let
1059         \expandafter\@gobble
1060       \else
1061         \expandafter\ifx\csname##1\expandafter\endcsname
1062           \csname iffalse\endcsname
1063           \pdfstringdefWarn\let
1064           \expandafter\expandafter\expandafter\@gobble
1065         \else
1066           #2%
1067           \expandafter\noexpand
1068           \csname##1\expandafter\expandafter\expandafter\endcsname
1069         \fi
1070       \fi
1071     }%
1072   }%
1073 \expandafter\x\csname <def>-command\expandafter\endcsname
1074   \csname <let>-command\endcsname
1075 \def\HyPsd@LetCommand#1{%
1076   \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1077   \expandafter\expandafter\expandafter{%
1078     \expandafter\@gobble\string#1\@empty
1079   }%
1080 }

```

### 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.

```
1081 \def\HyPsd@ifnextchar{%
1082   \pdfstringdefWarn\@ifnextchar
1083   \expandafter\@gobbletwo\@gobble
1084 }
```

`\HyPsd@new@ifnextchar` Package `amsgen.sty` redefines `\@ifstar` using `\new@ifnextchar` instead of `\@ifnextchar`. See bug report [latex/3662](https://tex.stackexchange.com/questions/3662).

```
1085 \def\HyPsd@new@ifnextchar{%
1086   \pdfstringdefWarn\new@ifnextchar
1087   \expandafter\@gobbletwo\@gobble
1088 }
```

### 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`.

```
1089 \def\HyPsd@protected@testopt#1{%
1090   \pdfstringdefWarn#1%
1091   \@gobbletwo
1092 }
```

## 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:

```
1093 \def\HyPsd@Warning#1{%
1094   \begingroup
1095     \def\space{ }%
1096     \Hy@Warning{#1}%
1097   \endgroup
1098 }
```

### 6.6.2 Protecting spaces

```
1099 \RequirePackage{etexcmds}
1100 \ifetex@unexpanded
1101   \expandafter\@secondoftwo
1102 \else
1103   \expandafter\@firstoftwo
1104 \fi
1105 {%
```

`\HyPsd@ProtectSpaces` `\HyPsd@ProtectSpaces` calls with the expanded string `\HyPsd@@ProtectSpacesFi`. The expanded string is protected by `|` at the beginning and end of the expanded string.

Because of this there can be no group at the beginning or end of the string and grouping characters are not removed by the call of `\HyPsd@@ProtectSpacesFi`.

```

1106 \def\HyPsd@ProtectSpaces#1{%
1107   \iftrue
1108     \expandafter\HyPsd@@ProtectSpacesFi
1109     \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1110   \fi
1111 }%

```

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

```

1112 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1113   \fi
1114   \ifx\scrollmode#2\scrollmode
1115     \HyPsd@RemoveMask#1\HyPsd@End#3%
1116   \else
1117     \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1118     \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1119   \fi
1120 }%

```

### Remove mask.

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

```

1121 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1122   \toks@{\expandafter{#1}}%
1123   \xdef#2{\the\toks@}%
1124 }%

1125 }{%
1126 \let\HyPsd@fi\fi
1127 \def\HyPsd@ProtectSpaces#1{%
1128   \xdef#1{%
1129     \iftrue
1130       \expandafter\HyPsd@@ProtectSpacesFi
1131       \expandafter|\expandafter\@empty#1| %
1132     \HyPsd@fi
1133   }%
1134   \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1135 }%
1136 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1137   \fi
1138   \etex@unexpanded{#1}%
1139   \ifx\scrollmode#2\scrollmode
1140     \else
1141       \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1142     \HyPsd@fi
1143   }%
1144 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1145   \xdef#2{\etex@unexpanded\expandafter{#1}}%
1146 }%
1147 }

```

### 6.6.3 Remove grouping braces

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

```

1148 \def\HyPsd@RemoveBraces#1{%
1149   \ifx\scrollmode#1\scrollmode
1150   \else
1151     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1152   \fi
1153 }

```

`\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`.

```

1154 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1155   \fi
1156   \def\Hy@temp@A{#1#2}%
1157   \def\Hy@temp@B{#3}%
1158   \ifx\Hy@temp@A\Hy@temp@B
1159     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1160       \HyPsd@String#1%
1161     }%
1162     \ifx\scrollmode#2\scrollmode
1163     \else
1164       \Hy@ReturnAfterFiFiEnd{%
1165         \HyPsd@RemoveBraces{#2}%
1166       }%
1167     \fi
1168   \else
1169     \def\Hy@temp@A{#1}%
1170     \HyPsd@AppendItalcorr\HyPsd@String
1171     \ifx\Hy@temp@A\@empty
1172       \Hy@ReturnAfterElseFiFiEnd{%
1173         \HyPsd@RemoveBraces{#2}%
1174       }%
1175     \else
1176       \HyPsd@ProtectSpaces\Hy@temp@A
1177       \HyPsd@AppendItalcorr\Hy@temp@A
1178       \Hy@ReturnAfterFiFiEnd{%
1179         \expandafter\HyPsd@RemoveBraces\expandafter
1180           {\Hy@temp@A#2}%
1181       }%
1182     \fi
1183   \fi
1184   \Hy@ReturnEnd
1185 }

```

`\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`.

```

\HyPsd@@AppendItalcorr
1186 \def\HyPsd@AppendItalcorr#1{%
1187   \expandafter\HyPsd@@AppendItalcorr\expandafter{/}#1%
1188 }
1189 \def\HyPsd@@AppendItalcorr#1#2{%
1190   \expandafter\def\expandafter#2\expandafter{#2#1}%
1191 }

```



## 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`).

```

1192 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1193   \global\let\HyPsd@Rest\relax
1194   \ifcat\relax\noexpand#1\relax
1195     \ifx#1\protect
1196     \else
1197       \ifx#1\penalty
1198         \setbox\z@=\hbox{%
1199           \afterassignment\HyPsd@AfterCountRemove
1200           \count@=#2\HyPsd@End
1201         }%
1202       \else
1203         \ifx#1\kern
1204         \setbox\z@=\hbox{%
1205           \afterassignment\HyPsd@AfterDimenRemove
1206           \dimen@=#2\HyPsd@End
1207         }%
1208       \else
1209         \ifx#1\hskip
1210         \setbox\z@=\hbox{%
1211           \afterassignment\HyPsd@AfterSkipRemove
1212           \skip@=#2\HyPsd@End
1213         }%
1214       \else
1215         \HyPsd@CatcodeWarning{#1}%
1216       \fi
1217     \fi
1218   \fi
1219 \fi
1220 \else
1221   \ifcat#1A% letter
1222   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1223     \HyPsd@String#1%
1224   }%
1225 \else
1226   \ifcat#1 % SPACE
1227   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1228     \HyPsd@String\HyPsd@SPACEOPTI
1229   }%
1230 \else
1231   \ifcat$#1%
1232   \HyPsd@CatcodeWarning{math shift}%
1233 \else
1234   \ifcat&#1%
1235   \HyPsd@CatcodeWarning{alignment tab}%

```

```

1236         \else
1237         \ifcat~#1%
1238         \HyPsd@CatcodeWarning{superscript}%
1239         \else
1240         \ifcat_#1%
1241         \HyPsd@CatcodeWarning{subscript}%
1242         \else
1243         \expandafter\def\expandafter\HyPsd@String\expandafter{%
1244         \HyPsd@String#1%
1245         }%
1246         \fi
1247     \fi
1248 \fi
1249 \fi
1250 \fi
1251 \fi
1252 \fi
1253 \ifx\HyPsd@Rest\relax
1254 \ifx\scrollmode#2\scrollmode
1255 \else
1256 \Hy@ReturnAfterFiFiEnd{%
1257 \HyPsd@CheckCatcodes#2\HyPsd@End
1258 }%
1259 \fi
1260 \else
1261 \ifx\HyPsd@Rest\@empty
1262 \else
1263 \Hy@ReturnAfterFiFiEnd{%
1264 \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1265 }%
1266 \fi
1267 \fi
1268 \Hy@ReturnEnd
1269 }

```

### Remove counts, dimens, skips.

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

```

1270 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1271 \gdef\HyPsd@Rest{#1}%
1272 }

```

\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.

```

1273 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1274 \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@ \fi>1ex %
1275 \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1276 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1277 \else
1278 \ifdim\dimen@=\z@
1279 \else
1280 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1281 \fi
1282 \gdef\HyPsd@Rest{#1}%
1283 \fi

```

1284 }

`\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).

```
1285 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1286   \ifdim\ifx\HyPsd@String\@empty\z@else\skip@fi>1ex %
1287     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1288     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1289   \else
1290     \ifdim\skip@=\z@
1291     \else
1292       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1293     \fi
1294     \gdef\HyPsd@Rest{#1}%
1295   \fi
1296 }
```

### Catcode warnings.

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

```
1297 \def\HyPsd@CatcodeWarning#1{%
1298   \HyPsd@Warning{%
1299     Token not allowed in a PDFDocEncoded string,%
1300     \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1301   }%
1302 }
1303 \begingroup
1304 \catcode'\|=0 %
1305 \catcode'\|=12 %
1306 \gdef\HyPsd@RemoveCmdPrefix#1{%
1307   \expandafter\HyPsd@@RemoveCmdPrefix
1308   \string#1\@empty\<>\@empty\@empty
1309 }%
1310 \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2\@empty#3\@empty{#1#2}%
1311 \endgroup
```

`\HyPsd@RemoveSpaceWarning`

```
1312 \def\HyPsd@RemoveSpaceWarning#1{%
1313   \HyPsd@Warning{%
1314     Token not allowed in a PDFDocEncoded string:%
1315     \MessageBreak #1\MessageBreak
1316     removed%
1317   }%
1318 }
```

`\HyPsd@ReplaceSpaceWarning`

```
1319 \def\HyPsd@ReplaceSpaceWarning#1{%
1320   \HyPsd@Warning{%
1321     Token not allowed in a PDFDocEncoded string:%
1322     \MessageBreak #1\MessageBreak
1323     replaced by space%
1324   }%
1325 }
```

### 6.6.5 Check for wrong glyphs

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

```
1326 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1327   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1328     \HyPsd@String#1%
1329   }%
1330   \ifx\#2\%
1331   \else
1332     \Hy@ReturnAfterFi{%
1333       \HyPsd@GlyphProcessWarning#2\@empty
1334     }%
1335   \fi
1336 }
1337 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1338   \HyPsd@Warning{%
1339     Glyph not defined in %
1340     P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1341     removing ‘\@backslashchar#1’%
1342   }%
1343   \HyPsd@GlyphProcess#2\@empty
1344 }
```

### 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`.

```
1345 \def\HyPsd@spaceopti#1{ % first space
1346   \ifx\HyPsd@spaceopti#1%
1347     \040%
1348   \else
1349     #1%
1350   \fi
1351 }
```

### 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.

```
1352 \def\HyPsd@Subst#1#2#3{%
1353   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1354     \fi
1355     ##1%
1356     \ifx\scrollmode##2\scrollmode
1357     \else
1358       #2%
1359       \HyPsd@@ReplaceFi##2\END
1360     \fi
1361   }%
1362   \xdef#3{%
1363     \iftrue
```

```

1364     \expandafter\HyPsd@@ReplaceFi#3#1\END
1365     \fi
1366 }%
1367 }

```

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

```

1368 \def\HyPsd@StringSubst#1{%
1369   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1370 }

```

### 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.

```

1371 \def\HyPsd@doxspace#1{%
1372   \ifx#1\relax\else
1373     \ifx#1.\else
1374       \ifx#1:\else
1375         \ifx#1,\else
1376           \ifx#1;\else
1377             \ifx#1!\else
1378               \ifx#1?\else
1379                 \ifx#1/\else
1380                   \ifx#1-\else
1381                     \ifx#1'\else
1382                       \HyPsd@SPACEOPTI
1383                     \fi
1384                   \fi
1385                 \fi
1386               \fi
1387             \fi
1388           \fi
1389         \fi
1390       \fi
1391     \fi
1392   \fi
1393   #1%
1394 }%

```

### 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.

```

1395 \begingroup
1396   \catcode'\|=0 %
1397   \catcode'\=12 %

```

`\HyPsd@ConvertToUnicode`

```

1398 |gdef|HyPsd@ConvertToUnicode#1{%
1399   |xdef#1{%
1400     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1401   }%
1402   |ifx#1|@empty

```

```

1403     |else
1404         |xdef#1{%
1405             \376\377%
1406             #1%
1407         }%
1408     |fi
1409 }%

```

\HyPsd@DoConvert

```

1410 |gdef|HyPsd@DoConvert#1{%
1411     |ifx#1|@empty
1412     |else
1413         |Hy@ReturnAfterFi{%
1414             |ifx#1\%%
1415             \%%
1416             |expandafter|HyPsd@DoEscape
1417         |else
1418             \000#1%
1419             |expandafter|HyPsd@DoConvert
1420         |fi
1421     }%
1422 |fi
1423 }%

```

\HyPsd@DoEscape

```

1424 |gdef|HyPsd@DoEscape#1{%
1425     |ifx#19%
1426     |expandafter|HyPsd@GetTwoBytes
1427     |else
1428         |Hy@ReturnAfterFi{%
1429             |ifx#18%
1430             00%
1431             |expandafter|HyPsd@GetTwoBytes
1432         |else
1433             #1%
1434             |expandafter|HyPsd@GetOneByte
1435         |fi
1436     }%
1437 |fi
1438 }%

```

\HyPsd@GetTwoBytes

```

1439 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1440     #1\#2#3#4%
1441     |HyPsd@DoConvert
1442 }%

```

\HyPsd@GetOneByte

```

1443 |gdef|HyPsd@GetOneByte#1#2{%
1444     #1#2%
1445     |HyPsd@DoConvert
1446 }%
1447 |endgroup

```

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

```

1448 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%

```

```

1449 \xdef#4{#4#1#2}%
1450 \HyPsd@@ConvertToUnicode#3\END#4%
1451 }

```

### 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

1452 \begingroup\expandafter\expandafter\expandafter\endgroup
1453 \expandafter\ifx\csname numexpr\endcsname\relax
1454 \let\HyPsd@UTFviii\relax
1455 \else
1456 \def\HyPsd@UTFviii{%
1457 \let\UTFviii@two@octets\HyPsd@UTFviii@two
1458 \let\UTFviii@three@octets\HyPsd@UTFviii@three
1459 \let\unichar\HyPsd@unichar
1460 }%

```

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.

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

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

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

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

$$(5)$$

```

1461 \def\HyPsd@UTFviii@two#1#2{%
1462 \expandafter\HyPsd@UTFviii@@two
1463 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1464 \number'#1\expandafter|%
1465 \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|%
1466 \number'#2 \@nil
1467 }%
1468 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
1469 \expandafter\8%
1470 \number\dimexpr #1-48\expandafter\relax
1471 \csname\number\dimexpr #2-4*#1\relax\expandafter\endcsname
1472 \number\dimexpr #3-8*%
1473 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1474 \number\dimexpr #4-8*#3\relax
1475 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

1476 \def\HyPsd@UTFviii@three#1#2#3{%
1477   \expandafter\HyPsd@UTFviii@three
1478   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
1479   \number'#1\expandafter|
1480   \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter|
1481   \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|
1482   \number'#2\expandafter|
1483   \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|
1484   \number'#3 \@nil
1485 }%
1486 \def\HyPsd@UTFviii@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1487   \expandafter\9%
1488   \number\numexpr #1-56\expandafter\relax
1489   \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1490   \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1491   \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1492   \number\numexpr #6-16\expandafter\relax
1493   \number\numexpr #7-8*#6\relax
1494 }%

```

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

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

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

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

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

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

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

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

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

$$(21)$$

```

1495 \def\HyPsd@UTFviii@four#1{%
1496   \expandafter\HyPsd@UTFviii@four\number'#1|
1497 }%
1498 \def\HyPsd@UTFviii@four#1|#2#3#4{%
1499   \expandafter\HyPsd@UTFviii@@four\number#1\expandafter|
1500   \number'#2\expandafter|
1501   \number\dimexpr.03125\dimexpr'#2sp\expandafter|
1502   \number'#3\expandafter|
1503   \number\dimexpr.03125\dimexpr'#3sp\expandafter|
1504   \number'#4\expandafter|
1505   \number\dimexpr.125\dimexpr'#4|
1506 }%
1507 \def\HyPsd@UTFviii@@four#1|#2|#3|#4|#5|#6|#7|{%

```



```

1508 \931%
1509 \number\numexpr\dimexpr.5\dimexpr#1sp\relax\relax -120\relax
1510 \csname\number\numexpr\ifodd#1 2\else 0\fi +#3-4\relax\endcsname
1511 \number\dimexpr.25\dimexpr #2sp - 32\dimexpr#3sp\relax\relax\relax
1512 % ...
1513 }%

```

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

```

1514 \def\HyPsd@unichar#1{%
1515 \ifHy@unicode
1516 \ifnum#1>"10FFFF %
1517 \HyPsd@UnicodeReplacementCharacter % illegal
1518 \else
1519 \ifnum#1>"FFFF %

```

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

```

1520 \expandafter\HyPsd@unichar\expandafter{%
1521 \number\numexpr 55296+%
1522 \dimexpr.0009765625\dimexpr\number#1sp-\p@
1523 \relax\relax\relax
1524 }%

```

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

```

1525 \expandafter\HyPsd@unichar\expandafter{%
1526 \number\numexpr#1-9216%
1527 -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1528 \relax\relax\relax
1529 }%
1530 \else
1531 \ifnum#1>"7FF %
1532 \9%
1533 \expandafter\HyPsd@unichar@first@byte\expandafter{%
1534 \number
1535 \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1536 }%
1537 \else
1538 \8%
1539 \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
1540 \fi
1541 \expandafter\HyPsd@unichar@second@byte\expandafter{%
1542 \number
1543 \numexpr#1-256*\number
1544 \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
1545 }%
1546 \fi
1547 \fi
1548 \else
1549 .% unsupported (Unicode -> PDF Doc Encoding)
1550 \fi
1551 }%
1552 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
1553 \def\HyPsd@unichar@first@byte#1{%
1554 \number\dimexpr.015625\dimexpr#1sp\relax\relax
1555 \expandafter\HyPsd@unichar@octtwo\expandafter{%
1556 \number
1557 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp\relax\relax\relax
1558 }%
1559 }%

```

```

1560 \def\HyPsd@unichar@second@byte#1{%
1561   \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
1562   \expandafter\HyPsd@unichar@octtwo\expandafter{%
1563     \number
1564     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp\relax\relax\relax
1565   }%
1566 }%
1567 \def\HyPsd@unichar@octtwo#1{%
1568   \number\dimexpr.125\dimexpr#1sp\relax\relax
1569   \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp\relax\relax\relax
1570 }%
1571 \fi

```

## 7 Support of other packages

### 7.1 Class memoir

```

1572 \@ifclassloaded{memoir}{%
1573   \AtEndOfPackage{\RequirePackage{memhfixc}}%
1574 }{}

```

### 7.2 Package subfigure

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

```

1575 \@ifpackageloaded{subfigure}{%
1576   \@ifundefined{sub@label}{%
1577     \Hy@hypertextnamesfalse
1578   }{%
1579     \renewcommand*{\sub@label}[1]{%
1580       \@bsphack
1581       \subfig@oldlabel{#1}%
1582       \if@filesw
1583         \begingroup
1584           \edef\@currentlabstr{%
1585             \expandafter\strip@prefix\meaning\@currentlabelname
1586           }%
1587           \protected@write\@auxout{}{%
1588             \string\newlabel{sub@#1}{%
1589               {\@nameuse{@@thesub\@capttype}}%
1590               {\thepage}%
1591               {\expandafter\strip@period\@currentlabstr\relax.\relax\@@}%
1592               {\@currentHref}%
1593             }%
1594           }%
1595         }%
1596       \endgroup
1597     }%
1598     \@esphack
1599   }%
1600   \@ifpackagelater{subfigure}{2002/03/26}{%
1601     \providecommand*{\toclevel@subfigure}{1}%
1602     \providecommand*{\toclevel@subtable}{1}%
1603   }%
1604 }%
1605 }{}

```

### 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:

```
1606 \@ifundefined{XR@addURL}{%
1607 }{%
```

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.

```
1608 \def\xR@addURL#1{\XR@dURL#1{}{}{}{}\\}%
1609 \def\xR@dURL#1#2#3#4#5\{%
1610   {#1}{#2}%
1611   \if!#4!%
1612   \else
1613     {#3}{#4}{\XR@URL}%
1614   \fi
1615 }%
1616 }
```

```
1617 \def\Hy@true{true}
1618 \def\Hy@false{false}
```

Providing dummy definitions.

```
1619 \let\literalps@out@gobble
1620 \newcommand\pdfbookmark[3][]{ }
1621 \let\Acrobatmenu@gobble
1622 \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

```
1623 \let\HyperRaiseLinkLength\@tempdima
1624 \let\HyperRaiseLinkHook\@empty
1625 \def\HyperRaiseLinkDefault{\baselineskip}
```

\HyperRaiseLinkHook allows the user to reassign \HyperRaiseLinkLength.

```
1626 \def\Hy@raisedlink#1{%
1627   \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1628   \HyperRaiseLinkHook
1629   \ifvmode
1630     #1%
1631   \else
1632     \penalty\@M
1633     \smash{\raise\HyperRaiseLinkLength\hbox{#1}}%
1634   \fi
1635 }
```

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

```

1636 \def\Hy@SaveLastskip{%
1637   \let\Hy@RestoreLastskip\relax
1638   \ifvmode
1639     \ifdim\lastskip=\z@
1640       \let\Hy@RestoreLastskip\nobreak
1641     \else
1642       \begingroup
1643         \skip@=-\lastskip
1644         \edef\x{%
1645           \endgroup
1646           \def\noexpand\Hy@RestoreLastskip{%
1647             \noexpand\ifvmode
1648               \noexpand\nobreak
1649               \vskip\the\skip@
1650               \vskip\the\lastskip\relax
1651             \noexpand\fi
1652           }%
1653         }%
1654       \x
1655     \fi
1656   \else
1657     \ifhmode
1658       \ifdim\lastskip=\z@
1659         \let\Hy@RestoreLastskip\nobreak
1660       \else
1661         \begingroup
1662           \skip@=-\lastskip
1663           \edef\x{%
1664             \endgroup
1665             \def\noexpand\Hy@RestoreLastskip{%
1666               \noexpand\ifhmode
1667                 \noexpand\nobreak
1668                 \hskip\the\skip@
1669                 \hskip\the\lastskip\relax
1670             \noexpand\fi
1671           }%
1672         }%
1673       \x
1674     \fi
1675   \fi
1676 \fi
1677 }%
```

## 9 Options

### 9.1 Help macros

`\Hy@boolkey`

```

1678 \def\Hy@boolkey{\@dblarg\Hy@boolkey}
1679 \def\Hy@@boolkey[#1]#2#3{%
1680   \lowercase{\def\Hy@tempa{#3}}%
1681   \ifx\Hy@tempa\@empty
1682     \let\Hy@tempa\Hy@true
1683   \fi
1684   \ifx\Hy@tempa\Hy@true
```

```

1685 \else
1686   \ifx\Hy@tempa\Hy@false
1687   \else
1688     \let\Hy@tempa\relax
1689   \fi
1690 \fi
1691 \ifx\Hy@tempa\relax
1692   \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1693 \else
1694   \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1695   \csname Hy@#2\Hy@tempa\endcsname
1696 \fi
1697 }

```

\Hy@WarnOptionValue

```

1698 \def\Hy@WarnOptionValue#1#2#3{%
1699   \Hy@Warning{%
1700     Unexpected value ‘#1’\MessageBreak
1701     of option ‘#2’ instead of\MessageBreak
1702     #3%
1703   }%
1704 }

```

\Hy@DisableOption

```

1705 \def\Hy@DisableOption#1{%
1706   \@ifundefined{KV@Hyp@#1@default}{%
1707     \define@key{Hyp}{#1}%
1708   }{%
1709     \define@key{Hyp}{#1}[]%
1710   }%
1711   {\Hy@WarnOptionDisabled{#1}}%
1712 }

```

\Hy@WarnOptionDisabled

```

1713 \def\Hy@WarnOptionDisabled#1{%
1714   \Hy@Warning{%
1715     Option ‘#1’ has already been used,\MessageBreak
1716     setting the option has no effect%
1717   }%
1718 }

```

\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.

```

1719 \def\Hy@CheckOptionValue#1#2#3{%
1720   \begingroup
1721   \edef\x{#1}%
1722   \@onelevel@sanitize\x
1723   \let\y=y%
1724   \def\do##1##2{%
1725     \def\z{##1}%
1726     \@onelevel@sanitize\z
1727     \ifx\x\z
1728       \let\y=n%
1729     \let\do\gobbletwo
1730   \fi
1731   }%
1732   #3%

```

```

1733 \ifx\y y%
1734 \def\do##1##2{%
1735 * '##1'%
1736 \ifx\\##2\\\else\space(##2)\fi
1737 \MessageBreak
1738 }%
1739 \Hy@Warning{%
1740 Values of option '#2':\MessageBreak
1741 #3%
1742 * An empty value disables the option.\MessageBreak
1743 Unknown value '\x'%
1744 }%
1745 \fi
1746 \endgroup
1747 }

```

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

```

1748 \def\Hy@DefNameKey#1{%
1749 \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
1750 }

```

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

```

1751 \def\Hy@@DefNameKey#1#2#3{%
1752 \define@key{Hyp}{#2}{%
1753 \edef#1{##1}%
1754 \ifx#1\@empty
1755 \else
1756 \Hy@CheckOptionValue{##1}{#2}{#3}%
1757 \fi
1758 }%
1759 \let#1\@empty
1760 }

```

**\Hy@UseNameKey**

```

1761 \def\Hy@UseNameKey#1#2{%
1762 \ifx#2\@empty
1763 \else
1764 /#1/#2%
1765 \fi
1766 }

```

## 9.2 Defining the options

```

1767 \define@key{Hyp}{implicit}[true]{%
1768 \Hy@boolkey{implicit}{#1}%
1769 }
1770 \define@key{Hyp}{draft}[true]{%
1771 \Hy@boolkey{draft}{#1}%
1772 }
1773 \define@key{Hyp}{final}[true]{%
1774 \Hy@boolkey{final}{#1}%
1775 }

```

```

1776 \let\KV@Hyp@nolinks\KV@Hyp@draft
1777 \define@key{Hyp}{a4paper}[true]{%
1778   \def\special@paper{210mm,297mm}%
1779   \def\Hy@pageheight{842}%
1780 }
1781 \define@key{Hyp}{a5paper}[true]{%
1782   \def\special@paper{148mm,210mm}%
1783   \def\Hy@pageheight{595}%
1784 }
1785 \define@key{Hyp}{b5paper}[true]{%
1786   \def\special@paper{176mm,250mm}%
1787   \def\Hy@pageheight{709}%
1788 }
1789 \define@key{Hyp}{letterpaper}[true]{%
1790   \def\special@paper{8.5in,11in}%
1791   \def\Hy@pageheight{792}%
1792 }
1793 \define@key{Hyp}{legalpaper}[true]{%
1794   \def\special@paper{8.5in,14in}%
1795   \def\Hy@pageheight{1008}%
1796 }
1797 \define@key{Hyp}{executivepaper}[true]{%
1798   \def\special@paper{7.25in,10.5in}%
1799   \def\Hy@pageheight{720}%
1800 }
1801 \define@key{Hyp}{setpagesize}[true]{%
1802   \Hy@boolkey{setpagesize}{#1}%
1803 }
1804 \define@key{Hyp}{debug}[true]{%
1805   \Hy@boolkey{debug}{verbose}{#1}%
1806 }
1807 \define@key{Hyp}{linktopage}[true]{%
1808   \Hy@boolkey{linktopage}{#1}%
1809 }
1810 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1811 \def\XR@ext{dvi}
1812 \define@key{Hyp}{verbose}[true]{%
1813   \Hy@boolkey{verbose}{#1}%
1814 }
1815 \define@key{Hyp}{typexml}[true]{%
1816   \Hy@boolkey{typexml}{#1}%
1817 }

```

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.

```

1818 \define@key{Hyp}{raiselinks}[true]{%
1819   \Hy@boolkey{raiselinks}{#1}%
1820 }

```

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

```

1821 \define@key{Hyp}{breaklinks}[true]{%
1822   \Hy@boolkey{breaklinks}{#1}%
1823 }

```

Determines whether an automatic anchor is put on each page

```

1824 \define@key{Hyp}{pageanchor}[true]{%
1825   \Hy@boolkey{pageanchor}{#1}%

```

```
1826 }
```

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.

```
1827 \define@key{Hyp}{plainpages}[true]{%
1828   \Hy@boolkey{plainpages}{#1}%
1829 }
```

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

```
1830 \define@key{Hyp}{naturalnames}[true]{%
1831   \Hy@boolkey{naturalnames}{#1}%
1832 }
```

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

```
1833 \define@key{Hyp}{hypertexnames}[true]{%
1834   \Hy@boolkey{hypertexnames}{#1}%
1835 }
```

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

```
1836 \define@key{Hyp}{nesting}[true]{%
1837   \Hy@boolkey{nesting}{#1}%
1838 }

1839 \define@key{Hyp}{unicode}[true]{%
1840   \Hy@boolkey{unicode}{#1}%
1841   \HyPsd@InitUnicode
1842 }
```

## 10 Options for different drivers

```
1843 \define@key{Hyp}{hyperref}[true]{%
1844 \define@key{Hyp}{tex4ht}[true]{%
1845   \def\XR@ext{html}%
1846   \Hy@texhttrue
1847   \def\Hy@raisedlink{}%
1848   \setkeys{Hyp}{colorlinks=true}%
1849   \def\BeforeTeXIVht{\usepackage{color}}%
1850   \def\Hy@driver{htex4ht}%
1851   \def\MaybeStopEarly{%
1852     \typeout{Hyperref stopped early}%
1853     \AfterBeginDocument{\PDF@FinishDoc}%
1854   }%
1855 }%
1856 }

1857 \define@key{Hyp}{pdftex}[true]{%
1858   \def\Hy@driver{hpdftex}%
1859   \def\XR@ext{pdf}%
1860   \PassOptionsToPackage{pdftex}{color}%
1861   \Hy@breaklinkstrue
1862 }

1863 \define@key{Hyp}{dvipdf}[true]{%
1864   \Hy@WarningNoLine{%
1865     Option 'dvipdf' is deprecated.\MessageBreak
1866     See the user manual for available driver options%
1867   }%
1868 }

1869 \define@key{Hyp}{nativepdf}[true]{%
1870   \def\Hy@driver{hdvips}%
1871   \def\Hy@raisedlink{}%
```



```

1872 \def\XR@ext{pdf}%
1873 }
1874 \define@key{Hyp}{dvipdfm}[true]{%
1875   \def\Hy@driver{hdvipdfm}%
1876   \def\XR@ext{pdf}%
1877   \Hy@breaklinkstrue
1878 }
1879 \define@key{Hyp}{dvipdfmx}[true]{%
1880   \def\Hy@driver{hdvipdfm}%
1881   \def\XR@ext{pdf}%
1882   \Hy@breaklinkstrue
1883 }
1884 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
1885   \expandafter\ifx\csname if#1\expandafter\endcsname
1886     \csname iftrue\endcsname
1887     \chardef\SpecialDvipdfmxOutlineOpen\@ne
1888   \else
1889     \chardef\SpecialDvipdfmxOutlineOpen\z@
1890   \fi
1891 }
1892 \define@key{Hyp}{xetex}[true]{%
1893   \def\Hy@driver{hdvipdfm}%
1894   \def\XR@ext{pdf}%
1895   \Hy@breaklinkstrue
1896 }
1897 \define@key{Hyp}{pdfmark}[true]{%
1898   \def\Hy@driver{hdvips}%
1899   \def\Hy@raisedlink{}%
1900   \def\XR@ext{pdf}%
1901 }
1902 \define@key{Hyp}{dvips}[true]{%
1903   \def\Hy@driver{hdvips}%
1904   \def\Hy@raisedlink{}%
1905   \def\XR@ext{pdf}%
1906 }
1907 \define@key{Hyp}{hypertex}[true]{%
1908   \def\Hy@driver{hypertex}%
1909 }
1910 \let\Hy@MaybeStopNow\relax
1911 \define@key{Hyp}{vtex}[true]{%
1912   \begingroup\expandafter\expandafter\expandafter\endgroup
1913   \expandafter\ifx\csname OpMode\endcsname\relax
1914     \@latex@error{Non-VTeX processor}{}%
1915     \global\let\Hy@MaybeStopNow\endinput
1916   \endinput
1917   \else
1918     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1919     \def\XR@ext{pdf}%
1920     \def\Hy@driver{hvtex}%
1921   \else
1922     \ifnum\OpMode=10\relax
1923     \def\XR@ext{htm}%
1924     \def\Hy@driver{hvtexhtm}%
1925     \def\MaybeStopEarly{%
1926       \typeout{Hyperref stopped early}%
1927       \AfterBeginDocument{\PDF@FinishDoc}%
1928     \endinput

```

```

1929     }%
1930     \else
1931         \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1932         \global\let\Hy@MaybeStopNow\endinput
1933     \endinput
1934 \fi
1935 \fi
1936 \fi
1937 }
1938 \define@key{Hyp}{vtexpdfmark}[true]{%
1939     \begingroup\expandafter\expandafter\expandafter\endgroup
1940     \expandafter\ifx\csname OpMode\endcsname\relax
1941         \@latex@error{Non-VTeX processor}{}%
1942         \let\Hy@MaybeStopNow\endinput
1943     \endinput
1944 \else
1945     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1946         \def\XR@ext{pdf}%
1947         \def\Hy@driver{hvtexmrk}%
1948         \def\Hy@raisedlink{}%
1949     \else
1950         \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1951         \let\Hy@MaybeStopNow\endinput
1952     \endinput
1953 \fi
1954 \fi
1955 }
1956 \define@key{Hyp}{dviwindo}[true]{%
1957     \def\Hy@driver{hdviwind}%
1958     \setkeys{Hyp}{colorlinks}%
1959     \PassOptionsToPackage{dviwindo}{color}%
1960 }
1961 \define@key{Hyp}{dvipsone}[true]{%
1962     \def\XR@ext{pdf}%
1963     \def\Hy@driver{hdvipson}%
1964     \def\Hy@raisedlink{}%
1965 }
1966 \define@key{Hyp}{textures}[true]{%
1967     \def\XR@ext{pdf}%
1968     \def\Hy@driver{htexture}%
1969 }
1970 \define@key{Hyp}{latex2html}[true]{%
1971     \AtBeginDocument{\@@latextohtmlX}%
1972 }

```

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

```

1973 \define@key{Hyp}{ps2pdf}[true]{%
1974     \def\Hy@driver{hdvips}%
1975     \def\Hy@raisedlink{}%
1976     \providecommand*\@pdfborder{0 0 1}%
1977 }

```

## 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.

```

1978 \define@key{Hyp}{hyperfigures}[true]{%
1979     \Hy@boolkey[hyperfigures]{figures}{#1}%

```

1980 }

The automatic footnote linking can be disabled by option hyperfootnotes.

```
1981 \define@key{Hyp}{hyperfootnotes}[true]{%
1982   \Hy@boolkey{hyperfootnotes}{#1}%
1983 }
```

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

```
1984 \def\back@none{none}
1985 \def\back@section{section}
1986 \def\back@page{page}
1987 \def\back@slide{slide}
1988 \define@key{Hyp}{backref}[section]{%
1989   \lowercase{\def\Hy@tempa{#1}}%
1990   \ifx\Hy@tempa\@empty
1991     \let\Hy@tempa\back@section
1992   \fi
1993   \ifx\Hy@tempa\Hy@false
1994     \let\Hy@tempa\back@none
1995   \fi
1996   \ifx\Hy@tempa\back@slide
1997     \let\Hy@tempa\back@section
1998   \fi
1999   \ifx\Hy@tempa\back@page
2000     \PassOptionsToPackage{hyperpageref}{backref}%
2001     \Hy@backreftrue
2002   \else
2003     \ifx\Hy@tempa\back@section
2004       \PassOptionsToPackage{hyperref}{backref}%
2005       \Hy@backreftrue
2006     \else
2007       \ifx\Hy@tempa\back@none
2008         \Hy@backreffalse
2009       \else
2010         \Hy@WarnOptionValue{#1}{backref}{%
2011           'section', 'slide', 'page', 'none', \MessageBreak
2012           or 'false'}%
2013       \fi
2014     \fi
2015   \fi
2016 }
2017 \define@key{Hyp}{pagebackref}[true]{%
2018   \lowercase{\def\Hy@tempa{#1}}%
2019   \ifx\Hy@tempa\@empty
2020     \let\Hy@tempa\Hy>true
2021   \fi
2022   \ifx\Hy@tempa\Hy>true
2023     \PassOptionsToPackage{hyperpageref}{backref}%
2024     \Hy@backreftrue
2025   \else
2026     \ifx\Hy@tempa\Hy>false
2027       \Hy@backreffalse
2028     \else
2029       \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
2030     \fi
2031   \fi
2032 }
```

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

```
2033 \define@key{Hyp}{hyperindex}[true]{%
2034   \Hy@boolkey{hyperindex}{#1}%
2035 }
```

Configuration of encap char.

```
2036 \define@key{Hyp}{encap}[|]{%
2037   \def\HyInd@EncapChar{#1}%
2038 }
```

## 12 Language options

The `\autoref` feature depends on the language.

```
2039 \def\HyLang@afrikaans{%
2040   \def\equationautorefname{Vergelyking}%
2041   \def\footnoteautorefname{Voetnota}%
2042   \def\itemautorefname{Item}%
2043   \def\figureautorefname{Figuur}%
2044   \def\tableautorefname{Tabel}%
2045   \def\partautorefname{Deel}%
2046   \def\appendixautorefname{Bylae}%
2047   \def\chapterautorefname{Hoofstuk}%
2048   \def\sectionautorefname{Afdeling}%
2049   \def\subsectionautorefname{Subafdeling}%
2050   \def\subsubsectionautorefname{Subsubafdeling}%
2051   \def\paragraphautorefname{Paragraaf}%
2052   \def\subparagraphautorefname{Subparagraaf}%
2053   \def\FancyVerbLineautorefname{Lyn}%
2054   \def\theoremautorefname{Teorema}%
2055   \def\pageautorefname{Bladsy}%
2056 }
2057 \def\HyLang@english{%
2058   \def\equationautorefname{Equation}%
2059   \def\footnoteautorefname{footnote}%
2060   \def\itemautorefname{item}%
2061   \def\figureautorefname{Figure}%
2062   \def\tableautorefname{Table}%
2063   \def\partautorefname{Part}%
2064   \def\appendixautorefname{Appendix}%
2065   \def\chapterautorefname{chapter}%
2066   \def\sectionautorefname{section}%
2067   \def\subsectionautorefname{subsection}%
2068   \def\subsubsectionautorefname{subsubsection}%
2069   \def\paragraphautorefname{paragraph}%
2070   \def\subparagraphautorefname{subparagraph}%
2071   \def\FancyVerbLineautorefname{line}%
2072   \def\theoremautorefname{Theorem}%
2073   \def\pageautorefname{page}%
2074 }
2075 \def\HyLang@french{%
2076   \def\equationautorefname{\`Equation}%
2077   \def\footnoteautorefname{note}%
2078   \def\itemautorefname{item}%
2079   \def\figureautorefname{Figure}%
2080   \def\tableautorefname{Tableau}%

```

```

2081 \def\partautorefname{Partie}%
2082 \def\appendixautorefname{Appendice}%
2083 \def\chapterautorefname{chapitre}%
2084 \def\sectionautorefname{section}%
2085 \def\subsectionautorefname{sous-section}%
2086 \def\subsubsectionautorefname{sous-sous-section}%
2087 \def\paragraphautorefname{paragraphe}%
2088 \def\subparagraphautorefname{sous-paragraphe}%
2089 \def\FancyVerbLineautorefname{ligne}%
2090 \def\theoremautorefname{Th\'eor\`eme}%
2091 \def\pageautorefname{page}%
2092 }
2093 \def\HyLang@german{%
2094 \def\equationautorefname{Gleichung}%
2095 \def\footnoteautorefname{Fu\ss note}%
2096 \def\itemautorefname{Punkt}%
2097 \def\figureautorefname{Abbildung}%
2098 \def\tableautorefname{Tabelle}%
2099 \def\partautorefname{Teil}%
2100 \def\appendixautorefname{Anhang}%
2101 \def\chapterautorefname{Kapitel}%
2102 \def\sectionautorefname{Abschnitt}%
2103 \def\subsectionautorefname{Unterabschnitt}%
2104 \def\subsubsectionautorefname{Unterunterabschnitt}%
2105 \def\paragraphautorefname{Absatz}%
2106 \def\subparagraphautorefname{Unterabsatz}%
2107 \def\FancyVerbLineautorefname{Zeile}%
2108 \def\theoremautorefname{Theorem}%
2109 \def\pageautorefname{Seite}%
2110 }
2111 \def\HyLang@italian{%
2112 \def\equationautorefname{Equazione}%
2113 \def\footnoteautorefname{nota}%
2114 \def\itemautorefname{punto}%
2115 \def\figureautorefname{Figura}%
2116 \def\tableautorefname{Tabella}%
2117 \def\partautorefname{Parte}%
2118 \def\appendixautorefname{Appendice}%
2119 \def\chapterautorefname{Capitolo}%
2120 \def\sectionautorefname{sezione}%
2121 \def\subsectionautorefname{sottosezione}%
2122 \def\subsubsectionautorefname{sottosottosezione}%
2123 \def\paragraphautorefname{paragrafo}%
2124 \def\subparagraphautorefname{sottoparagrafo}%
2125 \def\FancyVerbLineautorefname{linea}%
2126 \def\theoremautorefname{Teorema}%
2127 \def\pageautorefname{Pag.\@}%
2128 }
2129 \def\HyLang@portuges{%
2130 \def\equationautorefname{Equa\c c\~ao}%
2131 \def\footnoteautorefname{Nota de rodap\'e}%
2132 \def\itemautorefname{Item}%
2133 \def\figureautorefname{Figura}%
2134 \def\tableautorefname{Tabela}%
2135 \def\partautorefname{Parte}%
2136 \def\appendixautorefname{Ap\`endice}%
2137 \def\chapterautorefname{Cap\'itulo}%

```

```

2138 \def\sectionautorefname{Se\c c\~ao}%
2139 \def\subsectionautorefname{Subse\c c\~ao}%
2140 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
2141 \def\paragraphautorefname{par\'agrafo}%
2142 \def\subparagraphautorefname{subpar\'agrafo}%
2143 \def\FancyVerbLineautorefname{linha}%
2144 \def\theoremautorefname{Teorema}%
2145 \def\pageautorefname{P\'agina}%
2146 }
2147 \def\HyLang@spanish{%
2148 \def\equationautorefname{Ecuaci\'on}%
2149 \def\footnoteautorefname{Nota a pie de p\'agina}%
2150 \def\itemautorefname{Elemento}%
2151 \def\figureautorefname{Figura}%
2152 \def\tableautorefname{Tabla}%
2153 \def\partautorefname{Parte}%
2154 \def\appendixautorefname{Ap\'endice}%
2155 \def\chapterautorefname{Cap\'itulo}%
2156 \def\sectionautorefname{Secci\'on}%
2157 \def\subsectionautorefname{Subsecci\'on}%
2158 \def\subsubsectionautorefname{Subsubsecci\'on}%
2159 \def\paragraphautorefname{P\'arrafo}%
2160 \def\subparagraphautorefname{Subp\'arrafo}%
2161 \def\FancyVerbLineautorefname{L\'inea}%
2162 \def\theoremautorefname{Teorema}%
2163 \def\pageautorefname{P\'agina}%
2164 }
2165 \def\HyLang@vietnamese{%
2166 \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr\'inh}%
2167 \def\footnoteautorefname{Ch\'u th\'ich}%
2168 \def\itemautorefname{m\du{c}}%
2169 \def\figureautorefname{H\'inh}%
2170 \def\tableautorefname{B\h{a}ng}%
2171 \def\partautorefname{Ph\'acircumflex{n}}%
2172 \def\appendixautorefname{Ph\du{ }l\du{c}}%
2173 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
2174 \def\sectionautorefname{m\du{c}}%
2175 \def\subsectionautorefname{m\du{c}}%
2176 \def\subsubsectionautorefname{m\du{c}}%
2177 \def\paragraphautorefname{\dj{ }o\da{n}}%
2178 \def\subparagraphautorefname{\dj{ }o\da{n}}%
2179 \def\FancyVerbLineautorefname{d\'ong}%
2180 \def\theoremautorefname{DJ\di{ }nh l\'y}%
2181 \def\pageautorefname{Trang}%
2182 }

```

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

```

2183 \def\HyLang@addto#1#2{%
2184 #2%
2185 \@temptokena{#2}%
2186 \ifx#1\relax
2187 \let#1\@empty
2188 \fi
2189 \ifx#1\undefined
2190 \edef#1{\the\@temptokena}%
2191 \else
2192 \toks@\expandafter{#1}%

```

```

2193 \edef#1{\the\toks@\the\@temptokena}%
2194 \fi
2195 \@temptokena{}\toks@\@temptokena
2196 }

2197 \def\HyLang@DeclareLang#1#2{%
2198 \begingroup
2199 \edef\x##1##2{%
2200 \noexpand\ifx##2\relax
2201 \errmessage{No definitions for language #2' found!}%
2202 \noexpand\fi
2203 \endgroup
2204 \noexpand\define@key{Hyp}{#1}[]{%
2205 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
2206 }%
2207 }%
2208 \expandafter\x\csname extras#1\expandafter\endcsname
2209 \csname HyLang@#2\endcsname
2210 }

2211 \HyLang@DeclareLang{english}{english}
2212 \HyLang@DeclareLang{UKenglish}{english}
2213 \HyLang@DeclareLang{british}{english}
2214 \HyLang@DeclareLang{USenglish}{english}
2215 \HyLang@DeclareLang{american}{english}
2216 \HyLang@DeclareLang{german}{german}
2217 \HyLang@DeclareLang{austrian}{german}
2218 \HyLang@DeclareLang{ngerman}{german}
2219 \HyLang@DeclareLang{naustrian}{german}
2220 \HyLang@DeclareLang{brazil}{portuges}
2221 \HyLang@DeclareLang{brazilian}{portuges}
2222 \HyLang@DeclareLang{portuguese}{portuges}
2223 \HyLang@DeclareLang{spanish}{spanish}
2224 \HyLang@DeclareLang{afrikaans}{afrikaans}
2225 \HyLang@DeclareLang{french}{french}
2226 \HyLang@DeclareLang{frenchb}{french}
2227 \HyLang@DeclareLang{français}{french}
2228 \HyLang@DeclareLang{acadian}{french}
2229 \HyLang@DeclareLang{canadien}{french}
2230 \HyLang@DeclareLang{italian}{italian}

More work is needed in case of options vietnamese and vietnam.
2231 \define@key{Hyp}{vietnamese}[]{%
2232 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
2233 \AtEndOfPackage{%
2234 \@ifundefined{T@PU}{}%
2235 \input{puvnenc.def}%
2236 }%
2237 }%
2238 }

2239 \define@key{Hyp}{vietnam}[]{%
2240 \HyLang@addto\extravietnam\HyLang@vietnamese
2241 \AtEndOfPackage{%
2242 \@ifundefined{T@PU}{}%
2243 \input{puvnenc.def}%
2244 }%
2245 }%
2246 }

```

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

```

2247 \define@key{Hyp}{arabic}[] {%
2248   \AtEndOfPackage{%
2249     \ifundefined{T@PU}{}%
2250     \input{puarenc.def}%
2251   }%
2252 }%
2253 }

```

## 13 Options to change appearance of links

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

```

2254 \define@key{Hyp}{colorlinks}[true] {%
2255   \Hy@boolkey{colorlinks}{#1}%
2256   \ifHy@colorlinks
2257     \def\pdfborder{0 0 0}%
2258     \let\pdfborderstyle\@empty
2259   \fi
2260 }
2261 \define@key{Hyp}{frenchlinks}[true] {%
2262   \Hy@boolkey{frenchlinks}{#1}%
2263 }

```

## 14 Bookmarking

```

2264 \define@key{Hyp}{bookmarks}[true] {%
2265   \Hy@boolkey{bookmarks}{#1}%
2266 }
2267 \define@key{Hyp}{bookmarksopen}[true] {%
2268   \Hy@boolkey{bookmarksopen}{#1}%
2269 }

```

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.

```

2270 \let\Hy@bookmarksdepth\c@tocdepth
2271 \define@key{Hyp}{bookmarksdepth}[] {%
2272   \begingroup
2273     \edef\x{#1}%
2274     \ifx\x\empty
2275       \global\let\Hy@bookmarksdepth\c@tocdepth
2276     \else
2277       \ifundefined{toclevel@x}{%
2278         \@onelevel@sanitize\x
2279         \edef\y{\expandafter\@car\x\@nil}%
2280         \ifcase 0\expandafter\ifx\y-1\fi
2281           \expandafter\ifnum\expandafter\y>47 %
2282             \expandafter\ifnum\expandafter\y<58 1\fi\fi\relax

```



```

2283         \Hy@Warning{Unknown document division name (\x)}%
2284     \else
2285         \setbox\z@=\hbox{%
2286             \count@=\x
2287             \xdef\Hy@bookmarksdepth{\the\count@}%
2288         }%
2289     \fi
2290 }{%
2291     \setbox\z@=\hbox{%
2292         \count@=\csname toplevel@\x\endcsname
2293         \xdef\Hy@bookmarksdepth{\the\count@}%
2294     }%
2295 }%
2296 \fi
2297 \endgroup
2298 }

```

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

```

2299 \define@key{Hyp}{bookmarksopenlevel}{%
2300     \def\@bookmarksopenlevel{#1}%
2301 }
2302 \def\@bookmarksopenlevel{\maxdimen}
2303 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
2304 \define@key{Hyp}{bookmarkstype}{%
2305     \def\Hy@bookmarkstype{#1}%
2306 }
2307 \def\Hy@bookmarkstype{toc}

```

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

```

2308 \define@key{Hyp}{bookmarksnumbered}[true]{%
2309     \Hy@boolkey{bookmarksnumbered}{#1}%
2310 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2311 \define@key{Hyp}{CJKbookmarks}[true]{%
2312     \Hy@boolkey{CJKbookmarks}{#1}%
2313 }
2314 \def\Hy@temp#1{%
2315     \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
2316 }
2317 \def\Hy@@temp#1#2#3{%
2318     \define@key{Hyp}{#2color}{%
2319         \HyColor@HyperrefColor{##1}#1%
2320     }%
2321     \def#1{#3}%
2322 }
2323 \Hy@temp{link}{red}
2324 \Hy@temp{anchor}{black}
2325 \Hy@temp{cite}{green}
2326 \Hy@temp{file}{cyan}
2327 \Hy@temp{url}{magenta}
2328 \Hy@temp{menu}{red}
2329 \Hy@temp{run}{\@filecolor}
2330 \define@key{Hyp}{pagecolor}{%
2331     \Hy@WarningPageColor
2332 }
2333 \def\Hy@WarningPageColor{%

```

```

2334 \Hy@WarningNoLine{Option 'pagecolor' is not available anymore}%
2335 \global\let\Hy@WarningPageColor\relax
2336 }

2337 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2338 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2339 \let\@baseurl\empty
2340 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2341 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2342 \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.

```

2343 \let\@pdfpagetransition\relax
2344 \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.

```

2345 \let\@pdfpageduration\relax
2346 \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.

```

2347 \newif\ifHy@useHidKey
2348 \Hy@useHidKeyfalse
2349 \define@key{Hyp}{pdfpagehidden}[true]{%
2350   \Hy@boolkey{pdfpagehidden}{#1}%
2351   \ifHy@pdfpagehidden
2352     \global\Hy@useHidKeytrue
2353   \fi
2354 }

```

The value of the `bordercolor` options are not processed by the color package. Therefore the value consists of space separated rgb numbers in the range 0 until 1.

Package `xcolor` provides `\XC@bordercolor` since version 1.1. If the two spaces in the color specification are missing, then the value is processed as color specification from package `xcolor` by using `\XC@bordercolor` (since `xcolor` 2004/05/09 v1.11, versions 2005/03/24 v2.02 until 2006/11/28 v2.10 do not work because of a bug that is fixed in 2007/01/21 v2.11).

```

2355 \def\Hy@ColorList{cite,file,link,menu,run,url}
2356 \@for\Hy@temp:=\Hy@ColorList\do{%
2357   \edef\Hy@temp{%
2358     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2359       \noexpand\Hy@Color@HyperrefBorderColor
2360       {##1}%
2361       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
2362       {hyperref}%
2363       {\Hy@temp bordercolor}}%
2364   }%
2365 }%
2366 \Hy@temp

```

```

2367 }
2368 \define@key{Hyp}{pagebordercolor}{%
2369   \Hy@WarningPageBorderColor
2370 }
2371 \def\Hy@WarningPageBorderColor{%
2372   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
2373   \global\let\Hy@WarningPageBorderColor\relax
2374 }

2375 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2376 \Hy@DefNameKey{pdfhighlight}{%
2377   \do{/I}{Invert}%
2378   \do{/N}{None}%
2379   \do{/O}{Outline}%
2380   \do{/P}{Push}%
2381 }
2382 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2383 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2384 \def\Hy@setpdfborder{%
2385   \ifx\@pdfborder\@empty
2386   \else
2387     /Border[\@pdfborder]%
2388   \fi
2389   \ifx\@pdfborderstyle\@empty
2390   \else
2391     /BS<<\@pdfborderstyle>>%
2392   \fi
2393 }
2394 \Hy@DefNameKey{pdfpagemode}{%
2395   \do{UseNone}{}%
2396   \do{UseOutlines}{}%
2397   \do{UseThumbs}{}%
2398   \do{FullScreen}{}%
2399   \do{UseOC}{PDF 1.5}%
2400   \do{UseAttachments}{PDF 1.6}%
2401 }
2402 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2403   \do{UseNone}{}%
2404   \do{UseOutlines}{}%
2405   \do{UseThumbs}{}%
2406   \do{FullScreen}{}%
2407   \do{UseOC}{PDF 1.5}%
2408   \do{UseAttachments}{PDF 1.6}%
2409 }
2410 \Hy@DefNameKey{pdfdirection}{%
2411   \do{L2R}{Left to right}%
2412   \do{R2L}{Right to left}%
2413 }
2414 \Hy@DefNameKey{pdfviewarea}{%
2415   \do{MediaBox}{}%
2416   \do{CropBox}{}%
2417   \do{BleedBox}{}%
2418   \do{TrimBox}{}%
2419   \do{ArtBox}{}%
2420 }
2421 \Hy@DefNameKey{pdfviewclip}{%
2422   \do{MediaBox}{}%
2423   \do{CropBox}{}%

```

```

2424 \do{BleedBox}{}%
2425 \do{TrimBox}{}%
2426 \do{ArtBox}{}%
2427 }
2428 \Hy@DefNameKey{pdfprintarea}{%
2429 \do{MediaBox}{}%
2430 \do{CropBox}{}%
2431 \do{BleedBox}{}%
2432 \do{TrimBox}{}%
2433 \do{ArtBox}{}%
2434 }
2435 \Hy@DefNameKey{pdfprintclip}{%
2436 \do{MediaBox}{}%
2437 \do{CropBox}{}%
2438 \do{BleedBox}{}%
2439 \do{TrimBox}{}%
2440 \do{ArtBox}{}%
2441 }
2442 \Hy@DefNameKey{pdfprintscaling}{%
2443 \do{AppDefault}{}%
2444 \do{None}{}%
2445 }
2446 \Hy@DefNameKey{pdfduplex}{%
2447 \do{Simplex}{}%
2448 \do{DuplexFlipShortEdge}{}%
2449 \do{DuplexFlipLongEdge}{}%
2450 }
2451 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
2452 \do{true}{}%
2453 \do{false}{}%
2454 }
2455 \define@key{Hyp}{pdfprintpagerange}{%
2456 \def\@pdfprintpagerange{#1}%
2457 }
2458 \Hy@DefNameKey{pdfnumcopies}{%
2459 \do{2}{two copies}%
2460 \do{3}{three copies}%
2461 \do{4}{four copies}%
2462 \do{5}{five copies}%
2463 }
2464 \define@key{Hyp}{pdfusetitle}[true]{%
2465 \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2466 }
2467 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2468 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2469 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2470 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2471 \define@key{Hyp}{pdfcreationdate}{\pdfstringdef\@pdfcreationdate{#1}}
2472 \define@key{Hyp}{pdfmoddate}{\pdfstringdef\@pdfmoddate{#1}}
2473 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2474 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2475 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
2476 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2477 \let\setpdflinkmargin\@gobble
2478 \def\calculate@pdfview#1 #2\\{%
2479 \def\@pdfview{#1}%
2480 \ifx\@#2\\%

```

```

2481 \def\@pdfviewparams{ -32768}%
2482 \else
2483 \def\@pdfviewparams{ #2}%
2484 \fi
2485 }
2486 \define@key{Hyp}{pdfstartpage}{\def\@pdfstartpage{#1}}
2487 \define@key{Hyp}{pdfstartview}{%
2488 \ifx\@#1\%
2489 \def\@pdfstartview{}%
2490 \else
2491 \hypercalcbpdef\@pdfstartview{ /#1 }%
2492 \fi
2493 }
2494 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
2495 \define@key{Hyp}{pdftoolbar}[true]{%
2496 \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2497 }
2498 \define@key{Hyp}{pdfmenubar}[true]{%
2499 \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2500 }
2501 \define@key{Hyp}{pdfwindowui}[true]{%
2502 \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2503 }
2504 \define@key{Hyp}{pdffitwindow}[true]{%
2505 \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2506 }
2507 \define@key{Hyp}{pdfcenterwindow}[true]{%
2508 \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2509 }
2510 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2511 \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2512 }
2513 \define@key{Hyp}{pdfnewwindow}[true]{%
2514 \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2515 }
2516 \Hy@DefNameKey{pdfpagelayout}{%
2517 \do{SinglePage}}{%
2518 \do{OneColumn}}{%
2519 \do{TwoColumnLeft}}{%
2520 \do{TwoColumnRight}}{%
2521 \do{TwoPageLeft}{PDF 1.5}%
2522 \do{TwoPageRight}{PDF 1.5}%
2523 }
2524 \define@key{Hyp}{pdflang}{%
2525 \def\@pdflang{#1}%
2526 }
2527 \define@key{Hyp}{pdfpagelabels}[true]{%
2528 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2529 }
2530 \define@key{Hyp}{pdfescapeform}[true]{%
2531 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2532 }

```

Default values:

```

2533 \def\@linkbordercolor{1 0 0}
2534 \def\@urlbordercolor{0 1 1}
2535 \def\@menubordercolor{1 0 0}
2536 \def\@filebordercolor{0 .5 .5}

```

```

2537 \def\@runbordercolor{0 .7 .7}
2538 \def\@citebordercolor{0 1 0}
2539 \def\@pdfhighlight{/I}
2540 \def\@pdftitle{}
2541 \def\@pdfauthor{}
2542 \let\@pdfproducer\relax
2543 \def\@pdfcreator{LaTeX with hyperref package}
2544 \def\@pdfcreationdate{}
2545 \def\@pdfmoddate{}
2546 \def\@pdfsubject{}
2547 \def\@pdfkeywords{}
2548 \def\@pdfpagescrop{}
2549 \def\@pdfstartview{ /Fit }
2550 \def\@pdfstartpage{1}
2551 \def\@pdfprintpagerange{}
2552 \def\@pdflang{}
2553 \let\PDF@SetupDoc\@empty
2554 \let\PDF@FinishDoc\@empty
2555 \let\phantomsection\@empty
2556 \@ifundefined{stockwidth}{%
2557   \edef\special@paper{\the\paperwidth,\the\paperheight}%
2558 }{%
2559   \edef\special@paper{\the\stockwidth,\the\stockheight}%
2560 }
2561 \begingroup
2562   \dimen@=\@ifundefined{stockheight}{\paperheight}{\stockheight}\relax
2563   \dimen@=0.99626401\dimen@
2564   \xdef\Hy@pageheight{\strip@pt\dimen@}%
2565 \endgroup
2566 \def\HyInd@EncapChar{||}
2567 \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.

```

2568 \let\hyper@normalise\ExecuteOptions
2569 \let\ExecuteOptions\hypersetup
2570 \Hy@RestoreCatcodes
2571 \InputIfFileExists{hyperref.cfg}{-}{-}
2572 \Hy@SetCatcodes
2573 \let\ExecuteOptions\hyper@normalise
2574 \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`.

```

2575 \RequirePackage{kvoptions}[2006/08/17]

```

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

```

2576 \@ifpackageloaded{tex4ht}{%
2577   \@ifpackagewith{hyperref}{tex4ht}{-}{-}%
2578   \PassOptionsToPackage{tex4ht}{hyperref}%
2579 }%
2580 }{-}

2581 \let\ReadBookmarks\relax
2582 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2583 \AtBeginDocument{%
2584   \ifHy@draft
2585     \let\hyper@@anchor\@gobble
2586     \gdef\hyper@link#1#2#3{#3}%
2587     \let\hyper@anchorstart\@gobble
2588     \let\hyper@anchorend\@empty
2589     \let\hyper@linkstart\@gobbletwo
2590     \let\hyper@linkend\@empty
2591     \def\hyper@linkurl#1#2{#1}%
2592     \def\hyper@linkfile#1#2#3{#1}%
2593     \def\Acrobatmenu#1#2{#2}%
2594     \let\PDF@SetupDoc\@empty
2595     \let\PDF@FinishDoc\@empty
2596     \let\@fifthoffive\@secondoftwo
2597     \let\@secondoffive\@secondoftwo
2598     \let\ReadBookmarks\relax
2599     \let\WriteBookmarks\relax
2600     \Hy@WarningNoLine{ draft mode on}%
2601   \fi
2602   \Hy@DisableOption{draft}%
2603   \Hy@DisableOption{nolinks}%
2604   \Hy@DisableOption{final}%
2605 }%

```

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.

```

2606 \ifx\HyPsd@InitUnicode\relax
2607   \define@key{Hyp}{unicode}[true]{%
2608     \Hy@boolkey{unicode}{#1}%
2609   }%
2610 \else
2611   \define@key{Hyp}{unicode}[true]{%
2612     \Hy@boolkey{unicode}{#1}%
2613     \ifHy@unicode
2614       \Hy@WarningNoLine{Set package option 'unicode' first\MessageBreak
2615         in order to load unicode support%
2616     }%
2617     \Hy@unicodedefalse
2618   \fi
2619 }%
2620 \fi

```

The macro \HyPsd@InitUnicode is no longer needed.

```

2621 \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.

```

2622 \Hy@nextfalse
2623 \@ifundefined{spanish@sh@"@sel}{\Hy@nexttrue}
2624 \@ifundefined{galician@sh@"@sel}{\Hy@nexttrue}
2625 \@ifundefined{estonian@sh@"@sel}{\Hy@nexttrue}
2626 \ifHy@next
2627   \let\texttilde\~%

```

```

2628 \fi
2629 \ifHy@figures
2630   \Hy@Info{Hyper figures ON}%
2631 \else
2632   \Hy@Info{Hyper figures OFF}%
2633 \fi
2634 \ifHy@nesting
2635   \Hy@Info{Link nesting ON}%
2636 \else
2637   \Hy@Info{Link nesting OFF}%
2638 \fi
2639 \ifHy@hyperindex
2640   \Hy@Info{Hyper index ON}%
2641 \else
2642   \Hy@Info{Hyper index OFF}%
2643 \fi
2644 \ifHy@plainpages
2645   \Hy@Info{Plain pages ON}%
2646 \else
2647   \Hy@Info{Plain pages OFF}%
2648 \fi
2649 \ifHy@backref
2650   \Hy@Info{Backreferencing ON}%
2651 \else
2652   \Hy@Info{Backreferencing OFF}%
2653 \fi
2654 \ifHy@typexml
2655   \AtEndOfPackage{%
2656     \RequirePackage{color}%
2657     \RequirePackage{nameref}%
2658   }%
2659 \fi
2660 \Hy@DisableOption{typexml}
2661 \ifHy@implicit
2662   \typeout{Implicit mode ON; LaTeX internals redefined}%
2663 \else
2664   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
2665   \def\MaybeStopEarly{%
2666     \typeout{Hyperref stopped early}%
2667     \AfterBeginDocument{\PDF@FinishDoc}%
2668     \endinput
2669   }%
2670   \AtBeginDocument{%
2671     \let\autoref\ref
2672     \let\autopageref\pageref
2673     \ifx\pdfpagemode\empty
2674       \gdef\pdfpagemode{UseNone}%
2675     \fi
2676     \global\Hy@backreffalse
2677   }%
2678   \AtEndOfPackage{%
2679     \global\let\ReadBookmarks\relax
2680     \global\let\WriteBookmarks\relax
2681   }%
2682 \fi
2683 \Hy@DisableOption{implicit}

```



### 15.1.1 Driver loading

```

2684 \AtEndOfPackage{%
2685   \@ifpackageloaded{tex4ht}{%
2686     \def\Hy@driver{htex4ht}%
2687     \Hy@texhttrue
2688   }{}%
2689   \ifx\Hy@driver\@empty
2690     \providecommand*{\Hy@defaultdriver}{hypertex}%
2691     \begingroup\expandafter\expandafter\expandafter\endgroup
2692     \expandafter\ifx\csname pdfoutput\endcsname\relax
2693       \begingroup\expandafter\expandafter\expandafter\endgroup
2694       \expandafter\ifx\csname OpMode\endcsname\relax
2695         \begingroup\expandafter\expandafter\expandafter\endgroup
2696         \expandafter\ifx\csname XeTeXversion\endcsname\relax
2697           \let\Hy@driver\Hy@defaultdriver
2698         \else
2699           \def\Hy@driver{hdvipdfm}%
2700         \fi
2701       \else
2702         \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2703           \def\Hy@driver{hvtex}%
2704           \def\XR@ext{pdf}%
2705         \else
2706           \ifnum\OpMode=10\relax
2707             \def\XR@ext{htm}%
2708             \def\Hy@driver{hvtexhtm}%
2709             \def\MaybeStopEarly{%
2710               \typeout{Hyperref stopped early}%
2711               \AfterBeginDocument{\PDF@FinishDoc}%
2712             \endinginput
2713           }%
2714         \else
2715           \let\Hy@driver\Hy@defaultdriver
2716         \fi
2717       \fi
2718     \fi
2719   \else
2720     \ifnum\pdfoutput<1 %
2721       \let\Hy@driver\Hy@defaultdriver
2722     \else
2723       \def\Hy@driver{hpdftex}%
2724       \def\XR@ext{pdf}%
2725       \PassOptionsToPackage{pdftex}{color}%
2726       \Hy@breaklinkstrue
2727     \fi
2728   \fi
2729   \ifx\Hy@driver\Hy@defaultdriver
2730     \def\Hy@temp{hdvips}%
2731     \ifx\Hy@temp\Hy@driver
2732       \def\Hy@raisedlink{}%
2733       \def\XR@ext{pdf}%
2734     \fi
2735     \def\Hy@temp{hdvipdfm}%
2736     \ifx\Hy@temp\Hy@driver
2737       \def\XR@ext{pdf}%
2738       \Hy@breaklinkstrue
2739     \fi

```

```

2740 \def\Hy@temp{hdvwind}%
2741 \ifx\Hy@temp\Hy@driver
2742 \setkeys{Hyp}{colorlinks}%
2743 \PassOptionsToPackage{dviwindo}{color}%
2744 \fi
2745 \def\Hy@temp{hdvipson}%
2746 \ifx\Hy@temp\Hy@driver
2747 \def\XR@ext{pdf}%
2748 \def\Hy@raisedlink{}%
2749 \fi
2750 \def\Hy@temp{textures}%
2751 \ifx\Hy@temp\Hy@driver
2752 \def\XR@ext{pdf}%
2753 \fi
2754 \fi
2755 \typeout{*hyperref using default driver \Hy@driver*}%
2756 \else
2757 \typeout{*hyperref using driver \Hy@driver*}%
2758 \fi
2759 \input{\Hy@driver.def}%
2760 \let\@unprocessedoptions\relax
2761 \Hy@RestoreCatcodes
2762 }
2763 \newif\ifHy@DvipdfmxOutlineOpen
2764 \begingroup\expandafter\expandafter\expandafter\endgroup
2765 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
2766 \else
2767 \ifnum\SpecialDvipdfmxOutlineOpen>\z@
2768 \Hy@DvipdfmxOutlineOpentru
2769 \fi
2770 \fi
2771 \Hy@DisableOption{tex4ht}
2772 \Hy@DisableOption{pdftex}
2773 \Hy@DisableOption{dvipdf}
2774 \Hy@DisableOption{nativepdf}
2775 \Hy@DisableOption{dvipdfm}
2776 \Hy@DisableOption{dvipdfmx}
2777 \Hy@DisableOption{dvipdfmx-outline-open}
2778 \Hy@DisableOption{pdfmark}
2779 \Hy@DisableOption{dvips}
2780 \Hy@DisableOption{hypertex}
2781 \Hy@DisableOption{vtex}
2782 \Hy@DisableOption{vtexpdfmark}
2783 \Hy@DisableOption{dviwindo}
2784 \Hy@DisableOption{dvipsone}
2785 \Hy@DisableOption{textures}
2786 \Hy@DisableOption{latex2html}
2787 \Hy@DisableOption{ps2pdf}
2788 \Hy@DisableOption{xetex}

```

### 15.1.2 Bookmarks

```

2789 \def\WriteBookmarks{0}
2790 \def\@bookmarkopenstatus#1{%
2791 \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:

```

2792 \ifnum#1<\expandafter\@firstofone\expandafter

```

```

2793          {\number\@bookmarksopenlevel} % explicit space
2794      \else
2795          -%
2796      \fi
2797  \else
2798      -%
2799  \fi
2800 }
2801 \ifHy@bookmarks
2802   \Hy@Info{Bookmarks ON}%
2803   \ifx\@pdfpagemode\@empty
2804     \def\@pdfpagemode{UseOutlines}%
2805   \fi
2806 \else
2807   \def\@bookmarkopenstatus#1{%
2808     \Hy@Info{Bookmarks OFF}%
2809     \AtEndOfPackage{%
2810       \global\let\ReadBookmarks\relax
2811       \global\let\WriteBookmarks\relax
2812     }%
2813     \ifx\@pdfpagemode\@empty
2814       \def\@pdfpagemode{UseNone}%
2815     \fi
2816   \fi
2817 \Hy@DisableOption{bookmarks}

```

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

```

2818 \AtBeginDocument{%
2819   \ifHy@colorlinks
2820     \ifHy@typexml
2821     \else
2822       \RequirePackage{color}%
2823     \fi
2824     \def\Hy@colorlink#1{%
2825       \begingroup
2826         \HyColor@UseColor#1%
2827       }%
2828     \def\Hy@endcolorlink{\endgroup}%
2829     \Hy@Info{Link coloring ON}%
2830   \else
2831     \ifHy@frenchlinks
2832       \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
2833       \def\Hy@endcolorlink{\endgroup}%
2834       \Hy@Info{French linking ON}%
2835     \else

```

for grouping consistency:

```

2836       \def\Hy@colorlink#1{\begingroup}%
2837       \def\Hy@endcolorlink{\endgroup}%
2838       \Hy@Info{Link coloring OFF}%
2839     \fi
2840   \fi
2841   \Hy@DisableOption{colorlinks}%
2842   \Hy@DisableOption{frenchlinks}%
2843   \ifHy@texht
2844     \long\def\@firstoffive#1#2#3#4#5{#1}%
2845     \long\def\@secondoffive#1#2#3#4#5{#2}%
2846     \long\def\@thirdoffive#1#2#3#4#5{#3}%

```

```

2847 \long\def\@fourthoffive#1#2#3#4#5{#4}%
2848 \long\def\@fifthoffive#1#2#3#4#5{#5}%
2849 \providecommand*\@safe@activetrue{}%
2850 \providecommand*\@safe@activesfalse{}%
2851 \def\T@ref#1{%
2852   \Hy@safe@activetrue
2853   \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
2854   \Hy@safe@activesfalse
2855 }%
2856 \def\T@pageref#1{%
2857   \Hy@safe@activetrue
2858   \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
2859   \Hy@safe@activesfalse
2860 }%
2861 \else
2862   \ifHy@typexml\else\RequirePackage{nameref}\fi
2863 \fi
2864 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
2865 \DeclareRobustCommand\pageref{%
2866   \@ifstar\@pagerefstar\T@pageref
2867 }%
2868 }
2869 \AfterBeginDocument{%
2870   \ifHy@texht
2871   \else
2872     \ReadBookmarks
2873   \fi
2874 }
2875 \ifHy@backref
2876   \RequirePackage{backref}%
2877 \else
2878   \let\Hy@backout\@gobble
2879 \fi
2880 \Hy@DisableOption{backref}
2881 \Hy@DisableOption{pagebackref}
2882 \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.

```

2883 \begingroup
2884   \endlinechar=-1 %
2885   \catcode'\^^A=14 %
2886   \catcode'\^^M\active
2887   \catcode'\%\active
2888   \catcode'\#\active
2889   \catcode'\_\active
2890   \catcode'\$\active
2891   \gdef\hyper@normalise{^^A
2892     \begingroup
2893     \catcode'\^^M\active

```

```

2894 \def^^M{ }^^A
2895 \catcode'\%\active
2896 \let%\@percentchar
2897 \let%\@percentchar
2898 \catcode'\#\active
2899 \def#{\hyper@hash}^^A
2900 \def\#{\hyper@hash}^^A
2901 \@makeother\&^^A
2902 \edef\textunderscore{\string_}^^A
2903 \let\_ \textunderscore
2904 \catcode'\_ \active
2905 \let\_ \textunderscore
2906 \let~\hyper@tilde
2907 \let\~\hyper@tilde
2908 \let\textasciitilde\hyper@tilde
2909 \let\\\@backslashchar
2910 \edef$\{ \string$}^^A
2911 \Hy@safe@activetrue
2912 \hyper@n@rmalise
2913 }^^A
2914 \catcode'\#=6 ^^A
2915 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
2916 \gdef\hyper@n@rmalise#1#2{^^A
2917 \def\Hy@tempa{#2}^^A
2918 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
2919 \Hy@ReturnAfterElseFi{^^A
2920 \hyper@@normalise{#1}^^A
2921 }^^A
2922 \else
2923 \Hy@ReturnAfterFi{^^A
2924 \hyper@@normalise{#1}{#2}^^A
2925 }^^A
2926 \fi
2927 }^^A
2928 \gdef\hyper@@normalise#1#2{^^A
2929 \edef\Hy@tempa{^^A
2930 \endgroup
2931 \noexpand#1{\Hy@RemovePercentCr#2%\^^M\@nil}^^A
2932 }^^A
2933 \Hy@tempa
2934 }^^A
2935 \gdef\Hy@RemovePercentCr#1%\^^M#2\@nil{^^A
2936 #1^^A
2937 \ifx\limits#2\limits
2938 \else
2939 \Hy@ReturnAfterFi{^^A
2940 \Hy@RemovePercentCr #2\@nil
2941 }^^A
2942 \fi
2943 }^^A
2944 \endgroup
2945 \providecommand*\hyper@chars{%
2946 \let\#\hyper@hash
2947 \let%\@percentchar
2948 }

2949 \def\hyperlink#1#2{%
2950 \hyper@@link-{}{#1}{#2}%

```

```

2951 }
2952 \DeclareRobustCommand*\href{%
2953   \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
2954 }
2955 \def\Hy@href#{%
2956   \hyper@normalise\href@
2957 }
2958 \begingroup
2959   \catcode'\$=6 %
2960   \catcode'\#=12 %
2961   \gdef\href@#1{\expandafter\href@split$1##\}%
2962   \gdef\href@split$1#$2#$3\{\%
2963     \hyper@@link{$1}{$2}%
2964   }%
2965 \endgroup

```

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

```

2966 \RequirePackage{url}
2967 \let\HyOrg@url\url
2968 \def\Hurl{\begingroup \Url}
2969 \let\nolinkurl\Hurl
2970 \DeclareRobustCommand*\url{\hyper@normalise\url@}
2971 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

2972 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
2973 \providecommand\hyper@image[2]{#2}

2974 \def\hypertarget#1#2{%
2975   \ifHy@nesting
2976     \hyper@@anchor{#1}{#2}%
2977   \else
2978     \hyper@@anchor{#1}{\relax}#2%
2979   \fi
2980 }

```

`\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.

```

2981 \DeclareRobustCommand*\hyperref{%
2982   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
2983 }
2984 \def\Hy@babelnormalise#1[#2]{%
2985   \begingroup
2986     \Hy@safe@activestrue
2987     \edef\Hy@tempa{%
2988       \endgroup
2989       \noexpand#1[#2]}%
2990   }%
2991   \Hy@tempa
2992 }
2993 \def\@hyperref{\hyper@normalise\@hyperref}
2994 \def\@hyperref#1#2#3{%
2995   \edef\ref@one{\ifx\#2\\\else#2.\fi#3}%
2996   \expandafter\tryhyper@link\ref@one\{#1}%
2997 }

```

```

2998 \def\tryhyper@link#1\#2{%
2999 \hyper@@link{#2}{#1}%
3000 }

3001 \def\hyperdef{\@ifnextchar[{\label@hyperdef}{\@hyperdef}}
3002 \def\@hyperdef#1#2#3{%, category, name, text
3003 \ifHy@nesting
3004 \hyper@@anchor{#1.#2}{#3}%
3005 \else
3006 \hyper@@anchor{#1.#2}{\relax}#3%
3007 \fi
3008 }

```

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

```

3009 \def\label@hyperref[#1]{%
3010 \expandafter\label@hyperref\csname r@#1\endcsname{#1}%
3011 }%
3012 \def\label@hyperref#1#2#3{%
3013 \ifx#1\relax
3014 \protect\G@refundefinedtrue
3015 \@latex@warning{%
3016 Hyper reference ‘#2’ on page \thepage \space undefined%
3017 }%
3018 \hyper@@link{}{??}{#3}%
3019 \else
3020 \hyper@@link{\expandafter\@fifthoffive#1}%
3021 {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
3022 \fi
3023 }
3024 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
3025 % anchor text
3026 \@bsphack
3027 \if@filesw
3028 \protected@write\@auxout{%
3029 {\string\newlabel{#1}{\{ }\}\#2.#3}}%
3030 \fi
3031 \@esphack
3032 \ifHy@nesting
3033 \hyper@@anchor{#2.#3}{#4}%
3034 \else
3035 \hyper@@anchor{#2.#3}{\relax}#4%
3036 \fi
3037 }

```

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

```

3038 \def\hyper@@link{\let\Hy@reserved@a\relax
3039 \@ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
3040 }
3041 \def\hyper@link@[#1]#2#3#4{%
3042 \begingroup
3043 \protected@edef\Hy@tempa{#2}%

```

```

3044 \Hy@safe@activetrue
3045 \edef\x{#3}%
3046 \ifx\Hy@tempa\@empty
3047 \toks0{\hyper@link{#1}}%
3048 \else
3049 \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
3050 \fi
3051 \toks2{#4}%
3052 \edef\Hy@tempa{\the\toks2}%
3053 \edef\x{\endgroup
3054 \ifx\Hy@tempa\@empty
3055 \noexpand\Hy@Warning{Suppressing empty link}%
3056 \else
3057 \the\toks0 {\x}{\the\toks2}}%
3058 \fi
3059 }%
3060 \x
3061 }

```

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.

```

3062 \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.

```

3063 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
3064 }

```

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

```

3065 \def\@pdftempwordfile{file}%
3066 \def\@pdftempwordrun{run}%
3067 \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:

```

3068 \ifx\#6\%
3069 \expandafter\@hyper@linkfile file:#7\{#3}{#2}%
3070 \else
3071 \ifx\#4\%
3072 \expandafter\@hyper@linkfile file:#7\{#3}{#2}%
3073 \else

```



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

```

3074      \def\@pdftempa{#4}%
3075      \ifx\@pdftempa\@pdftempwordfile
3076      \expandafter\@hyper@linkfile#7\{\#3}\#2}%
3077      \else

```

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

```

3078      \ifx\@pdftempa\@pdftempwordrun
3079      \expandafter\@hyper@launch#7\{\#3}\#2}%
3080      \else

```

otherwise its a URL

```

3081      \hyper@linkurl{\#3}\#7\ifx\#2\\\else\hyper@hash#2\fi}%
3082      \fi
3083      \fi
3084      \fi
3085      \fi
3086 }

```

By default, turn run: into file:

```

3087 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
3088   \hyper@linkurl{\#2}\Hy@linkfileprefix#1\ifx\#3\\\else\hyper@hash#3\fi}%
3089 }

```

D P Story jstory@uakron.edu pointed out that relative paths starting .. fell over.

Switched to using \filename@parse to solve this.

```

3090 \def\@hyper@linkfile file:#1\#2#3{%
3091   %file url,link string, name
3092   \filename@parse{#1}%
3093   \ifx\filename@ext\relax
3094     \edef\filename@ext{\XR@ext}%
3095   \fi
3096   \def\use@file{\filename@area\filename@base.\filename@ext}%
3097   \ifx\filename@ext\XR@ext
3098     \hyper@linkfile{\#2}\{use@file}\#3}%
3099   \else
3100     \ifx\@baseurl\@empty
3101       \hyper@linkurl{\#2}\{
3102         \Hy@linkfileprefix\use@file\ifx\#3\\\else\hyper@hash#3\fi
3103       }%
3104     \else
3105       \hyper@linkurl{\#2}\{use@file\ifx\#3\\\else\hyper@hash#3\fi}%
3106     \fi
3107   \fi
3108 }

```

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.

```

3109 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
3110 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
3111   \ifx\#1\\\%
3112     #2\Hy@WarningNoLine{empty link? #1: #2#3}%
3113   \else
3114     \def\anchor@spot{\#2#3}%

```

```

3115 \let\put@me@back\@empty
3116 \ifx\relax#2\relax
3117 \else
3118 \ifHy@nesting
3119 \else
3120 \ifcat a\noexpand#2\relax
3121 \else
3122 \ifcat 0\noexpand#2 \relax
3123 \else
3124 % \typeout{Anchor start is not alphanumeric %
3125 % on input line\the\inputlineno%
3126 % }%
3127 \let\anchor@spot\@empty
3128 \def\put@me@back{#2#3}%
3129 \fi
3130 \fi
3131 \fi
3132 \fi
3133 \ifHy@activeanchor
3134 \anchor@spot
3135 \else
3136 \hyper@anchor{#1}%
3137 \fi
3138 \expandafter\put@me@back
3139 \fi
3140 \let\anchor@spot\@empty
3141 }

```

## 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.

```

3142 \let\htmladding\hyperimage
3143 \def\htmladdnormallink#1#2{\href{#2}{#1}}
3144 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
3145 \def\htmlref#1#2{% anchor text, label
3146 \label@hyperref[{#2}]{#1}%
3147 }

```

This is really too much. The *LT<sub>ε</sub>X2html* package defines its own `\hyperref` command, with a different syntax. Was this always here? Its weird, anyway. We interpret it in the 'printed' way, since we are about fidelity to the page.

```

3148 \def\@latextohtmlX{%
3149 \let\hhyperref\hyperref
3150 \def\hyperref##1##2##3##4{% anchor text for HTML
3151 % text to print before label in print
3152 % label
3153 % post-label text in print
3154 ##2\ref{##4}##3%
3155 }%
3156 }

```

## 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.

```
3157 \newif\ifFld@checked
3158 \newif\ifFld@hidden
3159 \newif\ifFld@multiline
3160 \newif\ifFld@readonly
3161 \newif\ifFld@disabled
3162 \newif\ifFld@password
3163 \newif\ifFld@radio
3164 \newif\ifFld@combo
3165 \newif\ifFld@popdown
3166 \Fld@multilinefalse
3167 \Fld@checkedfalse
3168 \Fld@hiddenfalse
3169 \Fld@readonlyfalse
3170 \Fld@disabledfalse
3171 \Fld@radiofalse
3172 \Fld@combofalse
3173 \Fld@popdownfalse
3174 \Fld@passwordfalse
3175 \newcount\Fld@menulength
3176 \newdimen\Field@Width
3177 \newdimen\Fld@charsize
3178 \Fld@charsize=10\p@
3179 \def\Fld@maxlen{0}
3180 \def\Fld@align{0}
3181 \def\Fld@color{0 0 0 rg}
3182 \def\Fld@bcolor{1 1 1}
3183 \def\Fld@bordercolor{1 0 0}
3184 \def\Fld@bordersep{1\p@}
3185 \def\Fld@borderwidth{1}
3186 \def\Fld@borderstyle{S}
3187 \def\Fld@cbsymbol{4}
3188 \def\Fld@rotation{0}
3189 \newtoks\Choice@toks
3190 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
3191 \def\endForm{\@endForm}
3192 \newif\ifForm@html
3193 \Form@htmlfalse
3194 \def\Form@boolkey#1#2{%
3195   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
3196 }
3197 \define@key{Form}{action}{%
3198   \hyper@normalise\Hy@DefFormAction{#1}%
3199 }
3200 \def\Hy@DefFormAction{\def\Fld@action}
3201 \def\enc@html{html}
3202 \define@key{Form}{encoding}{%
3203   \def\Hy@tempa{#1}%
3204   \ifx\Hy@tempa\enc@html
3205     \Form@htmltrue
3206   \else
3207     \typeout{hyperref: form 'encoding' key set to #1 %
```

```

3208      -- unknown type%
3209    }%
3210    \Form@htmlfalse
3211  \fi
3212 }
3213 \define@key{Form}{method}{%
3214   \def\Form@method{#1}%
3215 }
3216 \def\Form@method{}
3217 \def\Field@boolkey#1#2{%
3218   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
3219 }
3220 \newtoks\Field@toks
3221 \Field@toks={ }%
3222 \def\Field@addtoks#1#2{%
3223   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
3224   \@processme
3225 }
3226 \def\Fld@checkequals#1=#2=#3\{\%
3227   \def\@currDisplay{#1}%
3228   \ifx\#2\%
3229     \def\@currValue{#1}%
3230   \else
3231     \def\@currValue{#2}%
3232   \fi
3233 }
3234 \define@key{Field}{loc}{%
3235   \def\Fld@loc{#1}%
3236 }
3237 \define@key{Field}{multiline}[true]{%
3238   \lowercase{\Field@boolkey{#1}}{multiline}%
3239 }
3240 \define@key{Field}{checked}[true]{%
3241   \lowercase{\Field@boolkey{#1}}{checked}%
3242 }
3243 \define@key{Field}{hidden}[true]{%
3244   \lowercase{\Field@boolkey{#1}}{hidden}%
3245 }
3246 \define@key{Field}{readonly}[true]{%
3247   \lowercase{\Field@boolkey{#1}}{readonly}%
3248 }
3249 \define@key{Field}{disabled}[true]{%
3250   \lowercase{\Field@boolkey{#1}}{disabled}%
3251 }
3252 \define@key{Field}{password}[true]{%
3253   \lowercase{\Field@boolkey{#1}}{password}%
3254 }
3255 \define@key{Field}{radio}[true]{%
3256   \lowercase{\Field@boolkey{#1}}{radio}%
3257 }
3258 \define@key{Field}{combo}[true]{%
3259   \lowercase{\Field@boolkey{#1}}{combo}%
3260 }
3261 \define@key{Field}{popdown}[true]{%
3262   \lowercase{\Field@boolkey{#1}}{popdown}%
3263 }
3264 \define@key{Field}{accesskey}{%

```

```

3265 \Field@addtoks{accesskey}{#1}%
3266 }
3267 \define@key{Field}{tabkey}{%
3268 \Field@addtoks{tabkey}{#1}%
3269 }
3270 \define@key{Field}{name}{%
3271 \def\Fld@name{#1}%
3272 }
3273 \define@key{Field}{width}{%
3274 \def\Fld@width{#1}%
3275 \Field@Width#1\setbox0=\hbox{m}%
3276 }
3277 \define@key{Field}{maxlen}{%
3278 \def\Fld@maxlen{#1}%
3279 }
3280 \define@key{Field}{menulength}{%
3281 \Fld@menulength=#1\relax
3282 }
3283 \define@key{Field}{height}{%
3284 \def\Fld@height{#1}%
3285 }
3286 \define@key{Field}{charsize}{%
3287 \Fld@charsize#1%
3288 }
3289 \define@key{Field}{borderwidth}{%
3290 \def\Fld@borderwidth{#1}%
3291 }
3292 \define@key{Field}{borderstyle}{%
3293 \def\Fld@borderstyle{#1}%
3294 }
3295 \define@key{Field}{bordersep}{%
3296 \def\Fld@bordersep{#1}%
3297 }
3298 \define@key{Field}{default}{%
3299 \def\Fld@default{#1}%
3300 }
3301 \define@key{Field}{align}{%
3302 \def\Fld@align{#1}%
3303 }
3304 \define@key{Field}{value}{%
3305 \def\Fld@value{#1}%
3306 }
3307 \define@key{Field}{checkboxsymbol}{%
3308 \def\Fld@cbsymbol{#1}%
3309 }
3310 \define@key{Field}{rotation}{%
3311 \def\Fld@rotation{#1}%
3312 }
3313 \define@key{Field}{backgroundcolor}{%
3314 \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
3315 }
3316 \define@key{Field}{bordercolor}{%
3317 \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
3318 }
3319 \define@key{Field}{color}{%
3320 \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
3321 }

```

```

3322 \def\Fld@format@code{}
3323 \def\Fld@validate@code{}
3324 \def\Fld@calculate@code{}
3325 \def\Fld@keystroke@code{}
3326 \def\Fld@onfocus@code{}
3327 \def\Fld@onblur@code{}
3328 \def\Fld@onmousedown@code{}
3329 \def\Fld@onmouseup@code{}
3330 \def\Fld@onenter@code{}
3331 \def\Fld@onexit@code{}
3332 \define@key{Field}{keystroke}{%
3333   \def\Fld@keystroke@code{#1}%
3334 }
3335 \define@key{Field}{format}{%
3336   \def\Fld@format@code{#1}%
3337 }
3338 \define@key{Field}{validate}{%
3339   \def\Fld@validate@code{#1}%
3340 }
3341 \define@key{Field}{calculate}{%
3342   \def\Fld@calculate@code{#1}%
3343 }
3344 \define@key{Field}{onfocus}{%
3345   \def\Fld@onfocus@code{#1}%
3346 }
3347 \define@key{Field}{onblur}{%
3348   \def\Fld@onblur@code{#1}%
3349 }
3350 \define@key{Field}{onenter}{%
3351   \def\Fld@onenter@code{#1}%
3352 }
3353 \define@key{Field}{onexit}{%
3354   \def\Fld@onexit@code{#1}%
3355 }
3356 \define@key{Field}{onselect}{%
3357   \Field@addtoks{onselect}{#1}%
3358 }
3359 \define@key{Field}{onchange}{%
3360   \Field@addtoks{onchange}{#1}%
3361 }
3362 \define@key{Field}{onclick}{%
3363   \def\Fld@onclick{#1}%
3364   \Field@addtoks{onclick}{#1}%
3365 }
3366 \define@key{Field}{ondblclick}{%
3367   \Field@addtoks{ondblclick}{#1}%
3368 }
3369 \define@key{Field}{onmousedown}{%
3370   \Field@addtoks{onmousedown}{#1}%
3371 }
3372 \define@key{Field}{onmouseup}{%
3373   \Field@addtoks{onmouseup}{#1}%
3374 }
3375 \define@key{Field}{onmouseover}{%
3376   \Field@addtoks{onmouseover}{#1}%
3377 }
3378 \define@key{Field}{onmousemove}{%

```

```

3379 \Field@addtoks{onmousemove}{#1}%
3380 }
3381 \define@key{Field}{onmouseout}{%
3382 \Field@addtoks{onmouseout}{#1}%
3383 }
3384 \define@key{Field}{onkeypress}{%
3385 \Field@addtoks{onkeypress}{#1}%
3386 }
3387 \define@key{Field}{onkeydown}{%
3388 \Field@addtoks{onkeydown}{#1}%
3389 }
3390 \define@key{Field}{onkeyup}{%
3391 \Field@addtoks{onkeyup}{#1}%
3392 }
3393 %
3394 \DeclareRobustCommand\TextField{%
3395 \@ifnextchar[{\@TextField}{\@TextField[]}%
3396 }
3397 \DeclareRobustCommand\ChoiceMenu{%
3398 \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
3399 }
3400 \DeclareRobustCommand\CheckBox{%
3401 \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
3402 }
3403 \DeclareRobustCommand\PushButton{%
3404 \@ifnextchar[{\@PushButton}{\@PushButton[]}%
3405 }
3406 \DeclareRobustCommand\Gauge{%
3407 \@ifnextchar[{\@Gauge}{\@Gauge[]}%
3408 }
3409 \DeclareRobustCommand\Submit{%
3410 \@ifnextchar[{\@Submit}{\@Submit[]}%
3411 }
3412 \DeclareRobustCommand\Reset{%
3413 \@ifnextchar[{\@Reset}{\@Reset[]}%
3414 }
3415 \def\LayoutTextField#1#2{% label, field
3416 #1 #2%
3417 }
3418 \def\LayoutChoiceField#1#2{% label, field
3419 #1 #2%
3420 }
3421 \def\LayoutCheckField#1#2{% label, field
3422 #1 #2%
3423 }
3424 \def\LayoutPushButtonField#1{% button
3425 #1%
3426 }
3427 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3428 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3429 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3430 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3431 \def\MakeButtonField#1{%
3432 \sbox0{%
3433 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
3434 }%
3435 \@tempdima\ht0 %

```

```

3436 \advance\@tempdima by \Fld@borderwidth bp %
3437 \advance\@tempdima by \Fld@borderwidth bp %
3438 \ht0\@tempdima
3439 \@tempdima\dp0 %
3440 \advance\@tempdima by \Fld@borderwidth bp %
3441 \advance\@tempdima by \Fld@borderwidth bp %
3442 \dp0\@tempdima
3443 \box0\relax
3444 }
3445 \def\DefaultHeightofSubmit{14pt}
3446 \def\DefaultWidthofSubmit{2cm}
3447 \def\DefaultHeightofReset{14pt}
3448 \def\DefaultWidthofReset{2cm}
3449 \def\DefaultHeightofCheckBox{\baselineskip}
3450 \def\DefaultWidthofCheckBox{\baselineskip}
3451 \def\DefaultHeightofChoiceMenu{\baselineskip}
3452 \def\DefaultWidthofChoiceMenu{\baselineskip}
3453 \def\DefaultHeightofText{\baselineskip}
3454 \def\DefaultWidthofText{3cm}

```

## 20 Setup

```

3455 \ifHy@figures
3456 \Hy@Info{Hyper figures ON}%
3457 \else
3458 \Hy@Info{Hyper figures OFF}%
3459 \fi
3460 \ifHy@nesting
3461 \Hy@Info{Link nesting ON}%
3462 \else
3463 \Hy@Info{Link nesting OFF}%
3464 \fi
3465 \ifHy@hyperindex
3466 \Hy@Info{Hyper index ON}%
3467 \else
3468 \Hy@Info{Hyper index OFF}%
3469 \fi
3470 \ifHy@backref
3471 \Hy@Info{backreferencing ON}%
3472 \else
3473 \Hy@Info{backreferencing OFF}%
3474 \fi
3475 \ifHy@colorlinks
3476 \Hy@Info{Link coloring ON}%
3477 \else
3478 \Hy@Info{Link coloring OFF}%
3479 \fi

```

## 21 Low-level utility macros

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

```

3480 \edef\hyper@hash{\string#}
3481 \edef\hyper@tilde{\string~}
3482 \edef\hyper@quote{\string"}
3483 \let\@currentHref\@empty
3484 \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.

```

3485 \AfterBeginDocument{%
3486   \Hy@pdfstringtrue
3487   \PDF@SetupDoc
3488   \let\PDF@SetupDoc\@empty
3489   \Hy@DisableOption{pdfpagescrop}%
3490   \Hy@DisableOption{pdfpagemode}%
3491   \Hy@DisableOption{pdfnonfullscreenpagemode}%
3492   \Hy@DisableOption{pdfdirection}%
3493   \Hy@DisableOption{pdfviewarea}%
3494   \Hy@DisableOption{pdfviewclip}%
3495   \Hy@DisableOption{pdfprintarea}%
3496   \Hy@DisableOption{pdfprintclip}%
3497   \Hy@DisableOption{pdfprintscaling}%
3498   \Hy@DisableOption{pdfduplex}%
3499   \Hy@DisableOption{pdfpicktraybypdfsize}%
3500   \Hy@DisableOption{pdfprintpagerange}%
3501   \Hy@DisableOption{pdfnumcopies}%
3502   \Hy@DisableOption{pdfstartview}%
3503   \Hy@DisableOption{pdfstartpage}%
3504   \Hy@DisableOption{pdftoolbar}%
3505   \Hy@DisableOption{pdfmenubar}%
3506   \Hy@DisableOption{pdfwindowui}%
3507   \Hy@DisableOption{pdffitwindow}%
3508   \Hy@DisableOption{pdfcenterwindow}%
3509   \Hy@DisableOption{pdfdisplaydoctitle}%
3510   \Hy@DisableOption{pdfpagelayout}%
3511   \Hy@DisableOption{pdflang}%
3512   \Hy@DisableOption{baseurl}%
3513   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
3514   \Hy@pdfstringfalse
3515 }

```

## 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.

```

3516 \def\NoHyper{%
3517   \def\hyper@link@[##1]##2##3##4{##4}%
3518   \def\hyper@anchorend##1{}%
3519   \global\let\hyper@livelink\hyper@link
3520   \gdef\hyper@link##1##2##3{##3}%
3521   \def\hyper@anchorstart##1{}%
3522   \let\hyper@anchorend\@empty
3523   \def\hyper@linkstart##1##2{}%
3524   \let\hyper@linkend\@empty
3525   \def\hyper@linkurl##1##2{##1}%
3526   \def\hyper@linkfile##1##2##3{##1}%
3527   \let\Hy@backout\@gobble
3528 }
3529 \def\stop@hyper{%
3530   \def\hyper@link@[##1]##2##3##4{##4}%
3531   \let\Hy@backout\@gobble

```

```

3532 \def\hyper@@anchor##1{%
3533 \def\hyper@link##1##2##3{##3}%
3534 \def\hyper@anchorstart##1{%
3535 \let\hyper@anchorend\@empty
3536 \def\hyper@linkstart##1##2{%
3537 \let\hyper@linkend\@empty
3538 \def\hyper@linkurl##1##2{##1}%
3539 \def\hyper@linkfile##1##2##3{##1}%
3540 }
3541 \def\endNoHyper{%
3542 \global\let\hyper@link\hyper@livelink
3543 }
3544 \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:

```

3545 \let\hyper@@anchor\@gobble
3546 \def\hyper@link##1##2##3{##3}%
3547 \let\hyper@anchorstart\@gobble
3548 \let\hyper@anchorend\@empty
3549 \let\hyper@linkstart\@gobbletwo
3550 \let\hyper@linkend\@empty
3551 \def\hyper@linkurl##1##2{##1}%
3552 \def\hyper@linkfile##1##2##3{##1}%
3553 \let\PDF@SetupDoc\@empty
3554 \let\PDF@FinishDoc\@empty

```

Some top-level commands:

```

3556 \let\Acrobatmenu\@gobble
3557 \let\pdfstringdefDisableCommands\@gobbletwo
3558 \let\texorpdfstring\@firstoftwo
3559 \let\pdfbookmark\@undefined
3560 \newcommand\pdfbookmark[3][]{ }
3561 \let\phantomsection\@empty
3562 \let\hypersetup\@gobble
3563 \let\hyperbaseurl\@gobble
3564 \let\href\@gobble
3565 \let\hyperdef\@gobbletwo
3566 \let\hyperlink\@gobble
3567 \let\hypertarget\@gobble
3568 \def\hyperref{\@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}}
3569 \long\def\@gobbleopt[#1]{ }
3570 \let\hyperpage\@empty
3571 \end{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}`

```
3572 \*package>
3573 \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.

```
3574 \if@filesw
3575 \ifHy@typexml
3576 \immediate\closeout\@mainaux
3577 \immediate\openout\@mainaux\jobname.aux\relax
3578 \immediate\write\@auxout{<relaxxml>\relax}%
3579 \fi
3580 \immediate\write\@auxout{%
3581 \string\ifx\string\hyper@anchor\string\@undefined^^J%
3582 \global\let\string\oldcontentsline\string\contentsline^^J%
3583 \gdef\string\contentsline%
3584 \string#1\string#2\string#3\string#4{%
3585 \string\oldcontentsline%
3586 {\string#1}{\string#2}{\string#3}}^^J%
3587 \global\let\string\oldnewlabel\string\newlabel^^J%
3588 \gdef\string\newlabel\string#1\string#2{%
3589 \string\newlabelxx{\string#1}\string#2^^J%
3590 \gdef\string\newlabelxx%
3591 \string#1\string#2\string#3\string#4\string#5\string#6{%
3592 \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.

```
3593 \string\AtEndDocument{%
3594 \let\string\contentsline\string\oldcontentsline^^J%
3595 \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.

```
3596 \string\else^^J%
3597 \global\let\string\hyper@last\relax^^J%
3598 \string\fi^^J%
3599 }%
3600 \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.

```
3601 \ifx\hyper@last\@undefined
3602 \def\@starttoc#1{%
3603 \begingroup
3604 \makeatletter
3605 \IfFileExists{\jobname.#1}{%
3606 \Hy@WarningNoLine{%
3607 old #1 file detected, not used; run LaTeX again%
```

```

3608         }%
3609     }{}%
3610     \if@filesw
3611         \expandafter\newwrite\csname tf@#1\endcsname
3612         \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
3613     \fi
3614     \@nobreakfalse
3615 \endgroup
3616 }%
3617 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
3618 \fi
3619 }

```

## 25 Title strings

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

```

3620 \ifHy@usetitle
3621   \let\HyOrg@title\title
3622   \let\HyOrg@author\author
3623   \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
3624   \def\Hy@scanopttitle[#1]{%
3625     \gdef\Hy@title{#1}%
3626     \HyOrg@title[{#1}]%
3627   }%
3628   \def\Hy@scantitle#1{%
3629     \gdef\Hy@title{#1}%
3630     \HyOrg@title{#1}%
3631   }%
3632   \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
3633   \def\Hy@scanoptauthor[#1]{%
3634     \gdef\Hy@author{#1}%
3635     \HyOrg@author[{#1}]%
3636   }%
3637   \def\Hy@scanauthor#1{%
3638     \gdef\Hy@author{#1}%
3639     \HyOrg@author{#1}%
3640   }%

```

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.

```

3641 \begingroup
3642   \def\process@me#1\@nil#2{%
3643     \expandafter\let\expandafter\x\csname @#2\endcsname
3644     \edef\y{\expandafter\strip@prefix\meaning\x}%
3645     \def\c##1##2\@nil{%
3646       \ifx\\##1\\%
3647         \else
3648           \expandafter\gdef\csname Hy@#2\endcsname
3649             \expandafter{x}%
3650       \fi
3651     }%
3652     \expandafter\c\y\relax#1\@nil
3653   }%
3654   \expandafter\process@me\string\@latex@\@nil{title}%
3655   \expandafter\process@me\string\@latex@\@nil{author}%

```

```

3656 \endgroup
3657 \fi
3658 \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.

```

3659 \def\Hy@UseMaketitleString#1{%
3660   \@ifundefined{Hy@#1}{}%
3661   \begingroup
3662     \let\Hy@saved@hook\pdfstringdefPreHook
3663     \pdfstringdefDisableCommands{%
3664       \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
3665       \let\newline\\%
3666     }%
3667     \expandafter\ifx\csname @pdf#1\endcsname\@empty
3668       \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
3669         \csname Hy@#1\endcsname\@empty
3670       }%
3671     \fi
3672     \global\let\pdfstringdefPreHook\Hy@saved@hook
3673   \endgroup
3674 }%
3675 }
3676 \def\Hy@newline@title#1{ #1}
3677 \def\Hy@newline@author#1{, #1}
3678 \def\Hy@UseMaketitleInfos{%
3679   \Hy@UseMaketitleString{title}%
3680   \Hy@UseMaketitleString{author}%
3681 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

### 26.1 PDF /PageLabels

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

```

3682 \ifHy@pagelabels
3683   \begingroup\expandafter\expandafter\expandafter\endgroup
3684   \expandafter\ifx\csname thepage\endcsname\relax
3685     \Hy@pagelabelsfalse
3686     \Hy@WarningNoLine{%
3687       Option 'pdfpagelabels' is turned off\MessageBreak
3688       because \string\thepage\space is undefined%
3689     }%
3690     \csname fi\endcsname
3691     \csname iffalse\expandafter\endcsname
3692   \fi

```

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

```
3693 \def\thispdfpagelabel#1{%
3694   \gdef\HyPL@thisLabel{#1}%
3695 }%
3696 \global\let\HyPL@thisLabel\relax
```

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

```
3697 \def\HyPL@Labels{%
```

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

```
3698 \newcount\Hy@abspage
3699 \Hy@abspage=0 %
```

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

```
3700 \def\HyPL@LastType{init}%
3701 \def\HyPL@LastNumber{0}%
3702 \def\HyPL@LastPrefix{}
```

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

```
3703 \def\HyPL@arabic{D}%
3704 \def\HyPL@Roman{R}%
3705 \def\HyPL@roman{r}%
3706 \def\HyPL@Alph{A}%
3707 \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.

```
3708 \def\HyPL@EveryPage{%
3709   \begingroup
3710   \ifx\HyPL@thisLabel\relax
3711     \let\HyPL@page\thepage
3712   \else
3713     \let\HyPL@page\HyPL@thisLabel
3714     \global\let\HyPL@thisLabel\relax
3715   \fi
3716   \let\HyPL@Type\relax
3717   \ifnum\the\c@page>0 %
3718     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
3719   \fi
3720   \let\Hy@temp Y%
3721   \ifx\HyPL@Type\HyPL@LastType
3722   \else
3723     \let\Hy@temp N%
3724   \fi
3725   \ifx\HyPL@Type\relax
3726     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
3727   \else
3728     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
3729   \fi
3730   \ifx\HyPL@Prefix\HyPL@LastPrefix
3731   \else
3732     \let\Hy@temp N%
3733   \fi
3734   \if Y\Hy@temp
3735     \advance\c@page by -1 %
3736     \ifnum\HyPL@LastNumber=\the\c@page\relax
```

```

3737         \else
3738         \let\Hy@temp N%
3739         \fi
3740         \Hy@StepCount\c@page
3741     \fi
3742     \if N\Hy@temp
3743     \ifx\HyPL@Type\relax
3744     \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
3745     \else
3746     \HyPL@StorePageLabel{%
3747     \ifx\HyPL@Prefix\@empty
3748     \else
3749     /P(\HyPL@Prefix)%
3750     \fi
3751     /S/\csname HyPL\HyPL@Type\endcsname
3752     \ifnum\the\c@page=1 %
3753     \else
3754     \space/St \the\c@page
3755     \fi
3756     }%
3757     \fi
3758     \fi
3759     \xdef\HyPL@LastNumber{\the\c@page}%
3760     \global\let\HyPL@LastType\HyPL@Type
3761     \global\let\HyPL@LastPrefix\HyPL@Prefix
3762 \endgroup
3763 \Hy@GlobalStepCount\Hy@abspage
3764 }%

```

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

```

3765 \def\HyPL@CheckThePage#1\@nil{%
3766     \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
3767 }%

```

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

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

```

3768 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
3769     \def\Hy@tempa{#4}%
3770     \def\Hy@tempb{\csname\endcsname\c@page}%
3771     \ifx\Hy@tempa\Hy@tempb
3772     \expandafter\ifx\csname HyPL#3\endcsname\relax
3773     \else
3774     \def\HyPL@Type{#3}%
3775     \def\HyPL@Prefix{#2}%
3776     \fi
3777     \else
3778     \begingroup
3779     \let\Hy@next\endgroup
3780     \let\HyPL@found\@undefined
3781     \def\arabic{\HyPL@Format{arabic}}%
3782     \def\Roman{\HyPL@Format{Roman}}%
3783     \def\roman{\HyPL@Format{roman}}%
3784     \def\Alph{\HyPL@Format{Alph}}%
3785     \def\alph{\HyPL@Format{alph}}%
3786     \protected@edef\Hy@temp{#1}%

```

```

3787         \ifx\HyPL@found\relax
3788             \toks@{\expandafter{\Hy@temp}}%
3789             \edef\Hy@next{\endgroup
3790                 \noexpand\HyPL@@@CheckThePage\the\toks@
3791                 \noexpand\HyPL@found\relax\noexpand\@nil
3792             }%
3793         \fi
3794     \Hy@next
3795 \fi
3796 }%

```

**\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`.

```

3797 \def\HyPL@Format#1#2{%
3798     \ifx\HyPL@found\@undefined
3799         \expandafter\ifx\csname c@#2\endcsname\c@page
3800             \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
3801         \else
3802             \expandafter\noexpand\csname#1\endcsname{#2}%
3803         \fi
3804     \else
3805         \expandafter\noexpand\csname#1\endcsname{#2}%
3806     \fi
3807 }%

```

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

```

3808 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
3809     \def\Hy@tempa{#3}%
3810     \def\Hy@tempb{\HyPL@found\relax}%
3811     \ifx\Hy@tempa\Hy@tempb
3812         \def\HyPL@Type{#2}%
3813         \def\HyPL@Prefix{#1}%
3814     \fi
3815 }%

```

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

```

3816 \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`.

```

3817 \def\HyPL@Useless{0<</S/D>>}%
3818 \@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.

```

3819 \def\HyPL@SetPageLabels{%
3820     \@onelevel@sanitize\HyPL@Labels
3821     \ifx\HyPL@Labels\@empty
3822     \else
3823         \ifx\HyPL@Labels\HyPL@Useless
3824         \else
3825             \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
3826         \fi
3827     \fi
3828 }%

```



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

```
3829 \else
3830   \let\HyPL@EveryPage\@empty
3831 \fi
```

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

```
3832 \Hy@DisableOption{pdfpagelabels}
3833 \end{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

```
3834 <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.

```
3835 <*vTeX>
3836 \edef\Hy@VTeXversion{%
3837   \ifx\VTeXversion\@undefined
3838     \z@
3839   \else
3840     \ifx\VTeXversion\relax
3841       \z@
3842     \else
3843       \VTeXversion
3844     \fi
3845   \fi
3846 }
3847 \begingroup
3848   \ifnum\Hy@VTeXversion<660 %
3849     \gdef\Hy@PutCatalog#1{%
3850       \Hy@WarningNoLine{%
3851         VTeX 6.59g or above required for pdfpagelabels%
3852       }%
3853     }%
3854   \else
3855     \gdef\Hy@PutCatalog#1{%
3856       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
3857     }%
3858     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
3859       \ifx\#2\%
3860       \else
3861         \immediate\special{!pdfpagelabels #2}%
3862       \fi
3863     }%
3864   \fi
3865 \endgroup
3866 </vTeX>
3867 <*pdfTeX | vTeX>
```

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

```

3868 \ifHy@pagelabels
3869   \def\HyPL@StorePageLabel#1{%
3870     \toks@ \expandafter{\HyPL@Labels}%
3871     \xdef\HyPL@Labels{%
3872       \the\toks@
3873       \the\Hy@abspage<<#1>>%
3874     }%
3875   }%

```

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.

```

3876   \AtEndDocument{\clearpage\HyPL@SetPageLabels}%

3877 \fi
3878 </pdfTeX | vTeX>

```

## 26.1.2 pdfmarkbase, dvipdfm

`\Hy@PutCatalog`

```

3879 <dvipdfm>\def\Hy@PutCatalog#1{\pdfmark{docview << #1 >>}}
3880 <*pdfmarkbase>
3881 \def\Hy@PutCatalog#1{%
3882   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
3883 }
3884 </pdfmarkbase>

3885 <*pdfmarkbase | dvipdfm>
3886 \ifHy@pagelabels

```

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

```

3887   \def\HyPL@StorePageLabel#1{%
3888     \if@filesW
3889       \begingroup
3890         \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
3891         \immediate\write\@mainaux{%
3892           \string\HyPL@Entry{\Hy@tempa}%
3893         }%
3894       \endgroup
3895     \fi
3896   }%

```

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.

```

3897   \AfterBeginDocument{%
3898     \if@filesW
3899       \immediate\write\@mainaux{%
3900         \string\providecommand\string*\string\HyPL@Entry[1]{}%
3901       }%
3902     \fi
3903     \ifx\HyPL@Labels\@empty
3904       \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
3905     \else
3906       \HyPL@SetPageLabels
3907     \fi
3908     \let\HyPL@Entry\@gobble
3909   }%

```

\HyPL@Entry

```

3910 \def\HyPL@Entry#1{%
3911   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
3912     \HyPL@Labels
3913     #1%
3914   }%
3915 }%

3916 \fi
3917 </pdfmarkbase | dvipdfm>

3918 <*package>

3919 \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

```

3920 \newcommand\theHequation{\theHsection.\arabic{equation}}
3921 \@ifundefined{thepart}{\newcommand\theHpart{\arabic{part}}}{%
3922 \@ifundefined{thechapter}{%
3923   \newcommand\theHsection    {\arabic{section}}}%
3924   \newcommand\theHfigure     {\arabic{figure}}}%
3925   \newcommand\theHtable      {\arabic{table}}}%
3926 }{%
3927   \newcommand\theHchapter     {\arabic{chapter}}}%
3928   \newcommand\theHfigure      {\theHchapter.\arabic{figure}}}%
3929   \newcommand\theHtable       {\theHchapter.\arabic{table}}}%
3930   \newcommand\theHsection     {\theHchapter.\arabic{section}}}%
3931 }
3932 \newcommand\theHsubsection    {\theHsection.\arabic{subsection}}
3933 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
3934 \newcommand\theHparagraph     {\theHsubsubsection.\arabic{paragraph}}
3935 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
3936 \newcommand\theHtheorem       {\theHsection.\arabic{theorem}}
3937 \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.

```

3938 \let\H@item\item

```

```

3939 \newcounter{Item}
3940 \def\theHItem{\arabic{Item}}
3941 \def\item{%
3942   \@hyper@itemfalse
3943   \ifnmbrlist\@hyper@itemtrue\fi
3944   \H@item
3945 }

3946 \newcommand\theHenumi    {\theHItem}
3947 \newcommand\theHenumii   {\theHItem}
3948 \newcommand\theHenumiii  {\theHItem}
3949 \newcommand\theHenumiv   {\theHItem}
3950 \newcommand\theHHfootnote {\arabic{Hfootnote}}
3951 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
3952 \let\theHmpfootnote\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.

```

3953 \let\H@refstepcounter\refstepcounter
3954 \edef\name@of@eq{equation}%
3955 \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.

```

3956 \newif\if@hyper@item
3957 \newif\if@skiphyperref
3958 \@hyper@itemfalse
3959 \@skiphyperreffalse
3960 \def\refstepcounter#1{%
3961   \ifHy@pdfstring
3962   \else
3963     \H@refstepcounter{#1}%
3964     \edef\This@name{#1}%
3965     \ifx\This@name\name@of@slide
3966     \else
3967       \if@skiphyperref
3968       \else
3969         \if@hyper@item
3970           \stepcounter{Item}%
3971           \hyper@refstepcounter{Item}%
3972         \else
3973           \hyper@refstepcounter{#1}%
3974         \fi
3975       \fi
3976     \fi
3977   \fi
3978 }

```

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

```

3979 \@ifpackageloaded{amsmath}{-}{\newif\ifmeasuring@measuring@false}

```

`\hyper@refstepcounter`

```

3980 \def\hyper@refstepcounter#1{%
3981   \edef\This@name{#1}%

```

```

3982 \ifx\This@name\name@of@eq
3983   \@ifundefined{theHequation}{%
3984     \make@stripped@name{\theequation}%
3985     \let\theHequation\newname
3986   }{%
3987 \fi
3988 \@ifundefined{theH#1}{%
3989   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
3990 }{%
3991 \hyper@makecurrent{#1}%
3992 \ifmeasuring@
3993 \else
3994   \Hy@raisedlink{%
3995     \hyper@anchorstart{\@currentHref}\hyper@anchorend
3996   }%
3997 \fi
3998 }

```

After `\appendix` “chapter” (or “section” for classes without chapter) should be replaced by “appendix” to get `\autoref` work. Macro `\Hy@chapapp` contains the current valid name like `\@chapapp`, which cannot be used, because this string depends on the current language.

The “french” package defines counter `\thechapter` by `\newcounterchapter`, if `\@ifundefinedchapter`.

```

3999 \begingroup\expandafter\expandafter\expandafter\endgroup
4000 \expandafter\ifx\csname chapter\endcsname\relax
4001   \def\Hy@chapterstring{section}%
4002 \else
4003   \def\Hy@chapterstring{chapter}%
4004 \fi
4005 \def\Hy@appendixstring{appendix}
4006 \def\Hy@chapapp{\Hy@chapterstring}
4007 \let\HyOrg@appendix\appendix
4008 \def\appendix{%
4009   \@ifundefined{chapter}%
4010     {\gdef\theHsection{\Alph{section}}}%
4011     {\gdef\theHchapter{\Alph{chapter}}}%
4012   \xdef\Hy@chapapp{\Hy@appendixstring}%
4013   \HyOrg@appendix
4014 }

```

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

```

4015 \def\hyper@makecurrent#1{%
4016   \begingroup
4017     \edef\Hy@param{#1}%
4018     \ifx\Hy@param\Hy@chapterstring
4019       \let\Hy@param\Hy@chapapp
4020     \fi
4021     \ifHy@hypertextnames
4022       \let\@number\@firstofone
4023       \@ifundefined{latin@Alph}{%
4024         \ifx\@Alph@greek@Alph
4025           \def\@Alph{Alph\@arabic}%
4026         \fi
4027       }%
4028     \ifHy@naturalnames

```

```

4029     \let\textlatin\@firstofone
4030     \xdef\@currentHlabel{\csname the#1\endcsname}%
4031   \else
4032     \xdef\@currentHlabel{\csname theH#1\endcsname}%
4033   \fi
4034   \xdef\@currentHref{%
4035     \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
4036   }%
4037   \else
4038     \Hy@GlobalStepCount\Hy@linkcounter
4039     \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
4040   \fi
4041 \endgroup
4042 }

4043 \@ifpackageloaded{fancyvrb}{%
4044   \def\FV@StepLineNo{%
4045     \FV@SetLineNo
4046     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
4047     \FV@StepLineNo
4048   }%
4049 }{}

```

## 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`

```

4050 \AtBeginDocument{%
4051   \@ifpackageloaded{lastpage}{%
4052     \ifHy@pageanchor
4053     \else
4054       \Hy@WarningNoLine{%
4055         The \string\pageref{LastPage} link doesn't work\MessageBreak
4056         with disabled option 'pageanchor'%
4057       }%
4058     \fi
4059     \def\lastpage@putlabel{%
4060       \addtocounter{page}{-1}%
4061       \if@files
4062         \begingroup
4063           \let\@number\@firstofone
4064           \ifHy@pageanchor
4065             \ifHy@hypertexnames
4066               \ifHy@plainpages
4067                 \def\Hy@temp{\arabic{page}}%
4068               \else
4069                 \Hy@unicodedefalse
4070                 \pdfstringdef\Hy@temp{\thepage}%
4071             \fi
4072           \else

```

```

4073         \def\Hy@temp{\the\Hy@pagecounter}%
4074         \fi
4075     \fi
4076     \immediate\write\@auxout{%
4077         \string\newlabel
4078         {LastPage}{\the\page}{\the\page}%
4079         \ifHy@pageanchor page.\Hy@temp\fi}%
4080     }%
4081 \endgroup
4082 \fi
4083 \addtocounter{page}{1}%
4084 }%
4085 }{}%
4086 }
4087 \</package>
4088 \<*check>
4089 \checkpackage{lastpage}[1994/06/25]
4090 \checkcommand\def\lastpage@putlabel{%
4091     \addtocounter{page}{-1}%
4092     \immediate\write\@auxout{%
4093         \string\newlabel{LastPage}{\the\page}%
4094     }%
4095     \addtocounter{page}{1}%
4096 }
4097 \</check>
4098 \<*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.

```

4099 \def\hypergetref#1{\getrefbykeydefault{#1}{??}}
4100 \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:

```

4101 \@ifpackageloaded{titlesec}{%
4102     \def\ttl@Hy@steplink#1{%
4103         \Hy@GlobalStepCount\Hy@linkcounter
4104         \xdef\@currentHref{#1.\the\Hy@linkcounter}%
4105         \def\ttl@Hy@saveanchor{%
4106             \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4107         }%
4108     }%
4109     \def\ttl@Hy@refstepcounter#1{%
4110         \let\ttl@b\Hy@raisedlink
4111         \def\Hy@raisedlink##1{\def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}}%
4112         \refstepcounter{#1}%
4113         \let\Hy@raisedlink\ttl@b
4114     }%
4115 }{}

```

Package titletoc support:

```
4116 \@ifpackageloaded{titletoc}{%
4117   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
4118 }{}
```

## 31 Package varioref support

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

```
4119 \def\Hy@varioref@undefined{???}{??}{-}{-}{-}
4120 \@ifpackageloaded{varioref}{%
4121   \def\vref@pagenum#1#2{%
4122     \ifundefined{r@#2}{%
4123       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
4124     }{}%
4125     \edef#1{\getpagerefnumber{#2}}%
4126   }%
4127 }{}
```

## 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

```
4128 \@ifpackageloaded{longtable}{%
4129   \begingroup
4130     \def\y{\LT@array}%
4131     \ifundefined{scr@LT@array}{-}{\def\y{\scr@LT@array}}%
4132     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
4133       \expandafter\endgroup
4134       \expandafter\def\y[#1]##2{%
4135         \H@refstepcounter{#1}%
4136         \hyper@makecurrent{table}%
4137         #2\@sharp####4%
4138       }%
4139     }%
4140     \expandafter\expandafter\expandafter\x\y[#1]{#2}\@nil
```

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

```
4141   \begingroup
4142     \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
4143     \endgroup
4144     \def\LT@start{%
4145       #1%
4146       \hyper@refstepcounter{table}%
4147       \ifvoid\LT@firsthead\copy
4148       #2%
4149     }%
4150   }%
4151   \expandafter\x\LT@start\@nil
4152 }{}
```



### 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.

```

4153 \let\new@refstepcounter\refstepcounter
4154 \let\H@equation\equation
4155 \let\H@endequation\endequation

4156 \ifpackageloaded{amsmath}{%
4157   \long\def\Hy@temp{%
4158     \incr@eqnum
4159     \mathdisplay@push
4160     \st@rredfalse \global\@eqnswtrue
4161     \mathdisplay{equation}%
4162   }%
4163   \ifx\Hy@temp\equation
4164     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
4165       \csname iftrue\endcsname
4166   \else
4167     \long\def\equation{%
4168       \mathdisplay@push
4169       \st@rredfalse \global\@eqnswtrue
4170       \mathdisplay{equation}%
4171       \incr@eqnum
4172     }%
4173   \fi
4174 \fi
4175 }{%
4176 \def\equation{%
4177   \let\refstepcounter\H@refstepcounter
4178   \H@equation
4179   \@ifundefined{theHequation}{%
4180     \make@stripped@name{theequation}%
4181     \let\theHequation\newname
4182   }{}%
4183   \hyper@makecurrent{equation}%
4184   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
4185   \let\refstepcounter\new@refstepcounter
4186 }%
4187 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
4188 }

```

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.

```

4189 \newif\if@eqnstar
4190 \@eqnstarfalse
4191 \let\H@eqnarray\eqnarray
4192 \let\H@endeqnarray\endeqnarray
4193 \def\eqnarray{%
4194   \let\Hy@reserved@a\relax
4195   \def\@currentHref{}%

```

```

4196 \H@eqnarray
4197 \if@eqnstar
4198 \else
4199   \ifx\\ \@currentHref\\%
4200   \else
4201     \ifundefined{theHequation}{%
4202       \make@stripped@name{\theequation}%
4203       \let\theHequation\newname
4204     }{%
4205       \hyper@makecurrent{equation}%
4206       \hyper@anchorstart{\@currentHref}{\hyper@anchorend
4207     \fi
4208   \fi
4209 }
4210 \def\endeqnarray{%
4211   \H@endeqnarray
4212 }

```

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.

```

4213 \@namedef{eqnarray*}{%
4214   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
4215 }
4216 \@namedef{endeqnarray*}{%
4217   \nonumber\endeqnarray\@eqnstarfalse
4218 }

```

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

```

4219 \@ifundefined{subeqnarray}{%
4220   \let\H@subeqnarray\subeqnarray
4221   \let\H@endsubeqnarray\endsubeqnarray
4222   \def\subeqnarray{%
4223     \let\Hy@reserved@a\relax
4224     \H@subeqnarray
4225     \@ifundefined{theHequation}{%
4226       \make@stripped@name{\theequation}%
4227       \let\theHequation\newname
4228     }{%
4229       \hyper@makecurrent{equation}%
4230       \hyper@anchorstart{\@currentHref}{\hyper@anchorend
4231     }%
4232   \def\endsubeqnarray{%
4233     \H@endsubeqnarray
4234   }%
4235   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
4236 }

```

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

```

4237 \def\make@stripped@name#1{%
4238   \begingroup
4239     \escapechar\m@ne
4240     \global\let\newname\@empty
4241     \protected@edef\Hy@tempa{#1}%
4242     \edef\@tempb{%
4243       \noexpand\@tfor\noexpand\Hy@tempa:=%
4244       \expandafter\strip@prefix\meaning\Hy@tempa
4245     }%
4246     \@tempb\do{%

```

```

4247     \if{\Hy@tempa\else
4248     \if}\Hy@tempa\else
4249     \xdef\newname{\newname\Hy@tempa}%
4250     \fi
4251     \fi
4252   }%
4253 \endgroup
4254 }

Support for amsmath's subequations:

4255 \begingroup\expandafter\expandafter\expandafter\endgroup
4256 \expandafter\ifx\csname subequations\endcsname\relax
4257 \else
4258   \let\HyOrg@subequations\subequations
4259   \def\subequations{%
4260     \stepcounter{equation}%
4261     \protected@edef\theHparentequation{%
4262       \@ifundefined{theHequation}\theequation\theHequation
4263     }%
4264     \addtocounter{equation}{-1}%
4265     \HyOrg@subequations
4266     \def\theHequation{\theHparentequation\alph{equation}}%
4267     \ignorespaces
4268   }%
4269 \fi

```

## 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.

```

4270 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
4271 \ifHy@hyperfootnotes
4272   \newcounter{Hfootnote}%
4273   \let\H@@footnotetext\@footnotetext
4274   \let\H@@footnotemark\@footnotemark
4275   \def\@xfootnotenext[#1]{%
4276     \begingroup
4277       \csname c@\@mpfn\endcsname #1\relax
4278       \unrestored@protected@xdef\@thefnmark{\thempfn}%
4279     \endgroup
4280     \ifx\@footnotetext\@mpfootnotetext
4281       \expandafter\H@@mpfootnotetext
4282     \else
4283       \expandafter\H@@footnotetext
4284     \fi
4285   }%
4286   \def\@xfootnotemark[#1]{%
4287     \begingroup
4288       \c@footnote #1\relax
4289       \unrestored@protected@xdef\@thefnmark{\thefootnote}%
4290     \endgroup
4291     \H@@footnotemark
4292   }%

```

```

4293 \let\H@@mpfootnotetext\@mpfootnotetext
4294 \long\def\@mpfootnotetext#1{%
4295   \H@@mpfootnotetext{%
4296     \ifHy@nesting
4297       \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
4298     \else
4299       \Hy@raisedlink{%
4300         \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
4301       }#1%
4302     \fi
4303   }%
4304 }%
4305 \long\def\@footnotetext#1{%
4306   \H@@footnotetext{%
4307     \ifHy@nesting
4308       \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
4309     \else
4310       \Hy@raisedlink{%
4311         \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
4312       }%
4313       \let\@currentHlabel\Hy@footnote@currentHlabel
4314       \let\@currentHref\Hy@footnote@currentHref
4315       \let\@currentlabelname\@empty
4316       #1%
4317     \fi
4318   }%
4319 }%

```

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.

```

4320 \def\@footnotemark{%
4321   \leavevmode
4322   \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
4323   \stepcounter{Hfootnote}%
4324   \global\let\Hy@saved@currentHlabel\@currentHlabel
4325   \global\let\Hy@saved@currentHref\@currentHref
4326   \hyper@makecurrent{Hfootnote}%
4327   \global\let\Hy@footnote@currentHlabel\@currentHlabel
4328   \global\let\Hy@footnote@currentHref\@currentHref
4329   \global\let\@currentHlabel\Hy@saved@currentHlabel
4330   \global\let\@currentHref\Hy@saved@currentHref
4331   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
4332   \@makefnmark
4333   \hyper@linkend
4334   \ifhmode\spacefactor\x@sf\fi
4335   \relax
4336 }%

```

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.

```

4337 \@ifpackageloaded{longtable}{%
4338   \CheckCommand*\LT@p@ftntext}[1]{%
4339     \edef\@tempa{%
4340       \the\LT@p@ftn

```

```

4341     \noexpand\footnotetext[\the\c@footnote]%
4342   }%
4343   \global\LT@p@ftn\expandafter{\@tempa{#1}}%
4344 }%
4345 \long\def\LT@p@ftntext#1{%
4346   \edef\@tempa{%
4347     \the\LT@p@ftn
4348     \begingroup
4349       \noexpand\c@footnote=\the\c@footnote\relax
4350       \noexpand\protected@xdef
4351         \noexpand\@thefnmark{\noexpand\thempfn}%
4352       \noexpand\protected@xdef\noexpand\@thefnmark{%
4353         \noexpand\thempfn
4354       }%
4355       \expandafter\expandafter\expandafter\noexpand
4356       \expandafter\expandafter\expandafter\Hy@LT@footnotetext
4357       \expandafter\expandafter\expandafter{%
4358         \expandafter\Hy@footnote@currentHref\expandafter
4359         }\expandafter{\Hy@footnote@currentHlabel}%
4360   }%
4361   \global\LT@p@ftn\expandafter{%
4362     \@tempa{#1}%
4363   \endgroup
4364 }%
4365 }%
4366 \long\def\Hy@LT@footnotetext#1#2#3{%
4367   \H@@footnotetext{%
4368     \ifHy@nesting
4369       \hyper@@anchor{#1}{#3}%
4370     \else
4371       \Hy@raisedlink{%
4372         \hyper@@anchor{#1}{\relax}%
4373       }%
4374       \def\@currentHlabel{#2}%
4375       \def\@currentHref{#1}%
4376       \let\@currentlabelname\@empty
4377       #3%
4378     \fi
4379   }%
4380 }%
4381 }-}%

```

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.

```

4382 \let\HyOrg@maketitle\maketitle
4383 \def\maketitle{%
4384   \let\Hy@saved@footnotemark\@footnotemark
4385   \let\Hy@saved@footnotetext\@footnotetext
4386   \let\@footnotemark\H@@footnotemark
4387   \let\@footnotetext\H@@footnotetext
4388   \@ifnextchar[\Hy@maketitle@optarg{% ]
4389     \HyOrg@maketitle
4390     \Hy@maketitle@end
4391   }%
4392 }%
4393 \def\Hy@maketitle@optarg[#1]{%
4394   \HyOrg@maketitle[#{#1}]%
4395   \Hy@maketitle@end

```

```

4396 }%
4397 \def\Hy@maketitle@end{%
4398   \ifx\@footnotemark\H@@footnotemark
4399     \let\@footnotemark\Hy@saved@footnotemark
4400   \fi
4401   \ifx\@footnotetext\H@@footnotetext
4402     \let\@footnotetext\Hy@saved@footnotetext
4403   \fi
4404 }%

```

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

```

4405 \def\realfootnote{%
4406   \ifnextchar[\@xfootnote{%
4407     \stepcounter{\@mpfn}%
4408     \protected@xdef\@thefnmark{\thempfn}%
4409     \H@@footnotemark\H@@footnotetext
4410   }%
4411 }%

4412 \fi
4413 \Hy@DisableOption{hyperfootnotes}

4414 \</package>
4415 \< *check>
4416 \checklatex
4417 \checkcommand\def\@xfootnotenext[#1]{%
4418   \begingroup
4419     \csname c@\@mpfn\endcsname #1\relax
4420     \unrestored@protected@xdef\@thefnmark{\thempfn}%
4421   \endgroup
4422   \@footnotetext
4423 }
4424 \checkcommand\def\@xfootnotemark[#1]{%
4425   \begingroup
4426     \c@footnote #1\relax
4427     \unrestored@protected@xdef\@thefnmark{\thefnmark}%
4428   \endgroup
4429   \@footnotemark
4430 }
4431 \checkcommand\def\@footnotemark{%
4432   \leavevmode
4433   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
4434   \@makefnmark
4435   \ifhmode\spacefactor\@x@sf\fi
4436   \relax
4437 }
4438 \</check>
4439 \< *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.

```

4440 \def\caption{%
4441   \ifx\@capttype\@undefined
4442     \latex@error{\noexpand\caption outside float}\@ehd
4443     \expandafter\@gobble

```

```

4444 \else
4445   \H@refstepcounter\@capttype
4446   \@ifundefined{fst@\@capttype}{%
4447     \let\Hy@tempa\@caption
4448   }{%
4449     \let\Hy@tempa\Hy@float@caption
4450   }%
4451   \expandafter\@firstofone
4452 \fi
4453 {\@dblarg{\Hy@tempa\@capttype}}%
4454 }
4455 \long\def\@caption#1[#2]#3{%
4456   \expandafter\ifx\csname if@capstart\expandafter\endcsname
4457     \csname iftrue\endcsname
4458     \global\let\@currentHref\hc@currentHref
4459   \else
4460     \hyper@makecurrent{\@capttype}%
4461   \fi
4462   \def\@currentlabelname{#2}%
4463   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
4464     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
4465   }%
4466   \begingroup
4467     \@parboxrestore
4468     \if@minipage
4469       \setminipage
4470     \fi
4471     \normalsize
4472     \expandafter\ifx\csname if@capstart\expandafter\endcsname
4473       \csname iftrue\endcsname
4474       \global\@capstartfalse
4475       \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
4476     \else
4477       \@makecaption{\csname fnum@#1\endcsname}{%
4478         \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

4479     \ifHy@nesting
4480       \hyper@@anchor{\@currentHref}{#3}%
4481     \else
4482       \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
4483     \fi
4484   }%
4485 \fi
4486 \par
4487 \endgroup
4488 }

```

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.

```

4489 \let\Hy@float@caption\@caption
4490 \@ifpackageloaded{float}{%
4491   \def\Hy@float@caption{%
4492     \hyper@makecurrent{\@capttype}%
4493     \float@caption
4494   }%
4495   \let\HyOrg@float@makebox\float@makebox
4496   \renewcommand{\float@makebox}[1]{%

```

```

4497 \HyOrg@float@makebox{%
4498   #1\relax
4499   \begingroup
4500     \hyper@makecurrent{\@cuptype}%
4501     \hyper@@anchor{\@currentHref}{\relax}%
4502   \endgroup
4503 }%
4504 }%
4505 }{}

4506 \</package>
4507 \<*check>
4508 \checklatex[1999/06/01 - 2000/06/01]
4509 \checkcommand\def\caption{%
4510   \ifx\@cuptype\@undefined
4511     \@latex@error{\noexpand\caption outside float}\@ehd
4512     \expandafter\@gobble
4513   \else
4514     \refstepcounter\@cuptype
4515     \expandafter\@firstofone
4516   \fi
4517   {\@dblarg{\@caption\@cuptype}}}%
4518 }
4519 \checkcommand\long\def\@caption#1[#2]#3{%
4520   \par
4521   \addcontentsline{\csname ext@#1\endcsname}{#1}%
4522     {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
4523   \begingroup
4524     \@parboxrestore
4525     \if@minipage
4526       \setminipage
4527     \fi
4528     \normalsize
4529     \makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
4530   \endgroup
4531 }
4532 \</check>
4533 \<*package>

```

## 36 Bibliographic references

This is not very robust, since many styles redefine these things. The package used to redefine `\@citex` and the like; then we tried adding the `hyperref` call explicitly into the `.aux` file. Now we redefine `\bibcite`; this still breaks some citation packages so we have to work around them. But this remains extremely dangerous. Any or all of *achemso* 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.

```

4534 \def\hyper@natlinkstart#1{%
4535   \Hy@backout{#1}%
4536   \hyper@linkstart{cite}{cite.#1}%
4537   \def\hyper@nat@current{#1}%
4538 }
4539 \def\hyper@natlinkend{%
4540   \hyper@linkend

```



```

4541 }
4542 \def\hyper@natlinkbreak#1#2{%
4543   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
4544 }
4545 \def\hyper@natanchorstart#1{%
4546   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
4547 }
4548 \def\hyper@natanchorend{\hyper@anchorend}

```

Do not play games if we have natbib support. Macro `extra@binfo` added for chapterbib support. Chapterbib also wants `\extra@binfo` in the hyper-link, but since the link tag is not expanded immediately, we use `\extra@b@citeb`, so cites in a chapter will link to the bibliography in that chapter.

```

4549 \@ifundefined{NAT@parse}{%
4550   \providecommand*\extra@binfo{}%
4551   \providecommand*\extra@b@citeb{}%
4552   \def\bibcite#1#2{%
4553     \newl@bel{b}{#1\extra@binfo}{%
4554       \hyper@link[cite]{cite.#1\extra@b@citeb}{#2}%
4555     }%
4556   }%
4557   \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.”.

```

4558 \let\Hy@bibcite\bibcite
4559 \begingroup
4560   \@ifundefined{bbl@cite@choice}{}{%
4561     \g@addto@macro\bbl@cite@choice{%
4562       \let\bibcite\Hy@bibcite
4563     }%
4564   }%
4565 \endgroup

```

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

```

4566 \providecommand*\@BIBLABEL{\@biblabel}%
4567 \def\@lbibitem[#1]#2{%
4568   \@skiphyperreftrue
4569   \H@item[%
4570     \ifx\Hy@raisedlink\@empty
4571       \hyper@anchorstart{cite.#2\extra@b@citeb}%
4572       \@BIBLABEL{#1}%
4573       \hyper@anchorend
4574     \else
4575       \Hy@raisedlink{%
4576         \hyper@anchorstart{cite.#2\extra@b@citeb}\hyper@anchorend
4577       }%
4578     \@BIBLABEL{#1}%
4579     \fi
4580     \hfill
4581   ]%
4582   \@skiphyperreffalse
4583   \if@filesw
4584     \begingroup
4585       \let\protect\noexpand
4586       \immediate\write\@auxout{%
4587         \string\bibcite{#2}{#1}%
4588       }%

```

```

4589     \endgroup
4590     \fi
4591     \ignorespaces
4592 }%

```

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

```

4593 \def\@bibitem#1{%
4594   \@skiphyperreftrue\H@item\@skiphyperreffalse
4595   \Hy@raisedlink{%
4596     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
4597   }%
4598   \if@filesw
4599     \begingroup
4600     \let\protect\noexpand
4601     \immediate\write\@auxout{%
4602       \string\bibcite{#1}{\the\value{\@listctr}}}%
4603     }%
4604   \endgroup
4605   \fi
4606   \ignorespaces
4607 }%
4608 }{}

4609 </package>
4610 <*check>
4611 \checklatex
4612 \checkcommand\def\@lbibitem[#1]#2{%
4613   \item[\@biblabel{#1}\hfill]%
4614   \if@filesw
4615     {%
4616       \let\protect\noexpand
4617       \immediate\write\@auxout{%
4618         \string\bibcite{#2}{#1}%
4619       }%
4620     }%
4621   \fi
4622   \ignorespaces
4623 }
4624 \checkcommand\def\@bibitem#1{%
4625   \item
4626   \if@filesw
4627     \immediate\write\@auxout{%
4628       \string\bibcite{#1}{\the\value{\@listctr}}}%
4629     }%
4630   \fi
4631   \ignorespaces
4632 }
4633 </check>
4634 <*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.

```

4635 \@ifclassloaded{revtex}{%
4636   \Hy@Info{*** compatibility with revtex **** }%
4637   \def\revtex@checking#1#2{%
4638     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname

```

```

4639 \expandafter\def\csname b@#1\endcsname{#2}%
4640 \@SetMaxRnhefLabel{#1}%
4641 \expandafter\let\csname b@#1\endcsname\T@temp
4642 }%

```

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

```

4643 \@ifundefined{CITE}{\def\CITE{\@cite}}{}%
4644 \providecommand*{\@extra@b@citeb}{}%
4645 \def\CITEX[#1]#2{%
4646   \let\@citea\@empty
4647   \leavevmode
4648   \unskip
4649   $^{\%
4650     \scriptstyle
4651     \CITE{%
4652       \@for\@citeb:=#2\do{%
4653         \@citea
4654         \def\@citea{,\penalty\@m\ }%
4655         \edef\@citeb{\expandafter\@firstofone\@citeb}%
4656         \if@filesw
4657           \immediate\write\@auxout{\string\citation{\@citeb}}%
4658         \fi
4659         \@ifundefined{b@\@citeb\extra@b@citeb}{%
4660           \mbox{\reset@font\bfseries ?}%
4661           \G@refundefinedtrue
4662           \@latex@warning{%
4663             Citation ‘\@citeb’ on page \thepage \space undefined%
4664           }%
4665         }{%
4666           {\csname b@\@citeb\@extra@b@citeb\endcsname}%
4667         }%
4668       }%
4669     }{#1}%
4670   }$%
4671 }%

```

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.

```

4672 \def\citex[#1]#2{%
4673   \let\@citea\@empty
4674   \@cite{%
4675     \@for\@citeb:=#2\do{%
4676       \@citea
4677       \def\@citea{,\penalty\@m\ }%
4678       \edef\@citeb{\expandafter\@firstofone\@citeb}%
4679       \if@filesw
4680         \immediate\write\@auxout{\string\citation{\@citeb}}%
4681       \fi
4682       \@ifundefined{b@\@citeb\@extra@b@citeb}{%
4683         \mbox{\reset@font\bfseries ?}%
4684         \G@refundefinedtrue
4685         \@latex@warning{%
4686           Citation ‘\@citeb’ on page \thepage \space undefined%
4687         }%
4688       }{%
4689         \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
4690       }%

```

```

4691     }%
4692   }{#1}%
4693 }%
4694 }{}

```

### 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.

```

4695 \@ifpackageloaded{harvard}{%
4696   \AtBeginDocument{%
4697     \Hy@Info{*** compatibility with harvard **** }%
4698     \Hy@raiselinksfalse
4699     \def\harvardcite#1#2#3#4{%
4700       \global\@namedef{HAR@fn@#1}{\hyper@@link[cite]{}{cite.#1}{#2}}%
4701       \global\@namedef{HAR@an@#1}{\hyper@@link[cite]{}{cite.#1}{#3}}%
4702       \global\@namedef{HAR@yr@#1}{\hyper@@link[cite]{}{cite.#1}{#4}}%
4703       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
4704     }%
4705     \def\HAR@citetoaux#1{%
4706       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
4707       \ifHy@backref
4708         \ifx\@empty\@currentlabel
4709         \else
4710           \@bsphack
4711           \if@filesw
4712             \protected@write\@auxout{}{%
4713               \string\writefile{brf}{%
4714                 \string\backcite{#1}{%
4715                   {\thepage}{\@currentlabel}{\@currentHref}}%
4716             }%
4717           }%
4718         }%
4719       \fi
4720       \@esphack
4721     \fi
4722   \fi
4723 }%
4724 \def\harvarditem{%
4725   \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
4726 }%
4727 \def\@harvarditem[#1]#2#3#4#5\par{%
4728   \item[]%
4729   \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
4730   \if@filesw
4731     \begingroup
4732       \def\protect##1{\string ##1\space}%
4733       \ifthenelse{\equal{#1}{\null}}%
4734         {\def\next{{#4}{#2}{#2}{#3}}}%
4735         {\def\next{{#4}{#2}{#1}{#3}}}%
4736       \immediate\write\@auxout{\string\harvardcite\codeof\next}%
4737     \endgroup

```

```

4738     \fi
4739     \protect\hspace*{-\labelwidth}%
4740     \protect\hspace*{-\labelsep}%
4741     \ignorespaces
4742     #5%
4743     \ifHy@backref
4744         \newblock
4745         \backref{\csname br@#4\endcsname}%
4746     \fi
4747     \par
4748 }%

```

`\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`:

```

4749     \long\def\HAR@checkcitations#1#2#3#4{%
4750         \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
4751         \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
4752             \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
4753             \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
4754                 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
4755                 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
4756                     \else
4757                         \@tempswatrue
4758                     \fi
4759                 \else
4760                     \@tempswatrue
4761                 \fi
4762             \else
4763                 \@tempswatrue
4764             \fi
4765         }%
4766     }%

4767 }{}

```

## 36.2 Package `chicago`

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

```

4768 \ifpackageloaded{chicago}{%

```

`\citeN`

```

4769     \def\citeN{%
4770         \def\@citesep{~1000}%
4771         \def\@cite##1##2{##1}%
4772         \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
4773         \@citedata@opt
4774     }%

```

`\shortciteN`

```

4775     \def\shortciteN{%
4776         \def\@citesep{~1000}%
4777         \def\@cite##1##2{##1}%
4778         \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
4779         \@citedata@opt
4780     }%

```

`\@citedata@opt`

```
4781 \def\@citedata@opt{%
4782   \let\@cite@opt\@empty
4783   \ifnextchar [{%
4784     \@tempswatrue
4785     \@citedatax@opt
4786   }{%
4787     \@tempswafalse
4788     \@citedatax[]%
4789   }%
4790 }%
```

`\@citedatax@opt`

```
4791 \def\@citedatax@opt[#1]{%
4792   \def\@cite@opt{, #1}%
4793   \@citedatax[#{#1}]%
4794 }%

4795 }{}
```

## 37 Page numbers

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

```
4796 \def\@begindvi{%
4797   \unvbox \@begindvibox
4798   \Hy@begindvi
4799   \global\let\@begindvi\Hy@begindvi
4800 }
4801 \def\Hy@begindvi{%
4802   \@hyperfixhead
4803   \HyPL@EveryPage
4804 }
4805 \def\pagenumbering#1{%
4806   \global\c@page \@one
4807   \gdef\thepage{\csname @#1\endcsname\c@page}%
4808 }
```

This is needed for some unremembered reason...

```
4809 \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`.

```
4810 \providecommand*\hyper@pagetransition{}
4811 \providecommand*\hyper@pageduration{}
4812 \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

```
4813 \def\@hyperfixhead{%
4814   \Hy@DistillerDestFix
4815   \ifHy@pageanchor
4816     \ifHy@hypertextnames
4817       \ifHy@plainpages
4818         \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
4819       \else
4820         \begingroup
4821           \let\@number\@firstofone
4822           \Hy@unicodedefalse
4823           \pdfstringdef\@the@H@page{\thepage}%
4824         \endgroup
4825         \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
4826       \fi
4827     \else
4828       \Hy@GlobalStepCount\Hy@pagecounter
4829       \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}%
4830     \fi
4831   \else
4832     \let\Hy@TempPageAnchor\@empty
4833   \fi
4834   \let\H@old@thehead\@thehead
4835   \if~\@thehead~%
4836     \def\H@old@thehead{\hfil}%
4837   \fi
4838   \ifHy@texht
4839     \def\@thehead{}%
4840   \else
4841     \ifHy@seminarslides
4842       \begingroup
4843         \let\leavevmode\relax
4844         \Hy@TempPageAnchor\relax
4845         \hyper@pagetransition
4846         \hyper@pageduration
4847         \hyper@pagehidden
4848       \endgroup
4849     \else
4850       \def\@thehead{%
4851         \Hy@TempPageAnchor\relax
4852         \hyper@pagetransition
4853         \hyper@pageduration
4854         \hyper@pagehidden
4855         \H@old@thehead
4856       }%
4857     \fi
4858   \fi
4859   \ifx\PDF@FinishDoc\@empty
4860   \else
4861     \PDF@FinishDoc
4862     \gdef\PDF@FinishDoc{}%
4863   \fi
4864 }
```

## 37.1 Package fancybox

Fix for fancybox 2000/09/19 v1.3. Several commands are redefined to get \@beginndvi at a better place and putting page anchor and transition macros in \fb@outputpage.

```

4865 \@ifpackageloaded{fancybox}{%
4866   \def\fb@outputpage{%
4867     \begingroup
4868     \catcode'\ =10 %
4869     \let\-\@dischyph
4870     \let\'\@acci
4871     \let\'\@accii
4872     \let\=\@acciii
4873     \if@specialpage
4874       \global\@specialpagefalse\@nameuse{ps@\@specialstyle}%
4875     \fi
4876     \if@twoside
4877       \ifodd\count\z@
4878         \let\@thehead\@oddhead
4879         \let\@thefoot\@oddfoot
4880         \let\@themargin\oddsidemargin
4881       \else
4882         \let\@thehead\@evenhead
4883         \let\@thefoot\@evenfoot
4884         \let\@themargin\evensidemargin
4885       \fi
4886     \fi
4887     \csname reset@font\endcsname
4888     \normalsize
4889     \baselineskip\z@
4890     \lineskip\z@
4891     \let\par\@par
4892     \ifx\this@fancypage\@empty\else
4893       \this@fancypage
4894       \gdef\this@fancypage{}%
4895     \fi
4896     \ifx\the@fancypage\@empty\else
4897       \setbox\@outputbox\hbox{\the@fancypage{\box\@outputbox}}%
4898     \fi
4899     \ifx\fb@rotatepage\@empty\else
4900       \setbox\@outputbox\hbox{\fb@rotatepage{\box\@outputbox}}%
4901     \fi
4902     \setbox\@outputbox\vbox{%
4903       \@tempdima=\wd\@outputbox
4904       \setbox\@tempboxa=\hbox to\@tempdima{%
4905         \let\label\@gobble
4906         \let\index\@gobble
4907         \let\glossary\@gobble
4908         \@thehead
4909       }%
4910       \ht\@tempboxa\headheight
4911       \dp\@tempboxa\z@
4912       \box\@tempboxa
4913       \vskip\headsep
4914       \box\@outputbox
4915       \baselineskip\footskip
4916       \hbox to\@tempdima{%
4917         \let\label\@gobble

```



```

4918         \let\index\@gobble
4919         \let\glossary\@gobble
4920         \@thefoot
4921     }%
4922 }%
4923 \ifx\the@@fancypage\@empty\else
4924     \setbox\@outputbox\hbox{\the@@fancypage{\box\@outputbox}}%
4925 \fi
4926 \setbox\@outputbox\vbox{%
4927     \ifnum\fancyput@flag>-1 \do@fancyput\fi
4928     \@beginndvi
4929     \Hy@TempPageAnchor\relax
4930     \hyper@pagetransition
4931     \hyper@pageduration
4932     \hyper@pagehidden
4933     \vskip\topmargin
4934     \moveright\@themargin\box\@outputbox
4935 }%
4936 \ifx\fb@rotatepage\@empty\else
4937     \setbox\@outputbox\hbox{\lower\ht\@outputbox\box\@outputbox}%
4938     \dp\@outputbox\z@
4939     \wd\@outputbox\z@
4940     \setbox\@outputbox\hbox{\fb@rotatepage{\box\@outputbox}}%
4941     \expandafter\fb@setoffsets\fb@theoffsets
4942 \fi
4943 \let\protect\noexpand
4944 \shipout\box\@outputbox
4945 \global\@colht\textheight
4946 \endgroup
4947 \stepcounter{page}%
4948 \let\firstmark\botmark
4949 }%
4950 \def\fancypage#1#2{%
4951     \def\the@fancypage{#1}%
4952     \def\the@@fancypage{#2}%
4953     \def\@outputpage{\fb@outputpage}%
4954 }%
4955 \def\thisfancypage#1#2{%
4956     \gdef\@outputpage{\fb@outputpage}%
4957     \gdef\this@fancypage{\def\the@fancypage{#1}\def\the@@fancypage{#2}}%
4958 }%
4959 \def\fancyput{%
4960     \def\@outputpage{\fb@outputpage}%
4961     \@ifstar{\@testtrue\@fancyput}{\@testfalse\@fancyput}%
4962 }%
4963 \def\thisfancyput{%
4964     \gdef\@outputpage{\fb@outputpage}%
4965     \@ifstar{\@testtrue\@thisfancyput}{\@testfalse\@thisfancyput}%
4966 }%
4967 \def\LandScape#1{%
4968     \clearpage
4969     \def\fb@@rotatepage{#1}%
4970     \def\@outputpage{\fb@outputpage}%
4971     \@tempdima\textheight
4972     \textheight\textwidth
4973     \textwidth\@tempdima
4974     \UsePageParameters

```

```

4975 }%
4976 }{}

```

## 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.

```

4977 \begingroup\expandafter\expandafter\expandafter\endgroup
4978 \expandafter\ifx\csname chapter\endcsname\relax
4979   \def\toclevel@part{0}%
4980 \else
4981   \def\toclevel@part{-1}%
4982 \fi
4983 \def\toclevel@chapter{0}
4984 \def\toclevel@section{1}
4985 \def\toclevel@subsection{2}
4986 \def\toclevel@subsubsection{3}
4987 \def\toclevel@paragraph{4}
4988 \def\toclevel@subparagraph{5}
4989 \def\toclevel@figure{0}
4990 \def\toclevel@table{0}
4991 \@ifpackageloaded{listings}{%
4992   \providecommand*\theHlstlisting{\thelstlisting}%
4993   \providecommand*\toclevel@lstlisting{0}%
4994 }{}
4995 \@ifpackageloaded{listing}{%
4996   \providecommand*\theHlisting{\thelisting}%
4997   \providecommand*\toclevel@listing{0}%
4998 }{}
4999 \def\addcontentsline#1#2#3{% toc extension, type, tag
5000   \begingroup
5001     \let\label\@gobble
5002     \let\textlatin\@firstofone
5003     \ifx\@currentHref\@empty
5004       \Hy@Warning{%
5005         No destination for bookmark of \string\addcontentsline,%
5006         \MessageBreak destination is added%
5007       }%
5008     \phantomsection
5009   \fi
5010   \expandafter\ifx\csname toclevel@#2\endcsname\relax
5011     \begingroup
5012       \def\Hy@tempa{#1}%
5013       \ifx\Hy@tempa\Hy@bookmarkstype
5014         \Hy@WarningNoLine{bookmark level for unknown #2 defaults to 0}%
5015       \else
5016         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
5017       \fi
5018     \endgroup
5019     \expandafter\gdef\csname toclevel@#2\endcsname{0}%
5020   \fi
5021   \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
5022   \Hy@writebookmark{\csname the#2\endcsname}%
5023     {#3}%
5024     {\@currentHref}%

```

```

5025     {\Hy@toclevel}%
5026     {#1}%
5027     \ifHy@verbose
5028     \def\Hy@tempa{#3}%
5029     \@onelevel@sanitize\Hy@tempa
5030     \typeout{pdfTeX: bookmark at \the\inputlineno: %
5031         {\csname the#2\endcsname}%
5032         {\Hy@tempa}%
5033         {\@currentHref}%
5034         {\Hy@toclevel}%
5035         {#1}%
5036     }%
5037     \fi
5038     \addtocontents{#1}{%
5039         \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
5040     }%
5041 \endgroup
5042 }
5043 \def\contentsline#1#2#3#4{%
5044     \ifx\#4\%
5045         \csname l@#1\endcsname{#2}{#3}%
5046     \else
5047         \ifHy@linktocpage
5048             \csname l@#1\endcsname{#2}{#3}%
5049             \hyper@linkstart{link}{#4}{#3}\hyper@linkend
5050         }%
5051         \else
5052             \csname l@#1\endcsname{%
5053                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
5054             }{#3}%
5055         \fi
5056     \fi
5057 }

5058 \</package>
5059 \<*check>
5060 \checklatex
5061 \checkcommand\def\addcontentsline#1#2#3{%
5062     \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
5063 }
5064 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
5065 \</check>
5066 \<*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.

```

5067 \let\H@definecounter\@definecounter
5068 \def\@definecounter#1{%
5069     \H@definecounter{#1}%
5070     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
5071 }

```

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.

```

5072 \let\H@newctr\@newctr

```

```

5073 \def\@newctr#1[#2]{%
5074   \H@newctr#1[#2]}%
5075   \expandafter\def\csname theH#1\endcsname{%
5076     \csname the\@ifundefined{theH#2}{H}#2\endcsname.\arabic{#1}%
5077   }%
5078 }

```

## 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.

```

5079 \let\Hmake@df@tag@@\make@df@tag@@
5080 \def\make@df@tag@@#1{%
5081   \Hmake@df@tag@@{#1}%
5082   \Hy@GlobalStepCount\Hy@linkcounter
5083   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5084   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5085 }
5086 \let\Hmake@df@tag@@@\make@df@tag@@@
5087 \def\make@df@tag@@@#1{%
5088   \Hmake@df@tag@@@{#1}%
5089   \Hy@GlobalStepCount\Hy@linkcounter
5090   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5091   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5092 }

```

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

```

5093 \ifpackagewith{hyperref}{pdf $\TeX$ }{%
5094   \let\H@seteqlabel\@seteqlabel
5095   \def\@seteqlabel#1{%
5096     \H@seteqlabel{#1}%
5097     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5098     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5099   }%
5100 }{}

```

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.

```

5101 \let\HyOrg@addtoreset\@addtoreset

```

```

5102 \def\@addtoreset#1#2{%
5103   \HyOrg@addtoreset{#1}{#2}%
5104   \expandafter\xdef\csname theH#1\endcsname{%
5105     \expandafter\noexpand
5106       \csname the\ifundefined{theH#2}{#2}\endcsname
5107     .\noexpand\the\noexpand\value{#1}%
5108   }%
5109 }

```

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

```

5110 </package>
5111 <*check>
5112 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
5113 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
5114   \ifundefined{c@#2}{\@nocounterr{#2}}{%
5115     \ifundefined{c@#3}{\@nocnterr{#3}}{%
5116       \@addtoreset{#2}{#3}%
5117       \xp\xdef\csname the#2\endcsname{%
5118         \xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
5119       }%
5120     }%
5121   }%
5122 }%
5123 </check>
5124 <*package>
5125 \ifpackageloaded{amsmath}{%
5126   \ifpackagelater{amsmath}{1999/12/14}{%
5127     \renewcommand*{\numberwithin}[3][\arabic]{%
5128       \ifundefined{c@#2}{\@nocounterr{#2}}{%
5129         \ifundefined{c@#3}{\@nocnterr{#3}}{%
5130           \HyOrg@addtoreset{#2}{#3}%
5131           \xp\xdef\csname the#2\endcsname{%
5132             \xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
5133           }%
5134           \xp\xdef\csname theH#2\endcsname{%
5135             \xp\@nx
5136               \csname the\ifundefined{theH#3}{H#3}\endcsname
5137             .\@nx#1{#2}%
5138           }%
5139         }%
5140       }%
5141     }%
5142   }{%
5143     \Hy@WarningNoLine{%
5144       \string\numberwithin\space of package 'amsmath' %
5145       only fixed\MessageBreak
5146       for version 2000/06/06 v2.12 or newer%
5147     }%
5148   }%
5149 }{}

```

## 41 Included figures

Simply intercept the low level graphics package macro.

```

5150 \ifHy@figures

```

```

5151 \let\Hy@Gin@setfile\Gin@setfile
5152 \def\Gin@setfile#1#2#3{%
5153   \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
5154 }%
5155 \fi
5156 \Hy@DisableOption{hyperfigures}

```

## 42 hyperindex entries

Internal command names are prefixed with \HyInd@.

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

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

```

5157 \ifHy@hyperindex
5158   \def\HyInd@ParenLeft{({}%
5159   \def\HyInd@ParenRight{)}}%
5160   \Hy@nextfalse
5161   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
5162   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
5163   \begingroup
5164     \lccode'\|=\expandafter'\HyInd@EncapChar\relax
5165   \lowercase{\endgroup
5166     \ifHy@next
5167       \let\HyInd@org@wrindex\@wrindex
5168       \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
5169       \def\HyInd@@wrindex#1#2|#3|#4\{\%
5170         \ifx\|#3\%
5171           \HyInd@org@wrindex{#1}{#2|hyperpage}%
5172         \else
5173           \def\Hy@temp@A{#3}%
5174           \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
5175             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
5176             \relax
5177           \HyInd@org@wrindex{#1}{#2|#3}%
5178         \else
5179           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
5180         \fi
5181       \fi
5182     }%
5183   \else
5184     \def\@wrindex#1{\@@wrindex#1||\}%
5185     \def\@@wrindex#1|#2|#3\{\%
5186       \if@files
5187         \ifx\|#2\%
5188           \protected@write\@indexfile{\}%
5189             \string\indexentry{#1|hyperpage}{\thepage}%
5190         }%
5191       \else
5192         \def\Hy@temp@A{#2}%
5193         \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi

```

```

5194         \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
5195         \relax
5196         \protected@write\@indexfile{}\{%
5197             \string\indexentry{#1|#2}{\thepage}%
5198         }%
5199     \else
5200         \protected@write\@indexfile{}\{%
5201             \string\indexentry{#1|#2hyperpage}{\thepage}%
5202         }%
5203     \fi
5204 \fi
5205 \fi
5206 \endgroup
5207 \@esphack
5208 }%
5209 \fi
5210 }%
5211 \fi
5212 \Hy@DisableOption{hyperindex}
5213 \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.

```

5214 \def\hyperpage#1{\@hyperpage#1----\}
5215 \def\@hyperpage#1--#2--#3\{\%
5216     \ifx\#2\%
5217         \@commahyperpage{#1}%
5218     \else
5219         \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
5220     \fi
5221 }
5222 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
5223 \def\@commahyperpage#1, #2,#3\{\%
5224     \ifx\#2\%
5225         \HyInd@pagelink{#1}%
5226     \else
5227         \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
5228     \fi
5229 }

```

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

```

5230 \def\HyInd@pagelink#1{\%
5231     \begingroup
5232     \toks@={}%
5233     \HyInd@removespaces#1 \@nil
5234 \endgroup
5235 }
5236 \def\HyInd@removespaces#1 #2\@nil{\%
5237     \toks@=\expandafter{\the\toks@#1}%
5238     \ifx\#2\%
5239         \edef\x{\the\toks@}%
5240         \ifx\x\@empty
5241             \else
5242                 \hyperlink{page.\the\toks@}{\the\toks@}%
5243             \fi
5244         \else
5245             \Hy@ReturnAfterFi{\%

```

```

5246      \HyInd@removespaces#2\@nil
5247    }%
5248  \fi
5249 }

```

## 43 Compatibility with foiltex

```

5250 \@ifclassloaded{foils}{%
5251   \providecommand*\ext@table{lot}%
5252   \providecommand*\ext@figure{lof}%
5253 }{}

```

## 44 Compatibility with seminar slide package

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

```

5254 \@ifclassloaded{seminar}{%
5255   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}%
5256 }{%
5257   \Hy@seminarslidesfalse
5258 }
5259 \@ifpackageloaded{slidesec}{%
5260   \newcommand\theHslidesection {\arabic{slidesection}}%
5261   \newcommand\theHslidesubsection{%
5262     \theHslidesection.\arabic{slidesubsection}%
5263   }%
5264   \def\slide@heading[#1]#2{%
5265     \H@refstepcounter{slidesection}%
5266     \@addtoreset{slidesubsection}{slidesection}%
5267     \addtocontents{los}{%
5268       \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
5269       {\@SCTR}{slideheading.\theslidesection}%
5270     }%
5271     \def\Hy@tempa{#2}%
5272     \ifx\Hy@tempa\@empty
5273     \else
5274       {%
5275         \edef\@currentlabel{%
5276           \csname p@slidesection\endcsname\theslidesection
5277         }%
5278         \makeslideheading{#2}%
5279       }%
5280     \fi
5281     \gdef\theslideheading{#1}%
5282     \gdef\theslidesubheading{}%
5283     \ifHy@bookmarksnumbered
5284       \def\Hy@slidetitle{\theslidesection\space #1}%
5285     \else
5286       \def\Hy@slidetitle{#1}%
5287     \fi
5288     \ifHy@hypertextnames
5289       \ifHy@naturalnames
5290         \hyper@@anchor{slideheading.\theslidesection}{\relax}%
5291         \Hy@writebookmark
5292           {\theslidesection}%
5293           {\Hy@slidetitle}%

```



```

5294         {slideheading.\theslidesection}%
5295         {1}%
5296         {toc}%
5297     \else
5298         \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
5299         \Hy@writebookmark
5300         {\theslidesection}%
5301         {\Hy@slidetitle}%
5302         {slideheading.\theHslidesection}%
5303         {1}%
5304         {toc}%
5305     \fi
5306 \else
5307     \Hy@GlobalStepCount\Hy@linkcounter
5308     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
5309     \Hy@writebookmark
5310     {\theslidesection}%
5311     {\Hy@slidetitle}%
5312     {slideheading.\the\Hy@linkcounter}%
5313     {1}%
5314     {toc}%
5315 \fi
5316 }%
5317 \def\slide@subheading[#1]#2{%
5318     \H@refstepcounter{slidesubsection}%
5319     \addtocontents{los}{%
5320         \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
5321         {\@SCTR}{slideheading.\theslidesubsection}%
5322     }%
5323     \def\Hy@tempa{#2}%
5324     \ifx\Hy@tempa\@empty
5325     \else
5326         {%
5327             \edef\@currentlabel{%
5328                 \csname p@slidesubsection\endcsname\theslidesubsection
5329             }%
5330             \makeslidesubheading{#2}%
5331         }%
5332     \fi
5333     \gdef\theslidesubheading{#1}%
5334     \ifHy@bookmarksnumbered
5335         \def\Hy@slidetitle{\theslidesubsection\space #1}%
5336     \else
5337         \def\Hy@slidetitle{#1}%
5338     \fi
5339     \ifHy@hypertextnames
5340         \ifHy@naturalnames
5341             \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
5342             \Hy@writebookmark
5343             {\theslidesubsection}%
5344             {\Hy@slidetitle}%
5345             {slideheading.\theslidesubsection}%
5346             {2}%
5347             {toc}%
5348         \else
5349             \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
5350             \Hy@writebookmark

```

```

5351         {\theslidesubsection}%
5352         {\Hy@slidetitle}%
5353         {slideheading.\theHslidesubsection}%
5354         {2}%
5355         {toc}%
5356     \fi
5357 \else
5358     \Hy@GlobalStepCount\Hy@linkcounter
5359     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
5360     \Hy@writebookmark
5361         {\theslidesubsection}%
5362         {\Hy@slidetitle}%
5363         {slideheading.\the\Hy@linkcounter}%
5364         {1}%
5365         {toc}%
5366 \fi
5367 }%
5368 \providecommand*{\listslidenam}{List of Slides}%
5369 \def\listofslides{%
5370     \section*{%
5371         \listslidenam
5372         \@mkboth{%
5373             \expandafter\MakeUppercase\listslidenam
5374         }{%
5375             \expandafter\MakeUppercase\listslidenam
5376         }%
5377     }%
5378     \def\l@slide##1##2##3##4{%
5379         \slide@undottedcline{%
5380             \slidenumberline{##3}{\hyperlink{##4}{##2}}%
5381         }{%
5382         }%
5383         \let\l@subslide\l@slide
5384         \@startlos
5385     }%
5386     \def\slide@contents{%
5387         \def\l@slide##1##2##3##4{%
5388             \slide@cline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
5389         }%
5390         \let\l@subslide\@gobblefour
5391         \@startlos
5392     }%
5393     \def\Slide@contents{%
5394         \def\l@slide##1##2##3##4{%
5395             \ifcase\lslide@flag
5396                 \message{##1 ** \the\c@slide@section}%
5397                 \ifnum##1>\c@slide@section
5398                     \def\lslide@flag{1}%
5399                 {%
5400                     \large
5401                     \slide@cline{%
5402                         \slidenumberline{$\Rightarrow\bullet$}%
5403                         {\hyperlink{##4}{##2}}%
5404                     }{##3}%
5405                 }%
5406             \else
5407                 {%

```

```

5408         \large
5409         \slide@ccline{%
5410             \slidenumberline{$\surd\;\bullet$}%
5411             {\hyperlink{##4}{##2}}%
5412         }{##3}%
5413     }%
5414 \fi
5415 \or
5416 \def\lslide@flag{2}%
5417 {%
5418     \large
5419     \slide@ccline{%
5420         \slidenumberline{$\bullet$}%
5421         {\hyperlink{##4}{##2}}%
5422     }{##3}%
5423 }%
5424 \or
5425 {%
5426     \large
5427     \slide@ccline{%
5428         \slidenumberline{$\bullet$}%
5429         {\hyperlink{##4}{##2}}%
5430     }{##3}%
5431 }%
5432 \fi
5433 }%
5434 \def\l@subslide##1##2##3##4{%
5435     \ifnum\lslide@flag=1 %
5436         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
5437     \fi
5438 }%
5439 \def\lslide@flag{0}%
5440 \@startlos
5441 }%
5442 }{}

```

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.)

```

5443 \ifHy@texht
5444 \expandafter\endinput
5445 \fi
5446 \let\real@setref\@setref
5447 \def\@setref#1#2#3{% csname, extract group, refname
5448     \ifx#1\relax
5449         \protect\G@refundefinedtrue
5450         \nfss@text{\reset@font\bfseries ??}%
5451         \@latex@warning{%
5452             Reference ‘#3’ on page \thepage \space undefined%
5453         }%
5454     \else
5455         \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
5456     \fi
5457 }

```

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

```

5458 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%

```

```

5459 \begingroup
5460   \toks0={\hyper@@link{#5}{#4}}%
5461   \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
5462   \edef\x{\endgroup
5463     \the\toks0 {\the\toks1 }%
5464   }%
5465   \x
5466 }
5467 \def\@pagesetref#1#2#3{% csname, extract macro, ref
5468   \ifx#1\relax
5469     \protect\G@refundefinedtrue
5470     \nfss@text{\reset@font\bfseries ??}%
5471     \@latex@warning{%
5472       Reference ‘#3’ on page \thepage \space undefined%
5473     }%
5474   \else
5475     \protect\hyper@@link
5476     {\expandafter\@fifthoffive#1}%
5477     {page.\expandafter\@secondoffive#1}%
5478     {\expandafter\@secondoffive#1}%
5479   \fi
5480 }
5481 </package>
5482 <*check>
5483 \checklatex
5484 \checkcommand\def\@setref#1#2#3{%
5485   \ifx#1\relax
5486     \protect\G@refundefinedtrue
5487     \nfss@text{\reset@font\bfseries ??}%
5488     \@latex@warning{%
5489       Reference ‘#3’ on page \thepage\space undefined%
5490     }%
5491   \else
5492     \expandafter#2#1\relax
5493   \fi
5494 }
5495 </check>
5496 <*package>

```

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

```

5497 \def\HyRef@StarSetRef#1{%
5498   \begingroup
5499   \Hy@safe@activetrue
5500   \edef\x{#1}%
5501   \@onelevel@sanitize\x
5502   \edef\x{\endgroup
5503     \noexpand\HyRef@@StarSetRef
5504     \expandafter\noexpand\csname r@\x\endcsname{\x}%
5505   }%
5506   \x
5507 }
5508 \def\HyRef@@StarSetRef#1#2#3{%
5509   \ifx#1\@undefined
5510     \let#1\relax
5511   \fi
5512   \real@setref#1#3{#2}%

```

```

5513 }
5514 \def\@refstar#1{%
5515   \HyRef@StarSetRef{#1}\@firstoffive
5516 }
5517 \def\@pagerefstar#1{%
5518   \HyRef@StarSetRef{#1}\@secondoffive
5519 }
5520 \AtBeginDocument{%
5521   \ifpackageloaded{varioref}{%
5522     \def\@Refstar#1{%
5523       \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
5524     }%
5525     \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
5526       \MakeUppercase#1%
5527     }%
5528     \DeclareRobustCommand*\Ref{%
5529       \@ifstar\@Refstar\HyRef@Ref
5530     }%
5531     \def\HyRef@Ref#1{%
5532       \hyperref[#{1}]{\Ref*{#1}}%
5533     }%
5534     \def\Vr@f#1{%
5535       \leavevmode\unskip\vref@space
5536       \hyperref[#{1}]{%
5537         \Ref*{#1}%
5538         \let\vref@space\nobreakspace
5539         \@vpageref[\unskip]{#1}%
5540       }%
5541     }%
5542     \def\vr@f#1{%
5543       \leavevmode\unskip\vref@space
5544       \begingroup
5545         \let\T@pageref\@pagerefstar
5546         \hyperref[#{1}]{%
5547           \ref*{#1}%
5548           \vpageref[\unskip]{#1}%
5549         }%
5550       \endgroup
5551     }%
5552   }{}%
5553 }
5554 \DeclareRobustCommand*\autopageref{%
5555   \@ifstar{%
5556     \HyRef@autopagerefname\pageref*%
5557   }\HyRef@autopageref
5558 }
5559 \def\HyRef@autopageref#1{%
5560   \hyperref[#{1}]{\HyRef@autopagerefname\pageref*{#1}}%
5561 }
5562 \def\HyRef@autopagerefname{%
5563   \@ifundefined{pageautorefname}{%
5564     \@ifundefined{pagename}{%
5565       \Hy@Warning{No autoref name for 'page'}%
5566     }{%
5567       \pagename\nobreakspace
5568     }%
5569   }{}%

```

```

5570 \pageautorefname\nobreakspace
5571 }%
5572 }
5573 \DeclareRobustCommand*\autoref}{%
5574 \ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@link}%
5575 }
5576 \def\HyRef@autoref#1#2{%
5577 \begingroup
5578 \Hy@safe@activetrue
5579 \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
5580 \endgroup
5581 }
5582 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
5583 \HyRef@ShowKeysRef{#2}%
5584 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
5585 \edef\HyRef@thisref{\expandafter\@fourthoffive#1\@empty\@empty\@empty}%
5586 \expandafter\HyRef@testreftype\HyRef@thisref.\.%
5587 \Hy@safe@activesfalse
5588 #3{%
5589 \expandafter\@fifthoffive#1\@empty\@empty\@empty
5590 }{%
5591 \expandafter\@fourthoffive#1\@empty\@empty\@empty
5592 }{%
5593 \HyRef@currentHtag
5594 \expandafter\@firstoffive#1\@empty\@empty\@empty
5595 \null
5596 }%
5597 \else
5598 \protect\G@refundefinedtrue
5599 \nfss@text{\reset@font\bfseries ??}%
5600 \@latex@warning{%
5601 Reference ‘#2’ on page \thepage\space undefined%
5602 }%
5603 \fi
5604 }
5605 \def\HyRef@testreftype#1.#2\{\%
5606 \@ifundefined{#1autorefname}{%
5607 \@ifundefined{#1name}{%
5608 \HyRef@StripStar#1\*\*\@nil{#1}%
5609 \@ifundefined{\HyRef@name autorefname}{%
5610 \@ifundefined{\HyRef@name name}{%
5611 \def\HyRef@currentHtag{%
5612 \Hy@Warning{No autoref name for ‘#1’}%
5613 }{%
5614 \edef\HyRef@currentHtag{%
5615 \expandafter\noexpand\csname\HyRef@name name\endcsname
5616 \noexpand~%
5617 }%
5618 }%
5619 }{%
5620 \edef\HyRef@currentHtag{%
5621 \expandafter\noexpand\csname\HyRef@name autorefname\endcsname
5622 \noexpand~%
5623 }%
5624 }%
5625 }{%
5626 \edef\HyRef@currentHtag{%

```

```

5627         \expandafter\noexpand\csname#1name\endcsname
5628         \noexpand~%
5629     }%
5630 }%
5631 }{%
5632     \edef\HyRef@currentHtag{%
5633         \expandafter\noexpand\csname#1autorefname\endcsname
5634         \noexpand~%
5635     }%
5636 }%
5637 }
5638 \def\HyRef@StripStar#1*\#2\@nil#3{%
5639     \def\HyRef@name{#2}%
5640     \ifx\HyRef@name\HyRef@CaseStar
5641         \def\HyRef@name{#1}%
5642     \else
5643         \def\HyRef@name{#3}%
5644     \fi
5645 }
5646 \def\HyRef@CaseStar{*\\}
5647 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

5648 \let\HyRef@ShowKeysRef\@gobble
5649 \def\HyRef@ShowKeysInit{%
5650     \begingroup\expandafter\expandafter\expandafter\endgroup
5651     \expandafter\ifx\csname SK@@label\endcsname\relax
5652     \else
5653         \ifx\SK@ref\@empty
5654         \else
5655             \def\HyRef@ShowKeysRef{%
5656                 \SK@\SK@@ref
5657             }%
5658         \fi
5659     \fi
5660 }
5661 \@ifpackageloaded{showkeys}{%
5662     \HyRef@ShowKeysInit
5663 }{%
5664     \AtBeginDocument{%
5665         \@ifpackageloaded{showkeys}{%
5666             \HyRef@ShowKeysInit
5667         }{%
5668         }%
5669     }%

```

Defaults for the names that \autoref uses.

```

5670 \providecommand*\AMSautorefname{\equationautorefname}
5671 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
5672 \providecommand*\Itemautorefname{\itemautorefname}
5673 \providecommand*\itemautorefname{item}
5674 \providecommand*\equationautorefname{Equation}
5675 \providecommand*\footnoteautorefname{footnote}
5676 \providecommand*\itemautorefname{item}
5677 \providecommand*\figureautorefname{Figure}
5678 \providecommand*\tableautorefname{Table}

```

```

5679 \providecommand*\partautorefname{Part}
5680 \providecommand*\appendixautorefname{Appendix}
5681 \providecommand*\chapterautorefname{chapter}
5682 \providecommand*\sectionautorefname{section}
5683 \providecommand*\subsectionautorefname{subsection}
5684 \providecommand*\subsubsectionautorefname{subsubsection}
5685 \providecommand*\paragraphautorefname{paragraph}
5686 \providecommand*\subparagraphautorefname{subparagraph}
5687 \providecommand*\FancyVerbLineautorefname{line}
5688 \providecommand*\theoremautorefname{Theorem}
5689 \providecommand*\pageautorefname{page}
5690 \end{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`.

```

5691 \def\Hy@pstringdef#1#2{%
5692 \begin{group}\expandafter\expandafter\expandafter\end{group}
5693 \expandafter\ifx\csname pdfescapestring\endcsname\relax
5694 \begin{group}
5695 \catcode'\| = 0 %
5696 \@makeother\| %
5697 \@firstofone{ \end{group}
5698 \def\Hy@pstringdef#1#2{%
5699 \edef#1{#2}%
5700 \@onelevel@sanitize#1%
5701 \edef#1{\expandafter\Hy@ExchangeBackslash#1\|@nil}%
5702 \edef#1{\expandafter\Hy@ExchangeLeftParenthesis#1(|@nil}%
5703 \edef#1{\expandafter\Hy@ExchangeRightParenthesis#1|@nil}%
5704 }%
5705 \def\Hy@ExchangeBackslash#1#2|@nil{%
5706 #1%
5707 \ifx|#2|\| %
5708 \else
5709 \| %
5710 \Hy@ReturnAfterFi{%
5711 \Hy@ExchangeBackslash#2|@nil
5712 }%
5713 \fi
5714 }%
5715 }%
5716 \def\Hy@ExchangeLeftParenthesis#1(#2@nil{%
5717 #1%
5718 \ifx\#2\| %
5719 \else
5720 \@backslashchar(%
5721 \Hy@ReturnAfterFi{%
5722 \Hy@ExchangeLeftParenthesis#2@nil

```



```

5723     }%
5724     \fi
5725 }%
5726 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
5727     #1%
5728     \ifx\#2\%
5729     \else
5730     \@backslashchar)%
5731     \Hy@ReturnAfterFi{%
5732     \Hy@ExchangeRightParenthesis#2\@nil
5733     }%
5734     \fi
5735 }%
5736 \else
5737 \def\Hy@pstringdef#1#2{%
5738     \edef#1{\pdfescapestring{#2}}}%
5739 }%
5740 \fi
5741 </pdfTeX | dvipdfm | vTeX | pdfmarkbase | dviwindo>

```

## 45.2 pdfTeX

```
5742 < *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:

```

5743 \def\setpdflinkmargin#1{\pdflinkmargin#1}
5744 \ifx\pdfstartlink\undefined% less than version 14
5745     \let\pdfstartlink\pdfannotlink
5746     \let\pdflinkmargin\@tempdima
5747     \let\pdfxform\pdfform
5748     \let\pdflastxform\pdflastform
5749     \let\pdfrefxform\pdfrefform
5750 \else
5751     \pdflinkmargin1pt %
5752 \fi

```

First set up the default linking

```
5753 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```

5754 \def\new@pdflink#1{%
5755     \ifHy@verbose
5756         \typeout{pdfTeX: define anchor at line \the\inputlineno: #1}%
5757     \fi
5758     \Hy@SaveLastskip
5759     \Hy@pstringdef\Hy@pstringDest{#1}%
5760     \Hy@DestName\Hy@pstringDest\@pdfview
5761     \Hy@RestoreLastskip
5762 }
5763 \let\pdf@endanchor\@empty

```

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

```

5764 \def\Hy@DestName#1#2{%
5765     \pdfdest name{#1}#2\relax
5766 }

```

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.

```

5767 \providecommand*\pdfborder{0 0 1}
5768 \providecommand*\pdfborderstyle{}
5769 \def\Hy@undefinedname{UNDEFINED}
5770 \def\find@pdflink#1#2{%
5771   \leavevmode
5772   \protected@edef\Hy@testname{#2}%
5773   \ifx\Hy@testname\empty
5774     \let\Hy@testname\Hy@undefinedname
5775   \else
5776     \Hy@pstringdef\Hy@testname\Hy@testname
5777   \fi
5778   \Hy@StartlinkName{%
5779     \Hy@setpdfborder
5780     \ifx\@pdfhighlight\empty
5781       \else
5782         /H\@pdfhighlight
5783       \fi
5784       \ifx\CurrentBorderColor\relax
5785       \else
5786         /C[\CurrentBorderColor]%
5787       \fi
5788   }\Hy@testname
5789   \expandafter\Hy@colorlink\csname @#1color\endcsname
5790 }
5791 \def\Hy@StartlinkName#1#2{%
5792   \pdfstartlink attr{#1}goto name{#2}\relax
5793 }
5794 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
5795 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
5796 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
5797 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
5798 \def\hyper@linkstart#1#2{%
5799   \ifundefined{#@1bordercolor}{%
5800     \let\CurrentBorderColor\relax
5801   }{%
5802     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
5803   }%
5804   \find@pdflink{#1}{#2}%
5805 }
5806 \def\hyper@linkend{\close@pdflink}
5807 \def\hyper@link#1#2#3{%
5808   \ifundefined{#@1bordercolor}{%
5809     \let\CurrentBorderColor\relax
5810   }{%
5811     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
5812   }%
5813   \find@pdflink{#1}{#2}#3\close@pdflink
5814 }
5815 \let\CurrentBorderColor\@linkbordercolor
5816 \def\hyper@linkurl#1#2{%
5817   \beginngroup
5818     \Hy@pstringdef\Hy@pstringURI{#2}%
5819     \hyper@chars

```

```

5820 \leavevmode
5821 \pdfstartlink
5822 attr{%
5823   \Hy@setpdfborder
5824   \ifx\@pdfhighlight\@empty
5825   \else
5826     /H\@pdfhighlight
5827   \fi
5828   \ifx\@urlbordercolor\relax
5829   \else
5830     /C[\@urlbordercolor]%
5831   \fi
5832 }%
5833 user{%
5834   /Subtype/Link%
5835   /A<<%
5836     /Type/Action%
5837     /S/URI%
5838     /URI(\Hy@pstringURI)%
5839   >>%
5840 }%
5841 \relax
5842 \Hy@colorlink\@urlcolor#1%
5843 \close@pdflink
5844 \endgroup
5845 }
5846 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
5847 \begingroup
5848   \Hy@pstringdef\Hy@pstringF{#2}%
5849   \Hy@pstringdef\Hy@pstringD{#3}%
5850 \leavevmode
5851 \pdfstartlink
5852 attr{%
5853   \Hy@setpdfborder
5854   \ifx\@pdfhighlight\@empty
5855   \else
5856     /H\@pdfhighlight
5857   \fi
5858   \ifx\@filebordercolor\relax
5859   \else
5860     /C[\@filebordercolor]%
5861   \fi
5862 }%
5863 user {%
5864   /Subtype/Link%
5865   /A<<%
5866     /F(\Hy@pstringF)%
5867     /S/GoToR%
5868     \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}

5869         \ifx\#3\%
5870             /D[0 \@pdfstartview]%
5871         \else
5872             /D(\Hy@pstringD)%
5873         \fi
5874     >>%
5875 }%
5876 \relax
5877 \Hy@colorlink\@filecolor#1%
5878 \close@pdflink
5879 \endgroup
5880 }
5881 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
5882 \begingroup
5883 \Hy@pstringdef\Hy@pstringF{#1}%
5884 \Hy@pstringdef\Hy@pstringP{#3}%
5885 \leavevmode
5886 \pdfstartlink
5887 attr{%
5888     \Hy@setpdfborder
5889     \ifx\@pdfhighlight\@empty
5890     \else
5891         /H\@pdfhighlight
5892     \fi
5893     \ifx\@runbordercolor\relax
5894     \else
5895         /C[\@runbordercolor]%
5896     \fi
5897 }%
5898 user {%
5899     /Subtype/Link%
5900     /A<<%
5901         /F(\Hy@pstringF)%
5902         /S/Launch%
5903         \ifHy@newwindow /NewWindow true\fi
5904         \ifx\#3\%
5905         \else
5906             /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
5907         \fi
5908     >>%
5909 }%
5910 \relax
5911 \Hy@colorlink\@runcolor#2%
5912 \close@pdflink
5913 \endgroup
5914 }

\@pdfproducer

5915 \ifx\@pdfproducer\relax
5916 \def\@pdfproducer{pdfTeX}%
5917 \ifx\eTeXversion\@undefined
5918 \else
5919     \ifx\eTeXversion\relax
5920     \else
5921         \ifnum\eTeXversion>0 %

```

```

5922         \def\@pdfproducer{pdfTeX}%
5923     \fi
5924 \fi
5925 \fi
5926 \ifx\pdfTeXversion\@undefined
5927 \else
5928     \ifnum\pdfTeXversion<100 %
5929         \edef\@pdfproducer{%
5930             \@pdfproducer
5931             \the\pdfTeXversion.\pdfTeXrevision
5932         }%
5933     \else
5934         \ifnum\pdfTeXversion<130 %
5935             \edef\@pdfproducer{%
5936                 \@pdfproducer-
5937                 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
5938                 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
5939                 \pdfTeXrevision
5940             }%
5941         \else
5942             \ifnum\pdfTeXversion<140 %
5943             \else
5944                 \def\@pdfproducer{pdfTeX}%
5945             \fi
5946             \edef\@pdfproducer{%
5947                 \@pdfproducer-
5948                 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
5949                 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
5950                 \pdfTeXrevision
5951             }%
5952         \fi
5953     \fi
5954 \fi
5955 \fi

```

\PDF@SetupDox

```

5956 \def\PDF@SetupDoc{%
5957     \ifx\@pdfpagescrop\@empty
5958     \else
5959         \edef\process@me{%
5960             \pdfpagesattr={%
5961                 /CropBox[\@pdfpagescrop]%
5962                 \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
5963                 \else
5964                     ^^J\the\pdfpagesattr
5965                 \fi
5966             }%
5967         }%
5968         \process@me
5969     \fi
5970     \Hy@pstringdef\Hy@pstringB{\@baseurl}%
5971     \pdfcatalog{%
5972         /PageMode/\@pdfpagemode
5973         \ifx\@baseurl\@empty
5974         \else
5975             /URI<</Base(\Hy@pstringB)>>%
5976         \fi

```

```

5977 }%
5978 \ifx\@pdfstartview\@empty
5979 \else
5980   openaction goto page \@pdfstartpage {\@pdfstartview}%
5981 \fi
5982 \edef\Hy@temp{%
5983   \ifHy@toolbar\else /HideToolbar true\fi
5984   \ifHy@menubar\else /HideMenubar true\fi
5985   \ifHy@windowui\else /HideWindowUI true\fi
5986   \ifHy@fitwindow /FitWindow true\fi
5987   \ifHy@centerwindow /CenterWindow true\fi
5988   \ifHy@displaydoctitle /DisplayDocTitle true\fi
5989   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
5990   \Hy@UseNameKey{Direction}\@pdfdirection
5991   \Hy@UseNameKey{ViewArea}\@pdfviewarea
5992   \Hy@UseNameKey{ViewClip}\@pdfviewclip
5993   \Hy@UseNameKey{PrintArea}\@pdfprintarea
5994   \Hy@UseNameKey{PrintClip}\@pdfprintclip
5995   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
5996   \Hy@UseNameKey{Duplex}\@pdfduplex
5997   \ifx\@pdfpicktraybypdfsize\@empty
5998   \else
5999     /PickTrayByPDFSize \@pdfpicktraybypdfsize
6000   \fi
6001   \ifx\@pdfprintpagerange\@empty
6002   \else
6003     /PrintPageRange[\@pdfprintpagerange]%
6004   \fi
6005   \ifx\@pdfnumcopies\@empty
6006   \else
6007     /NumCopies \@pdfnumcopies
6008   \fi
6009 }%
6010 \pdfcatalog{%
6011   \ifx\Hy@temp\@empty
6012   \else
6013     /ViewerPreferences<<\Hy@temp>>%
6014   \fi
6015   \Hy@UseNameKey{PageLayout}\@pdfpagelayout
6016   \ifx\@pdflang\@empty
6017   \else
6018     /Lang(\@pdflang)%
6019   \fi
6020 }%
6021 }

```

\PDF@FinishDoc

```

6022 \def\PDF@FinishDoc{%
6023   \Hy@UseMaketitleInfos
6024   \pdfinfo{%
6025     /Author(\@pdfauthor)%
6026     /Title(\@pdftitle)%
6027     /Subject(\@pdfsubject)%
6028     /Creator(\@pdfcreator)%
6029     \ifx\@pdfcreationdate\@empty
6030     \else
6031       /CreationDate(\@pdfcreationdate)%

```

```

6032 \fi
6033 \ifx\@pdfmoddate\@empty
6034 \else
6035 /ModDate(\@pdfmoddate)%
6036 \fi
6037 \ifx\@pdfproducer\relax
6038 \else
6039 /Producer(\@pdfproducer)%
6040 \fi
6041 /Keywords(\@pdfkeywords)%
6042 }%
6043 \Hy@DisableOption{pdfauthor}%
6044 \Hy@DisableOption{pdftitle}%
6045 \Hy@DisableOption{pdfsubject}%
6046 \Hy@DisableOption{pdfcreator}%
6047 \Hy@DisableOption{pdfcreationdate}%
6048 \Hy@DisableOption{pdfmoddate}%
6049 \Hy@DisableOption{pdfproducer}%
6050 \Hy@DisableOption{pdfkeywords}%
6051 }

```

`\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`.

```

6052 \def\hyper@pagetransition{%
6053 \ifx\@pdfpagetransition\relax
6054 \else
6055 \expandafter\Hy@RemoveTransPageAttr\the\pdfpageattr^^J/Trans{}}>>\END
6056 \ifx\@pdfpagetransition\@empty
6057 \else
6058 \edef\@processme{%
6059 \global\pdfpageattr{%
6060 \the\pdfpageattr
6061 ^^J/Trans << /S /\@pdfpagetransition\space >>%
6062 }%
6063 }%
6064 \@processme
6065 \fi
6066 \fi
6067 }

```

`\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.

```

6068 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
6069 \ifx\#2\%
6070 \global\pdfpageattr{#1}%
6071 \else
6072 \Hy@RemoveTransPageAttr#1#4\END
6073 \fi
6074 }

```

`\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`.

```

6075 \def\hyper@pageduration{%
6076   \ifx\@pdfpageduration\relax
6077   \else
6078     \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
6079     \ifx\@pdfpageduration\@empty
6080     \else
6081       \edef\@processme{%
6082         \global\pdfpageattr{%
6083           \the\pdfpageattr
6084             ^^J/Dur \@pdfpageduration\space
6085         }%
6086       }%
6087       \@processme
6088     \fi
6089   \fi
6090 }

```

**\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.

```

6091 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
6092   \ifx\#2\%
6093     \global\pdfpageattr{#1}%
6094   \else
6095     \Hy@RemoveDurPageAttr#1#4\END
6096   \fi
6097 }

```

**\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).

```

6098 \def\hyper@pagehidden{%
6099   \ifHy@useHidKey
6100     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
6101     \ifHy@pdfpagehidden
6102       \edef\@processme{%
6103         \global\pdfpageattr{%
6104           \the\pdfpageattr
6105             ^^J/Hid true % SPACE
6106         }%
6107       }%
6108       \@processme
6109     \fi
6110   \fi
6111 }

```

**\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.

```

6112 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
6113   \ifx\#2\%
6114     \global\pdfpageattr{#1}%
6115   \else
6116     \Hy@RemoveHidPageAttr#1#4\END

```



```

6117 \fi
6118 }

```

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.

```

6119 \pdfoutput=1
6120 \pdfcompresslevel=9
6121 \AtBeginDocument{%
6122   \ifHy@setpagesize
6123     \expandafter\@firstofone
6124   \else
6125     \expandafter\@gobble
6126   \fi
6127   {%
6128     \@ifclassloaded{seminar}{%
6129       \setlength{\pdfhorigin}{1truein}%
6130       \setlength{\pdfvorigin}{1truein}%
6131     \ifportrait
6132       \ifdim\paperwidth=\z@
6133       \else
6134         \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
6135       \fi
6136       \ifdim\paperheight=\z@
6137       \else
6138         \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
6139       \fi
6140     \else
6141       \ifdim\paperheight=\z@
6142       \else
6143         \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
6144       \fi
6145       \ifdim\paperwidth=\z@
6146       \else
6147         \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
6148       \fi
6149     \fi
6150   }{%
6151     \@ifundefined{stockwidth}{%
6152       \ifdim\paperwidth=\z@
6153       \else
6154         \setlength{\pdfpagewidth}{\paperwidth}%
6155       \fi
6156       \ifdim\paperheight=\z@
6157       \else
6158         \setlength{\pdfpageheight}{\paperheight}%
6159       \fi
6160     }{%
6161       \ifdim\stockwidth=\z@
6162       \else
6163         \setlength{\pdfpagewidth}{\stockwidth}%
6164       \fi
6165       \ifdim\stockheight=\z@
6166       \else
6167         \setlength{\pdfpageheight}{\stockheight}%
6168       \fi
6169     }%
6170   }%

```

```

6171 }%
6172 \Hy@DisableOption{setpagesize}%
6173 }
6174 \def\Acrobatmenu#1#2{%
6175 \leavevmode
6176 \pdfstartlink
6177 attr{%
6178 \Hy@setpdfborder
6179 \ifx\@pdfhighlight\@empty
6180 \else
6181 /H\@pdfhighlight
6182 \fi
6183 \ifx\@menubordercolor\relax
6184 \else
6185 /C[\@menubordercolor]%
6186 \fi
6187 }%
6188 user{%
6189 /Subtype/Link%
6190 /A<<%
6191 /S/Named/N/#1%
6192 >>%
6193 }%
6194 \relax
6195 \Hy@colorlink\@menucolor#2\close@pdflink
6196 }
6197 </pdfTeX>
6198 <*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.

```

6199 \def\PDF@FinishDoc{}
6200 \def\PDF@SetupDoc{%
6201   \ifx\@baseurl\@empty
6202   \else
6203     \special{html:<base href="\@baseurl">}%
6204   \fi
6205 }
6206 \def\hyper@anchor#1{%
6207   \Hy@SaveLastskip
6208   \begingroup
6209     \let\protect=\string
6210     \hyper@chars
6211     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
6212   \endgroup
6213   \Hy@activeanchortrue
6214   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6215   \special{html:</a>}%
6216   \Hy@activeanchorfalse
6217   \Hy@RestoreLastskip
6218 }
6219 \def\hyper@anchorstart#1{%
6220   \Hy@SaveLastskip
6221   \begingroup
6222     \hyper@chars
6223     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
6224   \endgroup
6225   \Hy@activeanchortrue
6226 }
6227 \def\hyper@anchorend{%
6228   \special{html:</a>}%
6229   \Hy@activeanchorfalse
6230   \Hy@RestoreLastskip
6231 }
6232 \def\@urlltype{url}
6233 \def\hyper@linkstart#1#2{%
6234   \expandafter\Hy@colorlink\csname @#1color\endcsname
6235   \def\Hy@tempa{#1}%
6236   \ifx\Hy@tempa\@urlltype
6237     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
6238   \else
6239     \begingroup
6240       \hyper@chars
6241       \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
6242     \endgroup
6243   \fi
6244 }
6245 \def\hyper@linkend{%
6246   \special{html:</a>}%
6247   \Hy@endcolorlink
6248 }
6249 \def\hyper@linkfile#1#2#3{%
6250   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%

```

```

6251 }
6252 \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.

```

6253 \leavevmode
6254 \ifHy@raiselinks
6255 \setbox\@tempboxa=\color@hbox #1\color@endbox
6256 \@linkdim\dp\@tempboxa
6257 \lower\@linkdim\hbox{%
6258 \hyper@chars
6259 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
6260 }%
6261 \Hy@colorlink\@urlcolor#1%
6262 \@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).

```

6263 \advance\@linkdim by -6.5\p@
6264 \raise\@linkdim\hbox{\special{html:</a>}}%
6265 \Hy@endcolorlink
6266 \else
6267 \begingroup
6268 \hyper@chars
6269 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
6270 \Hy@colorlink\@urlcolor#1%
6271 \special{html:</a>}}%
6272 \Hy@endcolorlink
6273 \endgroup
6274 \fi
6275 }
6276 \def\hyper@link#1#2#3{%
6277 \hyper@linkurl{#3}{\##2}%
6278 }
6279 \def\hyper@image#1#2{%
6280 \begingroup
6281 \hyper@chars
6282 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
6283 \endgroup
6284 }
6285 \end{hypertex}
6286 \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.

```

6287 \providecommand*{\wwwbrowser{c:\string\netscape\string\netscape}
6288 \def\hyper@anchor#1{%
6289   \Hy@SaveLastskip
6290   \begingroup
6291     \let\protect=\string
6292     \special{mark: #1}%
6293   \endgroup
6294   \Hy@activeanchortrue
6295   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6296   \Hy@activeanchorfalse
6297   \Hy@RestoreLastskip
6298 }
6299 \def\hyper@anchorstart#1{%
6300   \Hy@SaveLastskip
6301   \special{mark: #1}%
6302   \Hy@activeanchortrue
6303 }
6304 \def\hyper@anchorend{%
6305   \Hy@activeanchorfalse
6306   \Hy@RestoreLastskip
6307 }
6308 \def\hyper@linkstart#1#2{%
6309   \expandafter\Hy@colorlink\csname @#1color\endcsname
6310   \special{button: %
6311     10000000 %
6312     \number\baselineskip\space
6313     #2%
6314   }%
6315 }
6316 \def\hyper@linkend{%
6317   \Hy@endcolorlink
6318 }
6319 \def\hyper@link#1#2#3{%
6320   \setbox\@tempboxa=\color@hbox #3\color@endbox
6321   \leavevmode
6322   \ifHy@raiselinks
6323     \@linkdim\dp\@tempboxa
6324     \lower\@linkdim\hbox{%
6325       \special{button: %
6326         \number\wd\@tempboxa\space
6327         \number\ht\@tempboxa\space
6328         #2%
6329       }%
6330       \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
6331       \Hy@endcolorlink
6332     }%
6333     \@linkdim\ht\@tempboxa
6334     \advance\@linkdim by -6.5\p@
6335     \raise\@linkdim\hbox{}%
6336   \else
6337     \special{button: %
6338       \number\wd\@tempboxa\space
6339       \number\ht\@tempboxa\space
6340       #2%
6341     }%

```

```

6342 \exandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
6343 \fi
6344 }
6345 \def\hyper@linkurl#1#2{%
6346 \begingroup
6347 \hyper@chars
6348 \leavevmode
6349 \setbox\@tempboxa=\color@hbox #1\color@endbox
6350 \ifHy@raiselinks
6351 \@linkdim\dp\@tempboxa
6352 \lower\@linkdim\hbox{%
6353 \special{button: %
6354 \number\wd\@tempboxa\space
6355 \number\ht\@tempboxa\space
6356 launch: \wwwbrowser\space
6357 #2%
6358 }%
6359 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6360 }%
6361 \@linkdim\ht\@tempboxa
6362 \advance\@linkdim by -6.5\p@
6363 \raise\@linkdim\hbox{}}%
6364 \else
6365 \special{button: %
6366 \number\wd\@tempboxa\space
6367 \number\ht\@tempboxa\space
6368 launch: \wwwbrowser\space
6369 #2%
6370 }%
6371 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6372 \fi
6373 \endgroup
6374 }
6375 \def\hyper@linkfile#1#2#3{%
6376 \begingroup
6377 \hyper@chars
6378 \leavevmode
6379 \setbox\@tempboxa=\color@hbox #1\color@endbox
6380 \ifHy@raiselinks
6381 \@linkdim\dp\@tempboxa
6382 \lower\@linkdim\hbox{%
6383 \special{button: %
6384 \number\wd\@tempboxa\space
6385 \number\ht\@tempboxa\space
6386 #3,%
6387 file: #2%
6388 }%
6389 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6390 }%
6391 \@linkdim\ht\@tempboxa
6392 \advance\@linkdim by -6.5\p@
6393 \raise\@linkdim\hbox{}}%
6394 \else
6395 \special{button: %
6396 \number\wd\@tempboxa\space
6397 \number\ht\@tempboxa\space
6398 #3,%

```

```

6399         file: #2%
6400     }%
6401     \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6402 \fi
6403 \endgroup
6404 }
6405 \ifx\@pdfproducer\relax
6406 \def\@pdfproducer{dviwindo + Distiller}%
6407 \fi
6408 \def\PDF@FinishDoc{%
6409 \Hy@UseMaketitleInfos
6410 \special{PDF: Keywords \@pdfkeywords}%
6411 \special{PDF: Title \@pdftitle}%
6412 \special{PDF: Creator \@pdfcreator}%
6413 \ifx\@pdfcreationdate\@empty
6414 \else
6415 \special{PDF: CreationDate \@pdfcreationdate}%
6416 \fi
6417 \ifx\@pdfmoddate\@empty
6418 \else
6419 \special{PDF: ModDate \@pdfmoddate}%
6420 \fi
6421 \special{PDF: Author \@pdfauthor}%
6422 \ifx\@pdfproducer\relax
6423 \else
6424 \special{PDF: Producer \@pdfproducer}%
6425 \fi
6426 \special{PDF: Subject \@pdfsubject}%
6427 \Hy@DisableOption{pdfauthor}%
6428 \Hy@DisableOption{pdftitle}%
6429 \Hy@DisableOption{pdfsubject}%
6430 \Hy@DisableOption{pdfcreator}%
6431 \Hy@DisableOption{pdfcreationdate}%
6432 \Hy@DisableOption{pdfmoddate}%
6433 \Hy@DisableOption{pdfproducer}%
6434 \Hy@DisableOption{pdfkeywords}%
6435 }
6436 \def\PDF@SetupDoc{%
6437 \ifx\@baseurl\@empty
6438 \else
6439 \special{PDF: Base \@baseurl}%
6440 \fi
6441 \ifx\@pdfpagescrop\@empty\else
6442 \special{PDF: BBox \@pdfpagescrop}%
6443 \fi
6444 \pdfmark{pdfmark=/DOCVIEW,%
6445 Page=\@pdfstartpage,%
6446 View=\@pdfstartview,%
6447 PageMode=/\@pdfpagemode
6448 }%
6449 \ifx\@pdfpagescrop\@empty
6450 \else
6451 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
6452 \fi
6453 \edef\Hy@temp{%
6454 \ifHy@toolbar\else /HideToolbar true\fi
6455 \ifHy@menubar\else /HideMenubar true\fi

```

```

6456 \ifHy@windowui\else /HideWindowUI true\fi
6457 \ifHy@fitwindow /FitWindow true\fi
6458 \ifHy@centerwindow /CenterWindow true\fi
6459 \ifHy@displaydoctitle /DisplayDocTitle true\fi
6460 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
6461 \Hy@UseNameKey{Direction}\@pdfdirection
6462 \Hy@UseNameKey{ViewArea}\@pdfviewarea
6463 \Hy@UseNameKey{ViewClip}\@pdfviewclip
6464 \Hy@UseNameKey{PrintArea}\@pdfprintarea
6465 \Hy@UseNameKey{PrintClip}\@pdfprintclip
6466 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6467 \Hy@UseNameKey{Duplex}\@pdfduplex
6468 \ifx\@pdfpicktraybypdfsize\@empty
6469 \else
6470 /PickTrayByPDFSize \@pdfpicktraybypdfsize
6471 \fi
6472 \ifx\@pdfprintpagerange\@empty
6473 \else
6474 /PrintPageRange[\@pdfprintpagerange]%
6475 \fi
6476 \ifx\@pdfnumcopies\@empty
6477 \else
6478 /NumCopies \@pdfnumcopies
6479 \fi
6480 }%
6481 \pdfmark{pdfmark=/PUT,%
6482 Raw={%
6483 \string{Catalog\string}<<%
6484 \ifx\Hy@temp\@empty
6485 \else
6486 /ViewerPreferences<<\Hy@temp>>%
6487 \fi
6488 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
6489 \ifx\@pdflang\@empty
6490 \else
6491 /Lang(\@pdflang)%
6492 \fi
6493 >>%
6494 }%
6495 }%
6496 }
6497 </dviwindo>
6498 <*dvipdfm>

```

## 45.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

6499 \newsavebox{\pdfm@box}
6500 \def\@pdfm@mark#1{\special{pdf:#1}}
6501 \def\@pdfm@dest#1{%
6502 \Hy@SaveLastskip
6503 \beginingroup
6504 \Hy@pstringdef\Hy@pstringDest{#1}%
6505 \def\x{XYZ}%
6506 \ifx\x\@pdfview
6507 \def\x{XYZ @xpos @ypos null}%
6508 \else

```



```

6509 \def\x{FitH}%
6510 \ifx\x\@pdfview
6511 \def\x{FitH @ypos}%
6512 \else
6513 \def\x{FitBH}%
6514 \ifx\x\@pdfview
6515 \def\x{FitBH @ypos}%
6516 \else
6517 \def\x{FitV}%
6518 \ifx\x\@pdfview
6519 \def\x{FitV @xpos}%
6520 \else
6521 \def\x{FitBV}%
6522 \ifx\x\@pdfview
6523 \def\x{FitBV @xpos}%
6524 \else
6525 \def\x{Fit}%
6526 \ifx\x\@pdfview
6527 \let\x\@pdfview
6528 \else
6529 \def\x{FitB}%
6530 \ifx\x\@pdfview
6531 \let\x\@pdfview
6532 \else
6533 \def\x{FitR}%
6534 \ifx\x\@pdfview
6535 \Hy@Warning{'pdfview=FitR' is not supported}%
6536 \def\x{XYZ @xpos @ypos null}%
6537 \else
6538 \@onelevel@sanitize\@pdfview
6539 \Hy@Warning{Unknown value '@pdfview' for pdfview}%
6540 \def\x{XYZ @xpos @ypos null}%
6541 \fi
6542 \fi
6543 \fi
6544 \fi
6545 \fi
6546 \fi
6547 \fi
6548 \fi
6549 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
6550 \endgroup
6551 \Hy@RestoreLastskip
6552 }
6553 \providecommand*\@pdfview{XYZ}
6554 \providecommand*\@pdfborder{0 0 1}
6555 \providecommand*\@pdfborderstyle{}
6556 \def\hyper@anchor#1{%
6557 \@pdfm@dest{#1}%
6558 }
6559 \def\hyper@anchorstart#1{%
6560 \Hy@activeanchortrue
6561 \@pdfm@dest{#1}%
6562 }
6563 \def\hyper@anchorend{%
6564 \Hy@activeanchorfalse
6565 }

```

```

6566 \def\Hy@undefinedname{UNDEFINED}
6567 \def\hyper@linkstart#1#2{%
6568   \protected@edef\Hy@testname{#2}%
6569   \ifx\Hy@testname\@empty
6570     \let\Hy@testname\Hy@undefinedname
6571   \else
6572     \Hy@pstringdef\Hy@testname\Hy@testname
6573   \fi
6574   \@pdfm@mark{%
6575     bann<<%
6576     /Type/Annot%
6577     /Subtype/Link%
6578     \Hy@setpdfborder
6579     \expandafter\ifx\csname @#1bordercolor\endcsname\relax
6580     \else
6581       /C[\csname @#1bordercolor\endcsname]%
6582     \fi
6583     /A<<%
6584     /S/GoTo%
6585     /D(\Hy@testname)%
6586     >>%
6587     >>%
6588   }%
6589   \expandafter\Hy@colorlink\csname @#1color\endcsname
6590 }
6591 \def\hyper@linkend{%
6592   \Hy@endcolorlink
6593   \@pdfm@mark{eann}%
6594 }
6595 \def\hyper@link#1#2#3{%
6596   \hyper@linkstart{#1}{#2}#3\hyper@linkend
6597 }
6598 \def\hyper@linkfile#1#2#3{%
6599   \Hy@pstringdef\Hy@pstringF{#2}%
6600   \Hy@pstringdef\Hy@pstringD{#3}%
6601   \leavevmode
6602   \@pdfm@mark{%
6603     bann<<%
6604     /Type/Annot%
6605     /Subtype/Link%
6606     \Hy@setpdfborder
6607     \ifx\@filebordercolor\relax
6608     \else
6609       /C[\@filebordercolor]%
6610     \fi
6611     /A<<%
6612     /S/GoToR%
6613     /F(\Hy@pstringF)%
6614     /D\ifx\#3\@pdfstartview\else(\Hy@pstringD)\fi
6615     \ifHy@newwindow /NewWindow true\fi
6616     >>%
6617     >>%
6618   }%
6619   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6620   \@pdfm@mark{eann}%
6621 }
6622 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname

```

```

6623 \Hy@pstringdef\Hy@pstringF{#1}%
6624 \Hy@pstringdef\Hy@pstringP{#3}%
6625 \leavevmode
6626 \@pdfm@mark{%
6627     bann<<%
6628     /Type/Annot%
6629     /Subtype/Link%
6630     \Hy@setpdfborder
6631     \ifx\@runbordercolor\relax
6632     \else
6633     /C[\@runbordercolor]%
6634     \fi
6635     /A<<%
6636     /S/Launch%
6637     /F(\Hy@pstringF)%
6638     \ifHy@newwindow /NewWindow true\fi
6639     \ifx\#3\%
6640     \else
6641     /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
6642     \fi
6643     >>%
6644     >>%
6645 }%
6646 \Hy@colorlink\@runcolor#2\Hy@endcolorlink
6647 \@pdfm@mark{eann}%
6648 }
6649 \def\hyper@linkurl#1#2{%
6650 \Hy@pstringdef\Hy@pstringURI{#2}%
6651 \leavevmode
6652 \@pdfm@mark{%
6653     bann<<%
6654     /Type/Annot%
6655     /Subtype/Link%
6656     \Hy@setpdfborder
6657     \ifx\@urlbordercolor\relax
6658     \else
6659     /C[\@urlbordercolor]%
6660     \fi
6661     /A<<%
6662     /S/URI%
6663     /URI(\Hy@pstringURI)%
6664     >>%
6665     >>%
6666 }%
6667 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6668 \@pdfm@mark{eann}%
6669 }
6670 \def\Acrobatmenu#1#2{%
6671 \leavevmode
6672 \@pdfm@mark{%
6673     bann<<%
6674     /Type/Annot%
6675     /Subtype/Link%
6676     /A<<%
6677     /S/Named%
6678     /N/#1%
6679     >>%

```

```

6680 \Hy@setpdfborder
6681 \ifx\@menubordercolor\relax
6682 \relax
6683 /C[\@menubordercolor]%
6684 \fi
6685 >>%
6686 }%
6687 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
6688 \@pdfmark{eann}%
6689 }
6690 \ifx\@pdfproducer\relax
6691 \def\@pdfproducer{dvipdfm}%
6692 \fi
6693 \def\PDF@FinishDoc{%
6694 \Hy@UseMaketitleInfos
6695 \@pdfmark{%
6696 docinfo<<%
6697 /Title(\@pdftitle)%
6698 /Subject(\@pdfsubject)%
6699 /Creator(\@pdfcreator)%
6700 \ifx\@pdfcreationdate\@empty
6701 \else
6702 /CreationDate(\@pdfcreationdate)%
6703 \fi
6704 \ifx\@pdfmoddate\@empty
6705 \else
6706 /ModDate(\@pdfmoddate)%
6707 \fi
6708 /Author(\@pdfauthor)%
6709 \ifx\@pdfproducer\relax
6710 \else
6711 /Producer(\@pdfproducer)%
6712 \fi
6713 /Keywords(\@pdfkeywords)%
6714 >>%
6715 }%
6716 \Hy@DisableOption{pdfauthor}%
6717 \Hy@DisableOption{pdftitle}%
6718 \Hy@DisableOption{pdfsubject}%
6719 \Hy@DisableOption{pdfcreator}%
6720 \Hy@DisableOption{pdfcreationdate}%
6721 \Hy@DisableOption{pdfmoddate}%
6722 \Hy@DisableOption{pdfproducer}%
6723 \Hy@DisableOption{pdfkeywords}%
6724 }
6725 \def\PDF@SetupDoc{%
6726 \edef\Hy@temp{%
6727 \ifHy@toolbar\else /HideToolbar true\fi
6728 \ifHy@menubar\else /HideMenubar true\fi
6729 \ifHy>windowui\else /HideWindowUI true\fi
6730 \ifHy@fitwindow /FitWindow true\fi
6731 \ifHy@centerwindow /CenterWindow true\fi
6732 \ifHy@displaydoctitle /DisplayDocTitle true\fi
6733 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
6734 \Hy@UseNameKey{Direction}\@pdfdirection
6735 \Hy@UseNameKey{ViewArea}\@pdfviewarea
6736 \Hy@UseNameKey{ViewClip}\@pdfviewclip

```

```

6737 \Hy@UseNameKey{PrintArea}\@pdfprintarea
6738 \Hy@UseNameKey{PrintClip}\@pdfprintclip
6739 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6740 \Hy@UseNameKey{Duplex}\@pdfduplex
6741 \ifx\@pdfpicktraybypdfsize\@empty
6742 \else
6743 /PickTrayByPDFSize \@pdfpicktraybypdfsize
6744 \fi
6745 \ifx\@pdfprintpagerange\@empty
6746 \else
6747 /PrintPageRange[\@pdfprintpagerange]%
6748 \fi
6749 \ifx\@pdfnumcopies\@empty
6750 \else
6751 /NumCopies \@pdfnumcopies
6752 \fi
6753 }%
6754 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6755 \@pdfm@mark{%
6756 docview<<%
6757 \ifx\@pdfstartview\@empty
6758 \else
6759 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
6760 \fi
6761 \ifx\@baseurl\@empty
6762 \else
6763 /URI<</Base(\Hy@pstringB)>>%
6764 \fi
6765 /PageMode/\@pdfpagemode
6766 \ifx\Hy@temp\@empty
6767 \else
6768 /ViewerPreferences<<\Hy@temp>>%
6769 \fi
6770 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
6771 \ifx\@pdflang\@empty
6772 \else
6773 /Lang(\@pdflang)%
6774 \fi
6775 >>%
6776 }%
6777 \ifx\@pdfpagescrop\@empty
6778 \else
6779 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
6780 \fi
6781 }
6782 </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.

```

6783 <*vtexhtml>
6784 \RequirePackage{vtexhtml}
6785 \newif\if@Localurl
6786 \def\PDF@FinishDoc{}
6787 \def\PDF@SetupDoc{%
6788 \ifx\@baseurl\@empty

```

```

6789 \else
6790 \special{!direct <base href="\@baseurl">}%
6791 \fi
6792 }
6793 \def\@urltype{url}
6794 \def\hyper@link#1#2#3{%
6795 \leavevmode
6796 \special{!direct <a href=\hyper@quote\hyper@hash#2\hyper@quote>}%
6797 #3%
6798 \special{!direct </a>}%
6799 }
6800 \def\hyper@linkurl#1#2{%
6801 \begingroup
6802 \hyper@chars
6803 \leavevmode
6804 \MathBSuppress=1\relax
6805 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
6806 #1%
6807 \MathBSuppress=0\relax
6808 \special{!direct </a>}%
6809 \endgroup
6810 }
6811 \def\hyper@linkfile#1#2#3{%
6812 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
6813 }
6814 \def\hyper@linkstart#1#2{%
6815 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
6816 \@Localurltrue
6817 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
6818 \else
6819 \@Localurlfalse
6820 \begingroup
6821 \hyper@chars
6822 \special{!aref #2}%
6823 \endgroup
6824 \fi
6825 }
6826 \def\hyper@linkend{%
6827 \if@Localurl
6828 \special{!endaref}%
6829 \else
6830 \special{!direct </a>}%
6831 \fi
6832 }
6833 \def\hyper@anchorstart#1{%
6834 \Hy@SaveLastskip
6835 \begingroup
6836 \hyper@chars
6837 \special{!aname #1}%
6838 \special{!direct <a name=\hyper@quote#1\hyper@quote>}%
6839 \endgroup
6840 \Hy@activeanchortrue
6841 }
6842 \def\hyper@anchorend{%
6843 \special{!direct </a>}%
6844 \Hy@activeanchorfalse
6845 \Hy@RestoreLastskip

```

```

6846 }
6847 \def\hyper@anchor#1{%
6848   \Hy@SaveLastskip
6849   \beginngroup
6850     \let\protect=\string
6851     \hyper@chars
6852     \leavevmode
6853     \special{!aname #1}%
6854     \special{!direct <a name=\hyper@quote #1\hyper@quote>}%
6855   \endgroup
6856   \Hy@activeanchortrue
6857   \bgroup\anchor@spot\egroup
6858   \special{!direct </a>}%
6859   \Hy@activeanchorfalse
6860   \Hy@RestoreLastskip
6861 }
6862 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
6863 \def\@endForm{}
6864 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
6865   \typeout{Sorry, TeXpider does not yet support FORM gauges}%
6866 }
6867 \def\@TextField[#1]#2{% parameters, label
6868   \typeout{Sorry, TeXpider does not yet support FORM text fields}%
6869 }
6870 \def\@CheckBox[#1]#2{% parameters, label
6871   \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
6872 }
6873 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
6874   \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
6875 }
6876 \def\@PushButton[#1]#2{% parameters, label
6877   \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
6878 }
6879 \def\@Reset[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
6880 \def\@Submit[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
6881 </vtexhtml>
6882 <*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.

```

6883 \ifx\mediaheight\@undefined
6884 \else
6885   \ifx\mediaheight\relax
6886   \else
6887     \ifHy@setpagesize
6888       \providecommand*{\VTeXInitMediaSize}{%
6889         \@ifundefined{stockwidth}{%
6890           \ifdim\paperheight>0pt %
6891             \setlength\mediaheight\paperheight
6892           \fi
6893           \ifdim\paperheight>0pt %
6894             \setlength\mediawidth\paperwidth
6895           \fi
6896         }{%
6897           \ifdim\stockheight>0pt %
6898             \setlength\mediaheight\stockheight

```

```

6899         \fi
6900         \ifdim\stockwidth>0pt %
6901             \setlength\mediawidth\stockwidth
6902         \fi
6903     }%
6904 }%
6905 \AtBeginDocument{\VTeXInitMediaSize}%
6906 \fi
6907 \Hy@DisableOption{setpagesize}%
6908 \fi
6909 \fi

```

Older versions of VTeX require xyz in lower case.

```

6910 \providecommand*\@pdfview{xyz}
6911 \providecommand*\@pdfborder{0 0 1}
6912 \providecommand*\@pdfborderstyle{}
6913 \let\CurrentBorderColor\@linkbordercolor
6914 \def\hyper@anchor#1{%
6915     \Hy@SaveLastskip
6916     \begingroup
6917         \let\protect=\string
6918         \hyper@chars
6919         \special{!aname #1;\@pdfview}%
6920     \endgroup
6921     \Hy@activeanchortrue
6922     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6923     \Hy@activeanchorfalse
6924     \Hy@RestoreLastskip
6925 }
6926 \def\hyper@anchorstart#1{%
6927     \Hy@SaveLastskip
6928     \begingroup
6929         \hyper@chars
6930         \special{!aname #1;\@pdfview}%
6931     \endgroup
6932     \Hy@activeanchortrue
6933 }
6934 \def\hyper@anchorend{%
6935     \Hy@activeanchorfalse
6936     \Hy@RestoreLastskip
6937 }
6938 \def\@urltype{url}
6939 \def\Hy@undefinedname{UNDEFINED}
6940 \def\hyper@linkstart#1#2{%
6941     \Hy@pstringdef\Hy@pstringURI{#2}%
6942     \expandafter\Hy@colorlink\csname @#1color\endcsname
6943     \@ifundefined{#1bordercolor}{%
6944         \let\CurrentBorderColor\relax
6945     }{%
6946         \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6947     }%
6948     \def\Hy@tempa{#1}%
6949     \ifx\Hy@tempa\@urltype
6950         \special{!%
6951             \ref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6952             a=<%
6953                 \Hy@setpdfborder
6954                 \ifx\CurrentBorderColor\relax

```



```

6955         \else
6956             /C [\CurrentBorderColor]%
6957         \fi
6958     >%
6959 }%
6960 \else
6961     \protected@edef\Hy@testname{#2}%
6962     \ifx\Hy@testname\@empty
6963         \let\Hy@testname\Hy@undefinedname
6964     \fi
6965     \special{!%
6966         aref \Hy@testname;%
6967         a=<%
6968             \Hy@setpdfborder
6969             \ifx\CurrentBorderColor\relax
6970                 \else
6971                     /C [\CurrentBorderColor]%
6972                 \fi
6973             >%
6974         }%
6975     \fi
6976 }
6977 \def\hyper@linkend{%
6978     \special{!endaref}%
6979     \Hy@endcolorlink
6980 }
6981 \def\hyper@linkfile#1#2#3{%
6982     \leavevmode
6983     \special{!%
6984         aref <%
6985             \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
6986             f=#2>#3;%
6987             a=<%
6988                 \Hy@setpdfborder
6989                 \ifx\@filebordercolor\relax
6990                     \else
6991                         /C [\@filebordercolor]%
6992                     \fi
6993                 >%
6994             }%
6995             \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6996             \special{!endaref}%
6997         }
6998 \def\hyper@linkurl#1#2{%
6999     \begingroup
7000     \Hy@pstringdef\Hy@pstringURI{#2}%
7001     \hyper@chars
7002     \leavevmode
7003     \special{!%
7004         aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
7005         a=<%
7006             \Hy@setpdfborder
7007             \ifx\@urlbordercolor\relax
7008                 \else
7009                     /C [\@urlbordercolor]%
7010                 \fi
7011             >%

```

```

7012 }%
7013 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7014 \special{!endaref}%
7015 \endgroup
7016 }
7017 \def\hyper@link#1#2#3{%
7018 \@ifundefined{#@#1bordercolor}{%
7019 \let\CurrentBorderColor\relax
7020 }{%
7021 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
7022 }%
7023 \leavevmode
7024 \protected@edef\Hy@testname{#2}%
7025 \ifx\Hy@testname\@empty
7026 \let\Hy@testname\Hy@undefinedname
7027 \fi
7028 \special{!%
7029 aref \Hy@testname;%
7030 a=<%
7031 \Hy@setpdfborder
7032 \ifx\CurrentBorderColor\relax
7033 \else
7034 /C [\CurrentBorderColor]%
7035 \fi
7036 >%
7037 }%
7038 \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
7039 \special{!endaref}%
7040 }
7041 \def\hyper@image#1#2{%
7042 \hyper@linkurl{#2}{#1}%
7043 }
7044 \def\@hyper@launch run:#1\#2#3{%
7045 \Hy@pstringdef\Hy@pstringF{#1}%
7046 \Hy@pstringdef\Hy@pstringP{#3}%
7047 \leavevmode
7048 \special{!aref %
7049 <u=%
7050 /Type/Action%
7051 /S/Launch%
7052 /F(\Hy@pstringF)%
7053 \ifHy@newwindow /NewWindow true \fi
7054 \ifx\#3\@empty /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>\fi
7055 >;%
7056 a=<%
7057 \Hy@setpdfborder
7058 \ifx\@runbordercolor\relax
7059 \else
7060 /C[\@runbordercolor]%
7061 \fi
7062 >%
7063 }%
7064 \Hy@colorlink\@runcolor#2\Hy@endcolorlink
7065 \special{!endaref}%
7066 }
7067 \def\Acrobatmenu#1#2{%
7068 \leavevmode

```

```

7069 \special{!%
7070   aref <u=/S /Named /N /#1>;%
7071   a=<%
7072     \Hy@setpdfborder
7073     \ifx\@menubordercolor\relax
7074     \else
7075       /C[\@menubordercolor]%
7076     \fi
7077   >%
7078 }%
7079 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
7080 \special{!endaref}%
7081 }

```

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

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

Please never use \@ifundefined{VTeXversion}{...}{...} *globally*.

```

7082 \ifnum\Hy@VTeXversion<702 %
7083 \else
7084   \def\hyper@pagetransition{%
7085     \ifx\@pdfpagetransition\relax
7086     \else
7087       \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

7088   \else
7089     \hvtex@parse@trans\@pdfpagetransition
7090   \fi
7091 \fi
7092 }%

```

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:

```

7093 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
7094 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
7095 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
7096 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
7097 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
7098 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%

```

```
7099 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%
```

Optional parameters:

```
7100 \def\hvtex@par@dimension{/Dm}%
```

```
7101 \def\hvtex@par@direction{/Di}%
```

```
7102 \def\hvtex@par@duration{/D}%
```

```
7103 \def\hvtex@par@motion{/M}%
```

Tokenizer:

```
7104 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}%
```

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

```
7105 \def\hvtex@gettoken@#1 #2\@nil{%
```

```
7106 \edef\hvtex@token{#1}%
```

```
7107 \edef\hvtex@buffer{#2}%
```

```
7108 }%
```

```
7109 \def\hvtex@parse@trans#1{%
```

Initializing code:

```
7110 \let\hvtex@trans@code\@empty
```

```
7111 \let\hvtex@param@dimension\@empty
```

```
7112 \let\hvtex@param@direction\@empty
```

```
7113 \let\hvtex@param@duration\@empty
```

```
7114 \let\hvtex@param@motion\@empty
```

```
7115 \edef\hvtex@buffer{#1\space}%
```

First token is the PDF transition name without escape.

```
7116 \hvtex@gettoken
```

```
7117 \ifx\hvtex@token\@empty
```

Leading space(s)?

```
7118 \ifx\hvtex@buffer\@empty
```

The buffer is empty, nothing to do.

```
7119 \else
```

```
7120 \hvtex@gettoken
```

```
7121 \fi
```

```
7122 \fi
```

```
7123 \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
7124 \hvtex@trans@params
```

```
7125 }%
```

Reentrant macro to parse optional parameters.

```
7126 \def\hvtex@trans@params{%
```

```
7127 \ifx\hvtex@buffer\@empty
```

```
7128 \else
```

```
7129 \hvtex@gettoken
```

```
7130 \let\hvtex@trans@par\hvtex@token
```

```
7131 \ifx\hvtex@buffer\@empty
```

```
7132 \else
```

```
7133 \hvtex@gettoken
```

```
7134 \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.

```
7135 \let\hvtex@param@duration\hvtex@token
```

```
7136 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
7137 \expandafter\edef\expandafter\hvtex@param@motion
```

```
7138 \expandafter{\expandafter\@gobble\hvtex@token}%
```

```
7139 \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```

7140      \expandafter\edef\expandafter\hvtex@param@dimension
7141      \expandafter{\expandafter\@gobble\hvtex@token}%
7142      \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).

```

7143      \let\hvtex@param@direction\hvtex@token
7144      \fi\fi\fi\fi
7145      \fi
7146      \fi
7147      \ifx\hvtex@buffer\@empty
7148      \let\next\hvtex@produce@trans
7149      \else
7150      \let\next\hvtex@trans@params
7151      \fi
7152      \next
7153  }%

```

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

```

7154  \def\hvtex@produce@trans{%
7155    \let\vtex@trans@special\@empty
7156    \if S\hvtex@trans@code
7157      \edef\vtex@trans@special{\hvtex@trans@code
7158        \hvtex@param@dimension\hvtex@param@motion}%
7159    \else \if B\hvtex@trans@code
7160      \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@dimension}%
7161    \else \if X\hvtex@trans@code
7162      \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@motion}%
7163    \else \if W\hvtex@trans@code
7164      \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
7165    \else \if D\hvtex@trans@code
7166      \let\vtex@trans@special\hvtex@trans@code
7167    \else \if R\hvtex@trans@code
7168      \let\vtex@trans@special\hvtex@trans@code
7169    \else \if G\hvtex@trans@code
7170      \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
7171    \fi\fi\fi\fi\fi\fi\fi
7172    \ifx\vtex@trans@special\@empty
7173    \else
7174      \ifx\hvtex@param@duration\@empty
7175      \else
7176        \setlength{\dimen@}{\hvtex@param@duration\p}%

```

I'm not guilty of possible overflow.

```

7177      \multiply\dimen@\@m
7178      \edef\vtex@trans@special{\vtex@trans@special,\strip@pt\dimen@}%
7179      \fi

```

And all the mess is just for this.

```

7180      \special{!trans \vtex@trans@special}%
7181      \fi
7182  }%
7183  \def\hyper@pageduration{%
7184    \ifx\@pdfpageduration\relax
7185    \else
7186      \ifx\@pdfpageduration\@empty

```

```

7187     \special{!duration-}%
7188     \else
7189     \special{!duration \@pdfpageduration}%
7190     \fi
7191   \fi
7192 }%
7193 \def\hyper@pagehidden{%
7194   \ifHy@useHidKey
7195     \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
7196   \fi
7197 }%
7198 \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

```

7199 \ifx\@pdfproducer\relax
7200   \def\@pdfproducer{VTeX}%
7201   \ifnum\Hy@VTeXversion>\z@
7202     \count@\VTeXversion
7203     \divide\count@ 100 %
7204     \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
7205     \multiply\count@ -100 %
7206     \advance\count@\VTeXversion
7207     \edef\@pdfproducer{%
7208       \@pdfproducer
7209       .\ifnum\count@<10 0\fi\the\count@
7210       \ifx\VTeXOS\@undefined\else
7211         \ifnum\VTeXOS>0 %
7212           \ifnum\VTeXOS<6 %
7213             \space(
7214             \ifcase\VTeXOS
7215             \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
7216             \fi
7217           )%
7218         \fi
7219       \fi
7220     \fi
7221     ,\space
7222     \ifnum\OpMode=\@ne PDF\else PS\fi
7223     \space backend%
7224     \ifx\gexmode\@undefined\else
7225       \ifnum\gexmode>\z@\space with GeX\fi
7226     \fi
7227   }%
7228 \fi
7229 \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).

```

7230 \def\PDF@SetupDoc{%
7231   \ifx\@pdfpagescrop\@empty
7232   \else
7233     \special{!pdfinfo b=<\@pdfpagescrop>}%
7234   \fi
7235   \special{!onopen Page\@pdfstartpage}%
7236   \special{!pdfinfo p=</\@pdfpagemode>}%
7237   \ifx\@baseurl\@empty
7238   \else
7239     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
7240   \fi
7241   \special{!pdfinfo v=<<<%
7242     \ifHy@toolbar\else /HideToolbar true\fi
7243     \ifHy@menubar\else /HideMenubar true\fi
7244     \ifHy>windowui\else /HideWindowUI true\fi
7245     \ifHy@fitwindow /FitWindow true\fi
7246     \ifHy@centerwindow /CenterWindow true\fi
7247     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7248     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7249     \Hy@UseNameKey{Direction}\@pdfdirection
7250     \Hy@UseNameKey{ViewArea}\@pdfviewarea
7251     \Hy@UseNameKey{ViewClip}\@pdfviewclip
7252     \Hy@UseNameKey{PrintArea}\@pdfprintarea
7253     \Hy@UseNameKey{PrintClip}\@pdfprintclip
7254     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7255     \Hy@UseNameKey{Duplex}\@pdfduplex
7256     \ifx\@pdfpicktraybypdfsize\@empty
7257     \else
7258       /PickTrayByPDFSize \@pdfpicktraybypdfsize
7259     \fi
7260     \ifx\@pdfprintpagerange\@empty
7261     \else
7262       /PrintPageRange[\@pdfprintpagerange]%
7263     \fi
7264     \ifx\@pdfnumcopies\@empty
7265     \else
7266       /NumCopies \@pdfnumcopies
7267     \fi
7268   >>>}%
7269   \ifx\@pdfpagelayout\@empty
7270   \else
7271     \special{!pdfinfo l=</\@pdfpagelayout\space>}%
7272   \fi

```

```

7273 }%
7274 \def\PDF@FinishDoc{%
7275   \Hy@UseMaketitleInfos
7276   \special{!pdfinfo a=<\pdfauthor>}%
7277   \special{!pdfinfo t=<\pdftitle>}%
7278   \special{!pdfinfo s=<\pdfsubject>}%
7279   \special{!pdfinfo c=<\pdfcreator>}%
7280   \ifx\pdfproducer\relax
7281   \else
7282     \special{!pdfinfo r=<\pdfproducer>}%
7283   \fi
7284   \special{!pdfinfo k=<\pdfkeywords>}%
7285   \Hy@DisableOption{pdfauthor}%
7286   \Hy@DisableOption{pdftitle}%
7287   \Hy@DisableOption{pdfsubject}%
7288   \Hy@DisableOption{pdfcreator}%
7289   \Hy@DisableOption{pdfcreationdate}%
7290   \Hy@DisableOption{pdfmoddate}%
7291   \Hy@DisableOption{pdfproducer}%
7292   \Hy@DisableOption{pdfkeywords}%
7293 }
7294 \end{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.

```

7295 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
7296 <package>\providecommand*\Hy@DistillerDestFix{}
7297 <*pdfmark | dviwindo>
7298 \def\Hy@DistillerDestFix{%
7299   \begin{group}
7300     \let\x\literalps@out

```

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

```

7301   \ifnum \@ifundefined{OpMode}{0}{}%
7302     \@ifundefined{gexmode}{0}{%
7303       \ifnum\gexmode>0 \OpMode\else 0\fi
7304     }>1 %
7305   \def\x##1{%
7306     \immediate\special{!=##1}%
7307   }%
7308   \fi
7309   \x{%
7310     /product where{%
7311       pop %
7312       product(Distiller)search{%
7313         pop pop pop %
7314         version(.)search{%

```



```

7315         exch pop exch pop%
7316         (3011)eq{%
7317             gsave %
7318             newpath 0 0 moveto closepath clip%
7319             /Courier findfont 10 scalefont setfont %
7320             72 72 moveto(.)show %
7321             grestore%
7322         }if%
7323     }{pop}ifelse%
7324 }{pop}ifelse%
7325 }if%
7326 }%
7327 \endgroup
7328 }
7329 </pdfmark | dviwindo>

```

## 45.8 Direct pdfmark support (dvipdf and pdfmark)

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

```

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

```

and the correct definitions of the following PostScript procedures:

```

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

```

```

7330 <*pdfmark | dvipdf>
7331 \def\hyper@anchor#1{%
7332     \Hy@SaveLastskip
7333     \beginngroup
7334     \pdfmark[\anchor@spot]{%
7335         pdfmark=/DEST,%
7336         linktype=anchor,%
7337         View=/\@pdfview \@pdfviewparams,%
7338         DestAnchor={#1}%
7339     }%
7340     \endgroup
7341     \Hy@RestoreLastskip
7342 }
7343 <*dvipdf>
7344 \def\hyper@anchorstart#1{\Hy@activeanchortrue}
7345 \def\hyper@anchorend{\Hy@activeanchorfalse}
7346 \def\hyper@linkstart#1#2{%
7347     \expandafter\Hy@colorlink\csname @#1color\endcsname
7348     \xdef\hyper@currentanchor{#2}%
7349 }
7350 \def\hyper@linkend{%
7351     \Hy@endcolorlink
7352 }
7353 </dvipdf>
7354 <*pdfmark>
7355 \ifundefined{hyper@anchorstart}{\endinput}

```

```

7356 \def\hyper@anchorstart#1{%
7357   \Hy@SaveLastskip
7358   \literalps@out{H.S}%
7359   \xdef\hyper@currentanchor{#1}%
7360   \Hy@activeanchortrue
7361 }
7362 \def\hyper@anchorend{%
7363   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
7364   \pdfmark{%
7365     pdfmark=/DEST,%
7366     linktype=anchor,%
7367     View=/\@pdfview \@pdfviewparams,%
7368     DestAnchor=\hyper@currentanchor,%
7369   }%
7370   \Hy@activeanchorfalse
7371   \Hy@RestoreLastskip
7372 }
7373 \def\hyper@linkstart#1#2{%
7374   \ifHy@breaklinks
7375   \else
7376     \leavevmode\hbox\bgroup
7377     \fi
7378     \expandafter\Hy@colorlink\csname @#1color\endcsname
7379     \literalps@out{H.S}%
7380     \xdef\hyper@currentanchor{#2}%
7381     \gdef\hyper@currentlinktype{#1}%
7382 }
7383 \def\hyper@linkend{%
7384   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
7385   \@ifundefined{@\hyper@currentlinktype bordercolor}{%
7386     \let\Hy@tempcolor\relax
7387   }{%
7388     \edef\Hy@tempcolor{\csname @\hyper@currentlinktype bordercolor\endcsname}%
7389   }%
7390   \pdfmark{%
7391     pdfmark=/ANN,%
7392     linktype=link,%
7393     Subtype=/Link,%
7394     Dest=\hyper@currentanchor,%
7395     AcroHighlight=\@pdfhighlight,%
7396     Border=\@pdfborder,%
7397     BorderStyle=\@pdfborderstyle,%
7398     Color=\Hy@tempcolor,%
7399     Raw=H.B%
7400   }%
7401   \Hy@endcolorlink
7402   \ifHy@breaklinks
7403   \else
7404     \egroup
7405   \fi
7406 }
7407 \langle *pdfmark \rangle

```

We have to allow for \baselineskip having an optional stretch and shrink (you meet this in slide packages, for instance), so we need to strip off the junk. David Carlisle, of course, wrote this bit of code.

```

7408 \beginngroup

```

```

7409 \catcode'P=12 %
7410 \catcode'T=12 %
7411 \lowercase{\endgroup
7412 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
7413 }
7414 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
7415 \</pdfmark>

```

\hyper@pagetransition

```

7416 \def\hyper@pagetransition{%
7417 \ifx\@pdfpagetransition\relax
7418 \else
7419 \ifx\@pdfpagetransition\@empty
7420 % 1. Does an old entry have to be deleted?
7421 % 2. If 1=yes, how to delete?
7422 \else
7423 \pdfmark{%
7424 pdfmark=/PUT,%
7425 Raw={%
7426 \string{ThisPage\string}%
7427 <</Trans << /S /\@pdfpagetransition\space >> >>%
7428 }%
7429 }%
7430 \fi
7431 \fi
7432 }

```

\hyper@pageduration

```

7433 \def\hyper@pageduration{%
7434 \ifx\@pdfpageduration\relax
7435 \else
7436 \ifx\@pdfpageduration\@empty
7437 % 1. Does an old entry have to be deleted?
7438 % 2. If 1=yes, how to delete?
7439 \else
7440 \pdfmark{%
7441 pdfmark=/PUT,%
7442 Raw={%
7443 \string{ThisPage\string}%
7444 <</Dur \@pdfpageduration>>%
7445 }%
7446 }%
7447 \fi
7448 \fi
7449 }

```

\hyper@pagehidden

```

7450 \def\hyper@pagehidden{%
7451 \ifHy@useHidKey
7452 \pdfmark{%
7453 pdfmark=/PUT,%
7454 Raw={%
7455 \string{ThisPage\string}%
7456 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
7457 }%
7458 }%
7459 \fi

```

```

7460 }

7461 </pdfmark>
7462 \def\hyper@image#1#2{%
7463   \hyper@linkurl{#2}{#1}%
7464 }
7465 \def\Hy@undefinedname{UNDEFINED}
7466 \def\hyper@link#1#2#3{%
7467   \@ifundefined{#1bordercolor}{%
7468     \let\Hy@tempcolor\relax
7469   }{%
7470     \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
7471   }%
7472   \begingroup
7473     \protected@edef\Hy@testname{#2}%
7474     \ifx\Hy@testname\@empty
7475       \let\Hy@testname\Hy@undefinedname
7476     \fi
7477   <*dvipdf>
7478     \pdfmark[{#3}]{%
7479       pdfmark=/LNK,%
7480       {},%
7481       linktype={#1},%
7482       AcroHighlight=\@pdfhighlight,%
7483       Border=\@pdfborder,%
7484       BorderStyle=\@pdfborderstyle,%
7485       Color=\Hy@tempcolor,%
7486       Dest=\Hy@testname
7487     }%
7488   </dvipdf>
7489   <*pdfmarkbase>
7490     \pdfmark[{#3}]{%
7491       Color=\Hy@tempcolor,%
7492       linktype={#1},%
7493       AcroHighlight=\@pdfhighlight,%
7494       Border=\@pdfborder,%
7495       BorderStyle=\@pdfborderstyle,%
7496       pdfmark=/ANN,%
7497       Subtype=/Link,%
7498       Dest=\Hy@testname
7499     }%
7500   </pdfmarkbase>
7501   \endgroup
7502 }
7503 \newtoks\pdf@docset
7504 \def\PDF@FinishDoc{%
7505   \Hy@UseMaketitleInfos
7506   \let\Hy@temp\@empty
7507   \ifx\@pdfcreationdate\@empty
7508   \else
7509     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
7510   \fi
7511   \ifx\@pdfmoddate\@empty
7512   \else
7513     \expandafter\def\expandafter\Hy@temp\expandafter{%
7514       \Hy@temp
7515       ModDate=\@pdfmoddate,%
7516     }%

```

```

7517 \fi
7518 \ifx\@pdfproducer\relax
7519 \else
7520   \expandafter\def\expandafter\Hy@temp\expandafter{%
7521     \Hy@temp
7522     Producer=\@pdfproducer,%
7523   }%
7524 \fi
7525 \expandafter
7526 \pdfmark\expandafter{%
7527   \Hy@temp
7528   pdfmark=/DOCINFO,%
7529   Title=\@pdftitle,%
7530   Subject=\@pdfsubject,%
7531   Creator=\@pdfcreator,%
7532   Author=\@pdfauthor,%
7533   Keywords=\@pdfkeywords
7534 }%
7535 \Hy@DisableOption{pdfauthor}%
7536 \Hy@DisableOption{pdftitle}%
7537 \Hy@DisableOption{pdfsubject}%
7538 \Hy@DisableOption{pdfcreator}%
7539 \Hy@DisableOption{pdfcreationdate}%
7540 \Hy@DisableOption{pdfmoddate}%
7541 \Hy@DisableOption{pdfproducer}%
7542 \Hy@DisableOption{pdfkeywords}%
7543 }
7544 \def\PDF@SetupDoc{%
7545   \pdfmark{%
7546     pdfmark=/DOCVIEW,%
7547     Page=\@pdfstartpage,%
7548     View=\@pdfstartview,%
7549     PageMode=/\@pdfpagemode
7550   }%
7551   \ifx\@pdfpagescrop\@empty
7552   \else
7553     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7554   \fi
7555   \edef\Hy@temp{%
7556     \ifHy@toolbar\else /HideToolbar true\fi
7557     \ifHy@menubar\else /HideMenubar true\fi
7558     \ifHy@windowui\else /HideWindowUI true\fi
7559     \ifHy@fitwindow /FitWindow true\fi
7560     \ifHy@centerwindow /CenterWindow true\fi
7561     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7562     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7563     \Hy@UseNameKey{Direction}\@pdfdirection
7564     \Hy@UseNameKey{ViewArea}\@pdfviewarea
7565     \Hy@UseNameKey{ViewClip}\@pdfviewclip
7566     \Hy@UseNameKey{PrintArea}\@pdfprintarea
7567     \Hy@UseNameKey{PrintClip}\@pdfprintclip
7568     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7569     \Hy@UseNameKey{Duplex}\@pdfduplex
7570     \ifx\@pdfpicktraybypdfsize\@empty
7571     \else
7572       /PickTrayByPDFSize \@pdfpicktraybypdfsize
7573     \fi

```

```

7574 \ifx\@pdfprintpagerange\@empty
7575 \else
7576 /PrintPageRange[\@pdfprintpagerange]%
7577 \fi
7578 \ifx\@pdfnumcopies\@empty
7579 \else
7580 /NumCopies \@pdfnumcopies
7581 \fi
7582 }%
7583 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7584 \pdfmark{%
7585 pdfmark=/PUT,%
7586 Raw={%
7587 \string{Catalog\string}<<%
7588 \ifx\Hy@temp\@empty
7589 \else
7590 /ViewerPreferences<<\Hy@temp>>%
7591 \fi
7592 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7593 \ifx\@pdflang\@empty
7594 \else
7595 /Lang(\@pdflang)%
7596 \fi
7597 \ifx\@baseurl\@empty
7598 \else
7599 /URI<</Base(\Hy@pstringB)>>%
7600 \fi
7601 >>%
7602 }%
7603 }%
7604 }
7605 </pdfmark | dvipdf>
7606 <*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.

```

7607 \newif\ifHy@pdfmarkerror
7608 \def\pdfmark{\@ifnextchar [{\pdfmark@}{\pdfmark@[]}}
7609 \def\pdfmark@[#1]#2{%
7610 \Hy@pdfmarkerrorfalse
7611 \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
7612 \@processme
7613 \let\pdf@type\relax
7614 \setkeys{PDF}{#2}%
7615 \ifHy@pdfmarkerror
7616 \else
7617 \ifx\pdf@type\relax
7618 \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
7619 \ifx\#1\\\relax\else\pdf@rect{#1}\fi
7620 \else
7621 \ifx\#1\\\relax
7622 <pdfmarkbase> \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark]}%
7623 <dvipdf> \literalps@out{/ANN >>}%
7624 \else

```

```

7625      \ifundefined{@\pdf@linktype color}{%
7626      \Hy@colorlink\@linkcolor
7627      }{%
7628      \expandafter\Hy@colorlink
7629      \csname @\pdf@linktype color\endcsname
7630      }%
7631      \pdf@rect{#1}%
7632 \pdfmarkbase) \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark}%
7633 \dvipdf) \literalps@out{/ANN >>}%
7634      \Hy@endcolorlink
7635      \fi
7636      \fi
7637      \fi
7638 }

```

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

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

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

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

```

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

```

```

7639 \newsavebox{\pdf@box}
7640 \providecommand*{\Hy@setouterhbox}{\sbox}
7641 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
7642 \def\Hy@DEST{/DEST}
7643 \def\pdf@rect#1{%
7644 \dvipdf) \literalps@out{/ANN \pdf@type\space\the\pdf@toks\space <<}#1%
7645 \leavevmode
7646 \ifHy@breaklinks
7647 \Hy@setouterhbox\pdf@box{#1}%
7648 \else
7649 \sbox\pdf@box{#1}%
7650 \fi
7651 \dimen@ht\pdf@box
7652 \ifdim\dp\pdf@box=z@
7653 \literalps@out{H.S}%
7654 \else
7655 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
7656 \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...).

```

7657 \ifHy@breaklinks
7658 \expandafter\Hy@breaklinksunhbox
7659 \else
7660 \expandafter\box
7661 \fi
7662 \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

```

```

7663 \ifdim\dimen@=\z@
7664   \literalps@out{H.R}%
7665 \else
7666   \raise\dimen@ \hbox{\literalps@out{H.R}}%
7667 \fi
7668 \ifx\pdf@type\Hy@DEST
7669 \else
7670   \pdf@addtoksx{H.B}%
7671 \fi
7672 }

```

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.

```

7673 \newtoks\pdf@toks
7674 \newtoks\pdf@defaulttoks
7675 \pdf@defaulttoks={}
7676 \def\pdf@addtoks#1#2{%
7677   \edef\@processme{\pdf@toks{\the\pdf@toks\space /#2 #1}}%
7678   \@processme
7679 }
7680 \def\pdf@addtoksx#1{%
7681   \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
7682   \@processme
7683 }
7684 \def\PDFdefaults#1{%
7685   \pdf@defaulttoks={#1}%
7686 }

```

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

```

7687 % what is the type of pdfmark?
7688 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
7689 % what is the link type?
7690 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
7691 \def\pdf@linktype{link}
7692 % parameter is a stream of PDF
7693 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
7694 % parameter is a name
7695 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
7696 % parameter is a array
7697 \define@key{PDF}{Border}{%
7698   \edef\Hy@temp{#1}%
7699   \ifx\Hy@temp\@empty
7700   \else
7701     \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}%
7702   \fi
7703 }
7704 \let\Hy@BorderArrayPatch\@empty
7705 % parameter is a dictionary
7706 \define@key{PDF}{BorderStyle}{%
7707   \edef\Hy@temp{#1}%
7708   \ifx\Hy@temp\@empty
7709   \else
7710     \pdf@addtoks{<<#1>>}{BS}%
7711   \fi
7712 }
7713 % parameter is a array
7714 \define@key{PDF}{Color}{%
7715   \ifx\relax#1\relax

```



```

7716 \else
7717     \pdf@addtoks{[#1]}{Color}%
7718 \fi
7719 }
7720 % parameter is a string
7721 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
7722 % parameter is a integer
7723 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
7724 % parameter is a array
7725 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}
7726 % parameter is a string
7727 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
7728 % parameter is a string or file
7729 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
7730 % parameter is a destination
7731 \define@key{PDF}{Dest}{%
7732     \Hy@pstringdef\Hy@pstringDest{#1}%
7733     \ifx\Hy@pstringDest\@empty
7734         \Hy@pdfmarkerrortrue
7735         \Hy@Warning{Destination with empty name ignored}%
7736     \else
7737         \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
7738     \fi
7739 }
7740 \define@key{PDF}{DestAnchor}{%
7741     \Hy@pstringdef\Hy@pstringDest{#1}%
7742     \ifx\Hy@pstringDest\@empty
7743         \Hy@pdfmarkerrortrue
7744         \Hy@Warning{Destination with empty name ignored}%
7745     \else
7746         \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
7747     \fi
7748 }
7749 % parameter is a string
7750 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
7751 % parameter is a string
7752 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
7753 % parameter is a int
7754 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
7755 % parameter is a name
7756 \define@key{PDF}{AcroHighlight}{%
7757     \beginngroup
7758         \edef\x{#1}%
7759         \expandafter\endgroup\ifx\x\@empty
7760     \else
7761         \pdf@addtoks{#1}{H}%
7762     \fi
7763 }
7764 % parameter is a string
7765 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}
7766 % parameter is a string
7767 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
7768 % parameter is a string
7769 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
7770 % parameter is a string
7771 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
7772 % parameter is a Boolean

```

```

7773 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
7774 % parameter is a integer or name
7775 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
7776 % parameter is a name
7777 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
7778 % parameter is a string
7779 \define@key{PDF}{Params}{\pdf@addtoks{#1}{Params}}
7780 % parameter is a array
7781 \define@key{PDF}{Rect}{\pdf@addtoks{#1}{Rect}}
7782 % parameter is a integer
7783 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
7784 % parameter is a name
7785 \pdfmarkbase\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
7786 \dvipdf\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{}}
7787 % parameter is a string
7788 \define@key{PDF}{Title}{\pdf@addtoks{#1}{Title}}
7789 % parameter is a string
7790 \define@key{PDF}{Unix}{\pdf@addtoks{#1}{Unix}}
7791 % parameter is a string
7792 \define@key{PDF}{UnixFile}{\pdf@addtoks{#1}{UnixFile}}
7793 % parameter is an array
7794 \define@key{PDF}{View}{\pdf@addtoks{#1}{View}}
7795 % parameter is a string
7796 \define@key{PDF}{WinFile}{\pdf@addtoks{#1}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

7797 \define@key{PDF}{Author}{\pdf@addtoks{#1}{Author}}
7798 \define@key{PDF}{Creator}{\pdf@addtoks{#1}{Creator}}
7799 \define@key{PDF}{CreationDate}{\pdf@addtoks{#1}{CreationDate}}
7800 \define@key{PDF}{ModDate}{\pdf@addtoks{#1}{ModDate}}
7801 \define@key{PDF}{Producer}{\pdf@addtoks{#1}{Producer}}
7802 \define@key{PDF}{Subject}{\pdf@addtoks{#1}{Subject}}
7803 \define@key{PDF}{Keywords}{\pdf@addtoks{#1}{Keywords}}
7804 \define@key{PDF}{ModDate}{\pdf@addtoks{#1}{ModDate}}
7805 \define@key{PDF}{Base}{\pdf@addtoks{#1}{Base}}
7806 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
7807 \pdfmarkbase | dvipdf
7808 \*pdfmark | dvipdf
7809 \def\Acrobatmenu#1#2{%
7810   \pdfmark[{#2}] {%
7811     linktype=menu,%
7812     pdfmark=/ANN,%
7813     AcroHighlight=\pdfhighlight,%
7814     Border=\pdfborder,%
7815     BorderStyle=\pdfborderstyle,%
7816     Action={<< /Subtype /Named /N /#1 >>},%
7817     Subtype=/Link%
7818   }%
7819 }

```

And now for some useful examples:

```

7820 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
7821 \def\PDFNextPage@[#1]#2{%
7822   \pdfmark[{#2}] {%
7823     #1,%
7824     Border=\pdfborder,%
7825     BorderStyle=\pdfborderstyle,%
7826     Color=.2 .1 .5,%

```

```

7827 pdfmark=/ANN,%
7828 Subtype=/Link,%
7829 Page=/Next%
7830 }%
7831 }
7832 \def\PDFPreviousPage{%
7833 \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
7834 }
7835 \def\PDFPreviousPage@[#1]#2{%
7836 \pdfmark[#{#2}]{%
7837 #1,%
7838 Border=\pdfborder,%
7839 BorderStyle=\pdfborderstyle,%
7840 Color=.4 .4 .1,%
7841 pdfmark=/ANN,%
7842 Subtype=/Link,%
7843 Page=/Prev%
7844 }%
7845 }
7846 \def\PDFOpen#1{%
7847 \pdfmark{#1,pdfmark=/DOCVIEW}%
7848 }

```

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

```

7849 \def\hyper@linkurl#1#2{%
7850 \begingroup
7851 \Hy@pstringdef\Hy@pstringURI{#2}%
7852 \hyper@chars
7853 \leavevmode
7854 \pdfmarkbase)
7855 \pdfmark[#{#1}]{%
7856 pdfmark=/ANN,%
7857 linktype=url,%
7858 AcroHighlight=\pdfhighlight,%
7859 Border=\pdfborder,%
7860 BorderStyle=\pdfborderstyle,%
7861 Color=\urlbordercolor,%
7862 Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
7863 Subtype=/Link%
7864 }%
7865 \pdfmarkbase)
7866 \dvi pdf)
7867 \pdfmark[#{#1}]{%
7868 pdfmark=/LNK,%
7869 linktype=url,%
7870 AcroHighlight=\pdfhighlight,%
7871 Border=\pdfborder,%
7872 BorderStyle=\pdfborderstyle,%
7873 Color=\urlbordercolor,%
7874 Action={URI /URI <\Hy@hstringURI>}%
7875 }%
7876 \dvi pdf)
7877 \endgroup
7878 }
7879 \def\hyper@linkfile#1#2#3{%
7880 \begingroup
7881 \Hy@pstringdef\Hy@pstringF{#2}%
7882 \Hy@pstringdef\Hy@pstringD{#3}%

```

```

7883     \leavevmode
7884 <*pdfmark>
7885     \pdfmark[{#1}]{%
7886         pdfmark=/ANN,%
7887         Subtype=/Link,%
7888         AcroHighlight=\@pdfhighlight,%
7889         Border=\@pdfborder,%
7890         BorderStyle=\@pdfborderstyle,%
7891         linktype=file,%
7892         Color=\@filebordercolor,%
7893         Action={%
7894             <<%
7895             /S/GoToR%
7896             \ifHy@newwindow /NewWindow true\fi
7897             /F(\Hy@pstringF)%
7898             /D\ifx\#3\@0 \@pdfstartview\else(\Hy@pstringD)cvn\fi
7899             >>%
7900         }%
7901     }%
7902 </pdfmark>
7903 <*dvipdf>
7904     \pdfmark[{#1}]{%
7905         pdfmark=/LNK,%
7906         linktype=file,%
7907         AcroHighlight=\@pdfhighlight,%
7908         Border=\@pdfborder,%
7909         BorderStyle=\@pdfborderstyle,%
7910         Color=\@filebordercolor,%
7911         Action={%
7912             <<%
7913             /S/GoToR%
7914             \ifHy@newwindow /NewWindow true\fi
7915             /F(\Hy@pstringF)%
7916             /D\ifx\#3\@0 \@pdfstartview\else(\Hy@pstringD)cvn\fi
7917             >>%
7918         }%
7919     }%
7920 </dvipdf>
7921 \endgroup
7922 }
7923 \def\@hyper@launch run:#1\#2#3{%
7924     \begingroup
7925     \Hy@pstringdef\Hy@pstringF{#1}%
7926     \Hy@pstringdef\Hy@pstringP{#3}%
7927     \leavevmode
7928 <*pdfmark>
7929     \pdfmark[{#2}]{%
7930         pdfmark=/ANN,%
7931         Subtype=/Link,%
7932         AcroHighlight=\@pdfhighlight,%
7933         Border=\@pdfborder,%
7934         BorderStyle=\@pdfborderstyle,%
7935         linktype=run,%
7936         Color=\@runbordercolor,%
7937         Action={%
7938             <<%
7939             /S/Launch%

```

```

7940         \ifHy@newwindow /NewWindow true\fi
7941         /F(\Hy@pstringF)%
7942         \ifx\|#3\|
7943         \else
7944         /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
7945         \fi
7946         >>%
7947     }%
7948 }%
7949 </pdfmark>
7950 <*dvipdf>
7951     \pdfmark[{#2}]{%
7952         pdfmark=/LNK,%
7953         linktype=file,%
7954         AcroHighlight=@pdfhighlight,%
7955         Border=@pdfborder,%
7956         BorderStyle=@pdfborderstyle,%
7957         Color=@filebordercolor,%
7958         Action={%
7959             <<%
7960             /S/GoToR%
7961             \ifHy@newwindow /NewWindow true\fi
7962             /F(\Hy@pstringF)%
7963             \ifx\|#3\|
7964             \else
7965             /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
7966             \fi
7967             >>%
7968             }%
7969         }%
7970 </dvipdf>
7971 \endgroup
7972 }
7973 </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.

```

7974 <*dvips>
7975 \input{pdfmark.def}%
7976 \ifx\@pdfproducer\relax
7977 \def\@pdfproducer{dvips + Distiller}%
7978 \fi
7979 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
7980 \def\headerps@out#1{\special{! #1}}%
7981 \providecommand*\@pdfborder{0 0 1}
7982 \providecommand*\@pdfborderstyle{}
7983 \providecommand*\@pdfview{XYZ}
7984 \providecommand*\@pdfviewparams{ H.V}
7985 \def\Hy@BorderArrayPatch{BorderArrayPatch}
7986 \AtBeginDvi{%
7987 \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.

```
7988 /DvipsToPDF{72.27 mul Resolution div} def%
7989 /PDFToDvips{72.27 div Resolution mul} def%
7990 /BPToDvips{72 div Resolution mul}def%
```

The values inside the /Boder array are not taken literally, but interpreted by ghostscript using the resolution of the dvi driver. I don't know how other distiller programs behaves in this manner.

```
7991 /BorderArrayPatch{%
7992   [exch%
7993     dup dup type/integertype eq exch type/realtype eq or%
7994     {BPToDvips}if%
7995     }forall]%
7996   }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.

```
7997 /HyperBorder {1 PDFToDvips} def%
7998 /H.V {pdf@hoff pdf@voff null} def%
7999 /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

```
8000 /H.S {%
8001   currentpoint %
8002   HyperBorder add /pdf@lly exch def %
8003   dup DvipsToPDF 72 add /pdf@hoff exch def %
8004   HyperBorder sub /pdf@llx exch def%
8005 } def%
```

The calculation of upper left *y* is done without raising the point in T<sub>E</sub>X, 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

```
8006 /H.L {%
8007   2 sub dup%
8008   /HyperBasePt exch def %
8009   PDFToDvips /HyperBaseDvips exch def %
8010   currentpoint %
8011   HyperBaseDvips sub /pdf@ury exch def%
8012   /pdf@urx exch def%
8013 } def%
8014 /H.A {%
```

```

8015      H.L %
8016 % | /pdf@voff| = the distance from the top of the page to a point
8017 % | \baselineskip| above the current point in PDF coordinates
8018      currentpoint exch pop %
8019      vsize 72 sub exch DvipsToPDF %
8020      HyperBasePt sub % baseline skip
8021      sub /pdf@voff exch def%
8022  } def%
8023  /H.R {%
8024      currentpoint %
8025      HyperBorder sub /pdf@ury exch def %
8026      HyperBorder add /pdf@urx exch def %
8027 % | /pdf@voff| = the distance from the top of the page to the current point, in
8028 % PDF coordinates
8029      currentpoint exch pop vsize 72 sub %
8030      exch DvipsToPDF sub /pdf@voff exch def%
8031  } def %
8032  systemdict /pdfmark known%
8033  {%
8034      userdict /?pdfmark systemdict /exec get put%
8035  }{%
8036      userdict /?pdfmark systemdict /pop get put %
8037      userdict /pdfmark systemdict /cleartomark get put%
8038  }%
8039  ifelse%
8040  }%
8041 }
8042 \AfterBeginDocument{%
8043   \ifx\special@paper\@empty\else
8044     \ifHy@setpagesize
8045       \special{papersize=\special@paper}%
8046     \fi
8047     \Hy@DisableOption{setpagesize}%
8048   \fi
8049 }
8050 </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.

```

8051 <*vtexpdfmark>
8052 \input{pdfmark.def}%
8053 \ifx\@pdfproducer\relax
8054   \ifnum\OpMode=\@one
8055     \def\@pdfproducer{VTeX}%
8056   \else
8057     \def\@pdfproducer{VTeX + Distiller}%
8058   \fi
8059 \fi
8060 \def\literalps@out#1{\special{pS:#1}}%
8061 \def\headerps@out#1{\immediate\special{pS:#1}}%
8062 \providecommand*\@pdfborder{0 0 1}
8063 \providecommand*\@pdfborderstyle{}

```

```

8064 \providecommand*\@pdfview{XYZ}
8065 \providecommand*\@pdfviewparams{ H.V}

8066 \AtBeginDvi{%
8067   \headerps@out{%
8068     /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.

```

8069   /HyperBorder {1} def%
8070   /H.V {pdf@hoff pdf@voff null} def%
8071   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

8072   /H.S {%
8073     currentpoint %
8074     HyperBorder sub%
8075     /pdf@lly exch def %
8076     dup 72 add /pdf@hoff exch def %
8077     HyperBorder sub%
8078     /pdf@llx exch def%
8079   } def%

```

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

```

8080   /H.L {%
8081     2 sub%
8082     /HyperBasePt exch def %
8083     currentpoint %
8084     HyperBasePt add HyperBorder add%
8085     /pdf@ury exch def %
8086     HyperBorder add%
8087     /pdf@urx exch def%
8088   } def%
8089   /H.A {%
8090     H.L %
8091     currentpoint exch pop %
8092     vsize 72 sub exch %
8093     HyperBasePt add add%
8094     /pdf@voff exch def%
8095   } def%

```

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

```

8096   /H.R {%
8097     currentpoint %
8098     HyperBorder add%
8099     /pdf@ury exch def %
8100     HyperBorder add%
8101     /pdf@urx exch def %
8102     currentpoint exch pop vsize 72 sub add%
8103     /pdf@voff exch def%
8104   } def %
8105   systemdict /pdfmark known%
8106   {%
8107     userdict /?pdfmark systemdict /exec get put%
8108   }{%
8109     userdict /?pdfmark systemdict /pop get put %

```



```

8110      userdict /pdfmark systemdict /cleartomark get put%
8111      }%
8112      ifelse%
8113    }%
8114  }
8115 </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.

```

8116 <*textures>
8117 \begingroup
8118   \obeylines %
8119   \gdef\Hy@ps@CR{\noexpand
8120     }%
8121 \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`.

```

8122 \def\literalps@out#1{%
8123   \special{postscript 0 0 transform}%
8124   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
8125 }%
8126 %

```

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.

```

8127 \def\headerps@out#1{%
8128   \special{%
8129     prepostscript TeXdict begin\Hy@ps@CR
8130       #1\Hy@ps@CR
8131     end%
8132   }%
8133 }%
8134 %

```

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.

```

8135 \AtBeginDvi{%

```

```

8136 \headerps@out{%
8137   /betterpdfmark {%
8138     systemdict begin %
8139     dup /BP eq%
8140     {cleartomark gsave nulldevice []%
8141     {dup /EP eq%
8142     {cleartomark cleartomark grestore}%
8143     {cleartomark}%
8144     ifelse%
8145     }ifelse %
8146     end%
8147   }def\Hy@ps@CR
8148   __pdfmark__ not{/pdfmark /betterpdfmark load def}if %
8149   systemdict /pdfmark known%
8150   {%
8151     userdict /?pdfmark systemdict /load get put%
8152   }{%
8153     userdict /?pdfmark systemdict /pop get put%
8154   }%
8155   ifelse%
8156 }% end of \headerps@out
8157 }% end of \AtBeginDvi
8158 %
8159 \input{pdfmark.def}%
8160 %
8161 \ifx\@pdfproducer\relax
8162   \def\@pdfproducer{Textures + Distiller}%
8163 \fi
8164 \providecommand*\@pdfborder{0 0 1}
8165 \providecommand*\@pdfborderstyle{}
8166 \providecommand*\@pdfview{XYZ}
8167 \providecommand*\@pdfviewparams{ H.V}
8168 %

```

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  $\TeX$ .

```
8169 \headerps@out{%
```

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

```

8170 /vsize {\Hy@pageheight} def%
8171 /DvipsToPDF {} def%
8172 /PDFToDvips {} def%
8173 /BPToDvips {} def%
8174 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
8175 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
8176 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
8177 /H.S {%
8178   currentpoint %
8179   HyperBorder add /pdf@lly exch def %
8180   dup DvipsToPDF 72 add /pdf@hoff exch def %
8181   HyperBorder sub /pdf@llx exch def%
8182 } def\Hy@ps@CR
8183 /H.L {%
8184   2 sub %
8185   PDFToDvips /HyperBase exch def %

```

```

8186     currentpoint %
8187     HyperBase sub /pdf@ury exch def%
8188     /pdf@urx exch def%
8189 } def\Hy@ps@CR
8190 /H.A {%
8191     H.L %
8192     currentpoint exch pop %
8193     vsize 72 sub exch DvipsToPDF %
8194     HyperBase sub % baseline skip
8195     sub /pdf@voff exch def%
8196 } def\Hy@ps@CR
8197 /H.R {%
8198     currentpoint %
8199     HyperBorder sub /pdf@ury exch def %
8200     HyperBorder add /pdf@urx exch def %
8201     currentpoint exch pop vsize 72 sub %
8202     exch DvipsToPDF sub /pdf@voff exch def%
8203 } def\Hy@ps@CR
8204 }

8205 \AfterBeginDocument{%
8206     \ifHy@colorlinks
8207         \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
8208     \fi
8209 }

```

Textures provides built-in support for HyperTeX specials so this part combines code from `hypertex.def` with what is established by loading `pdfmark.def`, or any other driver.

```

8210 \expandafter\let\expandafter\keepPDF@SetupDoc
8211     \csname PDF@SetupDoc\endcsname
8212 \def\PDF@SetupDoc{%
8213     \ifx\@baseurl\@empty
8214     \else
8215         \special{html:<base href="\@baseurl">}%
8216     \fi
8217     \keepPDF@SetupDoc
8218 }

8219 \def\hyper@anchor#1{%
8220     \Hy@SaveLastskip
8221     \begingroup
8222         \let\protect=\string
8223         \special{html:<a name=\hyper@quote #1\hyper@quote>}%
8224     \endgroup
8225     \Hy@activeanchortrue
8226     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8227     \special{html:</a>}%
8228     \Hy@activeanchorfalse
8229     \Hy@RestoreLastskip
8230 }

8231 \def\hyper@anchorstart#1{%
8232     \Hy@SaveLastskip
8233     \begingroup
8234         \hyper@chars
8235         \special{html:<a name=\hyper@quote#1\hyper@quote>}%
8236     \endgroup
8237     \Hy@activeanchortrue
8238 }

8239 \def\hyper@anchorend{%

```

```

8240 \special{html:</a>}}%
8241 \Hy@activeanchorfalse
8242 \Hy@RestoreLastskip
8243 }
8244 \def\@urltype{url}
8245 \def\hyper@linkstart#1#2{%
8246 \expandafter\Hy@colorlink\csname @#1color\endcsname
8247 \def\Hy@tempa{#1}%
8248 \ifx\Hy@tempa\@urltype
8249 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
8250 \else
8251 \begingroup
8252 \hyper@chars
8253 \special{html:<a href=\hyper@quote\##2\hyper@quote>}}%
8254 \endgroup
8255 \fi
8256 }
8257 \def\hyper@linkend{%
8258 \special{html:</a>}}%
8259 \Hy@endcolorlink
8260 }
8261 \def\hyper@linkfile#1#2#3{%
8262 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
8263 }
8264 \def\hyper@linkurl#1#2{%
8265 \leavevmode
8266 \ifHy@raiselinks
8267 \setbox\@tempboxa=\color@hbox #1\color@endbox
8268 \@linkdim\dp\@tempboxa
8269 \lower\@linkdim\hbox{%
8270 \hyper@chars
8271 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
8272 }%
8273 \Hy@colorlink\@urlcolor#1%
8274 \@linkdim\ht\@tempboxa
8275 \advance\@linkdim by -6.5\p@
8276 \raise\@linkdim\hbox{\special{html:</a>}}%
8277 \Hy@endcolorlink
8278 \else
8279 \begingroup
8280 \hyper@chars
8281 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
8282 \Hy@colorlink\@urlcolor#1%
8283 \special{html:</a>}}%
8284 \Hy@endcolorlink
8285 \endgroup
8286 \fi
8287 }
8288 \def\hyper@link#1#2#3{%
8289 \hyper@linkurl{#3}{\##2}%
8290 }
8291 \def\hyper@image#1#2{%
8292 \begingroup
8293 \hyper@chars
8294 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
8295 \endgroup
8296 }

```

8297 </textures>

## 45.12 dvipsone

```
8298 % \subsection{dvipsone driver}
8299 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
8300 % |\special| commands.
8301 <*dvipsone>
8302 \providecommand*\@pdfborder{0 0 1}
8303 \providecommand*\@pdfborderstyle{}
8304 \input{pdfmark.def}%
8305 \ifx\@pdfproducer\relax
8306   \def\@pdfproducer{dvipsone + Distiller}%
8307 \fi
8308 \def\literalps@out#1{\special{ps:#1}}%
8309 \def\headerps@out#1{\special{! #1}}%
8310 \def\PDF@FinishDoc{%
8311   \Hy@UseMaketitleInfos
8312   \special{PDF: Keywords \@pdfkeywords}%
8313   \special{PDF: Title \@pdftitle}%
8314   \special{PDF: Creator \@pdfcreator}%
8315   \ifx\@pdfcreationdate\@empty
8316   \else
8317     \special{PDF: CreationDate \@pdfcreationdate}%
8318   \fi
8319   \ifx\@pdfmoddate\@empty
8320   \else
8321     \special{PDF: ModDate \@pdfmoddate}%
8322   \fi
8323   \special{PDF: Author \@pdfauthor}%
8324   \ifx\@pdfproducer\relax
8325   \else
8326     \special{PDF: Producer \@pdfproducer}%
8327   \fi
8328   \special{PDF: Subject \@pdfsubject}%
8329   \Hy@DisableOption{pdfauthor}%
8330   \Hy@DisableOption{pdftitle}%
8331   \Hy@DisableOption{pdfsubject}%
8332   \Hy@DisableOption{pdfcreator}%
8333   \Hy@DisableOption{pdfcreationdate}%
8334   \Hy@DisableOption{pdfmoddate}%
8335   \Hy@DisableOption{pdfproducer}%
8336   \Hy@DisableOption{pdfkeywords}%
8337 }
8338 \def\PDF@SetupDoc{%
8339   \pdfmark{%
8340     pdfmark=/DOCVIEW,%
8341     Page=\@pdfstartpage,%
8342     View=\@pdfstartview,%
8343     PageMode=/\@pdfpagemode
8344   }%
8345   \ifx\@pdfpagescrop\@empty
8346   \else
8347     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
8348   \fi
8349   \edef\Hy@temp{%
8350     \ifHy@toolbar\else /HideToolbar true\fi
```

```

8351 \ifHy@menubar\else /HideMenubar true\fi
8352 \ifHy@windowui\else /HideWindowUI true\fi
8353 \ifHy@fitwindow /FitWindow true\fi
8354 \ifHy@centerwindow /CenterWindow true\fi
8355 \ifHy@displaydoctitle /DisplayDocTitle true\fi
8356 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8357 \Hy@UseNameKey{Direction}\@pdfdirection
8358 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8359 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8360 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8361 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8362 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8363 \Hy@UseNameKey{Duplex}\@pdfduplex
8364 \ifx\@pdfpicktraybypdfsize\@empty
8365 \else
8366 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8367 \fi
8368 \ifx\@pdfprintpagerange\@empty
8369 \else
8370 /PrintPageRange[\@pdfprintpagerange]%
8371 \fi
8372 \ifx\@pdfnumcopies\@empty
8373 \else
8374 /NumCopies \@pdfnumcopies
8375 \fi
8376 }%
8377 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8378 \pdfmark{%
8379 pdfmark=/PUT,%
8380 Raw={%
8381 \string{Catalog\string}<<%
8382 \ifx\Hy@temp\@empty
8383 \else
8384 /ViewerPreferences<<\Hy@temp>>%
8385 \fi
8386 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8387 \ifx\@pdflang\@empty
8388 \else
8389 /Lang(\@pdflang)%
8390 \fi
8391 \ifx\@baseurl\@empty
8392 \else
8393 /URI<</Base(\Hy@pstringB)>>%
8394 \fi
8395 >>%
8396 }%
8397 }%
8398 }
8399 \providecommand*\@pdfview{XYZ}
8400 \providecommand*\@pdfviewparams{ %
8401 gsave revscl currentpoint grestore %
8402 72 add exch pop null exch null%
8403 }
8404 \def\Hy@BorderArrayPatch{BorderArrayPatch}

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called pdf@llx pdf@lly pdf@urx pdf@ury, which are the coordinates of the bounding rectangle of the link, and pdf@hoff pdf@voff which are the PDF page

offsets. These latter are currently not used in the dvipsone setup. The Rect pair are called at the LL and UR corners of a box known to  $\TeX$ .

```
8405 \special{headertext=%
```

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

```
8406 /DvipsToPDF { 65781 div } def%
8407 /PDFToDvips { 65781 mul } def%
8408 /BPToDvips{65781 mul}def%
8409 /HyperBorder { 1 PDFToDvips } def%
8410 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def%
```

The values inside the /Boder array are not taken literally, but interpreted by ghostscript using the resolution of the dvi driver. I don't know how other distiller programs behaves in this manner.

```
8411 /BorderArrayPatch{%
8412   [exch{%
8413     dup dup type/integertype eq exch type/realtype eq or%
8414     {BPToDvips}if%
8415   }forall]]%
8416 }def%
8417 /H.S {%
8418   currentpoint %
8419   HyperBorder add /pdf@lly exch def %
8420   dup DvipsToPDF 72 add /pdf@hoff exch def %
8421   HyperBorder sub /pdf@llx exch def%
8422 } def%
8423 /H.L {%
8424   2 sub %
8425   PDFToDvips /HyperBase exch def %
8426   currentpoint %
8427   HyperBase sub /pdf@ury exch def%
8428   /pdf@urx exch def%
8429 } def%
8430 /H.A {%
8431   H.L %
8432   currentpoint exch pop %
8433   HyperBase sub % baseline skip
8434   DvipsToPDF /pdf@voff exch def%
8435 } def%
8436 /H.R {%
8437   currentpoint %
8438   HyperBorder sub /pdf@ury exch def %
8439   HyperBorder add /pdf@urx exch def %
8440   currentpoint exch pop DvipsToPDF /pdf@voff exch def%
8441 } def %
8442 systemdict%
8443 /pdfmark known%
8444 {%
8445   userdict /?pdfmark /exec load put%
8446 }{%
8447   userdict /?pdfmark /pop load put %
8448   userdict /pdfmark systemdict /cleartomark get put%
8449 }%
8450 ifelse%
8451 }
8452 </dvipsone>
8453 < *dvipdf>
8454 \def\literalps@out#1{\special{pdf: #1}}%
```

```

8455 \providecommand*\@pdfborder{0 0 1}
8456 \providecommand*\@pdfborderstyle{}
8457 \end{dvipdf}

```

## 45.13 TeX4ht

```

8458 \let\*tex4ht\relax
8459 \ifpackageloaded{tex4ht}{%
8460   \typeout{hyperref tex4ht: tex4ht already loaded}%
8461 }{%
8462   \RequirePackage[htex4ht]{tex4ht}%
8463 }
8464 \hyperlinkfileprefix{}
8465 \def\PDF@FinishDoc{}
8466 \def\PDF@SetupDoc{%
8467   \ifx\@baseurl\@empty
8468   \else
8469     \special{t4ht=<base href="\@baseurl">}%
8470   \fi
8471 }
8472 \def\hyper@anchor#1{%
8473   \Hy@SaveLastskip
8474   \begingroup
8475     \let\protect=\string
8476     \special{t4ht=<a name=\hyper@quote #1\hyper@quote>}%
8477   \endgroup
8478   \Hy@activeanchortrue
8479   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8480   \special{t4ht=</a>}%
8481   \Hy@activeanchorfalse
8482   \Hy@RestoreLastskip
8483 }
8484 \def\hyper@anchorstart#1{%
8485   \Hy@SaveLastskip
8486   \begingroup
8487     \hyper@chars\special{t4ht=<a name=\hyper@quote#1\hyper@quote>}%
8488   \endgroup
8489   \Hy@activeanchortrue
8490 }
8491 \def\hyper@anchorend{%
8492   \special{t4ht=</a>}%
8493   \Hy@activeanchorfalse
8494   \Hy@RestoreLastskip
8495 }
8496 \def\@urltype{url}
8497 \def\hyper@linkstart#1#2{%
8498   \expandafter\Hy@colorlink\csname @#1color\endcsname
8499   \def\Hy@tempa{#1}%
8500   \ifx\Hy@tempa\@urltype
8501     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
8502   \else
8503     {\hyper@chars\special{t4ht=<a href=\hyper@quote\##2\hyper@quote>}}%
8504   \fi
8505 }
8506 \def\hyper@linkend{%
8507   \special{t4ht=</a>}%
8508   \Hy@endcolorlink
8509 }

```



```

8510 \def\hyper@linkfile#1#2#3{%
8511   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
8512 }
8513 \def\hyper@linkurl#1#2{%
8514   \leavevmode
8515   \ifHy@raiselinks
8516     \setbox\@tempboxa=\color@hbox #1\color@endbox
8517     \@linkdim\dp\@tempboxa
8518     \lower\@linkdim\hbox{%
8519       \begingroup
8520         \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
8521       \endgroup
8522     }%
8523     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
8524     \@linkdim\ht\@tempboxa
8525     \advance\@linkdim by -6.5\p@
8526     \raise\@linkdim\hbox{\special{t4ht=</a>}}%
8527   \else
8528     \begingroup
8529     \hyper@chars
8530     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
8531     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
8532     \special{t4ht=</a>}}%
8533   \endgroup
8534 \fi
8535 }
8536 \def\hyper@link#1#2#3{%
8537   \hyper@linkurl{#3}{\##2}%
8538 }
8539 \def\hyper@image#1#2{%
8540   \begingroup
8541   \hyper@chars
8542   \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}}%
8543   \endgroup
8544 }
8545 \let\autoref\ref
8546 \ifx \rEfLiNK \UnDef
8547   \def\rEfLiNK #1#2{#2}%
8548 \fi
8549 \def\backref#1{}
8550 </tex4ht>
8551 <*tex4htcfg>
8552 \IfFileExists{\jobname.cfg}{\endinput}{}
8553 \Preamble{html}
8554   \begin{document}%
8555 \EndPreamble
8556 \def\TeX{TeX}
8557 \def\OMEGA{\Omega}
8558 \def\LaTeX{LaTeX}
8559 \def\LaTeXe{\LaTeX2e}
8560 \def\eTeX{e-TeX}
8561 \def\MF{Metafont}
8562 \def\MP{Metapost}
8563 </tex4htcfg>

```

## 46 Driver-specific form support

### 46.1 pdfmarks

```
8564 (*pdfmark)
8565 \long\def\@Form[#1]{%
8566 \AtBeginDvi{%
8567   \headerps@out{%
8568 [%
8569   /_objdef{pdfDocEncoding}%
8570   /type/dict%
8571 /OBJ pdfmark%
8572 [%
8573   {pdfDocEncoding}%
8574   <<%
8575     /Type/Encoding%
8576     /Differences[%
8577       24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
8578       39/quotesingle %
8579       96/grave %
8580       128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin/fraction%
8581         /guilsinglleft/guilsinglright/minus/perthousand/quotedblbase%
8582         /quotedblleft/quotedblright/quoteleft/quoteright/quotesinglbase%
8583         /trademark/fi/fl/Lslash/OE/Scaron/Ydieresis/Zcaron/dotlessi%
8584         /lslash/oe/scaron/zcaron164/currency166/brokenbar %
8585         168/dieresis/copyright/ordfeminine %
8586         172/logicalnot/.notdef/registered/macron/degree/plusminus%
8587         /twosuperior/threesuperior/acute/mu %
8588         183/periodcentered/cedilla/onesuperior/ordmasculine %
8589         188/onequarter/onehalf/threequarters %
8590         192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE/Ccedilla%
8591         /Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute/Icircumflex%
8592         /Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex/Otilde/Odieresis%
8593         /multiply/Oslash/Ugrave/Uacute/Ucircumflex/Udieresis/Yacute%
8594         /Thorn/germandbls/agrave/aacute/acircumflex/atilde/adieresis%
8595         /aring/ae/ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
8596         /iacute/icircumflex/idieresis/eth/ntilde/ograve/oacute%
8597         /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
8598         /ucircumflex/udieresis/yacute/thorn/ydieresis%
8599     ]%
8600   >>%
8601 /PUT pdfmark%
8602 [%
8603   /_objdef{ZaDb}%
8604   /type/dict%
8605 /OBJ pdfmark%
8606 [%
8607   {ZaDb}%
8608   <<%
8609     /Type/Font%
8610     /Subtype/Type1%
8611     /Name/ZaDb%
8612     /BaseFont/ZapfDingbats%
8613   >>%
8614 /PUT pdfmark%
8615 [%
8616   /_objdef {Helv}%
```

```

8617 /type/dict%
8618 /OBJ pdfmark%
8619 [%
8620 {Helv}%
8621 <<%
8622 /Type/Font%
8623 /Subtype/Type1%
8624 /Name/Helv%
8625 /BaseFont/Helvetica%
8626 /Encoding{pdfDocEncoding}%
8627 >>%
8628 /PUT pdfmark%
8629 [%
8630 /_objdef {aform}%
8631 /type/dict%
8632 /OBJ pdfmark%
8633 [%
8634 /_objdef{afields}%
8635 /type/array%
8636 /OBJ pdfmark%
8637 {%
8638 [%
8639 /BBox[0 0 100 100]%
8640 /_objdef{Check}%
8641 /BP pdfmark %
8642 1 0 0 setrgbcolor%
8643 /ZapfDingbats 80 selectfont %
8644 20 20 moveto%
8645 (4)show%
8646 [/EP pdfmark%
8647 [%
8648 /BBox[0 0 100 100]%
8649 /_objdef{Cross}%
8650 /BP pdfmark %
8651 1 0 0 setrgbcolor%
8652 /ZapfDingbats 80 selectfont %
8653 20 20 moveto%
8654 (8)show%
8655 [/EP pdfmark%
8656 [%
8657 /BBox[0 0 250 100]%
8658 /_objdef{Submit}%
8659 /BP pdfmark %
8660 0.6 setgray %
8661 0 0 250 100 rectfill %
8662 1 setgray %
8663 2 2 moveto %
8664 2 98 lineto %
8665 248 98 lineto %
8666 246 96 lineto %
8667 4 96 lineto %
8668 4 4 lineto %
8669 fill %
8670 0.34 setgray %
8671 248 98 moveto %
8672 248 2 lineto %
8673 2 2 lineto %

```

```

8674 4 4 lineto %
8675 246 4 lineto %
8676 246 96 lineto %
8677 fill%
8678 /Helvetica 76 selectfont %
8679 0 setgray %
8680 8 22.5 moveto%
8681 (Submit)show%
8682 [/EP pdfmark%
8683 [%
8684   /BBox[0 0 250 100]%
8685   /_objdef{SubmitP}%
8686 /BP pdfmark %
8687 0.6 setgray %
8688 0 0 250 100 rectfill %
8689 0.34 setgray %
8690 2 2 moveto %
8691 2 98 lineto %
8692 248 98 lineto %
8693 246 96 lineto %
8694 4 96 lineto %
8695 4 4 lineto %
8696 fill %
8697 1 setgray %
8698 248 98 moveto %
8699 248 2 lineto %
8700 2 2 lineto %
8701 4 4 lineto %
8702 246 4 lineto %
8703 246 96 lineto %
8704 fill%
8705 /Helvetica 76 selectfont %
8706 0 setgray %
8707 10 20.5 moveto%
8708 (Submit)show%
8709 [/EP pdfmark%
8710 } ?pdfmark%
8711 [%
8712 {aform}%
8713 <<%
8714   /Fields{afields}%
8715   /DR<<%
8716     /Font<<%
8717       /ZaDb{ZaDb}%
8718       /Helv{Helv}%
8719     >>%
8720   >>%
8721   /DA(/Helv 10 Tf 0 g)%
8722   /CO{corder}%
8723   /NeedAppearances true%
8724 >>%
8725 /PUT pdfmark%
8726 [%
8727 {Catalog}%
8728 <<%
8729   /AcroForm{aform}%
8730 >>%

```

```

8731 /PUT pdfmark%
8732 [%
8733   /_objdef{corder}%
8734   /type/array%
8735 /OBJ pdfmark% dps
8736 }}%
8737   \setkeys{Form}{#1}%
8738 }
8739 \def\@endForm{}
8740 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8741   \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
8742 }
8743 \def\@TextField[#1]#2{% parameters, label
8744   \def\Fld@name{#2}%
8745   \def\Fld@default{}%
8746   \let\Fld@value\@empty
8747   \def\Fld@width{\DefaultWidthofText}%
8748   \def\Fld@height{\DefaultHeightofText}%
8749   \ifFld@multiline
8750     \beginngroup
8751       \dimen@=\DefaultHeightofText
8752       \dimen@=4\dimen@
8753       \edef\x{\endgroup
8754         \def\noexpand\Fld@height{\the\dimen@}%
8755       }%
8756     \x
8757   \fi
8758   \bgroup
8759     \Field@toks={ }%
8760     \setkeys{Field}{#1}%
8761     \ifFld@hidden\def\Fld@width{1sp}\fi
8762     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
8763     \LayoutTextField{#2}{%
8764       \Hy@escapeform\PDFForm@Text
8765       \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
8766         pdfmark=/ANN,Raw={\PDFForm@Text}%
8767       }%
8768     }%
8769   \egroup
8770 }
8771 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8772   \def\Fld@name{#2}%
8773   \let\Fld@default\relax
8774   \let\Fld@value\relax
8775   \def\Fld@width{\DefaultWidthofChoiceMenu}%
8776   \def\Fld@height{\DefaultHeightofChoiceMenu}%
8777   \bgroup
8778     \Fld@menulength=0 %
8779     \@tempdima\z@
8780     \@for\@curropt:=#3\do{%
8781       \expandafter\Fld@checkequals\@curropt==\%
8782       \Hy@StepCount\Fld@menulength
8783       \settowidth{\@tempdimb}{\@currDisplay}%
8784       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8785     }%
8786     \advance\@tempdima by 15\p@
8787     \Field@toks={ }%

```

```

8788 \setkeys{Field}{#1}%
8789 \ifFld@hidden\def\Fld@width{1sp}\fi
8790 \ifx\Fld@value\relax
8791 \let\Fld@value\Fld@default
8792 \fi
8793 \LayoutChoiceField{#2}{%
8794 \ifFld@radio
8795 \@@Radio{#3}%
8796 \else
8797 {%
8798 \ifdim\Fld@width<\@tempdima
8799 \ifdim\@tempdima<1cm\@tempdima1cm\fi
8800 \edef\Fld@width{\the\@tempdima}%
8801 \fi
8802 \def\Fld@flags{}%
8803 \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8804 \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8805 \ifx\Fld@flags\@empty
8806 \@tempdima=\the\Fld@menulength\Fld@charsize
8807 \advance\@tempdima by \Fld@borderwidth bp %
8808 \advance\@tempdima by \Fld@borderwidth bp %
8809 \edef\Fld@height{\the\@tempdima}%
8810 \fi
8811 \@@ListBox{#3}%
8812 }%
8813 \fi
8814 }%
8815 \egroup
8816 }
8817 \def\@@Radio#1{%
8818 \Fld@listcount=0 %
8819 \@for\@curropt:=#1\do{%
8820 \expandafter\Fld@checkequals\@curropt==\\%
8821 \Hy@StepCount\Fld@listcount
8822 \currDisplay\space
8823 \Hy@escapeform\PDFForm@Radio
8824 \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
8825 pdfmark=/ANN,%
8826 Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
8827 } % deliberate space between radio buttons
8828 }%
8829 }
8830 \newcount\Fld@listcount
8831 \def\@@ListBox#1{%
8832 \Choice@toks={ }%
8833 \Fld@listcount=0 %
8834 \@for\@curropt:=#1\do{%
8835 \expandafter\Fld@checkequals\@curropt==\\%
8836 \Hy@StepCount\Fld@listcount
8837 \edef\@processme{%
8838 \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8839 }\@processme
8840 }%
8841 \Hy@escapeform\PDFForm@List
8842 \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
8843 pdfmark=/ANN,Raw={\PDFForm@List}%
8844 }%

```

```

8845 }
8846 \def\@PushButton[#1]#2{% parameters, label
8847   \def\Fld@name{#2}%
8848   \bgroup
8849     \Field@toks={ }%
8850     \setkeys{Field}{#1}%
8851     \ifFld@hidden\def\Fld@width{1sp}\fi
8852     \LayoutPushButtonField{%
8853       \Hy@escapeform\PDFForm@Push
8854       \pdfmark[\MakeButtonField{#2}]{%
8855         pdfmark=/ANN,Raw={\PDFForm@Push}%
8856       }%
8857     }%
8858   \egroup
8859 }
8860 \def\@Submit[#1]#2{%
8861   \Field@toks={ }%
8862   \def\Fld@width{\DefaultWidthofSubmit}%
8863   \def\Fld@height{\DefaultHeightofSubmit}%
8864   \bgroup
8865     \def\Fld@name{Submit}%
8866     \setkeys{Field}{#1}%
8867     \ifFld@hidden\def\Fld@width{1sp}\fi
8868     \Hy@escapeform\PDFForm@Submit
8869     \pdfmark[\MakeButtonField{#2}]{%
8870       pdfmark=/ANN,%
8871       Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
8872     }%
8873   \egroup
8874 }
8875 \def\@Reset[#1]#2{%
8876   \Field@toks={ }%
8877   \def\Fld@width{\DefaultWidthofReset}%
8878   \def\Fld@height{\DefaultHeightofReset}%
8879   \bgroup
8880     \def\Fld@name{Reset}%
8881     \setkeys{Field}{#1}%
8882     \ifFld@hidden\def\Fld@width{1sp}\fi
8883     \Hy@escapeform\PDFForm@Reset
8884     \pdfmark[\MakeButtonField{#2}]{%
8885       pdfmark=/ANN,Raw={\PDFForm@Reset}%
8886     }%
8887   \egroup
8888 }
8889 \def\@CheckBox[#1]#2{% parameters, label
8890   \def\Fld@name{#2}%
8891   \def\Fld@default{0}%
8892   \bgroup
8893     \def\Fld@width{\DefaultWidthofCheckBox}%
8894     \def\Fld@height{\DefaultHeightofCheckBox}%
8895     \Field@toks={ }%
8896     \setkeys{Field}{#1}%
8897     \ifFld@hidden\def\Fld@width{1sp}\fi
8898     \LayoutCheckField{#2}{%
8899       \Hy@escapeform\PDFForm@Check
8900       \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
8901         pdfmark=/ANN,Raw={\PDFForm@Check}%

```

```

8902     }%
8903   }%
8904   \egroup
8905 }
8906 </pdfmark>

```

## 46.2 dvipdf

```

8907 <*dvipdf>
8908 \def\@Form[#1]{\typeout{Sorry, I do not support FORMs}}
8909 \def\@endForm{}
8910 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8911   \typeout{Sorry, dvipdf does not support FORM gauges}%
8912 }
8913 \def\@TextField[#1]#2{% parameters, label
8914   \typeout{Sorry, dvipdf does not support FORM text fields}%
8915 }
8916 \def\@CheckBox[#1]#2{% parameters, label
8917   \typeout{Sorry, dvipdf does not support FORM checkboxes}%
8918 }
8919 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8920   \typeout{Sorry, dvipdf does not support FORM choice menus}%
8921 }
8922 \def\@PushButton[#1]#2{% parameters, label
8923   \typeout{Sorry, dvipdf does not support FORM pushbuttons}%
8924 }
8925 \def\@Reset[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
8926 \def\@Submit[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
8927 </dvipdf>

```

## 46.3 HyperTeX

```

8928 <*hypertex>
8929 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
8930 \def\@endForm{}
8931 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8932   \typeout{Sorry, HyperTeX does not support FORM gauges}%
8933 }
8934 \def\@TextField[#1]#2{% parameters, label
8935   \typeout{Sorry, HyperTeX does not support FORM text fields}%
8936 }
8937 \def\@CheckBox[#1]#2{% parameters, label
8938   \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
8939 }
8940 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8941   \typeout{Sorry, HyperTeX does not support FORM choice menus}%
8942 }
8943 \def\@PushButton[#1]#2{% parameters, label
8944   \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
8945 }
8946 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
8947 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
8948 </hypertex>

```

## 46.4 TeX4ht

```

8949 <*tex4ht>
8950 \def\@Form[#1]{%
8951   \setkeys{Form}{#1}%
8952   \HCode{<form action="\Form@action" method="\Form@method">}%

```



```

8953 }
8954 \def\@endForm{\HCode{</form>}}
8955 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8956   \typeout{Sorry, TeX4ht does not support gauges}%
8957 }
8958 \def\@TextField[#1]#2{% parameters, label
8959   \let\Hy@reserved@a\@empty
8960   \def\Fld@name{#2}%
8961   \def\Fld@default{}%
8962   \bgroup
8963     \Field@toks={ }%
8964     \setkeys{Field}{#1}%
8965     \HCode{<label for="\Fld@name">#2</label>}%
8966     \ifFld@password
8967       \@@PasswordField
8968     \else
8969       \@@TextField
8970     \fi
8971   \egroup
8972 }
8973 \def\@@PasswordField{%
8974   \HCode{%
8975     <input type="password" %
8976       id="\Fld@name" %
8977       name="\Fld@name" %
8978       \ifFld@hidden type="hidden" \fi
8979       value="\Fld@default" %
8980       \the\Field@toks
8981     >%
8982   }%
8983 }
8984 \def\@@TextField{%
8985   \ifFld@multiline
8986     \HCode{<textarea %
8987       \ifFld@readonly readonly \fi
8988       id="\Fld@name" %
8989       name="\Fld@name" %
8990       \ifFld@hidden type="hidden" \fi
8991       \the\Field@toks>%
8992     }%
8993     \Fld@default
8994     \HCode{</textarea>}%
8995   \else
8996     \HCode{<input type="text" %
8997       \ifFld@readonly readonly \fi
8998       id="\Fld@name" %
8999       name="\Fld@name" %
9000       \ifFld@hidden type="hidden" \fi
9001       value="\Fld@default" %
9002       \the\Field@toks>%
9003     }%
9004   \fi
9005 }
9006 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9007   \def\Fld@name{#2}%
9008   \def\Fld@default{}%
9009   \let\Hy@reserved@a\relax

```

```

9010 \bgroup
9011 \expandafter\Fld@findlength#3\\%
9012 \Field@toks={ }%
9013 \setkeys{Field}{#1}%
9014 #2%
9015 \ifFld@radio
9016 \expandafter\@@Radio#3\\%
9017 \else
9018 \expandafter\@@Menu#3\\%
9019 \fi
9020 \egroup
9021 }
9022 \def\Fld@findlength#1\\{%
9023 \Fld@menulength=0 %
9024 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
9025 }
9026 \def\@@Menu#1\\{%
9027 \HCode{<select size="\the\Fld@menulength" %
9028 name="\Fld@name" %
9029 \the\Field@toks>%
9030 }%
9031 \@for\@curropt:=#1\do{%
9032 \expandafter\Fld@checkequals\@curropt==\\%
9033 \HCode{<option %
9034 \ifx\@curropt\Fld@default selected \fi
9035 value="\@currValue">\@currDisplay</option>%
9036 }%
9037 }%
9038 \HCode{</select>}%
9039 }
9040 \def\@@Radio#1\\{%
9041 \@for\@curropt:=#1\do{%
9042 \expandafter\Fld@checkequals\@curropt==\\%
9043 \HCode{<input type="radio" %
9044 \ifx\@curropt\Fld@default checked \fi
9045 name="\Fld@name" %
9046 value="\@currValue" %
9047 \the\Field@toks>%
9048 }%
9049 \@currDisplay
9050 }%
9051 }
9052 \def\@PushButton[#1]#2{% parameters, label
9053 \def\Fld@name{#2}%
9054 \bgroup
9055 \Field@toks={ }%
9056 \setkeys{Field}{#1}%
9057 \HCode{<input type="button" %
9058 name="\Fld@name" %
9059 value="#2" %
9060 \the\Field@toks>%
9061 }%
9062 \HCode{</button>}%
9063 \egroup
9064 }
9065 \def\@Submit[#1]#2{%
9066 \HCode{<button type="submit">#2</button>}%

```

```

9067 }
9068 \def\@Reset[#1]#2{%
9069   \HCode{<button type="reset">#2</button>}%
9070 }
9071 \def\@CheckBox[#1]#2{% parameters, label
9072   \let\Hy@reserved@a\@empty
9073   \def\Fld@name{#2}%
9074   \def\Fld@default{0}%
9075   \bgroup
9076     \Field@toks={ }%
9077     \setkeys{Field}{#1}%
9078     \HCode{<input type="checkbox" %
9079       \ifFld@checked checked \fi
9080       \ifFld@disabled disabled \fi
9081       \ifFld@readonly readonly \fi
9082       name="\Fld@name" %
9083       \ifFld@hidden type="hidden" \fi
9084       value="\Fld@default" %
9085       \the\Field@toks>}%
9086     #2%
9087   }%
9088   \egroup
9089 }
9090 </tex4ht>

```

## 46.5 pdfTeX

```

9091 <*pdfTeX>
9092 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9093   \typeout{Sorry, pdfTeX does not support FORM gauges}%
9094 }
9095 \def\MakeFieldObject#1#2{\sbox0{#1}%
9096   \immediate\pdfxform0 %
9097   \expandafter\edef\csname #2object\endcsname{%
9098     \the\pdflastxform\space 0 R%
9099   }%
9100   \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
9101 }%
9102 \def\@Form[#1]{%
9103   \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
9104   \setkeys{Form}{#1}%
9105   \ifnum\pdfTeXversion>13 %
9106     \pdfrefobj\OBJ@pdfdocencoding
9107     \pdfrefobj\OBJ@ZaDb
9108     \pdfrefobj\OBJ@Helv
9109     \pdfrefobj\OBJ@acroform
9110   \fi
9111   \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
9112   \MakeFieldObject%

```

Same as \ding{123} of package pifont.

```

9113   \begingroup
9114     \fontfamily{pzd}%
9115     \fontencoding{U}%
9116     \fontseries{m}%
9117     \fontshape{n}%
9118     \selectfont
9119     \char123 %
9120   \endgroup

```

```

9121   }{Ding}%
9122   \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{Submit}}}}{Submit}%
9123   \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{SubmitP}}}}{SubmitP}%
9124 }
9125 \def\@endForm{}
9126 \def\@TextField[#1]#2{% parameters, label
9127   \def\Fld@name{#2}%
9128   \def\Fld@default{}%
9129   \let\Fld@value\@empty
9130   \def\Fld@width{\DefaultWidthofText}%
9131   \def\Fld@height{\DefaultHeightofText}%
9132   \ifFld@multiline
9133     \begingroup
9134       \dimen@=\DefaultHeightofText
9135       \dimen@=4\dimen@
9136       \edef\x{\endgroup
9137         \def\noexpand\Fld@height{\the\dimen@}%
9138       }%
9139     \x
9140   \fi
9141   \bgroup
9142     \Field@toks={ }%
9143     \setkeys{Field}{#1}%
9144     \ifFld@hidden\def\Fld@width{1sp}\fi
9145     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
9146     \LayoutTextField{#2}{%
9147       \Hy@escapeform\PDFForm@Text
9148       \pdfstartlink user {\PDFForm@Text}\relax
9149       \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
9150     }%
9151   \egroup
9152 }
9153 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9154   \def\Fld@name{#2}%
9155   \let\Fld@default\relax
9156   \let\Fld@value\relax
9157   \def\Fld@width{\DefaultWidthofChoiceMenu}%
9158   \def\Fld@height{\DefaultHeightofChoiceMenu}%
9159   \bgroup
9160     \Fld@menulength=0 %
9161     \@tempdima\z@
9162     \@for\@curropt:=#3\do{%
9163       \expandafter\Fld@checkequals\@curropt==\%
9164       \Hy@StepCount\Fld@menulength
9165       \settowidth{\@tempdimb}{\@currDisplay}%
9166       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
9167     }%
9168     \advance\@tempdima by 15\p@
9169     \Field@toks={ }%
9170     \setkeys{Field}{#1}%
9171     \ifFld@hidden\def\Fld@width{1sp}\fi
9172     \ifx\Fld@value\relax
9173       \let\Fld@value\Fld@default
9174     \fi
9175     \LayoutChoiceField{#2}{%
9176       \ifFld@radio
9177         \@Radio{#3}%

```

```

9178 \else
9179 {%
9180 \ifdim\Fld@width<\@tempdima
9181 \ifdim\@tempdima<1cm\@tempdima1cm\fi
9182 \edef\Fld@width{\the\@tempdima}%
9183 \fi
9184 \def\Fld@flags{}%
9185 \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
9186 \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
9187 \ifx\Fld@flags\@empty
9188 \@tempdima=\the\Fld@menulength\Fld@charsize
9189 \advance\@tempdima by \Fld@borderwidth bp %
9190 \advance\@tempdima by \Fld@borderwidth bp %
9191 \edef\Fld@height{\the\@tempdima}%
9192 \fi
9193 \@@ListBox{#3}%
9194 }%
9195 \fi
9196 }%
9197 \egroup
9198 }
9199 \def\@@Radio#1{%
9200 \Fld@listcount=0 %
9201 \@for\@curropt:=#1\do{%
9202 \expandafter\Fld@checkequals\@curropt==\%
9203 \Hy@StepCount\Fld@listcount
9204 \@currDisplay\space
9205 \leavevmode
9206 \Hy@escapeform\PDFForm@Radio
9207 \pdfstartlink user {%
9208 \PDFForm@Radio
9209 /AP<<%
9210 /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.

```

9211 /\@currValue\space \DingObject
9212 >>%
9213 >>%
9214 }%
9215 \relax
9216 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
9217 \space % deliberate space between radio buttons
9218 }%
9219 }
9220 \newcount\Fld@listcount
9221 \def\@@ListBox#1{%
9222 \Choice@toks={ }%
9223 \Fld@listcount=0 %
9224 \@for\@curropt:=#1\do{%
9225 \expandafter\Fld@checkequals\@curropt==\%
9226 \Hy@StepCount\Fld@listcount
9227 \edef\@processme{%
9228 \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
9229 }\@processme
9230 }%
9231 \leavevmode

```

```

9232 \Hy@escapeform\PDFForm@List
9233 \pdfstartlink user {\PDFForm@List}\relax
9234 \MakeChoiceField{\Fld@width}{\Fld@height}%
9235 \pdfendlink
9236 }
9237 \def\@PushButton[#1]#2{% parameters, label
9238 \def\Fld@name{#2}%
9239 \bgroup
9240 \Field@toks={ }%
9241 \setkeys{Field}{#1}%
9242 \ifFld@hidden\def\Fld@width{1sp}\fi
9243 \LayoutPushButtonField{%
9244 \leavevmode
9245 \Hy@escapeform\PDFForm@Push
9246 \pdfstartlink user {\PDFForm@Push}\relax
9247 \MakeButtonField{#2}%
9248 \pdfendlink
9249 }%
9250 \egroup
9251 }
9252 \def\@Submit[#1]#2{%
9253 \Field@toks={ }%
9254 \def\Fld@width{\DefaultWidthofSubmit}%
9255 \def\Fld@height{\DefaultHeightofSubmit}%
9256 \bgroup
9257 \def\Fld@name{Submit}%
9258 \setkeys{Field}{#1}%
9259 \ifFld@hidden\def\Fld@width{1sp}\fi
9260 \leavevmode
9261 \Hy@escapeform\PDFForm@Submit
9262 \pdfstartlink user {%
9263 \PDFForm@Submit
9264 /AP<</N \SubmitObject/D \SubmitPObject>>%
9265 }%
9266 \relax
9267 \MakeButtonField{#2}%
9268 \pdfendlink
9269 \egroup
9270 }
9271 \def\@Reset[#1]#2{%
9272 \Field@toks={ }%
9273 \def\Fld@width{\DefaultWidthofReset}%
9274 \def\Fld@height{\DefaultHeightofReset}%
9275 \bgroup
9276 \def\Fld@name{Reset}%
9277 \setkeys{Field}{#1}%
9278 \ifFld@hidden\def\Fld@width{1sp}\fi
9279 \leavevmode
9280 \Hy@escapeform\PDFForm@Reset
9281 \pdfstartlink user {\PDFForm@Reset}\relax
9282 \MakeButtonField{#2}%
9283 \pdfendlink
9284 \egroup
9285 }
9286 \def\@CheckBox[#1]#2{% parameters, label
9287 \def\Fld@name{#2}%
9288 \def\Fld@default{0}%

```

```

9289 \bgroup
9290 \def\Fld@width{\DefaultWidthofCheckBox}%
9291 \def\Fld@height{\DefaultHeightofCheckBox}%
9292 \Field@toks={ }%
9293 \setkeys{Field}{#1}%
9294 \ifFld@hidden\def\Fld@width{1sp}\fi
9295 \LayoutCheckField{#2}{%
9296 \Hy@escapeform\PDFForm@Check
9297 \pdfstartlink user {\PDFForm@Check}\relax
9298 \MakeCheckField{\Fld@width}{\Fld@height}%
9299 \pdfendlink
9300 }%
9301 \egroup
9302 }
9303 \pdfobj { << /Type /Encoding /Differences [ 24 /breve /caron
9304 /circumflex /dotaccent /hungarumlaut /ogonek /ring /tilde 39
9305 /quotesingle 96 /grave 128 /bullet /dagger /daggerdbl /ellipsis
9306 /emdash /endash /florin /fraction /guilsinglleft /guilsinglright
9307 /minus /perthousand /quotedblbase /quotedblleft /quotedblright
9308 /quoteleft /quoteright /quotesinglbase /trademark /fi /fl /Lslash /OE
9309 /Scaron /Ydieresis /Zcaron /dotlessi /lslash /oe /scaron /zcaron 164
9310 /currency 166 /brokenbar 168 /dieresis /copyright /ordfeminine 172
9311 /logicalnot /.notdef /registered /macron /degree /plusminus
9312 /twosuperior /threesuperior /acute /mu 183 /periodcentered /cedilla
9313 /onesuperior /ordmasculine 188 /onequarter /onehalf /threequarters 192
9314 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE /Ccedilla
9315 /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute /Icircumflex
9316 /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex /Otilde
9317 /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex /Udieresis
9318 /Yacute /Thorn /germandbls /agrave /aacute /acircumflex /atilde
9319 /adieresis /aring /ae /ccedilla /egrave /eacute /ecircumflex
9320 /edieresis /igrave /iacute /icircumflex /idieresis /eth /ntilde
9321 /ograve /oacute /ocircumflex /otilde /odieresis /divide /oslash
9322 /ugrave /uacute /ucircumflex /udieresis /yacute /thorn /ydieresis ] >>
9323 }
9324 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
9325 \pdfobj{%
9326 <<%
9327 /Type/Font%
9328 /Subtype/Type1%
9329 /Name/ZaDb%
9330 /BaseFont/ZapfDingbats%
9331 >>%
9332 }
9333 \edef\OBJ@ZaDb{\the\pdflastobj}
9334 \pdfobj{%
9335 <<%
9336 /Type/Font%
9337 /Subtype/Type1%
9338 /Name/Helv%
9339 /BaseFont/Helvetica%
9340 /Encoding \OBJ@pdfdocencoding\space 0 R%
9341 >>%
9342 }
9343 \edef\OBJ@Helv{\the\pdflastobj}
9344 \pdfobj{%
9345 <<%

```

```

9346      /Fields []%
9347      /DR<<%
9348      /Font<<%
9349      /ZaDb \OBJ@ZaDb\space 0 R%
9350      /Helv \OBJ@Helv\space 0 R%
9351      >>%
9352      >>%
9353      /DA(/Helv 10 Tf 0 g)%
9354      /NeedAppearances true%
9355      >>%
9356    }
9357    \edef\OBJ@acroform{\the\pdflastobj}
9358  \pdfTeX

```

## 46.6 dvipdfm

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

```

9359 \dvipdfm

```

\@Gauge

```

9360 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9361   \typeout{Sorry, dvipdfm does not support FORM gauges}%
9362 }

```

\@Form

```

9363 \def\@Form[#1]{%
9364   \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
9365   \setkeys{Form}{#1}%
9366   \@pdfm@mark{obj @afields []}%
9367   \@pdfm@mark{obj @corder []}%
9368   \@pdfm@mark{%
9369     obj @aform <<%
9370     /Fields @afields%
9371     /DR<<%
9372     /Font<<%
9373     /ZaDb @OBJ@ZaDb%
9374     /Helv @OBJ@Helv%
9375     >>%
9376     >>%
9377     /DA(/Helv 10 Tf 0 g)%
9378     /CO @corder%
9379     /NeedAppearances true%
9380     >>%
9381   }%
9382   \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
9383 }

```

\@endForm

```

9384 \def\@endForm{}

```

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

```

9385 \def\dvipdfm@setdim{%
9386   height \the\ht\pdfm@box\space
9387   width \the\wd\pdfm@box\space
9388   depth \the\dp\pdfm@box\space
9389 }

```



## \@TextField

```

9390 \def\@TextField[#1]#2{% parameters, label
9391   \def\Fld@name{#2}%
9392   \def\Fld@default{}%
9393   \let\Fld@value\@empty
9394   \def\Fld@width{\DefaultWidthofText}%
9395   \def\Fld@height{\DefaultHeightofText}%
9396   \ifFld@multiline
9397     \begingroup
9398       \dimen@=\DefaultHeightofText
9399       \dimen@=4\dimen@
9400       \edef\x{\endgroup
9401         \def\noexpand\Fld@height{\the\dimen@}%
9402       }%
9403     \x
9404   \fi
9405   \bgroup
9406     \Field@toks={ }%
9407     \setkeys{Field}{#1}%
9408     \ifFld@hidden\def\Fld@width{1sp}\fi
9409     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
9410     \setbox\pdfm@box=\hbox{%
9411       \MakeTextField{\Fld@width}{\Fld@height}%
9412     }%
9413     \LayoutTextField{#2}{%
9414       \Hy@escapeform\PDFForm@Text
9415       \@pdfm@mark{%
9416         ann @\Fld@name\space \dvipdfm@setdim << \PDFForm@Text >>%
9417       }%
9418     }%
9419     \unhbox\pdfm@box
9420     \@pdfm@mark{put @afields @\Fld@name}% record in @afields array
9421   \egroup
9422 }

```

## \@ChoiceMenu

```

9423 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9424   \def\Fld@name{#2}%
9425   \let\Fld@default\relax
9426   \let\Fld@value\relax
9427   \def\Fld@width{\DefaultWidthofChoiceMenu}%
9428   \def\Fld@height{\DefaultHeightofChoiceMenu}%
9429   \bgroup
9430     \Fld@menulength=0 %
9431     \@tempdima\z@
9432     \@for\@curropt:=#3\do{%
9433       \expandafter\Fld@checkequals\@curropt==\%
9434       \Hy@StepCount\Fld@menulength
9435       \settowidth{\@tempdimb}{\@currDisplay}%
9436       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
9437     }%
9438     \advance\@tempdima by 15\p@
9439     \Field@toks={ }%
9440     \setkeys{Field}{#1}%
9441     \ifFld@hidden\def\Fld@width{1sp}\fi
9442     \ifx\Fld@value\relax
9443       \let\Fld@value\Fld@default

```

```

9444 \fi
9445 \LayoutChoiceField{#2}{%
9446 \ifFld@radio
9447 \@@Radio{#3}%
9448 \else
9449 {%
9450 \ifdim\Fld@width<\@tempdima
9451 \ifdim\@tempdima<1cm\@tempdima1cm\fi
9452 \edef\Fld@width{\the\@tempdima}%
9453 \fi
9454 \def\Fld@flags{}%
9455 \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
9456 \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
9457 \ifx\Fld@flags\@empty
9458 \@tempdima=\the\Fld@menulength\Fld@charsize
9459 \advance\@tempdima by \Fld@borderwidth bp %
9460 \advance\@tempdima by \Fld@borderwidth bp %
9461 \edef\Fld@height{\the\@tempdima}%
9462 \fi
9463 \@@ListBox{#3}%
9464 }%
9465 \fi
9466 }%
9467 \egroup
9468 }

```

\@@Radio

```

9469 \def\@@Radio#1{%
9470 \Fld@listcount=0 %
9471 \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
9472 \@for\@curropt:=#1\do{%
9473 \expandafter\Fld@checkequals\@curropt==\%
9474 \Hy@StepCount\Fld@listcount
9475 \@currDisplay\space
9476 \leavevmode
9477 \Hy@escapeform\PDFForm@Radio
9478 \@pdfm@mark{%
9479 ann \ifnum\Fld@listcount=1 @\Fld@name\space\fi
9480 \dvi pdfm@setdim
9481 <<%
9482 \PDFForm@Radio
9483 /AP<</N<</\@currValue /null>>>>%
9484 >>%
9485 }%
9486 \unhcopy\pdfm@box\space% deliberate space between radio buttons
9487 \ifnum\Fld@listcount=1\@pdfm@mark{put @afields @\Fld@name}\fi
9488 }%
9489 }

```

\Fld@listcount

```

9490 \newcount\Fld@listcount

```

\@@ListBox

```

9491 \def\@@ListBox#1{%
9492 \Choice@toks={ }%
9493 \Fld@listcount=0 %
9494 \@for\@curropt:=#1\do{%

```

```

9495 \expandafter\Fld@checkequals\@curropt==\%
9496 \Hy@StepCount\Fld@listcount
9497 \edef\@processme{%
9498   \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
9499 } \@processme
9500 }%
9501 \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
9502 \leavevmode
9503 \Hy@escapeform\PDFForm@List
9504 \@pdfm@mark{%
9505   ann @\Fld@name\space\dvipdfm@setdim
9506   << \PDFForm@List >>%
9507 }%
9508 \unhbox\pdfm@box
9509 \@pdfm@mark{put @afields @\Fld@name}%
9510 }

```

\@PushButton

```

9511 \def\@PushButton[#1]#2{% parameters, label
9512   \def\Fld@name{#2}%
9513   \bgroup
9514     \Field@toks={}%
9515     \setkeys{Field}{#1}%
9516     \ifFld@hidden\def\Fld@width{1sp}\fi
9517     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
9518     \LayoutPushButtonField{%
9519       \leavevmode
9520       \Hy@escapeform\PDFForm@Push
9521       \@pdfm@mark{%
9522         ann @\Fld@name\space\dvipdfm@setdim
9523         << \PDFForm@Push >>%
9524       }%
9525     }%
9526     \unhbox\pdfm@box
9527     \@pdfm@mark{put @afields @\Fld@name}%
9528   \egroup
9529 }

```

\@Submit

```

9530 \def\@Submit[#1]#2{%
9531   \Field@toks={}%
9532   \def\Fld@width{\DefaultWidthofSubmit}%
9533   \def\Fld@height{\DefaultHeightofSubmit}%
9534   \bgroup
9535     \def\Fld@name{Submit}%
9536     \setkeys{Field}{#1}%
9537     \ifFld@hidden\def\Fld@width{1sp}\fi
9538     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
9539     \leavevmode
9540     \Hy@escapeform\PDFForm@Submit
9541     \@pdfm@mark{%
9542       ann @\Fld@name\space\dvipdfm@setdim
9543       << \PDFForm@Submit >>%
9544     }%
9545     \unhbox\pdfm@box%
9546     \@pdfm@mark{put @afields @\Fld@name}%
9547   \egroup

```

```

9548 }

\@Reset
9549 \def\@Reset[#1]#2{%
9550   \Field@toks={ }%
9551   \def\Fld@width{\DefaultWidthofReset}%
9552   \def\Fld@height{\DefaultHeightofReset}%
9553   \bgroup
9554     \def\Fld@name{Reset}%
9555     \setkeys{Field}{#1}%
9556     \ifFld@hidden\def\Fld@width{1sp}\fi
9557     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
9558     \leavevmode
9559     \Hy@escapeform\PDFForm@Reset
9560     \@pdfm@mark{%
9561       ann @\Fld@name\space\dvipdfm@setdim
9562       << \PDFForm@Reset >>%
9563     }%
9564     \unhbox\pdfm@box
9565     \@pdfm@mark{put @afields @\Fld@name}%
9566   \egroup
9567 }

\@CheckBox
9568 \def\@CheckBox[#1]#2{% parameters, label
9569   \def\Fld@name{#2}%
9570   \def\Fld@default{0}%
9571   \bgroup
9572     \def\Fld@width{\DefaultWidthofCheckBox}%
9573     \def\Fld@height{\DefaultHeightofCheckBox}%
9574     \Field@toks={ }%
9575     \setkeys{Field}{#1}%
9576     \ifFld@hidden\def\Fld@width{1sp}\fi
9577     \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
9578     \LayoutCheckField{#2}{%
9579       \Hy@escapeform\PDFForm@Check
9580       \@pdfm@mark{%
9581         ann @\Fld@name\space\dvipdfm@setdim
9582         << \PDFForm@Check >>%
9583       }%
9584       \unhbox\pdfm@box
9585       \@pdfm@mark{put @afields @\Fld@name}%
9586     }%
9587   \egroup
9588 }

9589 \@pdfm@mark{obj @OBJpdfdocencoding%
9590   <<%
9591     /Type/Encoding%
9592     /Differences[%
9593       24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
9594       39/quotesingle %
9595       96/grave %
9596       128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
9597       /fraction/guilsinglleft/guilsinglright/minus/perthousand%
9598       /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
9599       /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%

```

```

9600      /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
9601      164/currency %
9602      166/brokenbar %
9603      168/dieresis/copyright/ordfeminine %
9604      172/logicalnot/.notdef/registered/macron/degree/plusminus%
9605      /twosuperior/threesuperior/acute/mu %
9606      183/periodcentered/cedilla/onesuperior/ordmasculine %
9607      188/onequarter/onehalf/threequarters %
9608      192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
9609      /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
9610      /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
9611      /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
9612      /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
9613      /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
9614      /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
9615      /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%
9616      /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
9617      /thorn/ydieresis%
9618      ]%
9619      >>%
9620 }
9621 \@pdfmark{obj @OBJZaDb%
9622   <<%
9623     /Type/Font%
9624     /Subtype/Type1%
9625     /Name/ZaDb%
9626     /BaseFont/ZapfDingbats%
9627   >>%
9628 }
9629 \@pdfmark{obj @OBJHelv%
9630   <<%
9631     /Type/Font%
9632     /Subtype/Type1%
9633     /Name/Helv%
9634     /BaseFont/Helvetica%
9635     /Encoding @OBJpdfdocencoding%
9636   >>%
9637 }
9638 </dvipdfm>

```

## 46.7 Common forms part

```

9639 <*pdfform>

```

\Hy@escapestring

```

9640 \begingroup\expandafter\expandafter\expandafter\endgroup
9641 \expandafter\ifx\csname pdfescapestring\endcsname\relax
9642   \let\Hy@escapestring\@firstofone
9643   \def\Hy@escapeform#1{%
9644     \ifHy@escapeform
9645       \def\Hy@escapestring##1{%
9646         \noexpand\Hy@escapestring{\noexpand##1}%
9647       }%
9648     \edef\Hy@temp{#1}%
9649     \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{\}\@nil
9650   \def\Hy@escapestring##1{%
9651     \ifundefined{Hy@esc@string##1}{%

```

```

9652         ##1%
9653         \ThisShouldNotHappen
9654     }{%
9655         \csname Hy@esc@\string##1\endcsname
9656     }%
9657 }%
9658 \else
9659     \let\Hy@escapestring\@firstofone
9660 \fi
9661 }%
9662 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
9663     \ifx\#3\%
9664     \else
9665         \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
9666         \Hy@ReturnAfterFi{%
9667             \Hy@@escapeform#3\@nil
9668         }%
9669     \fi
9670 }%
9671 \else
9672 \def\Hy@escapeform#1{%
9673     \ifHy@escapeform
9674         \let\Hy@escapestring\pdfescapestring
9675     \else
9676         \let\Hy@escapestring\@firstofone
9677     \fi
9678 }%
9679 \Hy@escapeform{}}%
9680 \fi

```

\PDFForm@Check

```

9681 \def\PDFForm@Check{%
9682     /Subtype/Widget%
9683     \ifFld@hidden /F 6\else /F 4\fi
9684     /T(\Hy@escapestring{\Fld@name})%
9685     /Q \Fld@align
9686     /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
9687     /MK<<%
9688         \ifnum\Fld@rotation=\z@
9689         \else
9690             /R \Fld@rotation
9691         \fi
9692         \ifx\Fld@bordercolor\relax
9693         \else
9694             /BC[\Fld@bordercolor]%
9695         \fi
9696         \ifx\Fld@bcolor\relax
9697         \else
9698             /BG[\Fld@bcolor]%
9699         \fi
9700         /CA(\Hy@escapestring{\Fld@cbsymbol})%
9701     >>%
9702     /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
9703         \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
9704     /FT/Btn%
9705     /H/P%
9706     \ifFld@checked /V/Yes\else /V/Off\fi

```

9707 }

\PDFForm@Push

```
9708 \def\PDFForm@Push{%
9709   /Subtype/Widget%
9710   \ifFld@hidden /F 6\else /F 4\fi
9711   /T(\Hy@escapestring{\Fld@name})%
9712   /FT/Btn%
9713   /Ff 65540%
9714   /H/P%
9715   /BS<</W \Fld@borderwidth/S\Fld@borderstyle>>%
9716   /MK<<%
9717     \ifnum\Fld@rotation=\z@
9718     \else
9719       /R \Fld@rotation
9720     \fi
9721     \ifx\Fld@bordercolor\relax
9722     \else
9723       /BC[\Fld@bordercolor]%
9724     \fi
9725   >>%
9726   /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick})>>%
9727 }
```

\Fld@additionalactions

```
9728 \def\Fld@@additionalactions{%
```

K input (keystroke) format

```
9729 \ifx\Fld@keystroke@code\@empty
9730 \else
9731   /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
9732 \fi
```

F display format

```
9733 \ifx\Fld@format@code\@empty
9734 \else
9735   /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
9736 \fi
```

V validation

```
9737 \ifx\Fld@validate@code\@empty
9738 \else
9739   /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
9740 \fi
```

C calculation

```
9741 \ifx\Fld@calculate@code\@empty
9742 \else
9743   /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
9744 \fi
```

Fo receiving the input focus

```
9745 \ifx\Fld@onfocus@code\@empty
9746 \else
9747   /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
9748 \fi
```

Bl loosing the input focus (blurred)

```
9749 \ifx\Fld@onblur@code\@empty
```

```

9750 \else
9751   /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
9752 \fi

D pressing the mouse button (down)
9753 \ifx\Fld@onmousedown@code\@empty
9754 \else
9755   /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
9756 \fi

U releasing the mouse button (up)
9757 \ifx\Fld@onmouseup@code\@empty
9758 \else
9759   /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
9760 \fi

E cursor enters the annotation's active area.
9761 \ifx\Fld@onenter@code\@empty
9762 \else
9763   /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
9764 \fi

X cursor exits the annotation's active area.
9765 \ifx\Fld@onexit@code\@empty
9766 \else
9767   /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
9768 \fi
9769 }
9770 \def\Fld@additionalactions{%
9771 \if-\Fld@@additionalactions-%
9772 \else
9773   /AA<<\Fld@@additionalactions>>%
9774 \fi
9775 }

```

#### \PDFForm@List

```

9776 \def\PDFForm@List{%
9777   /Subtype/Widget%
9778   \ifFld@hidden /F 6\else /F 4\fi
9779   /T(\Hy@escapestring{\Fld@name})%
9780   /FT/Ch%
9781   /Q \Fld@align
9782   /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
9783   /MK<<%
9784     \ifnum\Fld@rotation=\z@
9785     \else
9786       /R \Fld@rotation
9787     \fi
9788     \ifx\Fld@bordercolor\relax
9789     \else
9790       /BC[\Fld@bordercolor]%
9791     \fi
9792     \ifx\Fld@bcolor\relax
9793     \else
9794       /BG[\Fld@bcolor]%
9795     \fi
9796   >>%
9797   /DA(/Helv \strip@pt\Fld@charsize\space Tf%
9798     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%

```



```

9799 /Opt[\the\Choice@toks]%
9800 \ifx\Fld@default\relax
9801 \else
9802   /DV(\Hy@escapestring{\Fld@default})%
9803 \fi
9804 \ifx\Fld@value\relax
9805 \else
9806   /V(\Hy@escapestring{\Fld@value})%
9807 \fi
9808 \Fld@additionalactions
9809 \Fld@flags
9810 }

```

#### \PDFForm@Radio

```

9811 \def\PDFForm@Radio{%
9812   /Subtype/Widget%
9813   \ifFld@hidden /F 6\else /F 4\fi
9814   /T(\Hy@escapestring{\Fld@name})%
9815   /FT/Btn%
9816   /Ff 49152%
9817   /H/P%
9818   /BS<</W \Fld@borderwidth/S\Fld@borderstyle>>%
9819   /MK<<%
9820     \ifnum\Fld@rotation=\z@
9821     \else
9822       /R \Fld@rotation
9823     \fi
9824     \ifx\Fld@bordercolor\relax
9825     \else
9826       /BC[\Fld@bordercolor]%
9827     \fi
9828     \ifx\Fld@bcolor\relax
9829     \else
9830       /BG[\Fld@bcolor]%
9831     \fi
9832     /CA(H)%
9833   >>%
9834   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
9835     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
9836   \ifx\@currValue\Fld@default
9837     /V\Fld@default
9838   \else
9839     /V/Off%
9840   \fi
9841   \Fld@additionalactions
9842 }

```

#### \PDFForm@Text

```

9843 \def\PDFForm@Text{%
9844   /Subtype/Widget%
9845   \ifFld@hidden /F 6\else /F 4\fi
9846   /T(\Hy@escapestring{\Fld@name})%
9847   /Q \Fld@align
9848   /FT/Tx%
9849   /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
9850   /MK<<%
9851     \ifnum\Fld@rotation=\z@

```

```

9852     \else
9853         /R \Fld@rotation
9854     \fi
9855     \ifx\Fld@bordercolor\relax
9856     \else
9857         /BC[\Fld@bordercolor]%
9858     \fi
9859     \ifx\Fld@bcolor\relax
9860     \else
9861         /BG[\Fld@bcolor]%
9862     \fi
9863 >>%
9864 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
9865     \ifx\Fld@color@empty\else\space\Fld@color\fi)%
9866 /DV(\Hy@escapestring{\Fld@default})%
9867 /V(\Hy@escapestring{\Fld@value})%
9868 \Fld@additionalactions
9869 \ifFld@multiline
9870     \ifFld@readonly /Ff 4097\else /Ff 4096\fi
9871 \else
9872     \ifFld@password
9873     \ifFld@readonly /Ff 8193\else /Ff 8192\fi
9874     \else
9875     \ifFld@readonly /Ff 1\fi
9876     \fi
9877 \fi
9878 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
9879 }

```

\PDFForm@Submit

```

9880 \def\PDFForm@Submit{%
9881     /Subtype/Widget%
9882     \ifFld@hidden /F 6\else /F 4\fi
9883     /T(\Hy@escapestring{\Fld@name})%
9884     /FT/Btn%
9885     /Ff 65540%
9886     /H/P%
9887     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
9888     /MK<<%
9889         \ifnum\Fld@rotation=\z@
9890         \else
9891             /R \Fld@rotation
9892         \fi
9893         \ifx\Fld@bordercolor\relax
9894         \else
9895             /BC[\Fld@bordercolor]%
9896         \fi
9897     >>%
9898     /A<<%
9899         /S/SubmitForm%
9900         /F<<%
9901             /FS/URL%
9902             /F(\Hy@escapestring{\Form@action})%
9903         >>%
9904         \ifForm@html /Flags 4\fi
9905     >>%
9906 }

```

\PDFForm@Reset

```

9907 \def\PDFForm@Reset{%
9908   /Subtype/Widget%
9909   \ifFld@hidden /F 6\else /F 4\fi
9910   /T(\Hy@escapestring{\Fld@name})%
9911   /FT/Btn%
9912   /H/P%
9913   /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
9914   /Ff 65540%
9915   /MK<<%
9916     \ifnum\Fld@rotation=\z@
9917     \else
9918       /R \Fld@rotation
9919     \fi
9920     \ifx\Fld@bordercolor\relax
9921     \else
9922       /BC[\Fld@bordercolor]%
9923     \fi
9924 %   /CA (Clear)
9925 %   /AC (Done)
9926 >>%
9927 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
9928 /A<</S/ResetForm>>%
9929 }

9930 </pdfform>
9931 <*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  $\text{\LaTeX}$  macros.

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

```

9932 \def\phantomsection{%
9933   \Hy@GlobalStepCount\Hy@linkcounter
9934   \xdef\@currentHref{section*.\the\Hy@linkcounter}%
9935   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9936 }
9937 </package>

```

### 47.1 Bookmarks

```
9938 <*outlines>
```

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

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

```
9939 \def\Hy@writebookmark#1#2#3#4#5{% section number, text, label, level, file
```

```

9940 \ifx\WriteBookmarks\relax%
9941 \else
9942 \ifnum#4>\Hy@bookmarksdepth\relax
9943 \else
9944 \@@writetorep{#1}{#2}{#3}{#4}{#5}%
9945 \fi
9946 \fi
9947 }
9948 \def\Hy@currentbookmarklevel{0}
9949 \def\Hy@numberline#1{#1 }
9950 \def\@@writetorep#1#2#3#4#5{%
9951 \begingroup
9952 \edef\Hy@tempa{#5}%
9953 \ifx\Hy@tempa\Hy@bookmarkstype
9954 \edef\Hy@level{#4}%
9955 \ifx\Hy@levelcheck Y%
9956 \@tempcnta\Hy@level\relax
9957 \advance\@tempcnta by -1 %
9958 \ifnum\Hy@currentbookmarklevel<\@tempcnta
9959 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
9960 \advance\@tempcnta by 1 %
9961 \Hy@Warning{%
9962 Difference (\the\@tempcnta) between bookmark levels is %
9963 greater \MessageBreak than one, level fixed%
9964 }%
9965 \@tempcnta\Hy@currentbookmarklevel
9966 \advance\@tempcnta by 1 %
9967 \edef\Hy@level{\the\@tempcnta}%
9968 \fi
9969 \else
9970 \global\let\Hy@levelcheck Y%
9971 \fi
9972 \global\let\Hy@currentbookmarklevel\Hy@level
9973 \@tempcnta\Hy@level\relax
9974 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
9975 \advance\@tempcnta by -1 %
9976 \edef\Hy@tempa{#3}%
9977 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
9978 \ifx\Hy@tempa\Hy@tempb
9979 \Hy@Warning{%
9980 The anchor of a bookmark and its parent's must not%
9981 \MessageBreak be the same. Added a new anchor%
9982 }%
9983 \phantomsection
9984 \fi
9985 \ifHy@bookmarksnumbered
9986 \let\numberline\Hy@numberline
9987 \let\partnumberline\Hy@numberline
9988 \let\chapternumberline\Hy@numberline
9989 \else
9990 \let\numberline@gobble
9991 \let\partnumberline@gobble
9992 \let\chapternumberline@gobble
9993 \fi
9994 \pdfstringdef\Hy@tempa{#2}%
9995 \if@filesw
9996 \protected@write\@outlinefile{}{

```

```

9997      \protect\BOOKMARK
9998      [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
9999      {\Hy@tempa}{\Hy@tempb}%
10000    }%
10001    \fi
10002    \fi
10003    \endgroup
10004 }

```

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

```

10005 \newcommand{\currentpdfbookmark}{%
10006   \pdfbookmark[\Hy@currentbookmarklevel]%
10007 }
10008 \newcommand{\subpdfbookmark}{%
10009   \@tempcnta\Hy@currentbookmarklevel
10010   \Hy@StepCount\@tempcnta
10011   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
10012 }
10013 \newcommand{\belowpdfbookmark}[2]{%
10014   \@tempcnta\Hy@currentbookmarklevel
10015   \Hy@StepCount\@tempcnta
10016   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
10017   \advance\@tempcnta by -1 %
10018   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
10019 }

```

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.

```

10020 \renewcommand\pdfbookmark[3][0]{%
10021   \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
10022   \hyper@anchorstart{#3.#1}\hyper@anchorend
10023 }
10024 \def\BOOKMARK{\@ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}}
10025 \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](mailto:denis.girou@idris.fr)), then by by Taco Hoekwater ([taco.hoekwater@wkap.nl](mailto: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.

```

10026 \<vtx>
10027 \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.

```

10028 \begingroup
10029   \catcode'\'=12 %
10030   \ifnum\Hy@VTeXversion<650 %
10031     \catcode\'\"=12 %
10032     \gdef\hv@pdf@char#1#2#3{%
10033       \char
10034       \ifcase'#1#2#3 %
10035         "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
10036         \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%

```

```

10037 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
10038 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
10039 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
10040 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
10041 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
10042 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
10043 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
10044 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
10045 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
10046 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
10047 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
10048 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
10049 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
10050 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
10051 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
10052 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
10053 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
10054 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
10055 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
10056 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
10057 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
10058 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
10059 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
10060 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
10061 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
10062 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
10063 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
10064 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
10065 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
10066 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
10067 \fi
10068 }%
10069 \else
10070 \gdef\hv@pdf@char{\char'}%
10071 \fi
10072 \endgroup

```

\@@BOOKMARK

```

10073 \def\@@BOOKMARK[#1][#2]#3#4#5{%
10074 \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
10075 \edef\@mycount{\the\@serial@counter}%
10076 \Hy@StepCount\@serial@counter
10077 \edef\@parcount{%
10078 \expandafter\ifx\csname @count@#5\endcsname\relax
10079 0%
10080 \else
10081 \csname @count@#5\endcsname
10082 \fi
10083 }%
10084 \immediate\special{!outline #3;p=\@parcount,i=\@mycount,s=\ifx#2-c\else
10085 o\fi,t=#4}%
10086 }%

```

\ReadBookmarks

```

10087 \def\ReadBookmarks{%
10088 \begingroup
10089 \def\O{\hv@pdf@char 0}%

```

```

10090 \def\1{\hv@pdf@char 1}%
10091 \def\2{\hv@pdf@char 2}%
10092 \def\3{\hv@pdf@char 3}%
10093 \def\{({}%
10094 \def\)}{)%
10095 \def\do##1{%
10096 \ifnum\the\catcode'##1=\active
10097 \makeoother##1%
10098 \fi
10099 }%
10100 \dospecials
10101 \InputIfFileExists{\jobname.out}{\}{\}%
10102 \endgroup
10103 \ifx\WriteBookmarks\relax
10104 \else
10105 \if@filesw
10106 \newwrite\@outlinefile
10107 \immediate\openout\@outlinefile=\jobname.out\relax
10108 \ifHy@typexml
10109 \immediate\write\@outlinefile{<relaxxml>\relax}%
10110 \fi
10111 \fi
10112 \fi
10113 }

10114 </vtex>
10115 <*\vtex>
10116 \def\ReadBookmarks{%
10117 \begingroup
10118 \escapechar='\'%
10119 \let\escapechar\@gobble %
10120 \def\@@BOOKMARK [##1][##2]##3##4##5{\calc@bm@number{##5}}%
10121 \InputIfFileExists{\jobname.out}{\}{\}%
10122 \ifx\WriteBookmarks\relax
10123 \global\let\WriteBookmarks\relax
10124 \fi
10125 \def\@@BOOKMARK [##1][##2]##3##4##5{%
10126 \def\Hy@temp{##4}%
10127 <*pdftex>
10128 \Hy@pstringdef\Hy@pstringName{##3}%
10129 \Hy@OutlineName{\Hy@pstringName{
10130 ##2\check@bm@number{##3}}%
10131 }{%
10132 \expandafter\strip@prefix\meaning\Hy@temp
10133 }%
10134 </pdftex>
10135 <*pdfmark>
10136 \Hy@pstringdef\Hy@pstringName{##3}%
10137 \pdfmark{%
10138 pdfmark=/OUT,%
10139 Count={##2\check@bm@number{##3}},%
10140 Dest={\Hy@pstringName},%
10141 Title=\expandafter\strip@prefix\meaning\Hy@temp
10142 }%
10143 </pdfmark>
10144 <*dvipdfm>
10145 \Hy@pstringdef\Hy@pstringName{##3}%
10146 \@pdfm@mark{%

```

```

10147         outline \ifHy@DvipdfmxOutlineOpen
10148             [%
10149                 \ifnum##21>\z@
10150                 \else
10151                     -%
10152                 \fi
10153             ] %
10154         \fi
10155         ##1<<%
10156         /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
10157         /A<<%
10158         /S/GoTo%
10159         /D(\Hy@pstringName)%
10160         >>%
10161     >>%
10162 }%
10163 </dvipdfm>
10164 }%
10165 {%
10166     \def\WriteBookmarks{0}%
10167     \InputIfFileExists{\jobname.out}{\}{}%
10168 }%
10169 {%\escapechar\m@ne\InputIfFileExists{\jobname.out}{\}{\}}%
10170 \ifx\WriteBookmarks\relax
10171 \else
10172     \if@filesw
10173         \newwrite\@outlinefile
10174         \immediate\openout\@outlinefile=\jobname.out\relax
10175         \ifHy@typexml
10176             \immediate\write\@outlinefile{<relaxxml>\relax}%
10177         \fi
10178     \fi
10179 \fi
10180 \endgroup
10181 }
10182 <*pdfTeX>
10183 \def\Hy@OutlineName#1#2#3#4{%
10184     \pdfoutline goto name{#2}count#3{#4}%
10185 }
10186 </pdfTeX>
10187 \def\check@bm@number#1{%
10188     \expandafter\ifx\csname B_#1\endcsname\relax
10189     0%
10190 \else
10191     \csname B_#1\endcsname
10192 \fi
10193 }
10194 \def\calc@bm@number#1{%
10195     \@tempcnta=\check@bm@number{#1}\relax
10196     \advance\@tempcnta by 1 %
10197     \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
10198 }
10199 </!vTeX>

```

This code is added, so that option ‘pdfpagenumbers’ works with option ‘implicit’ (suggestion of Sebastian Rahtz).

```

10200 \ifHy@implicit
10201 \else

```



```

10202 \def\@begindvi{%
10203     \unvbox\@begindvibox
10204     \HyPL@EveryPage
10205     \global\let\@begindvi\HyPL@EveryPage
10206 }%
10207 \expandafter\endinput
10208 \fi

10209 </outlines>
10210 <*outlines | hypertex>

10211 \let\H@old@ssect\@ssect
10212 \def\@ssect#1#2#3#4#5{%
10213     \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
10214     \phantomsection
10215 }

10216 \let\H@old@schapter\@schapter
10217 \def\@schapter#1{%
10218     \H@old@schapter{#1}%
10219     \begingroup
10220         \let\@mkboth\@gobbletwo
10221         \Hy@GlobalStepCount\Hy@linkcounter
10222         \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
10223         \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
10224     \endgroup
10225 }

```

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:

```

10226 \@ifundefined{chapter}{-}{%
10227     \let\Hy@org@chapter\@chapter
10228     \def\@chapter{%
10229         \def\Hy@next{%
10230             \Hy@GlobalStepCount\Hy@linkcounter
10231             \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
10232             \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
10233         }%
10234         \ifnum\c@secnumdepth>\m@ne
10235             \@ifundefined{if@mainmatter}{%
10236                 \iftrue{\csname if@mainmatter\endcsname}%
10237                 \let\Hy@next\relax
10238             }%
10239             \fi
10240             \Hy@next
10241             \Hy@org@chapter
10242         }%
10243     }

10244 \let\H@old@part\@part
10245 \begingroup\expandafter\expandafter\expandafter\endgroup
10246 \expandafter\ifx\csname chapter\endcsname\relax
10247     \let\Hy@secnum@part\z@
10248 \else
10249     \let\Hy@secnum@part\m@ne
10250 \fi
10251 \def\@part{%
10252     \ifnum\Hy@secnum@part>\c@secnumdepth
10253         \phantomsection

```

```

10254 \fi
10255 \H@old@part
10256 }

10257 \let\H@old@spart\@spart
10258 \def\@spart#1{%
10259 \H@old@spart{#1}%
10260 \Hy@GlobalStepCount\Hy@linkcounter
10261 \xdef\@currentHref{part*.\the\Hy@linkcounter}%
10262 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
10263 }

10264 \let\H@old@sect\@sect
10265 \def\@sect#1#2#3#4#5#6[#7]#8{%
10266 \ifnum #2>\c@secnumdepth
10267 \Hy@GlobalStepCount\Hy@linkcounter
10268 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
10269 \fi
10270 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}%
10271 \ifnum #2>\c@secnumdepth
10272 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
10273 \fi
10274 }

10275 </outlines | hypertex>
10276 <*outlines>

10277 \expandafter\def\csname Parent-4\endcsname{}
10278 \expandafter\def\csname Parent-3\endcsname{}
10279 \expandafter\def\csname Parent-2\endcsname{}
10280 \expandafter\def\csname Parent-1\endcsname{}
10281 \expandafter\def\csname Parent0\endcsname{}
10282 \expandafter\def\csname Parent1\endcsname{}
10283 \expandafter\def\csname Parent2\endcsname{}
10284 \expandafter\def\csname Parent3\endcsname{}
10285 \expandafter\def\csname Parent4\endcsname{}

10286 </outlines>

```

## 48 Compatibility with koma-script classes

```

10287 <*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.

```

10288 \def\Hy@tempa{%
10289 \def\@addchap[##1]##2{%
10290 \typeout{##2}%
10291 \if@twoside
10292 \@mkboth{##1}{}%
10293 \else
10294 \@mkboth{}{##1}%
10295 \fi
10296 \addtocontents{lof}{\protect\addvspace{10\p@}}%
10297 \addtocontents{lot}{\protect\addvspace{10\p@}}%
10298 \Hy@GlobalStepCount\Hy@linkcounter
10299 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
10300 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
10301 \if@twocolumn

```

```

10302      \@topnewpage[\@makeschapterhead{##2}]%
10303      \else
10304      \@makeschapterhead{##2}%
10305      \@afterheading
10306      \fi
10307      \addcontentsline{toc}{chapter}{##1}%
10308    }%
10309  }
10310  \@ifclassloaded{scrbook}{%
10311    \@ifclasslater{scrbook}{2001/01/01}{%
10312      \let\Hy@tempa\@empty
10313    }{}%
10314  }{%
10315    \@ifclassloaded{scrreprt}{%
10316      \@ifclasslater{scrreprt}{2001/01/01}{%
10317        \let\Hy@tempa\@empty
10318      }{}%
10319    }{%
10320      \let\Hy@tempa\@empty
10321    }%
10322  }%
10323  \Hy@tempa
10324  </outlines | hypertex>

```

## 49 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek oberdiek@ruf.uni-freiburg.de

### 49.1 PD1 encoding

```

10325 <*pd1enc>
10326 \DeclareFontEncoding{PD1}{}{}

```

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

```

10327 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
10328 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
10329 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
10330 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
10331 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed

```

#### Accents

```

10332 \DeclareTextAccent{'}{PD1}{\textgrave}
10333 \DeclareTextAccent{'\'}{PD1}{\textacute}
10334 \DeclareTextAccent{\`}{PD1}{\textcircumflex}
10335 \DeclareTextAccent{\~}{PD1}{\texttilde}
10336 \DeclareTextAccent{\"}{PD1}{\textdieresis}
10337 \DeclareTextAccent{\r}{PD1}{\textring}
10338 \DeclareTextAccent{\v}{PD1}{\textcaron}
10339 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
10340 \DeclareTextAccent{\c}{PD1}{\textcedilla}
10341 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textgrave}
10342 \DeclareTextCompositeCommand{'\'}{PD1}{\@empty}{\textacute}
10343 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textcircumflex}
10344 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
10345 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textdieresis}
10346 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
10347 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}
10348 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}

```

```

10349 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
10350 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}

Accent glyph names
10351 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve
10352 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
10353 \DeclareTextCommand{\textcircumflex}{PD1}{\032} % circumflex
10354 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
10355 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
10356 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
10357 \DeclareTextCommand{\textring}{PD1}{\036} % ring
10358 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde

\040: space
\041: exclam
10359 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042
10360 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign
10361 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar
10362 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent
10363 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand

\047: quotesingle
10364 \DeclareTextCommand{\textparenleft}{PD1}{\string\()} % parenleft \050
10365 \DeclareTextCommand{\textparenright}{PD1}{\string\)} % parenright \051

\052: asterisk
\053: plus
\054: comma
\055: hyphen
\056: period
\057: slash
\060... \071: 0...9
\072: colon
\073: semicolon
10366 \DeclareTextCommand{\textless}{PD1}{<} % less \074

\075: equal
10367 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076

\077: question
\100: at
\101... \132: A...Z
\133: bracketleft
10368 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash

\135: bracketright
10369 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum
10370 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
10371 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave

\141... \172: a...z
10372 \DeclareTextCompositeCommand{\.}{PD1}{i}{i} % i
10373 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
10374 \DeclareTextCommand{\textbar}{PD1}{|} % bar
10375 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
10376 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde

No glyph \177 in PDFDocEncoding.
10377 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
10378 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
10379 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl
10380 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis

```

```

10381 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
10382 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
10383 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
10384 \DeclareTextCommand{\textfractionmark}{PD1}{\207} % fraction, \207
10385 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft
10386 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
10387 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
10388 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
10389 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
10390 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
10391 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright
10392 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
10393 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
10394 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
10395 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark
10396 \DeclareTextCommand{\textfi}{PD1}{\223} % fi ?? \223
10397 \DeclareTextCommand{\textfl}{PD1}{\224} % fl ?? \224
10398 \DeclareTextCommand{\L}{PD1}{\225} % Lslash, \225
10399 \DeclareTextCommand{\OE}{PD1}{\226} % OE
10400 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron
10401 \DeclareTextCompositeCommand{\"}{PD1}{Y}{\230} % Ydieresis
10402 \DeclareTextCommand{\IJ}{PD1}{\230}
10403 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231} % Zcaron, \231
10404 \DeclareTextCommand{\i}{PD1}{\232} % dotlessi, \232
10405 \DeclareTextCommand{\l}{PD1}{\233} % lslash, \233
10406 \DeclareTextCommand{\oe}{PD1}{\234} % oe
10407 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
10408 \DeclareTextCompositeCommand{\v}{PD1}{z}{\236} % zcaron, 236

```

No glyph \237 in PDFDocEncoding.

The euro \240 is inserted in version 1.3 of the pdf specification.

```

10409 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
10410 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown
10411 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
10412 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
10413 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
10414 \DeclareTextCommand{\textyen}{PD1}{\245} % yen
10415 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
10416 \DeclareTextCommand{\textsection}{PD1}{\247} % section
10417 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
10418 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
10419 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
10420 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
10421 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

```

No glyph \255 in PDFDocEncoding.

```

10422 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
10423 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
10424 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
10425 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
10426 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
10427 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
10428 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
10429 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
10430 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
10431 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
10432 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
10433 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior
10434 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine

```

10435 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright  
10436 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter  
10437 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf  
10438 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters  
10439 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown  
10440 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300} % Agrave  
10441 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301} % Acute  
10442 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302} % Acircumflex  
10443 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303} % Atilde  
10444 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304} % Adieresis  
10445 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring  
10446 \DeclareTextCommand{\AE}{PD1}{\306} % AE  
10447 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla  
10448 \DeclareTextCompositeCommand{\'}{PD1}{E}{\310} % Egrave  
10449 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311} % Eacute  
10450 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312} % Ecircumflex  
10451 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313} % Edieresis  
10452 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314} % Igrave  
10453 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315} % Iacute  
10454 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316} % Icircumflex  
10455 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317} % Idieresis  
10456 \DeclareTextCommand{\DH}{PD1}{\320} % Eth  
10457 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth  
10458 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321} % Ntilde  
10459 \DeclareTextCompositeCommand{\'}{PD1}{O}{\322} % Ograve  
10460 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323} % Oacute  
10461 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324} % Ocircumflex  
10462 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325} % Otilde  
10463 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326} % Odieresis  
10464 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply  
10465 \DeclareTextCommand{\O}{PD1}{\330} % Oslash  
10466 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331} % Ugrave  
10467 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute  
10468 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333} % Ucircumflex  
10469 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis  
10470 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335} % Yacute  
10471 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn  
10472 \DeclareTextCommand{\ss}{PD1}{\337} % germandbls  
10473 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340} % agrave  
10474 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute  
10475 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342} % acircumflex  
10476 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343} % atilde  
10477 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344} % adieresis  
10478 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring  
10479 \DeclareTextCommand{\ae}{PD1}{\346} % ae  
10480 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla  
10481 \DeclareTextCompositeCommand{\'}{PD1}{e}{\350} % egrave  
10482 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute  
10483 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352} % ecircumflex  
10484 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353} % edieresis  
10485 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354} % igrave  
10486 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave  
10487 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute  
10488 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute  
10489 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356} % icircumflex  
10490 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356} % icircumflex  
10491 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis

```

10492 \DeclareTextCompositeCommand{"}{PD1}{\i}{\357} % idieresis
10493 \DeclareTextCommand{\dh}{PD1}{\360} % eth
10494 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361} % ntilde
10495 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362} % ograve
10496 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363} % oacute
10497 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364} % ocircumflex
10498 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365} % otilde
10499 \DeclareTextCompositeCommand{"}{PD1}{o}{\366} % odieresis
10500 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
10501 \DeclareTextCommand{\o}{PD1}{\370} % oslash
10502 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371} % ugrave
10503 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372} % uacute
10504 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373} % ucircumflex
10505 \DeclareTextCompositeCommand{"}{PD1}{u}{\374} % udieresis
10506 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375} % yacute
10507 \DeclareTextCommand{\th}{PD1}{\376} % thorn
10508 \DeclareTextCompositeCommand{"}{PD1}{y}{\377} % ydieresis
10509 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

10510 \DeclareTextCommand{\SS}{PD1}{SS}
10511 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

10512 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
10513 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
10514 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
10515 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
10516 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
10517 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
10518 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
10519 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

10520 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
10521 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
10522 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
10523 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
10524 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
10525 \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;

```

10526 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
10527 \DeclareTextCompositeCommand{\'}{PD1}{c}{c} % cacute
10528 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
10529 \DeclareTextCompositeCommand{\'}{PD1}{n}{n} % nacute
10530 \DeclareTextCompositeCommand{\'}{PD1}{s}{s} % sacute
10531 \DeclareTextCompositeCommand{\'}{PD1}{z}{z} % zacute
10532 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot
10533 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
10534 \DeclareTextCompositeCommand{\'}{PD1}{C}{C} % Cacute
10535 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
10536 \DeclareTextCompositeCommand{\'}{PD1}{N}{N} % Nacute
10537 \DeclareTextCompositeCommand{\'}{PD1}{S}{S} % Sacute
10538 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z} % Zacute
10539 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot

```

```

10540 </pdlenc>

```

## 49.2 PU encoding

```
10541 ⟨*puenc⟩
10542 \DeclareFontEncoding{PU}{-}{-}
```

### 49.2.1 Basic Latin

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

```
10543 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
10544 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
10545 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
10546 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
10547 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed
```

#### Accents

```
10548 \DeclareTextAccent{\`}{PU}{\textgrave}
10549 \DeclareTextAccent{\'}{PU}{\textacute}
10550 \DeclareTextAccent{\~}{PU}{\textcircumflex}
10551 \DeclareTextAccent{\~}{PU}{\texttilde}
10552 \DeclareTextAccent{\"}{PU}{\textdieresis}
10553 \DeclareTextAccent{\r}{PU}{\textring}
10554 \DeclareTextAccent{\v}{PU}{\textcaron}
10555 \DeclareTextAccent{\.}{PU}{\textdotaccent}
10556 \DeclareTextAccent{\c}{PU}{\textcedilla}
10557 \DeclareTextAccent{\U}{PU}{\textbreve}
10558 \DeclareTextAccent{\C}{PU}{\textdoublegrave}
10559 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textgrave}
10560 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
10561 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textcircumflex}
10562 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
10563 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textdieresis}
10564 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
10565 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
10566 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
10567 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
10568 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
10569 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}
10570 \DeclareTextCommand{\=}{PU}[1]{\TextSymbolUnavailable{\={#1}}#1}
10571 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
10572 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
10573 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}
```

#### Accent glyph names

```
10574 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
10575 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
10576 \DeclareTextCommand{\textcircumflex}{PU}{\80\032} % circumflex
10577 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
10578 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
10579 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
10580 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
10581 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
10582 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave
```

\040: space

\041: exclam

```
10583 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
10584 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
10585 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
10586 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
10587 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand
```



\047: quotesingle  
 10588 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft  
 10589 \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  
 10590 \DeclareTextCommand{\textless}{PU}{<} % less \80\074  
 \075: equal  
 10591 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076  
 \077: question  
 \100: at  
 \101... \132: A...Z  
 \133: bracketleft  
 10592 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash  
 \135: bracketright  
 10593 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum  
 10594 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore  
 10595 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave  
 \141... \172: a...z  
 10596 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % i  
 10597 \DeclareTextCommand{\j}{PU}{j} % jdotless  
 10598 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft  
 10599 \DeclareTextCommand{\textbar}{PU}{|} % bar  
 10600 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright  
 10601 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde  
 No glyph \177 in PDFDocEncoding.

## 49.2.2 Latin-1 Supplement

10602 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212  
 10603 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223  
 10604 \DeclareTextCommand{\textfl}{PU}{fl} % fl ?? \80\224

There are two positions for the glyphs from \80\225 until \80\236. See the test files testbmoe., testbml, testbmse, testbmzc, and testbmyi for details. Problematic are all positions, but especially \OE, \oe, and \i.

10605 \DeclareTextCommand{\OE}{PU}{OE} % OE  
 10606 \DeclareTextCommand{\oe}{PU}{oe} % oe

The euro \240 is inserted in version 1.3 of the pdf specification.

10607 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown  
 10608 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent  
 10609 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling  
 10610 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency  
 10611 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen  
 10612 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar  
 10613 \DeclareTextCommand{\textsection}{PU}{\80\247} % section  
 10614 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis

10615 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright  
10616 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine  
10617 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft  
10618 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot  
No glyph \255 in PDFDocEncoding.  
10619 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered  
10620 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron  
10621 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree  
10622 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus  
10623 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior  
10624 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior  
10625 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute  
10626 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu  
10627 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph  
10628 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered  
10629 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla  
10630 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior  
10631 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine  
10632 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright  
10633 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter  
10634 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf  
10635 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters  
10636 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown  
10637 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300} % Agrave  
10638 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute  
10639 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\302} % Acircumflex  
10640 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\303} % Atilde  
10641 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis  
10642 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring  
10643 \DeclareTextCommand{\AE}{PU}{\80\306} % AE  
10644 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla  
10645 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310} % Egrave  
10646 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311} % Eacute  
10647 \DeclareTextCompositeCommand{\~}{PU}{E}{\80\312} % Ecircumflex  
10648 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis  
10649 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314} % Igrave  
10650 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315} % Iacute  
10651 \DeclareTextCompositeCommand{\~}{PU}{I}{\80\316} % Icircumflex  
10652 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317} % Idieresis  
10653 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth  
10654 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321} % Ntilde  
10655 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322} % Ograve  
10656 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323} % Oacute  
10657 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\324} % Ocircumflex  
10658 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325} % Otilde  
10659 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326} % Odieresis  
10660 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply  
10661 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash  
10662 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331} % Ugrave  
10663 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332} % Uacute  
10664 \DeclareTextCompositeCommand{\~}{PU}{U}{\80\333} % Ucircumflex  
10665 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334} % Udieresis  
10666 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335} % Yacute  
10667 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn  
10668 \DeclareTextCommand{\ss}{PU}{\80\337} % germandbls  
10669 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340} % agrave  
10670 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341} % aacute

```

10671 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\342} % acircumflex
10672 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343} % atilde
10673 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344} % adieresis
10674 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
10675 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
10676 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
10677 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350} % egrave
10678 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351} % eacute
10679 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352} % ecircumflex
10680 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353} % edieresis
10681 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave
10682 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave
10683 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
10684 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
10685 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
10686 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
10687 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
10688 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
10689 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
10690 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361} % ntilde
10691 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362} % ograve
10692 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363} % oacute
10693 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364} % ocircumflex
10694 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365} % otilde
10695 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366} % odieresis
10696 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
10697 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
10698 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371} % ugrave
10699 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372} % uacute
10700 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373} % ucircumflex
10701 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374} % udieresis
10702 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375} % yacute
10703 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
10704 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377} % ydieresis
10705 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```

10706 \DeclareTextCommand{\SS}{PU}{SS}

```

Aliases (german.sty)

```

10707 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
10708 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
10709 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
10710 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
10711 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
10712 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
10713 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
10714 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

10715 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
10716 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
10717 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
10718 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
10719 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

### 49.2.3 Latin Extended-A

```

10720 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% Amacron
10721 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% amacron

```

```

10722 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% Abreve
10723 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% abreve
10724 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% Aogonek
10725 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% aogonek
10726 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% Cacute
10727 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% cacute
10728 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% Ccircumflex
10729 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% ccircumflex
10730 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% Cdot
10731 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% cdot
10732 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% Ccaron
10733 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% ccaron
10734 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% Dcaron
10735 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% dcaron
10736 \DeclareTextCommand{\DJ}{PU}{\81\020}% Dslash
10737 \DeclareTextCommand{\dj}{PU}{\81\021}% dslash
10738 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% Emacron
10739 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% emacron
10740 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% Ebreve
10741 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% ebreve
10742 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% Edot
10743 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% edot
10744 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% Eogonek
10745 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% eogonek
10746 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% Ecaron
10747 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% ecaron
10748 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% Gcircumflex
10749 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% gcircumflex
10750 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% Gbreve
10751 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% gbreve
10752 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% Gdot
10753 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% gdot
10754 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% Gcedilla
10755 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% gcedilla
10756 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% Hcircumflex
10757 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% hcircumflex
10758 \DeclareTextCommand{\textHslash}{PU}{\81\046}% Hslash
10759 \DeclareTextCommand{\textthslash}{PU}{\81\047}% hslash
10760 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% Itilde
10761 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% itilde
10762 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% itilde
10763 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% Imacron
10764 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% imacron
10765 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% imacron
10766 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% Ibreve
10767 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% ibreve
10768 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% ibreve
10769 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% Iogonek
10770 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% iogonek
10771 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% iogonek
10772 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% Idot
10773 \DeclareTextCommand{\i}{PU}{\81\061}% idotless
10774 % IJlig
10775 % ijlig
10776 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% Jcircumflex
10777 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% jcircumflex
10778 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% jcircumflex

```

```

10779 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
10780 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
10781 % kgreen
10782 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
10783 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
10784 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
10785 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
10786 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
10787 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
10788 % L middle dot
10789 % l middle dot
10790 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
10791 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
10792 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute
10793 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
10794 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
10795 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
10796 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
10797 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
10798 % n apostrophe
10799 \DeclareTextCommand{\NG}{PU}{\81\112} % NG
10800 \DeclareTextCommand{\ng}{PU}{\81\113} % ng
10801 \DeclareTextCompositeCommand{=}{PU}{O}{\81\114} % Omacron
10802 \DeclareTextCompositeCommand{=}{PU}{o}{\81\115} % omacron
10803 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve
10804 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
10805 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
10806 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
10807 \DeclareTextCommand{\OE}{PU}{\81\122} % OE
10808 \DeclareTextCommand{\oe}{PU}{\81\123} % oe
10809 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
10810 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
10811 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
10812 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
10813 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
10814 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
10815 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
10816 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
10817 \DeclareTextCompositeCommand{\`}{PU}{S}{\81\134} % Scircumflex
10818 \DeclareTextCompositeCommand{\`}{PU}{s}{\81\135} % scircumflex
10819 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
10820 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
10821 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
10822 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
10823 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
10824 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
10825 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
10826 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
10827 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
10828 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
10829 \DeclareTextCompositeCommand{\`}{PU}{U}{\81\150} % Utilde
10830 \DeclareTextCompositeCommand{\`}{PU}{u}{\81\151} % utilde
10831 \DeclareTextCompositeCommand{=}{PU}{U}{\81\152} % Umacron
10832 \DeclareTextCompositeCommand{=}{PU}{u}{\81\153} % umacron
10833 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
10834 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
10835 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring

```

```

10836 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
10837 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
10838 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute
10839 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Uogonek
10840 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % uogonek
10841 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164} % Wcircumflex
10842 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165} % wcircumflex
10843 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166} % Ycircumflex
10844 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167} % ycircumflex
10845 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170} % Ydieresis
10846 \DeclareTextCommand{\IJ}{PU}{\81\170}
10847 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
10848 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
10849 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
10850 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
10851 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
10852 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

```

#### 49.2.4 Latin Extended-B

```

10853 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
10854 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
10855 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
10856 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
10857 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
10858 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
10859 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
10860 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
10861 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
10862 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
10863 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
10864 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
10865 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
10866 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
10867 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
10868 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
10869 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Oogonek
10870 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

```

#### 49.2.5 Greek

```

10871 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}
10872 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}
10873 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
10874 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
10875 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}
10876 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
10877 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
10878 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
10879 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
10880 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
10881 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}
10882 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
10883 \DeclareTextCommand{\textBeta}{PU}{\83\222}
10884 \DeclareTextCommand{\textGamma}{PU}{\83\223}
10885 \DeclareTextCommand{\textDelta}{PU}{\83\224}
10886 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
10887 \DeclareTextCommand{\textZeta}{PU}{\83\226}
10888 \DeclareTextCommand{\textEta}{PU}{\83\227}

```

```

10889 \DeclareTextCommand{\textTheta}{PU}{\83\230}
10890 \DeclareTextCommand{\textIota}{PU}{\83\231}
10891 \DeclareTextCommand{\textKappa}{PU}{\83\232}
10892 \DeclareTextCommand{\textLambda}{PU}{\83\233}
10893 \DeclareTextCommand{\textMu}{PU}{\83\234}
10894 \DeclareTextCommand{\textNu}{PU}{\83\235}
10895 \DeclareTextCommand{\textXi}{PU}{\83\236}
10896 \DeclareTextCommand{\textOmicron}{PU}{\83\237}
10897 \DeclareTextCommand{\textPi}{PU}{\83\240}
10898 \DeclareTextCommand{\textRho}{PU}{\83\241}
10899 \DeclareTextCommand{\textSigma}{PU}{\83\243}
10900 \DeclareTextCommand{\textTau}{PU}{\83\244}
10901 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}
10902 \DeclareTextCommand{\textPhi}{PU}{\83\246}
10903 \DeclareTextCommand{\textChi}{PU}{\83\247}
10904 \DeclareTextCommand{\textPsi}{PU}{\83\250}
10905 \DeclareTextCommand{\textOmega}{PU}{\83\251}
10906 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}
10907 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}
10908 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}
10909 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}
10910 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}
10911 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}
10912 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}
10913 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}
10914 \DeclareTextCommand{\textalpha}{PU}{\83\261}
10915 \DeclareTextCommand{\textbeta}{PU}{\83\262}
10916 \DeclareTextCommand{\textgamma}{PU}{\83\263}
10917 \DeclareTextCommand{\textdelta}{PU}{\83\264}
10918 \DeclareTextCommand{\textepsilon}{PU}{\83\265}
10919 \DeclareTextCommand{\textzeta}{PU}{\83\266}
10920 \DeclareTextCommand{\texteta}{PU}{\83\267}
10921 \DeclareTextCommand{\texttheta}{PU}{\83\270}
10922 \DeclareTextCommand{\textiota}{PU}{\83\271}
10923 \DeclareTextCommand{\textkappa}{PU}{\83\272}
10924 \DeclareTextCommand{\textlambda}{PU}{\83\273}
10925 \DeclareTextCommand{\textmu}{PU}{\83\274}
10926 \DeclareTextCommand{\textnu}{PU}{\83\275}
10927 \DeclareTextCommand{\textxi}{PU}{\83\276}
10928 \DeclareTextCommand{\textomicron}{PU}{\83\277}
10929 \DeclareTextCommand{\textpi}{PU}{\83\300}
10930 \DeclareTextCommand{\textrho}{PU}{\83\301}
10931 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
10932 \DeclareTextCommand{\textsigma}{PU}{\83\303}
10933 \DeclareTextCommand{\texttau}{PU}{\83\304}
10934 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
10935 \DeclareTextCommand{\textphi}{PU}{\83\306}
10936 \DeclareTextCommand{\textchi}{PU}{\83\307}
10937 \DeclareTextCommand{\textpsi}{PU}{\83\310}
10938 \DeclareTextCommand{\textomega}{PU}{\83\311}
10939 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}
10940 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}
10941 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}
10942 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}
10943 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}
10944 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}
10945 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}

```

```

10946 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}
10947 \DeclareTextCommand{\textstigmagreek}{PU}{\83\332}
10948 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}
10949 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}
10950 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}
10951 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}
10952 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}
10953 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}
10954 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}
10955 %\DeclareTextCommand{\textvarkappa}{PU}{\83\360}
10956 %\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.

```

10957 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
10958 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}%
10959 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
10960 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% GJE
10961 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
10962 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
10963 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
10964 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI
10965 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
10966 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
10967 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE
10968 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
10969 \DeclareTextCompositeCommand{'}{PU}{\CYRK}{\84\014}% KJE
10970 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
10971 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
10972 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A
10973 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
10974 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
10975 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
10976 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
10977 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
10978 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
10979 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
10980 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I
10981 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
10982 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}%
10983 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
10984 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
10985 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM
10986 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN
10987 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O
10988 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE
10989 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER
10990 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES
10991 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE
10992 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U
10993 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF
10994 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA
10995 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE
10996 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE
10997 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA
10998 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA

```



```

10999 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN
11000 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU
11001 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN
11002 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E
11003 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU
11004 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA
11005 \DeclareTextCommand{\cyra}{PU}{\84\060}% a
11006 \DeclareTextCommand{\cyrb}{PU}{\84\061}% be
11007 \DeclareTextCommand{\cyrv}{PU}{\84\062}% ve
11008 \DeclareTextCommand{\cyrg}{PU}{\84\063}% ghe
11009 \DeclareTextCommand{\cyrd}{PU}{\84\064}% de
11010 \DeclareTextCommand{\cyre}{PU}{\84\065}% ie
11011 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% zhe
11012 \DeclareTextCommand{\cyrz}{PU}{\84\067}% ze
11013 \DeclareTextCommand{\cyri}{PU}{\84\070}% i
11014 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i
11015 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}%
11016 \DeclareTextCommand{\cyrk}{PU}{\84\072}% ka
11017 \DeclareTextCommand{\cyr1}{PU}{\84\073}% el
11018 \DeclareTextCommand{\cyrn}{PU}{\84\074}% em
11019 \DeclareTextCommand{\cyrn}{PU}{\84\075}% en
11020 \DeclareTextCommand{\cyro}{PU}{\84\076}% o
11021 \DeclareTextCommand{\cyrp}{PU}{\84\077}% pe
11022 \DeclareTextCommand{\cyrr}{PU}{\84\100}% er
11023 \DeclareTextCommand{\cyr{s}}{PU}{\84\101}% es
11024 \DeclareTextCommand{\cyr{t}}{PU}{\84\102}% te
11025 \DeclareTextCommand{\cyr{u}}{PU}{\84\103}% u
11026 \DeclareTextCommand{\cyr{f}}{PU}{\84\104}% ef
11027 \DeclareTextCommand{\cyr{h}}{PU}{\84\105}% ha
11028 \DeclareTextCommand{\cyr{c}}{PU}{\84\106}% tse
11029 \DeclareTextCommand{\cyr{ch}}{PU}{\84\107}% che
11030 \DeclareTextCommand{\cyr{sh}}{PU}{\84\110}% sha
11031 \DeclareTextCommand{\cyr{shch}}{PU}{\84\111}% shcha
11032 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% hard sign
11033 \DeclareTextCommand{\cyrery}{PU}{\84\113}% yeru
11034 \DeclareTextCommand{\cyr{sftsn}}{PU}{\84\114}% soft sign
11035 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% e
11036 \DeclareTextCommand{\cyr{y}}{PU}{\84\116}% yu
11037 \DeclareTextCommand{\cyr{ya}}{PU}{\84\117}% ya
11038 \DeclareTextCommand{\cyr{yo}}{PU}{\84\121}% io
11039 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}%
11040 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% dje
11041 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% gje
11042 \DeclareTextCommand{\cyrie}{PU}{\84\124}% ukrainian ie
11043 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% dze
11044 \DeclareTextCommand{\cyr{i}}{PU}{\84\126}% byelorussian-ukrainian i
11045 \DeclareTextCommand{\cyr{y}}{PU}{\84\127}% yi
11046 \DeclareTextCommand{\cyr{je}}{PU}{\84\130}% je
11047 \DeclareTextCommand{\cyr{lje}}{PU}{\84\131}% lje
11048 \DeclareTextCommand{\cyr{nje}}{PU}{\84\132}% nje
11049 \DeclareTextCommand{\cyr{tshe}}{PU}{\84\133}% tshe
11050 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% kje
11051 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% short u
11052 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% dzhe
11053 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA
11054 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega
11055 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT

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11056 \DeclareTextCommand{\cyr yat}{PU}{\84\143}% yat  
11057 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E  
11058 \DeclareTextCommand{\cyriote}{PU}{\84\145}% iotified e  
11059 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS  
11060 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% little yus  
11061 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS  
11062 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% iotified little yus  
11063 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS  
11064 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% big yus  
11065 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS  
11066 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% iotified big yus  
11067 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI  
11068 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% ksi  
11069 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI  
11070 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi  
11071 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA  
11072 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita  
11073 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA  
11074 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa  
11075 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave  
11076 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave  
11077 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK  
11078 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk  
11079 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA  
11080 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega  
11081 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo  
11082 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo  
11083 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT  
11084 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot  
11085 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA  
11086 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa  
11087 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign  
11088 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO  
11089 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION  
11090 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA  
11091 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA  
11092 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn  
11093 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn  
11094 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke  
11095 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke  
11096 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook  
11097 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook  
11098 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender  
11099 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender  
11100 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender  
11101 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender  
11102 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender  
11103 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% ka descender  
11104 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke  
11105 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke  
11106 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke  
11107 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% ka stroke  
11108 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA  
11109 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka  
11110 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender  
11111 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender  
11112 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE

11113 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe  
11114 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook  
11115 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook  
11116 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA  
11117 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha  
11118 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender  
11119 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% es descender  
11120 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender  
11121 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% te descender  
11122 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U  
11123 \DeclareTextCommand{\cyrY}{PU}{\84\257}% straight u  
11124 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke  
11125 \DeclareTextCommand{\cyrYhcrs}{PU}{\84\261}% straight u stroke  
11126 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender  
11127 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% ha descender  
11128 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE  
11129 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% ligature te tse  
11130 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender  
11131 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender  
11132 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke  
11133 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% che vertical stroke  
11134 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA  
11135 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha  
11136 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhasian CHE  
11137 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhasian che  
11138 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% abkhasian CHE descender  
11139 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhasian che descender  
11140 \DeclareTextCommand{\CYRpaloChka}{PU}{\84\300}% palochka  
11141 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve  
11142 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% zhe breve  
11143 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook  
11144 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% ka hook  
11145 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook  
11146 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% en hook  
11147 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE  
11148 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che  
11149 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve  
11150 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve  
11151 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% A diaeresis  
11152 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% a diaeresis  
11153 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE  
11154 \DeclareTextCommand{\cyrae}{PU}{\84\325}% ligature a ie  
11155 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve  
11156 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve  
11157 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA  
11158 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% schwa  
11159 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis  
11160 \DeclareTextCompositeCommand{"}{PU}{\cyrswa}{\84\333}% schwa diaeresis  
11161 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% ZHE diaeresis  
11162 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% zhe diaeresis  
11163 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% ZE diaeresis  
11164 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% ze diaeresis  
11165 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhasian DZE  
11166 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhasian dze  
11167 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% I macron  
11168 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% i macron  
11169 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% I diaeresis

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11170 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% i diaeresis
11171 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% O diaeresis
11172 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% o diaeresis
11173 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O
11174 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% barred o
11175 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% barred O diaeresis
11176 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% barred o diaeresis
11177 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U macron
11178 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% u macron
11179 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U diaeresis
11180 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% u diaeresis
11181 \DeclareTextCompositeCommand{H}{PU}{\CYRU}{\84\362}% U double acute
11182 \DeclareTextCompositeCommand{H}{PU}{\cyru}{\84\363}% u double acute
11183 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% CHE diaeresis
11184 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% che diaeresis
11185 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% YERU diaeresis
11186 \DeclareTextCompositeCommand{"}{PU}{\cyrery}{\84\371}% yeru diaeresis

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## 49.2.7 Symbols

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11187 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash
11188 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash
11189 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030} % quoteleft
11190 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright
11191 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase
11192 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
11193 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
11194 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
11195 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
11196 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
11197 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet
11198 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
11199 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
11200 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
11201 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
11202 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
11203 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
11204 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
11205 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}
11206 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
11207 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
11208 % \DeclareTextCommand{\cyrlangle}{PU}{\9043\051}
11209 % \DeclareTextCommand{\cyrrangle}{PU}{\9043\052}

11210 </puenc>

```

## 49.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

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11211 <*puvnenc>

11212 \DeclareTextCommand{\abreve}{PU}{\81\003}
11213 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
11214 \DeclareTextCommand{\dj}{PU}{\81\021}
11215 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
11216 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
11217 \DeclareTextCommand{\ohorn}{PU}{\81\241}
11218 \DeclareTextCommand{\uhorn}{PU}{\81\260}
11219 \DeclareTextCommand{\ABREVE}{PU}{\81\002}

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11220 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}  
11221 \DeclareTextCommand{\DJ}{PU}{\81\020}  
11222 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}  
11223 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}  
11224 \DeclareTextCommand{\OHORN}{PU}{\81\240}  
11225 \DeclareTextCommand{\UHORN}{PU}{\81\257}  
  
11226 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}  
11227 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}  
11228 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}  
11229 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}  
11230 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}  
11231 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}  
11232 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}  
11233 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}  
11234 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}  
11235 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}  
11236 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}  
11237 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}  
11238 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}  
11239 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
11240 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}  
11241 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
11242 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
11243 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
11244 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
11245 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
11246 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
11247 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
11248 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
11249 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
11250 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
11251 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
11252 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
11253 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
11254 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
11255 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
11256 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
11257 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
11258 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
11259 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
11260 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
11261 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
11262 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
11263 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
11264 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
11265 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
11266 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
11267 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
11268 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
11269 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
11270 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
11271 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
11272 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
11273 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
11274 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
11275 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
11276 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}

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11277 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}
11278 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}
11279 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}
11280 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}
11281 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}
11282 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}
11283 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}
11284 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}
11285 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}
11286 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}
11287 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}
11288 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}
11289 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}
11290 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}
11291 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}
11292 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}
11293 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}
11294 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}
11295 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}
11296 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}
11297 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}
11298 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}
11299 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}
11300 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}
11301 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}
11302 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}
11303 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}
11304 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}
11305 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}
11306 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}
11307 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}
11308 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}
11309 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}
11310 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}
11311 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}
11312 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}
11313 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}
11314 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}
11315 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}
11316 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}
11317 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}
11318 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}
11319 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}
11320 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}
11321 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}
11322 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}
11323 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}
11324 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}
11325 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}
11326 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}
11327 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}
11328 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}
11329 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}
11330 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
11331 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
11332 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
11333 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}

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11334 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
11335 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
11336 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}
11337 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
11338 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
11339 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
11340 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
11341 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}
11342 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
11343 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
11344 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
11345 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
11346 </puvnenc>

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## 49.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

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11347 <*puarenc>
11348 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LETTER HAMZA
11349 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADDA A
11350 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA A
11351 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afii57412;ARABIC LETTER WAW WITH HAMZA AE
11352 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HA
11353 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
11354 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF
11355 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH
11356 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA
11357 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH
11358 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH
11359 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM
11360 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH
11361 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH
11362 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL
11363 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL
11364 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH
11365 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN
11366 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN
11367 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN
11368 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD
11369 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD
11370 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH
11371 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH
11372 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN
11373 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN
11374 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEL
11375 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afii57441;ARABIC LETTER FEH
11376 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF
11377 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF
11378 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM
11379 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LETTER MEEM
11380 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON
11381 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH
11382 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afii57448;ARABIC LETTER WAW
11383 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afii57449;ARABIC LETTER ALEF MAKSURA
11384 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afii57450;ARABIC LETTER YEH

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11385 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afii57451;ARABIC FATHATAN
11386 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afii57452;ARABIC DAMMATAN
11387 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN
11388 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afii57454;ARABIC FATHA
11389 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afii57455;ARABIC DAMMA
11390 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA
11391 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA
11392 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afii57458;ARABIC SUKUN

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## Farsi

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11393 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afii57506;ARABIC LETTER PEH
11394 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afii57507;ARABIC LETTER TCHEH
11395 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afii57508;ARABIC LETTER JEH
11396 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afii????;FARSI LETTER KAF
11397 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF
11398 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afii????;FARSI LETTER YEH

11399 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
11400 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ
11401 </puarenc>

```

## 50 End of file hycheck.tex

```

11402 < *check>
11403 \typeout{}
11404 \begin{document}
11405 \end{document}
11406 </check>

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