

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

Sebastian Rahtz

Email: `sebastian.rahtz@oucs.ox.ac.uk`

Heiko Oberdiek

Email: `oberdiek@uni-freiburg.de`

processed April 19, 2008

## 1 Documentation overview for `hyperref`

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

**Manual** The **USER MANUAL** (also available as HTML).

**README** The **README** file (also available as text file). 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 (also available as text file).

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

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

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

Source code documentation:

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

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

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

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### 3 File hycheck.tex

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

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

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

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

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

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

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

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

`\HyC@checkPackage`

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

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

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

`\HyC@meaning`

```

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

```

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

```

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

```

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

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

\Hy@RestoreCatcodes

```

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

```

```

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

```

```
231 \Hy@SetCatcodes
```

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

```

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

```

## 4.2 Compatibility with format dumps

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

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

```

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

```

## 4.3 Switches

```

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

```

```

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

```

Defaults for the switches are now set.

```

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

```

```

312 \Hy@texhtfalse
313 \Hy@toolbartrue
314 \Hy@typexmlfalse
315 \Hy@unicodedefalse
316 \Hy@usetitlefalse
317 \Hy@verbosefalse
318 \Hy>windowuitrue
319 \Hy@displaydoctitlefalse
320 \Hy@pdfafalse

```

## 5 Common help macros

`\Hy@StepCount`

```

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

```

`\Hy@GlobalStepCount`

```

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

323 \newdimen\@linkdim
324 \let\Hy@driver\@empty
325 \let\MaybeStopEarly\relax
326 \newcount\Hy@linkcounter
327 \newcount\Hy@pagecounter
328 \Hy@linkcounter0
329 \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.

```

330 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
331 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

332 \let\Hy@ReturnEnd\@empty
333 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
334 \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.

```

335 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
336 \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).

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

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

- It cannot be used inside `\usepackage`, because LaTeX expands the options before package `hyperref` is loaded and `\hypercalscbp` 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
337 \begingroup\expandafter\expandafter\expandafter\endgroup
338 \expandafter\ifx\csname dimexpr\endcsname\relax
339   \def\hypercalcbpdef#1#2{%
340     \begingroup
341       \toks@{}%
342       \HyCal@scan#2\hypercalcbp\@nil
343       \expandafter\endgroup
344       \expandafter\def\expandafter#1\expandafter{\the\toks@}%
345   }%
346   \def\HyCal@scan#1\hypercalcbp#2\@nil{%
347     \toks@\expandafter{\the\toks@ #1}%
348     \ifx\#2\%
349       \else
350         \Hy@ReturnAfterFi{%
351           \HyCal@do#2\@nil
352         }%
353       \fi
354     }%
355     \def\HyCal@do#1#2\@nil{%
356       \@ifpackageloaded{calc}{}{%
357         \Hy@Warning{%
358           For calculations \string\hypercalcbp\space needs\MessageBreak
359           package calc or e-TeX%
360         }%
361       }%
362       \setlength{\dimen@}{#1}%
363       \setlength{\dimen@}{0.99626401\dimen@}%
364       \edef\x{%
365         \toks@{%
366           \the\toks@
367           \strip@pt\dimen@
368         }%
369       }\x
370       \HyCal@scan#2\@nil
371     }%
372   \else
373     \def\hypercalcbp#1{%

```

```

374 \strip@pt\dimexpr 0.99626401\dimexpr #1\relax\relax
375 }%
376 \def\hypercalcbpdef{\def}%
377 \fi

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

Email: oberdiek@uni-freiburg.de.

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

### 6.1 Description of PDF strings

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

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

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

### 6.2 Definition of `\pdfstringdef`

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

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

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

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

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

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

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

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

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

```
379 \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.

```
380 \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.

```
381 \edef\0{\string\0}%
382 \edef\1{\string\1}%
383 \edef\2{\string\2}%
384 \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.

```
385 \ifHy@unicode
386 \edef\8{\string\8}%
387 \edef\9{\string\9}%
388 \fontencoding{PU}%
389 \HyPsd@UTFviii
390 \else
391 \fontencoding{PD1}%
392 \fi
393 \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).

```
394 \@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).

```
395 \let\@inmathwarn\HyPsd@inmathwarn
```



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

```
396 \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.

```
397 \let\{\textbraceleft
398 \let\}\textbraceright
399 \let\\\textbackslash
400 \let\#\textnumbersign
401 \let\$\textdollar
402 \let\%\textpercent
403 \let\&\textampersand
404 % \let\~\textasciitilde
405 \let\_ \textunderscore
406 \let\P\textparagraph
407 \let\ldots\textellipsis
408 \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.

```
409 \def\{\pdfstringdefWarn\\}%
410 \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.

```
411 \def\TeX{\TeX}%
412 \def\LaTeX{\LaTeX}%
413 \def\LaTeXe{\LaTeX2e}%
414 \def\eTeX{e-TeX}%
415 \def\SliTeX{SliTeX}%
416 \def\MF{Metafont}%
417 \def\MP{Metapost}%
```

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

```
418 \let\emph\@firstofone
419 \let\textnormal\@firstofone
420 \let\textrm\@firstofone
421 \let\textsf\@firstofone
422 \let\texttt\@firstofone
423 \let\textbf\@firstofone
424 \let\textmd\@firstofone
425 \let\textit\@firstofone
```

```

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

```

#### Package color.

```

452 \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).

```

453 \let\textlatin\@firstofone
454 \@ifundefined{language@group}{-}{%
455   \csname HyPsd@babel@\language@group\endcsname
456 }%
457 \HyPsd@GreekPatch

458 \let\@safe@activetrue\relax
459 \let\@safe@activesfalse\relax

```

Disable \cyr, used in russianb.ldf.

```

460 \let\cyr\relax

```

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

```

461 \let\es@roman\@Roman

```

#### Package german.

```

462 \let\glqq\textglqq
463 \let\grqq\textgrqq
464 \let\glq\textglq
465 \let\grq\textgrq
466 \let\flqq\textflqq
467 \let\frqq\textfrqq
468 \let\flq\textflq
469 \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}
470 \let\if@mid@expandable\@firstoftwo

```

**AMS classes.**

```

471 \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.

```

472 \let\hspace\HyPsd@hspace

```

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

```

473 \let\label\@gobble
474 \let\index\@gobble
475 \let\glossary\@gobble
476 \let\href\@secondoftwo
477 \let\@mkboth\@gobbletwo

```

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

```

478 \let\ref\HyPsd@ref
479 \let\pageref\HyPsd@pageref
480 \let\autoref\HyPsd@autoref

```

**Miscellaneous commands.**

```

481 \let\leavevmode\@empty
482 \let\mbox\@empty

```

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

```

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

```

**Patch for cjk bookmarks.**

```

484 \ifHy@CJKbookmarks
485 \HyPsd@CJKhook
486 \fi

```

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

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

```

487 \Hy@pdfstringtrue
488 \pdfstringdefPreHook

```

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

```

489 \HyPsd@LetUnexpandableSpace\space
490 \HyPsd@LetUnexpandableSpace\ %
491 \HyPsd@LetUnexpandableSpace~%
492 \HyPsd@LetUnexpandableSpace\nobreakspace

```

**Package xspace.**

```

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

```

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

```

501 \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:

```

502 \let\@ifnextchar\HyPsd@ifnextchar
503 \let\@ifnextchar\HyPsd@new@ifnextchar
504 \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 be processed without errors. Mainly the error message is very cryptic and for the normal user hard to understand. T<sub>E</sub>X provides no way to catch the error caused by \csname or allows to support the user with a descriptive error message. Therefore the experienced user had to enable this behaviour by an option exactdef in previous versions less or equal 6.50.

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

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

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

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

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

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

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

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

### 6.2.3 Postprocessing

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

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

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

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

- An argument can be a single token or a group of many tokens. And within curly braces tokens aren't find by  $\TeX$ 's argument scanning process. Third curly braces as grouping characters cannot be expanded further, so they don't vanish by the string expansion above. So these characters with catcode 1 and 2 are removed in the following and replaced by an 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.

```

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

```

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

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

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

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

```

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

```

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

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

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

```

536     \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
537     \let\HyPsd@String\@empty
538     \expandafter\HyPsd@GlyphProcess#1\relax\@empty
539     \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.

```
540 \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.

```
541 \ifHy@unicode
542 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
543 \HyPsd@SPACEOPTI#1%
544 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
545 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
546 {\HyPsd@SPACEOPTI\80\273}\#1%
547 \else
548 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
549 \expandafter\HyPsd@Subst\expandafter{%
550 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
551 \string\273}\HyPsd@SPACEOPTI\273}\#1%
552 \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.

```
553 \ifHy@unicode
554 \HyPsd@StringSubst{\}){\80\051}\#1%
555 \HyPsd@Subst){\80\051}\#1%
556 \let\HyPsd@empty\relax
557 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
558 {\HyPsd@empty\80\051}\#1%
559 \else
560 \HyPsd@StringSubst{\}){\051}\#1%
561 \HyPsd@Subst){\051}\#1%
562 \let\HyPsd@empty\relax
563 \HyPsd@StringSubst{\051}\HyPsd@empty\string\}){\#1%
564 \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`.

```

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

```

**Ligatures.**  $\TeX$  forms ligatures in its stomach, but the PDF strings are treated only by  $\TeX$ 's mouth. The `PDFDocEncoding` contains some ligatures, but the current version 3 of the `AcrobatReader` lacks the `fi` and `fl` glyphs, and the Linux version lacks the `emdash` and `endash` glyphs. So the necessary code is provided here, but currently disabled, hoping that version 4 of the `AcrobatReader` is better. To break the ligatures the user can use an empty group, because it leads to an insertion of an `\HyPsd@empty`. If this ligature code will be enabled some day, then the italic correction should also break the ligatures. Currently this occurs only, if package `xspace` is loaded.

```

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

```

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

```

580     \let\HyPsd@empty\@empty

```

**Left parentheses.** Left parentheses are now converted to safe forms to avoid problems with unmatched ones (`\` with `PDFDocEncoding`, the octal sequence with Unicode).

An optimization is possible. Matched parentheses can be replaced by a `()` pair. But this code is removed to save  $\TeX$  memory and time.

```

581     \ifHy@unicode
582         \HyPsd@StringSubst{\textparenleft#1%
583         \HyPsd@Subst(\textparenleft#1%
584     \else
585         \HyPsd@StringSubst({\0050}#1%
586         \HyPsd@Subst({\0050}#1%
587         \HyPsd@StringSubst{\0050}{\string\()}#1%
588     \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.

```

589     \ifHy@unicode
590         \edef\HyPsd@SPACEOPTI{\80\040}%
591     \else
592         \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
593     \fi
594     \xdef#1{#1\@empty}%
595 \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.

```
596 \endgroup
597 \begingroup
598 \ifHy@unicode
599 \HyPsd@ConvertToUnicode#1%
```

**Try conversion back to PDFDocEncoding.**

```
600 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
601 \@ifundefined{StringEncodingConvertTest}{%
602 }{%
603 \EdefUnescapeString\HyPsd@temp#1%
604 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
605 {utf16be}{pdfdoc}{%
606 \EdefEscapeString\HyPsd@temp\HyPsd@temp
607 \global\let#1\HyPsd@temp
608 \Hy@unicodedefalse
609 }{}%
610 }%
611 \fi
612 \fi
```

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

```
613 \pdfstringdefPostHook#1%
614 \endgroup
615 }
```

\Hy@pdfstringdef

```
616 \def\Hy@pdfstringdef#1#2{%
617 \pdfstringdef\Hy@gtemp{#2}%
618 \let#1\Hy@gtemp
619 }
```

## 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.

```
620 \@ifundefined{T@PD1}{\input{pd1enc.def}}{}
621 \DeclareFontFamily{PD1}{pdf}{}
622 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
623 \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`.

```

624 \def\HyPsd@InitUnicode{%
625   \@ifundefined{T@PU}{\input{puenc.def}}{}%
626   \DeclareFontFamily{PU}{pdf}{}%
627   \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
628   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
629   \let\HyPsd@InitUnicode\relax
630 }

```

## 6.4 Additional user commands

### 6.4.1 `\texorpdfstring`

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

```

631 \newcommand*{\texorpdfstring}{%
632   \ifHy@pdfstring
633     \expandafter\@secondoftwo
634   \else
635     \expandafter\@firstoftwo
636   \fi
637 }

```

### 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`.

```

638 \@ifundefined{pdfstringdefPreHook}{%
639   \let\pdfstringdefPreHook\@empty
640 }{}
641 \@ifundefined{pdfstringdefPostHook}{%
642   \let\pdfstringdefPostHook\@gobble
643 }{}

```

`\pdfstringdefDisableCommands` In `\pdfstringdefPreHook` the user can add code that is executed before the string, that have to be converted by `\pdfstringdef`, is expanded. So replacements for problematic macros can be given. The code in `\pdfstringdefPreHook` should not be replaced perhaps by an `\renewcommand`, because a previous meaning gets lost.

Macro `\pdfstringdefDisableCommands` avoids this, because it reuses the old meaning of the hook and appends the new code to `\pdfstringdefPreHook`, e.g.:

```

\pdfstringdefDisableCommands{%
  \let~\textasciitilde
  \def\url{\pdfstringdefWarn\url}%
  \let\textcolor\@gobble
}%

```

In the argument of `\pdfstringdefDisableCommands` the character `@` can be used in command names. So it is easy to use useful L<sup>A</sup>T<sub>E</sub>X commands like `\@gobble` or `\@firstofone`.

```

644 \def\pdfstringdefDisableCommands{%
645   \begingroup
646     \makeatletter

```

```

647 \HyPsd@DisableCommands
648 }

```

\HyPsd@DisableCommands

```

649 \long\def\HyPsd@DisableCommands#1{%
650   \toks0=\expandafter{\pdfstringdefPreHook}%
651   \toks1={#1}%
652   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
653 \endgroup
654 }

```

\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.

```

655 \def\pdfstringdefWarn#1{%
656   \expandafter\noexpand\csname<- \string#1\endcsname
657 }

```

## 6.5 Help macros for expansion

### 6.5.1 Babel languages

```

658 \newif\ifHy@next

```

Nothing to do for english.

```

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

```

```

686 }%
687 }
688 \@ifundefined{macedonian@sh@"@sel}{-}{%
689   \def\HyPsd@babel@macedonian{%
690     \declare@shorthand{macedonian}{"}{-}%
691     \declare@shorthand{macedonian}{"}{-}%
692   }%
693 }
694 \@ifundefined{ngerman@sh@"@sel}{-}{%
695   \def\HyPsd@babel@ngerman{%
696     \declare@shorthand{ngerman}{"}{-}%
697     \declare@shorthand{ngerman}{"}{-}%
698   }%
699 }
700 \@ifundefined{portuges@sh@"@sel}{-}{%
701   \def\HyPsd@babel@portuges{%
702     \declare@shorthand{portuges}{"}{-}%
703   }%
704 }
705 \@ifundefined{russian@sh@"@sel}{-}{%
706   \def\HyPsd@babel@russian{%
707     \declare@shorthand{russian}{"}{-}%
708     \declare@shorthand{russian}{"}{-}%
709   }%
710 }
711 \@ifundefined{slovene@sh@"@sel}{-}{%
712   \def\HyPsd@babel@slovene{%
713     \declare@shorthand{slovene}{"}{-}%
714   }%
715 }

```

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

```

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

```

```

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

```

```

799     \fi
800 \fi
801 }
802 \def\HyPsd@GreeNumI#1#2#3{%
803   #1{%
804     \ifnum#3>\z@
805       \textnumeralsignlowergreek
806     \fi
807   }%
808   \expandafter#2%
809   \ifcase#3 %
810     {}{}%
811     \or\textalpha\textAlpha
812     \or\textbeta\textBeta
813     \or\textgamma\textGamma
814     \or\textdelta\textDelta
815     \or\textepsilon\textEpsilon
816     \or\textstigmagreek\textStigmagreek
817     \or\textzeta\textZeta
818     \or\texteta\textEta
819     \or\texttheta\textTheta
820   \else
821     {}{}%
822   \fi
823 }
824 \def\HyPsd@GreeNumII#1#2#3#4{%
825   #1{%
826     \ifnum#3>\z@
827       \textnumeralsignlowergreek
828     \fi
829   }%
830   \expandafter#2%
831   \ifcase#3 %
832     {}{}%
833     \or\textiota\textIota
834     \or\textkappa\textKappa
835     \or\textlambda\textLambda
836     \or\textmu\textMu
837     \or\textnu\textNu
838     \or\textxi\textXi
839     \or\textomicron\textOmicron
840     \or\textpi\textPi
841     \or\textkoppagreek\textKoppagreek
842   \else
843     {}{}%
844   \fi
845   \HyPsd@GreeNumI#1#2#4%
846 }
847 \def\HyPsd@GreeNumIII#1#2#3#4#5{%
848   #1{%
849     \ifnum#3>\z@
850       \textnumeralsignlowergreek
851     \fi
852   }%
853   \expandafter#2%
854   \ifcase#3 %
855     {}{}%

```

```

856 \or\textrho\textRho
857 \or\textsigma\textSigma
858 \or\texttau\textTau
859 \or\textupsilon\textUpsilon
860 \or\textphi\textPhi
861 \or\textchi\textChi
862 \or\textpsi\textPsi
863 \or\textomega\textOmega
864 \or\textsampgreek\textSampgreek
865 \else
866   {}{}%
867 \fi
868 \HyPsd@GreekNumII#1#2#4#5%
869 }
870 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
871   \HyPsd@GreekNumI\@firstofone#1#2%
872   \HyPsd@@GreekNum#1{#3#4#5}%
873 }
874 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
875   \HyPsd@GreekNumII\@firstofone#1#2#3%
876   \HyPsd@@GreekNum#1{#4#5#6}%
877 }
878 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
879   \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
880   \HyPsd@@GreekNum#1{#5#6#7}%
881 }

```

## 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 ( $\geq 0x40$ ).

```

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

```

```

901 }%
902 \count@=127 %
903 \@whilenum\count@<255 \do{%
904   \advance\count@ by 1 %
905   \lccode'\~=\count@
906   \lowercase{%
907     \toks@\expandafter{\the\toks@ ~}%
908   }%
909 }%
910 \toks@\expandafter{\the\toks@ !}%
911 \xdef\HyPsd@CJKhook{\the\toks@}%
912 \endgroup

```

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

```

913 \def\HyPsd@CJKActiveChars#1{%
914   \ifx#1!%
915     \let\HyPsd@CJKActiveChars\relax
916   \else
917     \edef#1{\noexpand\Hy@cjkpu\string#1}%
918   \fi
919   \HyPsd@CJKActiveChars
920 }

```

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

```

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

```



```

953 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
954 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
955 \fi
956 }

```

### 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}

957 \def\HyPsd@inmathwarn#1#2{%
958   \ifx#2\expandafter
959     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
960       \HyPsd@GLYPHERR
961       \expandafter\@gobble\string#1%
962     >%
963     \expandafter\expandafter\expandafter\HyPsd@EndWithElse
964   \else
965     \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
966   \fi

```

```

967 \else
968   \expandafter#2%
969 \fi
970 }
971 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
972 \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

```

973 \def\HyPsd@add@accent#1#2{%
974   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
975   #2%
976 }%

```

#### 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.

```

977 \def\HyPsd@LetUnexpandableSpace#1{%
978   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
979 }

```

\HyPsd@UnexpandableSpace \HyPsd@UnexpandableSpace is used in \HyPsd@@ProtectSpaces. In \HyPsd@@ProtectSpaces the space tokens are replaced by unexpandable commands \HyPsd@UnexpandableSpace, but that have the effect of spaces.

```

980 \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.

```

981 \edef\HyPsd@XSPACE{\string#\string X}
982 \edef\HyPsd@ITALCORR{\string#\string I}
983 \edef\HyPsd@GLYPHERR{\string#\string G}

```

#### 6.5.7 \hspace fix

\HyPsd@hspace

```

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

```

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

```

985 \def\HyPsd@@hspace#1*#2\END{%
986   \ifx\#2\%
987     \HyPsd@hspacetest{#1}%

```

```

988 \else
989 \expandafter\HyPsd@hspacetest
990 \fi
991 }

```

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

```

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

```

### 6.5.8 Fix for AMS classes

```

993 \@ifundefined{tocsection}{%
994 \let\HyPsd@AMSclassfix\relax
995 }{%
996 \def\HyPsd@AMSclassfix{%
997 \let\tocpart\HyPsd@tocsection
998 \let\tocchapter\HyPsd@tocsection
999 \let\tocappendix\HyPsd@tocsection
1000 \let\tocsection\HyPsd@tocsection
1001 \let\tocsubsection\HyPsd@tocsection
1002 \let\tocsubsubsection\HyPsd@tocsection
1003 \let\tocparagraph\HyPsd@tocsection
1004 }%
1005 \def\HyPsd@tocsection#1#2#3{%
1006 \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1007 #3%
1008 }%
1009 }

```

### 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.

```

1010 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%

```

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

```

1011 \def\HyPsd@@ref#1*#2\END{%
1012 \ifx\\#2\\%
1013 \HyPsd@@@ref{#1}%
1014 \else
1015 \expandafter\HyPsd@@@ref
1016 \fi
1017 }%

```

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

```

1018 \def\HyPsd@@@ref#1{%
1019 \expandafter\ifx\csname r@#1\endcsname\relax
1020 ???%
1021 \else
1022 \expandafter\expandafter\expandafter
1023 \@car\csname r@#1\endcsname\@nil
1024 \fi
1025 }

```

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

```

1026 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

```



```

1068 \def\HyPsd@autorefname#1.#2\@nil{%
1069   \@ifundefined{#1autorefname}{%
1070     \@ifundefined{#1name}{%
1071       }{%
1072         \csname#1name\endcsname\space
1073       }%
1074     }{%
1075       \csname#1autorefname\endcsname\space
1076     }%
1077 }

```

### 6.5.10 Redefining the defining commands

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

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

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

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

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

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

```

\HyPsd@DefCommand
\HyPsd@LetCommand
1078 \begingroup
1079   \def\x#1#2{%
1080     \endgroup
1081     \let#1\def
1082     \def\HyPsd@DefCommand##1##2##{%
1083       #1%
1084       \expandafter\noexpand
1085         \csname\expandafter@gobble\string##1\@empty\endcsname
1086       \@gobble
1087     }%
1088     \let#2\let
1089     \def\HyPsd@LetCommand##1{%
1090       \expandafter\ifx\csname##1\expandafter\endcsname
1091         \csname iftrue\endcsname

```

```

1092     \pdfstringdefWarn\let
1093     \expandafter\@gobble
1094   \else
1095     \expandafter\ifx\csname##1\expandafter\endcsname
1096         \csname iffalse\endcsname
1097     \pdfstringdefWarn\let
1098     \expandafter\expandafter\expandafter\@gobble
1099   \else
1100     #2%
1101     \expandafter\noexpand
1102     \csname##1\expandafter\expandafter\expandafter\endcsname
1103   \fi
1104 \fi
1105 }%
1106 }%
1107 \expandafter\x\csname <def>-command\expandafter\endcsname
1108     \csname <let>-command\endcsname
1109 \def\HyPsd@LetCommand#1{%
1110   \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1111   \expandafter\expandafter\expandafter{%
1112     \expandafter\@gobble\string#1\@empty
1113   }%
1114 }

```

### 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.

```

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

```

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

```

1119 \def\HyPsd@new@ifnextchar{%
1120   \pdfstringdefWarn\new@ifnextchar
1121   \expandafter\@gobbletwo\@gobble
1122 }

```

### 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`.

```

1123 \def\HyPsd@protected@testopt#1{%
1124   \pdfstringdefWarn#1%
1125   \@gobbletwo
1126 }

```

## 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:

```
1127 \def\HyPsd@Warning#1{%
1128   \begingroup
1129     \def\space{ }%
1130     \Hy@Warning{#1}%
1131   \endgroup
1132 }
```

### 6.6.2 Protecting spaces

```
1133 \RequirePackage{etexcmds}[2007/09/09]
1134 \ifetex@unexpanded
1135   \expandafter\@secondoftwo
1136 \else
1137   \expandafter\@firstoftwo
1138 \fi
1139 {%
```

`\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`.

```
1140   \def\HyPsd@ProtectSpaces#1{%
1141     \iftrue
1142       \expandafter\HyPsd@@ProtectSpacesFi
1143       \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1144     \fi
1145   }%
```

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

```
1146   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1147     \fi
1148     \ifx\scrollmode#2\scrollmode
1149       \HyPsd@RemoveMask#1\HyPsd@End#3%
1150     \else
1151       \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1152       \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1153     \fi
1154   }%
```

### 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.

```
1155   \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1156     \toks@\expandafter{#1}%
1157     \xdef#2{\the\toks@}%
1158   }%
1159 }{%
1160   \let\HyPsd@fi\fi
1161   \def\HyPsd@ProtectSpaces#1{%
```

```

1162 \xdef#1{%
1163 \iftrue
1164 \expandafter\HyPsd@@ProtectSpacesFi
1165 \expandafter\expandafter\@empty#1| %
1166 \HyPsd@fi
1167 }%
1168 \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1169 }%
1170 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1171 \fi
1172 \etex@unexpanded{#1}%
1173 \ifx\scrollmode#2\scrollmode
1174 \else
1175 \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1176 \HyPsd@fi
1177 }%
1178 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1179 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1180 }%
1181 }

```

### 6.6.3 Remove grouping braces

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

```

1182 \def\HyPsd@RemoveBraces#1{%
1183 \ifx\scrollmode#1\scrollmode
1184 \else
1185 \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1186 \fi
1187 }

```

`\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`.

```

1188 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1189 \fi
1190 \def\Hy@temp@A{#1#2}%
1191 \def\Hy@temp@B{#3}%
1192 \ifx\Hy@temp@A\Hy@temp@B
1193 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1194 \HyPsd@String#1%
1195 }%
1196 \ifx\scrollmode#2\scrollmode
1197 \else
1198 \Hy@ReturnAfterFiFiEnd{%
1199 \HyPsd@RemoveBraces{#2}%
1200 }%
1201 \fi
1202 \else
1203 \def\Hy@temp@A{#1}%

```



```

1204 \HyPsd@AppendItalcorr\HyPsd@String
1205 \ifx\Hy@temp@A\@empty
1206 \Hy@ReturnAfterElseFiFiEnd{%
1207 \HyPsd@RemoveBraces{#2}%
1208 }%
1209 \else
1210 \HyPsd@ProtectSpaces\Hy@temp@A
1211 \HyPsd@AppendItalcorr\Hy@temp@A
1212 \Hy@ReturnAfterFiFiEnd{%
1213 \expandafter\HyPsd@RemoveBraces\expandafter
1214 {\Hy@temp@A#2}%
1215 }%
1216 \fi
1217 \fi
1218 \Hy@ReturnEnd
1219 }

```

\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.

```

1220 \def\HyPsd@AppendItalcorr#1{%
1221 \expandafter\HyPsd@@AppendItalcorr\expandafter{/}\#1%
1222 }
1223 \def\HyPsd@@AppendItalcorr#1#2{%
1224 \expandafter\def\expandafter#2\expandafter{#2#1}%
1225 }

```

## 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).

```

1226 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1227 \global\let\HyPsd@Rest\relax
1228 \ifcat\relax\noexpand#1\relax
1229 \ifx#1\protect
1230 \else
1231 \ifx#1\penalty
1232 \setbox\z@=\hbox{%
1233 \afterassignment\HyPsd@AfterCountRemove
1234 \count@=#2\HyPsd@End
1235 }%
1236 \else
1237 \ifx#1\kern
1238 \setbox\z@=\hbox{%
1239 \afterassignment\HyPsd@AfterDimenRemove
1240 \dimen@=#2\HyPsd@End
1241 }%
1242 \else

```

```

1243         \ifx#1\hskip
1244             \setbox\z@=\hbox{%
1245                 \afterassignment\HyPsd@AfterSkipRemove
1246                 \skip@=#2\HyPsd@end
1247             }%
1248         \else
1249             \HyPsd@CatcodeWarning{#1}%
1250         \fi
1251     \fi
1252 \fi
1253 \fi
1254 \else
1255     \ifcat#1A% letter
1256         \expandafter\def\expandafter\HyPsd@String\expandafter{%
1257             \HyPsd@String#1%
1258         }%
1259     \else
1260         \ifcat#1 % SPACE
1261             \expandafter\def\expandafter\HyPsd@String\expandafter{%
1262                 \HyPsd@String\HyPsd@SPACEOPTI
1263             }%
1264         \else
1265             \ifcat$#1%
1266                 \HyPsd@CatcodeWarning{math shift}%
1267             \else
1268                 \ifcat&#1%
1269                     \HyPsd@CatcodeWarning{alignment tab}%
1270                 \else
1271                     \ifcat^#1%
1272                         \HyPsd@CatcodeWarning{superscript}%
1273                     \else
1274                         \ifcat_#1%
1275                             \HyPsd@CatcodeWarning{subscript}%
1276                         \else
1277                             \expandafter\def\expandafter\HyPsd@String\expandafter{%
1278                                 \HyPsd@String#1%
1279                             }%
1280                         \fi
1281                     \fi
1282                 \fi
1283             \fi
1284         \fi
1285     \fi
1286 \fi
1287 \ifx\HyPsd@Rest\relax
1288     \ifx\scrollmode#2\scrollmode
1289         \else
1290             \Hy@ReturnAfterFiFiEnd{%
1291                 \HyPsd@CheckCatcodes#2\HyPsd@end
1292             }%
1293         \fi
1294     \else
1295         \ifx\HyPsd@Rest\@empty
1296         \else
1297             \Hy@ReturnAfterFiFiEnd{%
1298                 \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@end
1299             }%

```

```

1300     \fi
1301     \fi
1302     \Hy@ReturnEnd
1303 }

```

### Remove counts, dimens, skips.

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

```

1304 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1305     \gdef\HyPsd@Rest{#1}%
1306 }

```

`\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.

```

1307 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1308     \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1309         \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1310         \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1311     \else
1312         \ifdim\dimen@=\z@
1313         \else
1314             \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1315         \fi
1316         \gdef\HyPsd@Rest{#1}%
1317     \fi
1318 }

```

`\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).

```

1319 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1320     \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1321         \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1322         \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1323     \else
1324         \ifdim\skip@=\z@
1325         \else
1326             \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1327         \fi
1328         \gdef\HyPsd@Rest{#1}%
1329     \fi
1330 }

```

### Catcode warnings.

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

```

1331 \def\HyPsd@CatcodeWarning#1{%
1332     \HyPsd@Warning{%
1333         Token not allowed in a PDF string (%
1334         \ifHy@unicode
1335             Unicode%
1336         \else
1337             PDFDocEncoding%
1338         \fi
1339     ),%

```

```

1340 \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1341 }%
1342 }
1343 \beginingroup
1344 \catcode'\|=0 %
1345 \catcode'\|=12 %
1346 \gdef\HyPsd@RemoveCmdPrefix#1{%
1347 \expandafter\HyPsd@@RemoveCmdPrefix
1348 \string#1\@empty\<>-|@empty|@empty
1349 }%
1350 \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1351 \endgroup

```

\HyPsd@RemoveSpaceWarning

```

1352 \def\HyPsd@RemoveSpaceWarning#1{%
1353 \HyPsd@Warning{%
1354 Token not allowed in a PDFDocEncoded string:%
1355 \MessageBreak #1\MessageBreak
1356 removed%
1357 }%
1358 }

```

\HyPsd@ReplaceSpaceWarning

```

1359 \def\HyPsd@ReplaceSpaceWarning#1{%
1360 \HyPsd@Warning{%
1361 Token not allowed in a PDFDocEncoded string:%
1362 \MessageBreak #1\MessageBreak
1363 replaced by space%
1364 }%
1365 }

```

### 6.6.5 Check for wrong glyphs

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

```

1366 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1367 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1368 \HyPsd@String#1%
1369 }%
1370 \ifx\|#2\%
1371 \else
1372 \Hy@ReturnAfterFi{%
1373 \HyPsd@GlyphProcessWarning#2\@empty
1374 }%
1375 \fi
1376 }
1377 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1378 \HyPsd@Warning{%
1379 Glyph not defined in %
1380 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1381 removing '\@backslashchar#1'%
1382 }%
1383 \HyPsd@GlyphProcess#2\@empty
1384 }

```

## 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`.

```
1385 \def\HyPsd@spaceopti#1{ % first space
1386   \ifx\HyPsd@spaceopti#1%
1387     \040%
1388   \else
1389     #1%
1390   \fi
1391 }%
```

### 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.

```
1392 \def\HyPsd@Subst#1#2#3{%
1393   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1394     \fi
1395     ##1%
1396     \ifx\scrollmode##2\scrollmode
1397     \else
1398       #2%
1399       \HyPsd@@ReplaceFi##2\END
1400     \fi
1401   }%
1402   \xdef#3{%
1403     \iftrue
1404       \expandafter\HyPsd@@ReplaceFi#3#1\END
1405     \fi
1406   }%
1407 }
```

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

```
1408 \def\HyPsd@StringSubst#1{%
1409   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1410 }
```

### 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.

```
1411 \def\HyPsd@doxspace#1{%
1412   \ifx#1\relax\else
1413     \ifx#1.\else
1414       \ifx#1:\else
1415         \ifx#1,\else
1416         \ifx#1;\else
1417         \ifx#1!\else
1418         \ifx#1?\else
```

```

1419         \ifx#1/\else
1420         \ifx#1-\else
1421         \ifx#1'\else
1422         \HyPsd@SPACEOPTI
1423         \fi
1424         \fi
1425         \fi
1426         \fi
1427         \fi
1428         \fi
1429         \fi
1430         \fi
1431         \fi
1432         \fi
1433         #1%
1434     }%

```

### 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.

```

1435 \begingroup
1436   \catcode'\|=0 %
1437   \catcode'\|=12 %

```

\HyPsd@ConvertToUnicode

```

1438 |gdef|HyPsd@ConvertToUnicode#1{%
1439   |xdef#1{%
1440     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1441   }%
1442   |ifx#1|@empty
1443   |else
1444     |xdef#1{%
1445       \376\377%
1446       #1%
1447     }%
1448   |fi
1449 }%

```

\HyPsd@DoConvert

```

1450 |gdef|HyPsd@DoConvert#1{%
1451   |ifx#1|@empty
1452   |else
1453     |Hy@ReturnAfterFi{%
1454       |ifx#1\|%
1455       \|%
1456       |expandafter|HyPsd@DoEscape
1457     |else
1458       \000#1%
1459       |expandafter|HyPsd@DoConvert
1460     |fi
1461   }%
1462   |fi
1463 }%

```

`\HyPsd@DoEscape`

```

1464 |gdef|HyPsd@DoEscape#1{%
1465   |ifx#19%
1466   |expandafter|HyPsd@GetTwoBytes
1467   |else
1468   |Hy@ReturnAfterFi{%
1469     |ifx#18%
1470     00%
1471     |expandafter|HyPsd@GetTwoBytes
1472     |else
1473     #1%
1474     |expandafter|HyPsd@GetOneByte
1475     |fi
1476   }%
1477 |fi
1478 }%

```

`\HyPsd@GetTwoBytes`

```

1479 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1480   #1\#2#3#4%
1481   |HyPsd@DoConvert
1482 }%

```

`\HyPsd@GetOneByte`

```

1483 |gdef|HyPsd@GetOneByte#1#2{%
1484   #1#2%
1485   |HyPsd@DoConvert
1486 }%
1487 |endgroup

```

`\HyPsd@@GetNextTwoTokens`

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

```

1488 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1489   \xdef#4{#4#1#2}%
1490   \HyPsd@@ConvertToUnicode#3\END#4%
1491 }

```

### 6.6.9 Support for UTF-8 input encoding

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

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

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

```

1492 \begingroup\expandafter\expandafter\expandafter\endgroup
1493 \expandafter\ifx\csname numexpr\endcsname\relax
1494   \let\HyPsd@UTFviii\relax
1495 \else
1496   \begingroup
1497     \lccode'\~='^^f4\relax
1498   \lowercase{\endgroup

```

```

1499 \def\HyPsd@UTFviii{%
1500 \let\UTFviii@two@octets\HyPsd@UTFviii@two
1501 \let\UTFviii@three@octets\HyPsd@UTFviii@three
1502 \let\UTFviii@four@octets\HyPsd@UTFviii@four
1503 \ifx~\HyPsd@UTFviii@ccxliv@undef
1504 \let~\HyPsd@UTFviii@ccxliv@def
1505 \fi
1506 \let\unichar\HyPsd@unichar
1507 }%
1508 }%
1509 \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
1510 \edef\HyPsd@UTFviii@ccxliv@def{%
1511 \noexpand\UTFviii@four@octets\string ^^f4%
1512 }%

```

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.

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

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

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

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

$$(5)$$

```

1513 \def\HyPsd@UTFviii@two#1#2{%
1514 \expandafter\HyPsd@UTFviii@@two
1515 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1516 \number'#1\expandafter|%
1517 \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|%
1518 \number'#2 \@nil
1519 }%
1520 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
1521 \expandafter\8%
1522 \number\numexpr #1-48\expandafter\relax
1523 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1524 \number\numexpr #3-8*%
1525 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1526 \number\numexpr #4-8*#3\relax
1527 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

1528 \def\HyPsd@UTFviii@three#1#2#3{%
1529 \expandafter\HyPsd@UTFviii@@three
1530 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%

```



```

1531 \number'#1\expandafter|%
1532 \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter|%
1533 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|%
1534 \number'#2\expandafter|%
1535 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|%
1536 \number'#3 \@nil
1537 }%
1538 \def\HyPsd@UTFviii@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1539 \expandafter\9%
1540 \number\numexpr #1-56\expandafter\relax
1541 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1542 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1543 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1544 \number\numexpr #6-16\expandafter\relax
1545 \number\numexpr #7-8*#6\relax
1546 }%

```

Surrogates: 4 octets in UTF-8, a surrogate pair in UTF-16. High surrogate range: U+D800–U+DBFF, low surrogate range: U+DC00–U+DFFF.

```

UTF-8: 11110uuu 10uuzzzz 10yyyyyy 10xxxxxx
www = uuuu - 1
UTF-16: 110110ww wwzzzzyy 110111yy yyxxxxxx
octal: 011 011 0ww 0ww zzz zyy 011 011 1yy 0yy xxx xxx

```

```

1547 \def\HyPsd@UTFviii@four#1#2{%
1548 \expandafter\HyPsd@UTFviii@four\number
1549 \numexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
1550 \expandafter|\number
1551 \numexpr'#2-16*\dimexpr.0625\dimexpr'#2sp|%
1552 }%
1553 \def\HyPsd@UTFviii@four#1|#2|#3{%
1554 \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1555 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1556 \ifodd#2 %
1557 \number\numexpr(#2-1)/2\relax
1558 \else
1559 \number\numexpr#2/2\relax
1560 \fi
1561 \number\numexpr\ifodd#2 4+\fi
1562 \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
1563 \933%
1564 \expandafter\HyPsd@UTFviii@four\number
1565 \numexpr'#3-16*\dimexpr.0625\dimexpr'#3sp|%
1566 }%
1567 \def\HyPsd@UTFviii@four#1|#2{%
1568 \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1569 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1570 \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
1571 \number\numexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
1572 }%

```

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

```

1573 \def\HyPsd@unichar#1{%
1574 \ifHy@unicode
1575 \ifnum#1>"10FFFF %
1576 \HyPsd@UnicodeReplacementCharacter % illegal
1577 \else

```

```

1578         \ifnum#1>"FFFF %
High-surrogate code point. ("D800 = 55296, \p@ = 1pt = 65536sp)
1579         \expandafter\HyPsd@unichar\expandafter{%
1580         \number\numexpr 55296+%
1581         \dimexpr.0009765625\dimexpr\number#1sp-\p@
1582         \relax\relax\relax
1583     }%
Low-surrogate code point. ("DC00 = 56320, "DC00 - 65536 = -9216)
1584         \expandafter\HyPsd@unichar\expandafter{%
1585         \number\numexpr#1-9216%
1586         -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1587         \relax\relax\relax
1588     }%
1589     \else
1590         \ifnum#1>"7FF %
1591         \9%
1592         \expandafter\HyPsd@unichar@first@byte\expandafter{%
1593         \number
1594         \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1595         }%
1596     \else
1597         \8%
1598         \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
1599     \fi
1600     \expandafter\HyPsd@unichar@second@byte\expandafter{%
1601     \number
1602     \numexpr#1-256*\number
1603     \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
1604     }%
1605     \fi
1606     \fi
1607     \else
1608     .% unsupported (Unicode -> PDF Doc Encoding)
1609     \fi
1610 }%
1611 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
1612 \def\HyPsd@unichar@first@byte#1{%
1613     \number\dimexpr.015625\dimexpr#1sp\relax\relax
1614     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1615     \number
1616     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1617     \relax\relax\relax
1618     }%
1619 }%
1620 \def\HyPsd@unichar@second@byte#1{%
1621     \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
1622     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1623     \number
1624     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1625     \relax\relax\relax
1626     }%
1627 }%
1628 \def\HyPsd@unichar@octtwo#1{%
1629     \number\dimexpr.125\dimexpr#1sp\relax\relax
1630     \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
1631     \relax\relax\relax

```

```

1632 }%
1633 \fi

```

## 7 Support of other packages

### 7.1 Class memoir

```

1634 \@ifclassloaded{memoir}{%
1635   \AtEndOfPackage{\RequirePackage{memhfixc}}%
1636 }{}

```

### 7.2 Package subfigure

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

```

1637 \@ifpackageloaded{subfigure}{%
1638   \@ifundefined{sub@label}{%
1639     \Hy@hypertextnamesfalse
1640   }{%
1641     \renewcommand*{\sub@label}[1]{%
1642       \@bsphack
1643       \subfig@oldlabel{#1}%
1644       \if@filesw
1645         \begingroup
1646           \edef\@currentlabstr{%
1647             \expandafter\strip@prefix\meaning\@currentlabelname
1648           }%
1649           \protected@write\@auxout{}{%
1650             \string\newlabel{sub@#1}{%
1651               {\@nameuse{@@thesub\@capttype}}%
1652               {\thepage}%
1653             }%
1654             \expandafter\strip@period\@currentlabstr
1655             \relax.\relax\@@@%
1656           }%
1657           {\@currentHref}%
1658           {}%
1659         }%
1660       }%
1661       \endgroup
1662     \fi
1663     \@esphack
1664   }%
1665   \@ifpackagelater{subfigure}{2002/03/26}{%
1666     \providecommand*{\toclevel@subfigure}{1}%
1667     \providecommand*{\toclevel@subtable}{1}%
1668   }%
1669 }%
1670 }{}

```

### 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:

```

1671 \@ifundefined{XR@addURL}{%
1672 }{}

```

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.

```

1673 \def\XR@addURL#1{\XR@dURL#1{}{}{}\\}%
1674 \def\XR@dURL#1#2#3#4#5\{%
1675   {#1}{#2}%
1676   \if!#4!%
1677   \else
1678     {#3}{#4}{\XR@URL}%
1679   \fi
1680 }%
1681 }

1682 \def\Hy@true{true}
1683 \def\Hy@false{false}

```

Providing dummy definitions.

```

1684 \let\literalps@out\@gobble
1685 \newcommand\pdfbookmark[3][]{ }
1686 \def\Acrobatmenu#1#2{\leavevmode#2}
1687 \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

```

1688 \let\HyperRaiseLinkHook\@empty
1689 \def\HyperRaiseLinkDefault{\baselineskip}

```

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

```

1690 \def\Hy@raisedlink#1{%
1691   \ifvmode
1692     #1%
1693   \else
1694     \penalty\@M
1695     \smash{%
1696       \begingroup
1697         \let\HyperRaiseLinkLength\@tempdima
1698         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1699         \HyperRaiseLinkHook
1700       \expandafter\endgroup
1701       \expandafter\raise\the\HyperRaiseLinkLength\hbox{#1}%
1702     }%
1703   \fi
1704 }

```

`\Hy@SaveLastskip` Inserting a `\special` command to set a destination destroys the `\lastskip` value.  
`\Hy@RestoreLastskip` 1705 \def\Hy@SaveLastskip{%

```

1706 \let\Hy@RestoreLastskip\relax
1707 \ifvmode
1708   \ifdim\lastskip=\z@
1709     \let\Hy@RestoreLastskip\nobreak
1710   \else
1711     \begingroup
1712       \skip@=-\lastskip
1713       \edef\x{%
1714         \endgroup
1715         \def\noexpand\Hy@RestoreLastskip{%
1716           \noexpand\ifvmode
1717             \noexpand\nobreak
1718             \vskip\the\skip@
1719             \vskip\the\lastskip\relax
1720         \noexpand\fi
1721       }%
1722     }%
1723   \x
1724 \fi
1725 \else
1726   \ifhmode
1727     \ifdim\lastskip=\z@
1728       \let\Hy@RestoreLastskip\nobreak
1729     \else
1730       \begingroup
1731         \skip@=-\lastskip
1732         \edef\x{%
1733           \endgroup
1734           \def\noexpand\Hy@RestoreLastskip{%
1735             \noexpand\ifhmode
1736               \noexpand\nobreak
1737               \hskip\the\skip@
1738               \hskip\the\lastskip\relax
1739           \noexpand\fi
1740         }%
1741       }%
1742     \x
1743   \fi
1744 \fi
1745 \fi
1746 }%

```

## 9 Options

### 9.1 Help macros

\Hy@boolkey

```

1747 \def\Hy@boolkey{\@dblarg\Hy@boolkey}
1748 \def\Hy@boolkey[#1]#2#3{%
1749   \lowercase{\def\Hy@tempa{#3}}%
1750   \ifx\Hy@tempa\@empty
1751     \let\Hy@tempa\Hy@true
1752   \fi
1753   \ifx\Hy@tempa\Hy@true
1754   \else
1755     \ifx\Hy@tempa\Hy@false

```

```

1756     \else
1757         \let\Hy@tempa\relax
1758     \fi
1759 \fi
1760 \ifx\Hy@tempa\relax
1761     \Hy@WarnOptionValue{#3}{#1}{'true' or 'false'}%
1762 \else
1763     \Hy@Info{Option '#1' set '\Hy@tempa'}%
1764     \csname Hy@#2\Hy@tempa\endcsname
1765 \fi
1766 }

```

\Hy@WarnOptionValue

```

1767 \def\Hy@WarnOptionValue#1#2#3{%
1768     \Hy@Warning{%
1769         Unexpected value '#1'\MessageBreak
1770         of option '#2' instead of\MessageBreak
1771         #3%
1772     }%
1773 }

```

\Hy@DisableOption

```

1774 \def\Hy@DisableOption#1{%
1775     \ifundefined{KV@Hyp@#1@default}{%
1776         \define@key{Hyp}{#1}%
1777     }{%
1778         \define@key{Hyp}{#1}[]%
1779     }%
1780     {\Hy@WarnOptionDisabled{#1}}%
1781 }

```

\Hy@WarnOptionDisabled

```

1782 \def\Hy@WarnOptionDisabled#1{%
1783     \Hy@Warning{%
1784         Option '#1' has already been used,\MessageBreak
1785         setting the option has no effect%
1786     }%
1787 }

```

\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.

```

1788 \def\Hy@CheckOptionValue#1#2#3{%
1789     \begingroup
1790     \edef\x{#1}%
1791     \@onelevel@sanitize\x
1792     \let\y=y%
1793     \def\do##1##2{%
1794         \def\z{##1}%
1795         \@onelevel@sanitize\z
1796         \ifx\x\z
1797             \let\y=n%
1798             \let\do\@gobbletwo
1799         \fi
1800     }%
1801     #3%
1802     \ifx\y y%
1803         \def\do##1##2{%

```

```

1804      * '##1'%
1805      \ifx\##2\\\else\space(##2)\fi
1806      \MessageBreak
1807    }%
1808    \Hy@Warning{%
1809      Values of option '#2':\MessageBreak
1810      #3%
1811      * An empty value disables the option.\MessageBreak
1812      Unknown value '\x'%
1813    }%
1814    \fi
1815  \endgroup
1816 }

```

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

```

1817 \def\Hy@DefNameKey#1{%
1818   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
1819 }

```

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

```

1820 \def\Hy@@DefNameKey#1#2#3{%
1821   \define@key{Hyp}{#2}{%
1822     \edef#1{##1}%
1823     \ifx#1\@empty
1824     \else
1825       \Hy@CheckOptionValue{##1}{#2}{#3}%
1826     \fi
1827   }%
1828   \let#1\@empty
1829 }

```

`\Hy@UseNameKey`

```

1830 \def\Hy@UseNameKey#1#2{%
1831   \ifx#2\@empty
1832   \else
1833     /#1/#2%
1834   \fi
1835 }

```

## 9.2 Defining the options

```

1836 \define@key{Hyp}{implicit}[true]{%
1837   \Hy@boolkey{implicit}{#1}%
1838 }
1839 \define@key{Hyp}{draft}[true]{%
1840   \Hy@boolkey{draft}{#1}%
1841 }
1842 \define@key{Hyp}{final}[true]{%
1843   \Hy@boolkey{final}{#1}%
1844 }
1845 \let\KV@Hyp@nolinks\KV@Hyp@draft
1846 \define@key{Hyp}{a4paper}[true]{%

```

```

1847 \def\special@paper{210mm,297mm}%
1848 \def\Hy@pageheight{842}%
1849 }
1850 \define@key{Hyp}{a5paper}[true]{%
1851 \def\special@paper{148mm,210mm}%
1852 \def\Hy@pageheight{595}%
1853 }
1854 \define@key{Hyp}{b5paper}[true]{%
1855 \def\special@paper{176mm,250mm}%
1856 \def\Hy@pageheight{709}%
1857 }
1858 \define@key{Hyp}{letterpaper}[true]{%
1859 \def\special@paper{8.5in,11in}%
1860 \def\Hy@pageheight{792}%
1861 }
1862 \define@key{Hyp}{legalpaper}[true]{%
1863 \def\special@paper{8.5in,14in}%
1864 \def\Hy@pageheight{1008}%
1865 }
1866 \define@key{Hyp}{executivepaper}[true]{%
1867 \def\special@paper{7.25in,10.5in}%
1868 \def\Hy@pageheight{720}%
1869 }
1870 \define@key{Hyp}{setpagesize}[true]{%
1871 \Hy@boolkey{setpagesize}{#1}%
1872 }
1873 \define@key{Hyp}{debug}[true]{%
1874 \Hy@boolkey[debug]{verbose}{#1}%
1875 }
1876 \define@key{Hyp}{linktocpage}[true]{%
1877 \Hy@boolkey{linktocpage}{#1}%
1878 \ifHy@linktocpage
1879 \let\Hy@linktoc\Hy@linktoc@page
1880 \else
1881 \let\Hy@linktoc\Hy@linktoc@section
1882 \fi
1883 }
1884 \chardef\Hy@linktoc@none=0 %
1885 \chardef\Hy@linktoc@section=1 %
1886 \chardef\Hy@linktoc@page=2 %
1887 \chardef\Hy@linktoc@all=3 %
1888 \ifHy@linktocpage
1889 \let\Hy@linktoc\Hy@linktoc@page
1890 \else
1891 \let\Hy@linktoc\Hy@linktoc@section
1892 \fi
1893 \define@key{Hyp}{linktoc}{%
1894 \@ifundefined{Hy@linktoc@#1}{%
1895 \Hy@Warning{%
1896 Unexpected value ‘#1’ of\MessageBreak
1897 option ‘linktoc’ instead of ‘none’,\MessageBreak
1898 ‘section’, ‘page’ or ‘all’%
1899 }%
1900 }{%
1901 \expandafter\let\expandafter\Hy@linktoc
1902 \csname Hy@linktoc@#1\endcsname
1903 }%

```



```

1904 }
1905 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1906 \def\XR@ext{dvi}
1907 \define@key{Hyp}{verbose}[true]{%
1908   \Hy@boolkey{verbose}{#1}%
1909 }
1910 \define@key{Hyp}{typexml}[true]{%
1911   \Hy@boolkey{typexml}{#1}%
1912 }

```

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.

```

1913 \define@key{Hyp}{raiselinks}[true]{%
1914   \Hy@boolkey{raiselinks}{#1}%
1915 }

```

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

```

1916 \define@key{Hyp}{breaklinks}[true]{%
1917   \Hy@boolkey{breaklinks}{#1}%
1918 }

```

Determines whether an automatic anchor is put on each page

```

1919 \define@key{Hyp}{pageanchor}[true]{%
1920   \Hy@boolkey{pageanchor}{#1}%
1921 }

```

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.

```

1922 \define@key{Hyp}{plainpages}[true]{%
1923   \Hy@boolkey{plainpages}{#1}%
1924 }

```

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?

```

1925 \define@key{Hyp}{naturalnames}[true]{%
1926   \Hy@boolkey{naturalnames}{#1}%
1927 }

```

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

```

1928 \define@key{Hyp}{hypertextnames}[true]{%
1929   \Hy@boolkey{hypertextnames}{#1}%
1930 }

```

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

```

1931 \define@key{Hyp}{nesting}[true]{%
1932   \Hy@boolkey{nesting}{#1}%
1933 }

```

```

1934 \define@key{Hyp}{unicode}[true]{%
1935   \Hy@boolkey{unicode}{#1}%
1936   \ifHy@unicode
1937     \def\HyPsd@pdfencoding{unicode}%
1938   \else
1939     \def\HyPsd@pdfencoding{pdfdoc}%
1940   \fi
1941   \HyPsd@LoadUnicode
1942 }
1943 \def\HyPsd@LoadUnicode{%
1944   \ifundefined{T@PU}{\input{puenc.def}}{}%

```

```

1945 \DeclareFontFamily{PU}{pdf}{}%
1946 \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
1947 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
1948 \global\let\HyPsd@LoadUnicode\relax
1949 }
1950 \AtBeginDocument{%
1951 \ifx\HyPsd@LoadUnicode\relax
1952 \else
1953 \def\HyPsd@LoadUnicode{%
1954 \PackageError{hyperref}{}%
1955 Unicode support for bookmarks is not available.\MessageBreak
1956 Activate unicode support by using one of the options\MessageBreak
1957 'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
1958 in the preamble%
1959 }\@ehc
1960 \global\let\HyPsd@LoadUnicode\relax
1961 \global\Hy@unicodedefalse
1962 \global\let\Hy@unicodetrue\Hy@unicodedefalse
1963 }%
1964 \fi
1965 }

1966 \define@key{Hyp}{pdfencoding}{%
1967 \edef\HyPsd@temp{#1}%
1968 \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
1969 \let\HyPsd@pdfencoding\HyPsd@temp
1970 \Hy@unicodedefalse
1971 \else
1972 \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
1973 \z@
1974 \else
1975 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
1976 \z@
1977 \else
1978 \@ne
1979 \fi
1980 \fi
1981 \let\HyPsd@pdfencoding\HyPsd@temp
1982 \hypersetup{unicode}%
1983 \ifHy@unicode
1984 \def\HyPsd@pdfencoding{#1}%
1985 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
1986 \HyPsd@LoadStringEncoding
1987 \fi
1988 \else
1989 \Hy@Warning{Cannot switch to unicode bookmarks}%
1990 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
1991 \fi
1992 \else
1993 \@onelevel@sanitize\HyPsd@temp
1994 \Hy@Warning{%
1995 Values of option 'pdfencoding':\MessageBreak
1996 'pdfdoc', 'unicode', 'auto'.\MessageBreak
1997 Ignoring unknown value '\HyPsd@temp'%
1998 }%
1999 \fi
2000 \fi
2001 }

```

```

2002 \def\HyPsd@pdfencoding@auto{auto}
2003 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2004 \def\HyPsd@pdfencoding@unicode{unicode}
2005 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
2006 \def\HyPsd@LoadStringEnc{%
2007   \RequirePackage{stringenc}[2007/06/14]%
2008   \let\HyPsd@LoadStringEnc\relax
2009 }
2010 \AtBeginDocument{%
2011   \ifpackageloaded{stringenc}{%
2012     \let\HyPsd@LoadStringEnc\relax
2013   }{%
2014     \def\HyPsd@LoadStringEnc{%
2015       \Hy@WarningNoLine{%
2016         Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak
2017         in the preamble or load the package there%
2018       }%
2019     }%
2020   }%
2021 }

2022 \newif\ifHy@setpdfversion
2023 \define@key{Hyp}{pdfversion}{%
2024   \ifundefined{Hy@pdfversion@#1}{%
2025     \PackageWarning{hyperref}{%
2026       Unsupported PDF version '#1'.\MessageBreak
2027       Valid values: 1.2 until 1.7%
2028     }%
2029   }{%
2030     \Hy@setpdfversiontrue
2031     \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
2032   }%
2033 }
2034 \@namedef{Hy@pdfversion@1.2}{2}%
2035 \@namedef{Hy@pdfversion@1.3}{3}%
2036 \@namedef{Hy@pdfversion@1.4}{4}%
2037 \@namedef{Hy@pdfversion@1.5}{5}%
2038 \@namedef{Hy@pdfversion@1.6}{6}%
2039 \@namedef{Hy@pdfversion@1.7}{7}%
2040 \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

2041 \define@key{Hyp}{hyperref}[true]{}
2042 \define@key{Hyp}{tex4ht}[true]{}
2043 \def\XR@ext{html}%
2044 \Hy@texhttrue
2045 \def\Hy@raisedlink{}%
2046 \setkeys{Hyp}{colorlinks=true}%
2047 \def\BeforeTeXIVht{\usepackage{color}}%
2048 \def\Hy@driver{htex4ht}%
2049 \def\MaybeStopEarly{%
2050   \typeout{Hyperref stopped early}%
2051   \AfterBeginDocument{%
2052     \PDF@FinishDoc
2053     \gdef\PDF@FinishDoc{}%
2054   }%
2055   \endinput

```

```

2056 }%
2057 }
2058 \define@key{Hyp}{pdftex}[true]{%
2059   \def\Hy@driver{hpdftex}%
2060   \def\XR@ext{pdf}%
2061   \PassOptionsToPackage{pdftex}{color}%
2062   \Hy@breaklinkstrue
2063 }
2064 \define@key{Hyp}{dvipdf}[true]{%
2065   \Hy@WarningNoLine{%
2066     Option 'dvipdf' is deprecated.\MessageBreak
2067     See the user manual for available driver options%
2068   }%
2069 }
2070 \define@key{Hyp}{nativepdf}[true]{%
2071   \def\Hy@driver{hdvips}%
2072   \def\Hy@raisedlink{}%
2073   \def\XR@ext{pdf}%
2074 }
2075 \define@key{Hyp}{dvipdfm}[true]{%
2076   \def\Hy@driver{hdvipdfm}%
2077   \def\XR@ext{pdf}%
2078   \Hy@breaklinkstrue
2079 }
2080 \define@key{Hyp}{dvipdfmx}[true]{%
2081   \def\Hy@driver{hdvipdfm}%
2082   \def\XR@ext{pdf}%
2083   \Hy@breaklinkstrue
2084 }
2085 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2086   \expandafter\ifx\csname if#1\expandafter\endcsname
2087     \csname iftrue\endcsname
2088     \chardef\SpecialDvipdfmxOutlineOpen@ne
2089   \else
2090     \chardef\SpecialDvipdfmxOutlineOpen@z@
2091   \fi
2092 }
2093 \define@key{Hyp}{xetex}[true]{%
2094   \def\Hy@driver{hdvipdfm}%
2095   \def\XR@ext{pdf}%
2096   \Hy@breaklinkstrue
2097 }
2098 \define@key{Hyp}{pdfmark}[true]{%
2099   \def\Hy@driver{hdvips}%
2100   \def\Hy@raisedlink{}%
2101   \def\XR@ext{pdf}%
2102 }
2103 \define@key{Hyp}{dvips}[true]{%
2104   \def\Hy@driver{hdvips}%
2105   \def\Hy@raisedlink{}%
2106   \def\XR@ext{pdf}%
2107 }
2108 \define@key{Hyp}{hypertex}[true]{%
2109   \def\Hy@driver{hypertex}%
2110 }
2111 \let\Hy@MaybeStopNow\relax
2112 \define@key{Hyp}{vtex}[true]{%

```

```

2113 \begingroup\expandafter\expandafter\expandafter\endgroup
2114 \expandafter\ifx\csname OpMode\endcsname\relax
2115   \@latex@error{Non-VTeX processor}{}%
2116   \global\let\Hy@MaybeStopNow\endinput
2117   \endinput
2118 \else
2119   \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2120     \def\XR@ext{pdf}%
2121     \def\Hy@driver{hvtex}%
2122   \else
2123     \ifnum\OpMode=10\relax
2124       \def\XR@ext{htm}%
2125       \def\Hy@driver{hvtexhtm}%
2126       \def\MaybeStopEarly{%
2127         \typeout{Hyperref stopped early}%
2128         \AfterBeginDocument{%
2129           \PDF@FinishDoc
2130           \gdef\PDF@FinishDoc{}%
2131         }%
2132       \endinput
2133     }%
2134   \else
2135     \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2136     \global\let\Hy@MaybeStopNow\endinput
2137     \endinput
2138   \fi
2139 \fi
2140 \fi
2141 }
2142 \define@key{Hyp}{vtxpdfmark}[true]{%
2143 \begingroup\expandafter\expandafter\expandafter\endgroup
2144 \expandafter\ifx\csname OpMode\endcsname\relax
2145   \@latex@error{Non-VTeX processor}{}%
2146   \let\Hy@MaybeStopNow\endinput
2147   \endinput
2148 \else
2149   \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2150     \def\XR@ext{pdf}%
2151     \def\Hy@driver{hvtexmrk}%
2152     \def\Hy@raisedlink{}%
2153   \else
2154     \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2155     \let\Hy@MaybeStopNow\endinput
2156     \endinput
2157   \fi
2158 \fi
2159 }
2160 \define@key{Hyp}{dviwindo}[true]{%
2161   \def\Hy@driver{hdviwind}%
2162   \setkeys{Hyp}{colorlinks}%
2163   \PassOptionsToPackage{dviwindo}{color}%
2164 }
2165 \define@key{Hyp}{dvipsone}[true]{%
2166   \def\XR@ext{pdf}%
2167   \def\Hy@driver{hdvipson}%
2168   \def\Hy@raisedlink{}%
2169 }

```

```

2170 \define@key{Hyp}{textures}[true]{%
2171   \def\XR@ext{pdf}%
2172   \def\Hy@driver{htext}%
2173 }
2174 \define@key{Hyp}{latex2html}[true]{%
2175   \AtBeginDocument{\@latex2htmlX}%
2176 }

```

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

```

2177 \define@key{Hyp}{ps2pdf}[true]{%
2178   \def\Hy@driver{hdvips}%
2179   \def\Hy@raisedlink{}%
2180   \providecommand*\@pdfborder{0 0 1}%
2181 }

```

## 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.

```

2182 \define@key{Hyp}{hyperfigures}[true]{%
2183   \Hy@boolkey[hyperfigures]{figures}{#1}%
2184 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

2185 \define@key{Hyp}{hyperfootnotes}[true]{%
2186   \Hy@boolkey[hyperfootnotes]{#1}%
2187 }

```

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

```

2188 \def\back@none{none}
2189 \def\back@section{section}
2190 \def\back@page{page}
2191 \def\back@slide{slide}
2192 \define@key{Hyp}{backref}[section]{%
2193   \lowercase{\def\Hy@tempa{#1}}%
2194   \ifx\Hy@tempa\@empty
2195     \let\Hy@tempa\back@section
2196   \fi
2197   \ifx\Hy@tempa\Hy@false
2198     \let\Hy@tempa\back@none
2199   \fi
2200   \ifx\Hy@tempa\back@slide
2201     \let\Hy@tempa\back@section
2202   \fi
2203   \ifx\Hy@tempa\back@page
2204     \PassOptionsToPackage{hyperpageref}{backref}%
2205     \Hy@backreftrue
2206   \else
2207     \ifx\Hy@tempa\back@section
2208       \PassOptionsToPackage{hyperref}{backref}%
2209       \Hy@backreftrue
2210     \else
2211       \ifx\Hy@tempa\back@none
2212         \Hy@backreffalse
2213       \else
2214         \Hy@WarnOptionValue{#1}{backref}{%
2215           'section', 'slide', 'page', 'none', \MessageBreak
2216           or 'false'}%

```

```

2217     \fi
2218     \fi
2219 \fi
2220 }
2221 \define@key{Hyp}{pagebackref}[true]{%
2222   \lowercase{\def\Hy@tempa{#1}}%
2223   \ifx\Hy@tempa\@empty
2224     \let\Hy@tempa\Hy@true
2225   \fi
2226   \ifx\Hy@tempa\Hy@true
2227     \PassOptionsToPackage{hyperpageref}{backref}%
2228     \Hy@backreftrue
2229   \else
2230     \ifx\Hy@tempa\Hy@false
2231       \Hy@backreffalse
2232     \else
2233       \Hy@WarnOptionValue{#1}{pagebackref}{‘true’ or ‘false’}%
2234     \fi
2235   \fi
2236 }

```

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

```

2237 \define@key{Hyp}{hyperindex}[true]{%
2238   \Hy@boolkey{hyperindex}{#1}%
2239 }

```

Configuration of encap char.

```

2240 \define@key{Hyp}{encap}[\l]{%
2241   \def\HyInd@EncapChar{#1}%
2242 }

```

## 12 Language options

The `\autoref` feature depends on the language.

```

2243 \def\HyLang@afrikaans{%
2244   \def\equationautorefname{Vergelyking}%
2245   \def\footnoteautorefname{Voetnota}%
2246   \def\itemautorefname{Item}%
2247   \def\figureautorefname{Figuur}%
2248   \def\tableautorefname{Tabel}%
2249   \def\partautorefname{Deel}%
2250   \def\appendixautorefname{Bylae}%
2251   \def\chapterautorefname{Hoofstuk}%
2252   \def\sectionautorefname{Afdeling}%
2253   \def\subsectionautorefname{Subafdeling}%
2254   \def\subsubsectionautorefname{Subsubafdeling}%
2255   \def\paragraphautorefname{Paragraaf}%
2256   \def\subparagraphautorefname{Subparagraaf}%
2257   \def\FancyVerbLineautorefname{Lyn}%
2258   \def\theoremautorefname{Teorema}%
2259   \def\pageautorefname{Bladsy}%
2260 }
2261 \def\HyLang@english{%
2262   \def\equationautorefname{Equation}%
2263   \def\footnoteautorefname{footnote}%
2264   \def\itemautorefname{item}%

```

```

2265 \def\figureautorefname{Figure}%
2266 \def\tableautorefname{Table}%
2267 \def\partautorefname{Part}%
2268 \def\appendixautorefname{Appendix}%
2269 \def\chapterautorefname{chapter}%
2270 \def\sectionautorefname{section}%
2271 \def\subsectionautorefname{subsection}%
2272 \def\subsubsectionautorefname{subsubsection}%
2273 \def\paragraphautorefname{paragraph}%
2274 \def\subparagraphautorefname{subparagraph}%
2275 \def\FancyVerbLineautorefname{line}%
2276 \def\theoremautorefname{Theorem}%
2277 \def\pageautorefname{page}%
2278 }
2279 \def\HyLang@french{%
2280 \def\equationautorefname{\`Equation}%
2281 \def\footnoteautorefname{note}%
2282 \def\itemautorefname{item}%
2283 \def\figureautorefname{Figure}%
2284 \def\tableautorefname{Tableau}%
2285 \def\partautorefname{Partie}%
2286 \def\appendixautorefname{Appendice}%
2287 \def\chapterautorefname{chapitre}%
2288 \def\sectionautorefname{section}%
2289 \def\subsectionautorefname{sous-section}%
2290 \def\subsubsectionautorefname{sous-sous-section}%
2291 \def\paragraphautorefname{paragraphe}%
2292 \def\subparagraphautorefname{sous-paragraphe}%
2293 \def\FancyVerbLineautorefname{ligne}%
2294 \def\theoremautorefname{Th\'eor\'eme}%
2295 \def\pageautorefname{page}%
2296 }
2297 \def\HyLang@german{%
2298 \def\equationautorefname{Gleichung}%
2299 \def\footnoteautorefname{Fu\ss note}%
2300 \def\itemautorefname{Punkt}%
2301 \def\figureautorefname{Abbildung}%
2302 \def\tableautorefname{Tabelle}%
2303 \def\partautorefname{Teil}%
2304 \def\appendixautorefname{Anhang}%
2305 \def\chapterautorefname{Kapitel}%
2306 \def\sectionautorefname{Abschnitt}%
2307 \def\subsectionautorefname{Unterabschnitt}%
2308 \def\subsubsectionautorefname{Unterunterabschnitt}%
2309 \def\paragraphautorefname{Absatz}%
2310 \def\subparagraphautorefname{Unterabsatz}%
2311 \def\FancyVerbLineautorefname{Zeile}%
2312 \def\theoremautorefname{Theorem}%
2313 \def\pageautorefname{Seite}%
2314 }
2315 \def\HyLang@italian{%
2316 \def\equationautorefname{Equazione}%
2317 \def\footnoteautorefname{nota}%
2318 \def\itemautorefname{punto}%
2319 \def\figureautorefname{Figura}%
2320 \def\tableautorefname{Tabella}%
2321 \def\partautorefname{Parte}%

```



```

2322 \def\appendixautorefname{Appendice}%
2323 \def\chapterautorefname{Capitolo}%
2324 \def\sectionautorefname{sezione}%
2325 \def\subsectionautorefname{sottosezione}%
2326 \def\subsubsectionautorefname{sottosottosezione}%
2327 \def\paragraphautorefname{paragrafo}%
2328 \def\subparagraphautorefname{sottoparagrafo}%
2329 \def\FancyVerbLineautorefname{linea}%
2330 \def\theoremautorefname{Teorema}%
2331 \def\pageautorefname{Pag.\@}%
2332 }
2333 \def\HyLang@magyar{%
2334 \def\equationautorefname{Egyenlet}%
2335 \def\footnoteautorefname{l\'abjegyzet}%
2336 \def\itemautorefname{Elem}%
2337 \def\figureautorefname{\'Abra}%
2338 \def\tableautorefname{T\'abl\'azat}%
2339 \def\partautorefname{R\'esz}%
2340 \def\appendixautorefname{F\'uggel\'ek}%
2341 \def\chapterautorefname{fejezet}%
2342 \def\sectionautorefname{szakasz}%
2343 \def\subsectionautorefname{alszakasz}%
2344 \def\subsubsectionautorefname{alalszakasz}%
2345 \def\paragraphautorefname{bekezd\'es}%
2346 \def\subparagraphautorefname{albekezd\'es}%
2347 \def\FancyVerbLineautorefname{sor}%
2348 \def\theoremautorefname{T\'etel}%
2349 \def\pageautorefname{oldal}%
2350 }
2351 \def\HyLang@portuges{%
2352 \def\equationautorefname{Equa\c c\~ao}%
2353 \def\footnoteautorefname{Nota de rodap\'e}%
2354 \def\itemautorefname{Item}%
2355 \def\figureautorefname{Figura}%
2356 \def\tableautorefname{Tabela}%
2357 \def\partautorefname{Parte}%
2358 \def\appendixautorefname{Ap\~endice}%
2359 \def\chapterautorefname{Cap\'itulo}%
2360 \def\sectionautorefname{Se\c c\~ao}%
2361 \def\subsectionautorefname{Subse\c c\~ao}%
2362 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
2363 \def\paragraphautorefname{par\'agrafo}%
2364 \def\subparagraphautorefname{subpar\'agrafo}%
2365 \def\FancyVerbLineautorefname{linha}%
2366 \def\theoremautorefname{Teorema}%
2367 \def\pageautorefname{P\'agina}%
2368 }

```

Next commented section for Russian is provided by Olga Lapko.

Next follow the checked reference names with commented variants and explanations. All they are abbreviated and they won't create a grammatical problems in the *middle* of sentences.

The most weak points in these abbreviations are the `\equationautorefname`, `\theoremautorefname` and the `\FancyVerbLineautorefname`. But those three, and also the `\footnoteautorefname` are not *too* often referenced. Another rather weak point is the `\appendixautorefname`.

```

2369 \def\HyLang@russian{%

```

The abbreviated reference to the equation: it is not for “the good face of the book”, but maybe it will be better to get the company for the `\theoremautorefname`?

```
2370 \def\equationautorefname{\cyr\cyrv\cyrrery\cyrr.}%
```

The name of the equation reference has common form for both nominative and accusative but changes in other forms, like “of `\autoref{auto}`” etc. The full name must follow full name of the `\theoremautorefname`.

```
2371 % \def\equationautorefname{%
2372 %     \cyr\cyrv\cyrrery\cyrr\cyra\cyrrzh\cyre\cyrn\cyri\cyre
2373 % }%
```

The variant of footnote has abbreviation form of the synonym of the word “footnote”. This variant of abbreviated synonym has alternative status (maybe obsolete?).

```
2374 \def\footnoteautorefname{%
2375     \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrm.%
2376 }%
```

Commented form of the full synonym for “footnote”. It has common form for both nominative and accusative but changes in other forms, like “of `\autoref{auto}`”

```
2377 % \def\footnoteautorefname{%
2378 %     \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrrzh\cyrn\cyro\cyre\ %
2379 %     \cyrp\cyrr\cyri\cyrm\cyre\cyrrzh\cyra\cyrn\cyri\cyre
2380 % }%
```

Commented forms of the “footnote”: have different forms, the same is for the nominative and accusative. (The others needed?)

```
2381 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
2382 % \def\Accfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyru}%
```

Name of the list item, can be confused with the paragraph reference name, but reader could understand meaning from context(?). Commented variant has common form for both nominative and accusative but changes in other forms, like “of `\autoref{auto}`” etc.

```
2383 \def\itemautorefname{\cyr\cyrp.}%
2384 % \def\itemautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
```

Names of the figure and table have stable (standard) abbreviation forms. No problem in the middle of sentence.

```
2385 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
2386 \def\tableautorefname{\cyr\cyrt\cyra\cyrb\cyrl.}%
```

Names of the part, chapter, section(s) have stable (standard) abbreviation forms. No problem in the middle of sentence.

```
2387 \def\partautorefname{\cyr\cyrrch.}%
2388 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
2389 \def\sectionautorefname{\cyr\cyrr\cyra\cyrrzh\cyrd.}%
```

Name of the appendix can use this abbreviation, but it is not standard for books, i.e., not for “the good face of the book”. Commented variant has common form for both nominative and accusative but changes in other forms, like “of `\autoref{auto}`” etc.

```
2390 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
2391 % \def\appendixautorefname{%
2392 %     \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrrzh\cyre\cyrn\cyri\cyre
2393 % }%
```

The sectioning command have stable (almost standard) and common abbreviation form for all levels (the meaning of these references visible from the section number). No problem.

```
2394 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrrzh\cyrd.}%
2395 \def\subsubsectionautorefname{\cyr\cyrr\cyra\cyrrzh\cyrd.}%
```

The names of references to paragraphs also have stable (almost standard) and common abbreviation form for all levels (the meaning of these references is visible from the section number). No problem in the middle of sentence.

```
2396 \def\paragraphautorefname{\cyr\cyrp.}%
2397 \def\subparagraphautorefname{\cyr\cyrp.}%
```

Commented variant can be used in books but since it has common form for both nominative and accusative but it changes in other forms, like “of \autoref{auto}” etc.

```
2398 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
2399 % \def\subparagraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
```

The name of verbatim line. Here could be a standard of the abbreviation (used very rare). But the author preprint publications (which have not any editor or corrector) can use this abbreviation for the page reference. So the meaning of the line reference can be read as reference to the page.

```
2400 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%
```

Commented names of the “verbatim line”: have different forms, also the nominative and accusative.

```
2401 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
2402 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

The alternative, ve-e-e-ery professional abbreviation, was used in typography markup for typesetters.

```
2403 % \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyrk.}%
```

The names of theorem: if we want have “the good face of the book”, so the theorem reference must have the full name (like equation reference). But ...

```
2404 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

Commented forms of the “theorem”: have different forms, also the nominative and accusative.

```
2405 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
2406 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

Name of the page stable (standard) abbreviation form. No problem.

```
2407 \def\pageautorefname{\cyr\cyrs.}%
2408 }
```

```
2409 \def\HyLang@spanish{%
2410 \def\equationautorefname{Ecuaci'on}%
2411 \def\footnoteautorefname{Nota a pie de p'agina}%
2412 \def\itemautorefname{Elemento}%
2413 \def\figureautorefname{Figura}%
2414 \def\tableautorefname{Tabla}%
2415 \def\partautorefname{Parte}%
2416 \def\appendixautorefname{Ap'endice}%
2417 \def\chapterautorefname{Cap'itulo}%
2418 \def\sectionautorefname{Secci'on}%
2419 \def\subsectionautorefname{Subsecci'on}%
2420 \def\subsubsectionautorefname{Subsubsecci'on}%
2421 \def\paragraphautorefname{P'arrafo}%
2422 \def\subparagraphautorefname{Subp'arrafo}%
2423 \def\FancyVerbLineautorefname{L'inea}%
2424 \def\theoremautorefname{Teorema}%
2425 \def\pageautorefname{P'agina}%
2426 }
2427 \def\HyLang@vietnamese{%
2428 \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr'inh}%
2429 \def\footnoteautorefname{Ch'u th'ich}%
```

```

2430 \def\itemautorefname{m\d{u}c}%
2431 \def\figureautorefname{H\'inh}%
2432 \def\tableautorefname{B\h{a}ng}%
2433 \def\partautorefname{Ph\'acircumflex{}n}%
2434 \def\appendixautorefname{Ph\d{u} l\d{u}c}%
2435 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
2436 \def\sectionautorefname{m\d{u}c}%
2437 \def\subsectionautorefname{m\d{u}c}%
2438 \def\subsubsectionautorefname{m\d{u}c}%
2439 \def\paragraphautorefname{dj{}o\d{a}n}%
2440 \def\subparagraphautorefname{dj{}o\d{a}n}%
2441 \def\FancyVerbLineautorefname{d\'ong}%
2442 \def\theoremautorefname{DJ{}\d{i}nh l\'y}%
2443 \def\pageautorefname{Trang}%
2444 }

```

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

```

2445 \def\HyLang@addto#1#2{%
2446   #2%
2447   \@temptokena{#2}%
2448   \ifx#1\relax
2449     \let#1\@empty
2450   \fi
2451   \ifx#1\undefined
2452     \edef#1{\the\@temptokena}%
2453   \else
2454     \toks@\expandafter{#1}%
2455     \edef#1{\the\toks@\the\@temptokena}%
2456   \fi
2457   \@temptokena{}\toks@\@temptokena
2458 }

2459 \def\HyLang@DeclareLang#1#2#3{%
2460   \begingroup
2461     \edef\x##1##2{%
2462       \noexpand\ifx##2\relax
2463         \errmessage{No definitions for language #2' found!}%
2464       \noexpand\fi
2465     \endgroup
2466     \noexpand\define@key{Hyp}{#1}[]{%
2467       \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
2468       #3%
2469     }%
2470   }%
2471   \expandafter\x\csname extras#1\expandafter\endcsname
2472   \csname HyLang@#2\endcsname
2473 }

2474 \HyLang@DeclareLang{english}{english}{}
2475 \HyLang@DeclareLang{UKenglish}{english}{}
2476 \HyLang@DeclareLang{british}{english}{}
2477 \HyLang@DeclareLang{USenglish}{english}{}
2478 \HyLang@DeclareLang{american}{english}{}
2479 \HyLang@DeclareLang{german}{german}{}
2480 \HyLang@DeclareLang{austrian}{german}{}
2481 \HyLang@DeclareLang{ngerman}{german}{}
2482 \HyLang@DeclareLang{naustrian}{german}{}
2483 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}

```

```

2484 \HyLang@DeclareLang{brazil}{portuges}{}
2485 \HyLang@DeclareLang{brazilian}{portuges}{}
2486 \HyLang@DeclareLang{portuguese}{portuges}{}
2487 \HyLang@DeclareLang{spanish}{spanish}{}
2488 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
2489 \HyLang@DeclareLang{french}{french}{}
2490 \HyLang@DeclareLang{frenchb}{french}{}
2491 \HyLang@DeclareLang{francais}{french}{}
2492 \HyLang@DeclareLang{acadian}{french}{}
2493 \HyLang@DeclareLang{canadien}{french}{}
2494 \HyLang@DeclareLang{italian}{italian}{}
2495 \HyLang@DeclareLang{magyar}{magyar}{}
2496 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

2497 \define@key{Hyp}{vietnamese}[]{}%
2498   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
2499   \AtEndOfPackage{%
2500     \ifundefined{T@PU}{}{}%
2501     \input{puvnenc.def}%
2502   }%
2503 }%
2504 }
2505 \define@key{Hyp}{vietnam}[]{}%
2506   \HyLang@addto\extravietnam\HyLang@vietnamese
2507   \AtEndOfPackage{%
2508     \ifundefined{T@PU}{}{}%
2509     \input{puvnenc.def}%
2510   }%
2511 }%
2512 }

```

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

```

2513 \define@key{Hyp}{arabic}[]{}%
2514   \AtEndOfPackage{%
2515     \ifundefined{T@PU}{}{}%
2516     \input{puarenc.def}%
2517   }%
2518 }%
2519 }

```

## 13 Options to change appearance of links

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

```

2520 \define@key{Hyp}{colorlinks}[true]{}%
2521   \Hy@boolkey{colorlinks}{#1}%
2522   \ifHy@colorlinks
2523     \def\pdfborder{0 0 0}%
2524     \let\pdfborderstyle\empty
2525   \fi
2526 }
2527 \define@key{Hyp}{ocgcolorlinks}[true]{}%
2528   \Hy@boolkey{ocgcolorlinks}{#1}%
2529 }
2530 \AtBeginDocument{%
2531   \begingroup
2532     \ifundefined{OBJ@OCG@view}{}%

```

```

2533 \ifHy@ocgcolorlinks
2534 \Hy@Warning{%
2535     Driver does not support 'ocgcolorlinks',\MessageBreak
2536     using 'colorlinks' instead%
2537 }%
2538 \fi
2539 }{}%
2540 \endgroup
2541 }
2542 \define@key{Hyp}{frenchlinks}[true]{%
2543 \Hy@boolkey{frenchlinks}{#1}%
2544 }

```

## 14 Bookmarking

```

2545 \define@key{Hyp}{bookmarks}[true]{%
2546 \Hy@boolkey{bookmarks}{#1}%
2547 }

2548 \define@key{Hyp}{bookmarksopen}[true]{%
2549 \Hy@boolkey{bookmarksopen}{#1}%
2550 }

```

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.

```

2551 \let\Hy@bookmarksdepth\c@tocdepth
2552 \define@key{Hyp}{bookmarksdepth}[]{%
2553 \begingroup
2554 \edef\x{#1}%
2555 \ifx\x\empty
2556 \global\let\Hy@bookmarksdepth\c@tocdepth
2557 \else
2558 \ifundefined{toclevel@\x}{%
2559 \onelevel@sanitize\x
2560 \edef\y{\expandafter\@car\x\@nil}%
2561 \ifcase 0\expandafter\ifx\y-1\fi
2562 \expandafter\ifnum\expandafter'\y>47 %
2563 \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
2564 \Hy@Warning{Unknown document division name (\x)}%
2565 \else
2566 \setbox\z@=\hbox{%
2567 \count@=\x
2568 \xdef\Hy@bookmarksdepth{\the\count@}%
2569 }%
2570 \fi
2571 }{%
2572 \setbox\z@=\hbox{%
2573 \count@=\csname toclevel@\x\endcsname
2574 \xdef\Hy@bookmarksdepth{\the\count@}%

```

```

2575     }%
2576     }%
2577     \fi
2578 \endgroup
2579 }

```

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

```

2580 \define@key{Hyp}{bookmarksopenlevel}{%
2581   \def\@bookmarksopenlevel{#1}%
2582 }
2583 \def\@bookmarksopenlevel{\maxdimen}
2584 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
2585 \define@key{Hyp}{bookmarkstype}{%
2586   \def\Hy@bookmarkstype{#1}%
2587 }
2588 \def\Hy@bookmarkstype{toc}

```

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

```

2589 \define@key{Hyp}{bookmarksnumbered}[true]{%
2590   \Hy@boolkey{bookmarksnumbered}{#1}%
2591 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2592 \define@key{Hyp}{CJKbookmarks}[true]{%
2593   \Hy@boolkey{CJKbookmarks}{#1}%
2594 }

2595 \def\Hy@temp#1{%
2596   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
2597 }
2598 \def\Hy@@temp#1#2#3{%
2599   \define@key{Hyp}{#2color}{%
2600     \HyColor@HyperrefColor{##1}#1%
2601   }%
2602   \def#1{#3}%
2603 }
2604 \Hy@temp{link}{red}
2605 \Hy@temp{anchor}{black}
2606 \Hy@temp{cite}{green}
2607 \Hy@temp{file}{cyan}
2608 \Hy@temp{url}{magenta}
2609 \Hy@temp{menu}{red}
2610 \Hy@temp{run}{\@filecolor}
2611 \define@key{Hyp}{pagecolor}{%
2612   \Hy@WarningPageColor
2613 }
2614 \def\Hy@WarningPageColor{%
2615   \Hy@WarningNoLine{Option ‘pagecolor’ is not available anymore}%
2616   \global\let\Hy@WarningPageColor\relax
2617 }

2618 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2619 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2620 \let\@baseurl\empty
2621 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2622 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2623 \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.

```
2624 \let\pdfpagetransition\relax
2625 \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.

```
2626 \let\pdfpageduration\relax
2627 \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.

```
2628 \newif\ifHy@useHidKey
2629 \Hy@useHidKeyfalse
2630 \define@key{Hyp}{pdfpagehidden}[true]{%
2631   \Hy@boolkey{pdfpagehidden}{#1}%
2632   \ifHy@pdfpagehidden
2633     \global\Hy@useHidKeytrue
2634   \fi
2635 }
```

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).

```
2636 \def\Hy@ColorList{cite,file,link,menu,run,url}
2637 \for\Hy@temp:=\Hy@ColorList\do{%
2638   \edef\Hy@temp{%
2639     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2640       \noexpand\HyColor@HyperrefBorderColor
2641         {##1}%
2642       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
2643       {hyperref}%
2644       {\Hy@temp bordercolor}%
2645     }%
2646   }%
2647   \Hy@temp
2648 }
2649 \define@key{Hyp}{pagebordercolor}{%
2650   \Hy@WarningPageBorderColor
2651 }
2652 \def\Hy@WarningPageBorderColor{%
2653   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
2654   \global\let\Hy@WarningPageBorderColor\relax
2655 }
2656 \define@key{Hyp}{pdfhighlight}{\def\pdfhighlight{#1}}
2657 \Hy@DefNameKey{pdfhighlight}{%
2658   \do{/I}{Invert}%
2659 }
```



```

2659 \do{/N}{None}%
2660 \do{/O}{Outline}%
2661 \do{/P}{Push}%
2662 }
2663 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2664 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2665 \def\Hy@setpdfborder{%
2666   \ifx\@pdfborder\@empty
2667   \else
2668     /Border[\@pdfborder]%
2669   \fi
2670   \ifx\@pdfborderstyle\@empty
2671   \else
2672     /BS<<\@pdfborderstyle>>%
2673   \fi
2674 }
2675 \Hy@DefNameKey{pdfpagemode}{%
2676   \do{UseNone}{}%
2677   \do{UseOutlines}{}%
2678   \do{UseThumbs}{}%
2679   \do{FullScreen}{}%
2680   \do{UseOC}{PDF 1.5}%
2681   \do{UseAttachments}{PDF 1.6}%
2682 }
2683 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2684   \do{UseNone}{}%
2685   \do{UseOutlines}{}%
2686   \do{UseThumbs}{}%
2687   \do{FullScreen}{}%
2688   \do{UseOC}{PDF 1.5}%
2689   \do{UseAttachments}{PDF 1.6}%
2690 }
2691 \Hy@DefNameKey{pdfdirection}{%
2692   \do{L2R}{Left to right}%
2693   \do{R2L}{Right to left}%
2694 }
2695 \Hy@DefNameKey{pdfviewarea}{%
2696   \do{MediaBox}{}%
2697   \do{CropBox}{}%
2698   \do{BleedBox}{}%
2699   \do{TrimBox}{}%
2700   \do{ArtBox}{}%
2701 }
2702 \Hy@DefNameKey{pdfviewclip}{%
2703   \do{MediaBox}{}%
2704   \do{CropBox}{}%
2705   \do{BleedBox}{}%
2706   \do{TrimBox}{}%
2707   \do{ArtBox}{}%
2708 }
2709 \Hy@DefNameKey{pdfprintarea}{%
2710   \do{MediaBox}{}%
2711   \do{CropBox}{}%
2712   \do{BleedBox}{}%
2713   \do{TrimBox}{}%
2714   \do{ArtBox}{}%
2715 }

```

```

2716 \Hy@DefNameKey{pdfprintclip}{%
2717   \do{MediaBox}{}%
2718   \do{CropBox}{}%
2719   \do{BleedBox}{}%
2720   \do{TrimBox}{}%
2721   \do{ArtBox}{}%
2722 }
2723 \Hy@DefNameKey{pdfprintscaling}{%
2724   \do{AppDefault}{}%
2725   \do{None}{}%
2726 }
2727 \Hy@DefNameKey{pdfduplex}{%
2728   \do{Simplex}{}%
2729   \do{DuplexFlipShortEdge}{}%
2730   \do{DuplexFlipLongEdge}{}%
2731 }
2732 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
2733   \do{true}{}%
2734   \do{false}{}%
2735 }
2736 \define@key{Hyp}{pdfprintpagerange}{%
2737   \def\@pdfprintpagerange{#1}%
2738 }
2739 \Hy@DefNameKey{pdfnumcopies}{%
2740   \do{2}{two copies}%
2741   \do{3}{three copies}%
2742   \do{4}{four copies}%
2743   \do{5}{five copies}%
2744 }
2745 \define@key{Hyp}{pdfusetitle}[true]{%
2746   \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2747 }
2748 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2749 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2750 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2751 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2752 \define@key{Hyp}{pdfcreationdate}{%
2753   \begingroup
2754     \Hy@unicodedefalse
2755     \pdfstringdef\@pdfcreationdate{#1}%
2756   \endgroup
2757 }
2758 \define@key{Hyp}{pdfmoddate}{%
2759   \begingroup
2760     \Hy@unicodedefalse
2761     \pdfstringdef\@pdfmoddate{#1}%
2762   \endgroup
2763 }
2764 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2765 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2766 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
2767 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2768 \let\setpdflinkmargin\@gobble
2769 \def\calculate@pdfview#1 #2\{\%
2770   \def\@pdfview{#1}%
2771   \ifx\#2\%
2772     \def\@pdfviewparams{ -32768}%

```

```

2773 \else
2774   \def\@pdfviewparams{ #2}%
2775 \fi
2776 }
2777 \begingroup\expandafter\expandafter\expandafter\endgroup
2778 \expandafter\ifx\csname numexpr\endcsname\relax
2779   \def\Hy@number#1{%
2780     \expandafter\@firstofone\expandafter{\number#1}%
2781   }%
2782 \else
2783   \def\Hy@number#1{%
2784     \the\numexpr#1\relax
2785   }%
2786 \fi
2787 \define@key{Hyp}{pdfstartpage}{%
2788   \ifx\#1\%
2789     \def\@pdfstartpage{%
2790       \else
2791         \edef\@pdfstartpage{\Hy@number{#1}}%
2792       \fi
2793     }%
2794 \define@key{Hyp}{pdfstartview}{%
2795   \ifx\#1\%
2796     \def\@pdfstartview{%
2797       \else
2798         \hypercalcbpdef\@pdfstartview{ /#1 }%
2799       \fi
2800     }
2801 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
2802 \define@key{Hyp}{pdftoolbar}[true]{%
2803   \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2804 }
2805 \define@key{Hyp}{pdfmenubar}[true]{%
2806   \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2807 }
2808 \define@key{Hyp}{pdfwindowui}[true]{%
2809   \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2810 }
2811 \define@key{Hyp}{pdffitwindow}[true]{%
2812   \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2813 }
2814 \define@key{Hyp}{pdfcenterwindow}[true]{%
2815   \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2816 }
2817 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2818   \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2819 }
2820 \define@key{Hyp}{pdfa}[true]{%
2821   \Hy@boolkey{pdfa}{#1}%
2822 }
2823 \define@key{Hyp}{pdfnewwindow}[true]{%
2824   \def\Hy@temp{#1}%
2825   \ifx\Hy@temp\@empty
2826     \Hy@newwindowsetfalse
2827   \else
2828     \Hy@newwindowsettrue
2829     \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%

```

```

2830 \fi
2831 }
2832 \def\Hy@SetNewWindow{%
2833 \ifHy@newwindowset
2834 /NewWindow %
2835 \ifHy@newwindow true\else false\fi
2836 \fi
2837 }
2838 \Hy@DefNameKey{pdfpagelayout}{%
2839 \do{SinglePage}{}%
2840 \do{OneColumn}{}%
2841 \do{TwoColumnLeft}{}%
2842 \do{TwoColumnRight}{}%
2843 \do{TwoPageLeft}{PDF 1.5}%
2844 \do{TwoPageRight}{PDF 1.5}%
2845 }
2846 \define@key{Hyp}{pdflang}{%
2847 \def\@pdflang{#1}%
2848 }
2849 \define@key{Hyp}{pdfpagelabels}[true]{%
2850 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2851 }
2852 \define@key{Hyp}{pdfescapeform}[true]{%
2853 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2854 }

```

Default values:

```

2855 \def\@linkbordercolor{1 0 0}
2856 \def\@urlbordercolor{0 1 1}
2857 \def\@menubordercolor{1 0 0}
2858 \def\@filebordercolor{0 .5 .5}
2859 \def\@runbordercolor{0 .7 .7}
2860 \def\@citebordercolor{0 1 0}
2861 \def\@pdfhighlight{/I}
2862 \def\@pdftitle{}
2863 \def\@pdfauthor{}
2864 \let\@pdfproducer\relax
2865 \def\@pdfcreator{LaTeX with hyperref package}
2866 \def\@pdfcreationdate{}
2867 \def\@pdfmoddate{}
2868 \def\@pdfsubject{}
2869 \def\@pdfkeywords{}
2870 \def\@pdfpagescrop{}
2871 \def\@pdfstartview{/Fit }
2872 \def\@pdfstartpage{1}
2873 \def\@pdfprintpagerange{}
2874 \def\@pdflang{}
2875 \let\PDF@SetupDoc\@empty
2876 \let\PDF@FinishDoc\@empty
2877 \let\phantomsection\@empty
2878 \let\special@paper\@empty
2879 \@ifundefined{stockwidth}{%
2880 \ifdim\paperwidth>\z@
2881 \ifdim\paperheight>\z@
2882 \edef\special@paper{\the\paperwidth,\the\paperheight}%
2883 \fi
2884 \fi
2885 }{%

```

```

2886 \ifdim\stockwidth>\z@
2887 \ifdim\stockheight>\z@
2888 \edef\special@paper{\the\stockwidth,\the\stockheight}%
2889 \fi
2890 \fi
2891 }
2892 \begingroup
2893 \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
2894 \dimen@=\x\relax
2895 \ifdim\dimen@>\z@
2896 \else
2897 \dimen@=11in\relax
2898 \Hy@WarningNoLine{%
2899 Height of page (\expandafter\string\x) %
2900 is invalid (\the\x),\MessageBreak
2901 using 11in%
2902 }%
2903 \fi
2904 \dimen@=0.99626401\dimen@
2905 \xdef\Hy@pageheight{\strip@pt\dimen@}%
2906 \endgroup
2907 \def\HyInd@EncapChar{\\}
2908 \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.

```

2909 \let\hyper@normalise\ExecuteOptions
2910 \let\ExecuteOptions\hypersetup
2911 \Hy@RestoreCatcodes
2912 \InputIfFileExists{hyperref.cfg}{-}{-}
2913 \Hy@SetCatcodes
2914 \let\ExecuteOptions\hyper@normalise
2915 \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`.

```

2916 \RequirePackage{kvoptions}[2006/08/17]
2917 \AddOption{tex4ht}{Add option tex4ht if package tex4ht is loaded.}
2918 \@ifpackageloaded{tex4ht}{%
2919 \ifpackagewith{hyperref}{tex4ht}{-}{-}%
2920 \PassOptionsToPackage{tex4ht}{hyperref}%
2921 }{}
2922 \let\ReadBookmarks\relax
2923 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2924 \AtBeginDocument{%
2925 \ifHy@draft
2926 \let\hyper@@anchor@gobble
2927 \gdef\hyper@link#1#2#3{#3}%
2928 \let\hyper@anchorstart@gobble
2929 \let\hyper@anchorend@empty

```

```

2930 \let\hyper@linkstart\@gobbletwo
2931 \let\hyper@linkend\@empty
2932 \def\hyper@linkurl#1#2{#1}%
2933 \def\hyper@linkfile#1#2#3{#1}%
2934 \def\hyper@link@[#1]#2#3{#1}%
2935 \def\Acrobatmenu#1#2{\leavevmode#2}%
2936 \let\PDF@SetupDoc\@empty
2937 \let\PDF@FinishDoc\@empty
2938 \let\@fifthoffive\@secondoftwo
2939 \let\@secondoffive\@secondoftwo
2940 \let\ReadBookmarks\relax
2941 \let\WriteBookmarks\relax
2942 \Hy@WarningNoLine{ draft mode on}%
2943 \fi
2944 \Hy@DisableOption{draft}%
2945 \Hy@DisableOption{nolinks}%
2946 \Hy@DisableOption{final}%
2947 }

```

## 15.1 PDF/A

```

2948 \Hy@DisableOption{pdfa}
2949 \ifHy@pdfa
2950 \setkeys{Hyp}{pdfversion=1.4}%
2951 \def\Hy@Acrobatmenu#1#2{%
2952 \leavevmode
2953 \begingroup
2954 \edef\x{#1}%
2955 \@onelevel@sanitize\x
2956 \ifx\x\Hy@NextPage
2957 \let\y=Y%
2958 \else
2959 \ifx\x\Hy@PrevPage
2960 \let\y=Y%
2961 \else
2962 \ifx\x\Hy@FirstPage
2963 \let\y=Y%
2964 \else
2965 \ifx\x\Hy@LastPage
2966 \let\y=Y%
2967 \else
2968 \let\y=N%
2969 \fi
2970 \fi
2971 \fi
2972 \endgroup
2973 \expandafter\endgroup
2974 \ifx\y Y%
2975 \else
2976 \PackageError{hyperref}{%
2977 PDF/A: Named action ‘#1’ is not permitted%
2978 }\@ehc
2979 {#2}%
2980 \expandafter\@gobble
2981 \fi
2982 }%
2983 \def\Hy@temp#1{%

```

```

2984 \expandafter\def\csname Hy@#1\endcsname{#1}%
2985 \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
2986 }%
2987 \Hy@temp{NextPage}%
2988 \Hy@temp{PrevPage}%
2989 \Hy@temp{FirstPage}%
2990 \Hy@temp{LastPage}%
2991 \else
2992 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
2993 \fi

```

## 15.2 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.

```

2994 \Hy@nextfalse
2995 \@ifundefined{spanish@sh@"@sel}{\Hy@nexttrue}
2996 \@ifundefined{galician@sh@"@sel}{\Hy@nexttrue}
2997 \@ifundefined{estonian@sh@"@sel}{\Hy@nexttrue}
2998 \ifHy@next
2999 \let\texttilde~%
3000 \fi

```

## 15.3 Patch for babel 3.8j

Babel 2008/03/16 v3.8j adds a patch to disable shorthands for bookmarks. That reduces warnings, but the bookmarks are ugly. Therefore the following patch tries to undo this.

```

3001 \@ifpackageloaded{babel}{%
3002 \@ifpackagelater{babel}{2008/03/16}{%
3003 \def\Hy@PatchLanguageShorthands#1{%
3004 \begingroup
3005 \edef\x{#1}%
3006 \@onelevel@sanitize\x
3007 \def\y{system}%
3008 \@onelevel@sanitize\y
3009 \expandafter\endgroup
3010 \ifx\x\y
3011 \else
3012 \HyOrg@languageshorthands{#1}%
3013 \fi
3014 }%
3015 \AtBeginDocument{%
3016 \begingroup
3017 \toks0=\expandafter{\pdfstringdefPreHook}%
3018 \xdef\pdfstringdefPreHook{%
3019 \let\noexpand\HyOrg@languageshorthands
3020 \noexpand\languageshorthands
3021 \let\noexpand\languageshorthands
3022 \noexpand\Hy@PatchLanguageShorthands
3023 \the\toks0 %
3024 \let\noexpand\languageshorthands
3025 \noexpand\HyOrg@languageshorthands
3026 }%
3027 \endgroup
3028 }%
3029 }{}%
3030 }{}

```

```

3031 \ifHy@figures
3032   \Hy@Info{Hyper figures ON}%
3033 \else
3034   \Hy@Info{Hyper figures OFF}%
3035 \fi
3036 \ifHy@nesting
3037   \Hy@Info{Link nesting ON}%
3038 \else
3039   \Hy@Info{Link nesting OFF}%
3040 \fi
3041 \ifHy@hyperindex
3042   \Hy@Info{Hyper index ON}%
3043 \else
3044   \Hy@Info{Hyper index OFF}%
3045 \fi
3046 \ifHy@plainpages
3047   \Hy@Info{Plain pages ON}%
3048 \else
3049   \Hy@Info{Plain pages OFF}%
3050 \fi
3051 \ifHy@backref
3052   \Hy@Info{Backreferencing ON}%
3053 \else
3054   \Hy@Info{Backreferencing OFF}%
3055 \fi
3056 \ifHy@typexml
3057   \AtEndOfPackage{%
3058     \RequirePackage{color}%
3059     \RequirePackage{nameref}%
3060   }%
3061 \fi
3062 \Hy@DisableOption{typexml}
3063 \ifHy@implicit
3064   \typeout{Implicit mode ON; LaTeX internals redefined}%
3065 \else
3066   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
3067   \def\MaybeStopEarly{%
3068     \typeout{Hyperref stopped early}%
3069     \AfterBeginDocument{%
3070       \PDF@FinishDoc
3071       \gdef\PDF@FinishDoc{}%
3072     }%
3073   \endinput
3074   }%
3075   \AtBeginDocument{%
3076     \let\autoref\ref
3077     \let\autopageref\pageref
3078     \ifx\@pdfpagemode\@empty
3079       \gdef\@pdfpagemode{UseNone}%
3080     \fi
3081     \global\Hy@backreffalse
3082   }%
3083   \AtEndOfPackage{%
3084     \global\let\ReadBookmarks\relax
3085     \global\let\WriteBookmarks\relax
3086   }%
3087 \fi

```



```
3088 \Hy@DisableOption{implicit}
```

### 15.3.1 Driver loading

```
3089 \AtEndOfPackage{%
3090   \@ifpackageloaded{tex4ht}{%
3091     \def\Hy@driver{htex4ht}%
3092     \Hy@texhttrue
3093   }{%
3094     \ifx\Hy@driver\@empty
3095       \providecommand*{\Hy@defaultdriver}{hypertex}%
3096       \begingroup\expandafter\expandafter\expandafter\endgroup
3097       \expandafter\ifx\csname pdfoutput\endcsname\relax
3098         \begingroup\expandafter\expandafter\expandafter\endgroup
3099         \expandafter\ifx\csname OpMode\endcsname\relax
3100           \begingroup\expandafter\expandafter\expandafter\endgroup
3101           \expandafter\ifx\csname XeTeXversion\endcsname\relax
3102             \let\Hy@driver\Hy@defaultdriver
3103           \else
3104             \def\Hy@driver{hdvipdfm}%
3105           \fi
3106         \else
3107           \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
3108             \def\Hy@driver{hvtex}%
3109             \def\XR@ext{pdf}%
3110           \else
3111             \ifnum\OpMode=10\relax
3112               \def\XR@ext{htm}%
3113               \def\Hy@driver{hvtexhtm}%
3114               \def\MaybeStopEarly{%
3115                 \typeout{Hyperref stopped early}%
3116                 \AfterBeginDocument{%
3117                   \PDF@FinishDoc
3118                   \gdef\PDF@FinishDoc{}}%
3119               }%
3120               \endinput
3121             }%
3122           \else
3123             \let\Hy@driver\Hy@defaultdriver
3124           \fi
3125         \fi
3126       \fi
3127     \else
3128       \ifnum\pdfoutput<1 %
3129         \let\Hy@driver\Hy@defaultdriver
3130       \else
3131         \def\Hy@driver{hpdftex}%
3132         \def\XR@ext{pdf}%
3133         \PassOptionsToPackage{pdftex}{color}%
3134         \Hy@breaklinkstrue
3135       \fi
3136     \fi
3137   \ifx\Hy@driver\Hy@defaultdriver
3138     \def\Hy@temp{hdvips}%
3139     \ifx\Hy@temp\Hy@driver
3140       \def\Hy@raisedlink{}%
3141     \def\XR@ext{pdf}%

```

```

3142 \fi
3143 \def\Hy@temp{hdvipdfm}%
3144 \ifx\Hy@temp\Hy@driver
3145 \def\XR@ext{pdf}%
3146 \Hy@breaklinkstrue
3147 \fi
3148 \def\Hy@temp{hdviwind}%
3149 \ifx\Hy@temp\Hy@driver
3150 \setkeys{Hyp}{colorlinks}%
3151 \PassOptionsToPackage{dviwindo}{color}%
3152 \fi
3153 \def\Hy@temp{hdvipson}%
3154 \ifx\Hy@temp\Hy@driver
3155 \def\XR@ext{pdf}%
3156 \def\Hy@raisedlink{}%
3157 \fi
3158 \def\Hy@temp{textures}%
3159 \ifx\Hy@temp\Hy@driver
3160 \def\XR@ext{pdf}%
3161 \fi
3162 \fi
3163 \typeout{*hyperref using default driver \Hy@driver*}%
3164 \else
3165 \typeout{*hyperref using driver \Hy@driver*}%
3166 \fi
3167 \input{\Hy@driver.def}%
3168 \let\@unprocessedoptions\relax
3169 \Hy@RestoreCatcodes
3170 }
3171 \newif\ifHy@DvipdfmxOutlineOpen
3172 \begingroup\expandafter\expandafter\expandafter\endgroup
3173 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
3174 \else
3175 \ifnum\SpecialDvipdfmxOutlineOpen>\z@
3176 \Hy@DvipdfmxOutlineOpentru
3177 \fi
3178 \fi
3179 \Hy@DisableOption{tex4ht}
3180 \Hy@DisableOption{pdftex}
3181 \Hy@DisableOption{dvipdf}
3182 \Hy@DisableOption{nativepdf}
3183 \Hy@DisableOption{dvipdfm}
3184 \Hy@DisableOption{dvipdfmx}
3185 \Hy@DisableOption{dvipdfmx-outline-open}
3186 \Hy@DisableOption{pdfmark}
3187 \Hy@DisableOption{dvips}
3188 \Hy@DisableOption{hypertex}
3189 \Hy@DisableOption{vtex}
3190 \Hy@DisableOption{vtexpdfmark}
3191 \Hy@DisableOption{dviwindo}
3192 \Hy@DisableOption{dvipsone}
3193 \Hy@DisableOption{textures}
3194 \Hy@DisableOption{latex2html}
3195 \Hy@DisableOption{ps2pdf}
3196 \Hy@DisableOption{xetex}
3197 \AtEndOfPackage{%
3198 \Hy@DisableOption{pdfversion}%

```

3199 }

### 15.3.2 Bookmarks

```
3200 \def\WriteBookmarks{0}
3201 \def\@bookmarkopenstatus#1{%
3202   \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:

```
3203   \ifnum#1<\expandafter\@firstofone\expandafter
3204     {\number\@bookmarkopenlevel} % explicit space
3205   \else
3206     -%
3207   \fi
3208 \else
3209   -%
3210 \fi
3211 }
3212 \ifHy@bookmarks
3213   \Hy@Info{Bookmarks ON}%
3214   \ifx\@pdfpagemode\@empty
3215     \def\@pdfpagemode{UseOutlines}%
3216   \fi
3217 \else
3218   \def\@bookmarkopenstatus#1{%
3219     \Hy@Info{Bookmarks OFF}%
3220     \AtEndOfPackage{%
3221       \global\let\ReadBookmarks\relax
3222       \global\let\WriteBookmarks\relax
3223     }%
3224     \ifx\@pdfpagemode\@empty
3225       \def\@pdfpagemode{UseNone}%
3226     \fi
3227 \fi
3228 \Hy@DisableOption{bookmarks}
```

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

```
3229 \AtBeginDocument{%
3230   \ifHy@ocgcolorlinks
3231     \setkeys{Hyp}{colorlinks}%
3232     \ifHy@pdfa
3233       \Hy@Warning{%
3234         PDF/A: Optional Content Groups are prohibited,\MessageBreak
3235         using ‘colorlinks’ instead of ‘ocgcolorlinks’%
3236       }%
3237       \Hy@ocgcolorlinksfalse
3238     \fi
3239   \fi
3240   \ifHy@ocgcolorlinks
3241   \else
3242     \Hy@DisableOption{ocgcolorlinks}%
3243   \fi
3244   \ifHy@colorlinks
3245     \ifHy@typexml
3246     \else
3247       \RequirePackage{color}%
3248     \fi
```

```

3249 \def\Hy@colorlink#1{%
3250 \begingroup
3251 \HyColor@UseColor#1%
3252 }%
3253 \def\Hy@endcolorlink{\endgroup}%
3254 \Hy@Info{Link coloring ON}%
3255 \else
3256 \ifHy@frenchlinks
3257 \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
3258 \def\Hy@endcolorlink{\endgroup}%
3259 \Hy@Info{French linking ON}%
3260 \else
for grouping consistency:
3261 \def\Hy@colorlink#1{\begingroup}%
3262 \def\Hy@endcolorlink{\endgroup}%
3263 \Hy@Info{Link coloring OFF}%
3264 \fi
3265 \fi
3266 \Hy@DisableOption{colorlinks}%
3267 \Hy@DisableOption{frenchlinks}%
3268 \ifHy@texht
3269 \long\def\@firstoffive#1#2#3#4#5{#1}%
3270 \long\def\@secondoffive#1#2#3#4#5{#2}%
3271 \long\def\@thirdoffive#1#2#3#4#5{#3}%
3272 \long\def\@fourthoffive#1#2#3#4#5{#4}%
3273 \long\def\@fifthoffive#1#2#3#4#5{#5}%
3274 \providecommand*\@safe@activestruet{}%
3275 \providecommand*\@safe@activesfalse{}%
3276 \def\T@ref#1{%
3277 \Hy@safe@activestruet
3278 \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
3279 \Hy@safe@activesfalse
3280 }%
3281 \def\T@pageref#1{%
3282 \Hy@safe@activestruet
3283 \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
3284 \Hy@safe@activesfalse
3285 }%
3286 \else
3287 \ifHy@typexml\else\RequirePackage{nameref}\fi
3288 \fi
3289 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
3290 \DeclareRobustCommand\pageref{%
3291 \@ifstar\@pagerefstar\T@pageref
3292 }%
3293 }
3294 \AfterBeginDocument{%
3295 \ifHy@texht
3296 \else
3297 \ReadBookmarks
3298 \fi
3299 }
3300 \ifHy@backref
3301 \RequirePackage{backref}%
3302 \else
3303 \let\Hy@backout\@gobble
3304 \fi

```

```

3305 \Hy@DisableOption{backref}
3306 \Hy@DisableOption{pagebackref}

3307 \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.

```

3308 \begingroup
3309   \endlinechar=-1 %
3310   \catcode'\^^A=14 %
3311   \catcode'\^^M\active
3312   \catcode'\%\active
3313   \catcode'\#\active
3314   \catcode'\_\active
3315   \catcode'\$\active
3316   \gdef\hyper@normalise{^^A
3317     \begingroup
3318     \catcode'\^^M\active
3319     \def^^M{ }^^A
3320     \catcode'\%\active
3321     \let%\@percentchar
3322     \let%\@percentchar
3323     \catcode'\#\active
3324     \def#{\hyper@hash}^^A
3325     \def\#{\hyper@hash}^^A
3326     \@makeother\&^^A
3327     \edef\textunderscore{\string_}^^A
3328     \let\_ \textunderscore
3329     \catcode'\_\active
3330     \let\_ \textunderscore
3331     \let~\hyper@tilde
3332     \let~\hyper@tilde
3333     \let\textasciitilde\hyper@tilde
3334     \let\\\@backslashchar
3335     \edef$\string$\string$}^^A
3336     \Hy@safe@activetrue
3337     \hyper@n@rmalise
3338   }^^A
3339   \catcode'\#=6 ^^A
3340   \gdef\Hy@ActiveCarriageReturn{^^M}^^A
3341   \gdef\hyper@n@rmalise#1#2{^^A
3342     \def\Hy@tempa{#2}^^A
3343     \ifx\Hy@tempa\Hy@ActiveCarriageReturn
3344       \Hy@ReturnAfterElseFi{^^A
3345         \hyper@@normalise{#1}^^A
3346       }^^A
3347     \else
3348       \Hy@ReturnAfterFi{^^A
3349         \hyper@@normalise{#1}{#2}^^A
3350       }^^A
3351   \fi

```

```

3352 }^^A
3353 \gdef\hyper@@normalise#1#2{^^A
3354   \edef\Hy@tempa{^^A
3355     \endgroup
3356     \noexpand#1{\Hy@RemovePercentCr#2%\^^M\@nil}^^A
3357   }^^A
3358   \Hy@tempa
3359 }^^A
3360 \gdef\Hy@RemovePercentCr#1%\^^M#2\@nil{^^A
3361   #1^^A
3362   \ifx\limits#2\limits
3363   \else
3364     \Hy@ReturnAfterFi{^^A
3365       \Hy@RemovePercentCr #2\@nil
3366     }^^A
3367   \fi
3368 }^^A
3369 \endgroup
3370 \providecommand*\hyper@chars{%
3371   \let\#\hyper@hash
3372   \let%\@percentchar
3373   \Hy@safe@activetrue
3374 }

3375 \def\hyperlink#1#2{%
3376   \hyper@@link{#1}{#2}%
3377 }

3378 \DeclareRobustCommand*\href{%
3379   \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
3380 }
3381 \def\Hy@href#{%
3382   \hyper@normalise\href@
3383 }
3384 \begingroup
3385   \catcode'\$=6 %
3386   \catcode'\#=12 %
3387   \gdef\href@#1{\expandafter\href@split$1#\}\}%
3388   \gdef\href@split$1#$2#$3\{%
3389     \hyper@@link{$1}{$2}%
3390   }%
3391 \endgroup

```

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

```

3392 \RequirePackage{url}
3393 \let\HyOrg@url\url
3394 \def\Hurl{\begingroup \Url}
3395 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
3396 \def\nolinkurl@#1{\Hurl{#1}}
3397 \DeclareRobustCommand*\url{\hyper@normalise\url@}
3398 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

3399 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
3400 \providecommand\hyper@image[2]{#2}

3401 \def\hypertarget#1#2{%
3402   \ifHy@nesting
3403     \hyper@@anchor{#1}{#2}%
3404   \else
3405     \hyper@@anchor{#1}{\relax}#2%

```

```

3406 \fi
3407 }

```

`\hyperref` is more complicated, as it includes the concept of a category of link, used to make the name. This is not really used in this package. `\hyperdef` sets up an anchor in the same way. They each have three parameters of category, linkname, and marked text, and `\hyperref` also has a first parameter of URL. If there is an optional first parameter to `\hyperdef`, it is the name of a L<sup>A</sup>T<sub>E</sub>X label which can be used in a short form of `\hyperref` later, to avoid remembering the name and category.

```

3408 \DeclareRobustCommand*\hyperref{%
3409   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
3410 }
3411 \def\Hy@babelnormalise#1[#2]{%
3412   \begingroup
3413     \Hy@safe@activetrue
3414     \edef\Hy@tempa{%
3415       \endgroup
3416       \noexpand#1[#2]}%
3417  }%
3418   \Hy@tempa
3419 }
3420 \def\@hyperref{\hyper@normalise\@hyperref}
3421 \def\@hyperref#1#2#3{%
3422   \edef\ref@one{\ifx\#2\else#2.\fi#3}%
3423   \expandafter\tryhyper@link\ref@one\{#1}%
3424 }
3425 \def\tryhyper@link#1\#2{%
3426   \hyper@@link{#2}{#1}%
3427 }
3428 \def\hyperdef{\@ifnextchar[{\label@hyperdef}\@hyperdef}}
3429 \def\@hyperdef#1#2#3{%, category, name, text
3430   \ifHy@nesting
3431     \hyper@@anchor{#1.#2}{#3}%
3432   \else
3433     \hyper@@anchor{#1.#2}{\relax}#3%
3434   \fi
3435 }

```

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.

```

3436 \def\label@hyperref[#1]{%
3437   \expandafter\label@\hyperref\csname r@#1\endcsname{#1}%
3438 }%
3439 \def\label@\@hyperref#1#2#3{%
3440   \ifx#1\relax
3441     \protect\G@refundefinedtrue
3442     \@latex@warning{%
3443       Hyper reference ‘#2’ on page \thepage \space undefined%
3444     }%
3445     \hyper@@link{}{??}{#3}%
3446   \else
3447     \hyper@@link{\expandafter\@fifthoffive#1}%
3448     {\expandafter\@fourthoffive#1\@empty\empty}{#3}%
3449   \fi
3450 }
3451 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
3452                               % anchor text

```

```

3453 \@bsphack
3454 \if@filesw
3455   \protected@write\@auxout{%
3456     {\string\newlabel{#1}{-}{-}\##2.##3}}%
3457 \fi
3458 \@esphack
3459 \ifHy@nesting
3460   \hyper@@anchor{#2.##3}{#4}%
3461 \else
3462   \hyper@@anchor{#2.##3}{\relax}#4%
3463 \fi
3464 }

```

## 17 Underlying basic hypertext macros

Links have an optional type, a filename (possibly a URL), an internal name, and some marked text. (Caution: the internal name may contain babel shorthand characters.) If the second parameter is empty, it's an internal link, otherwise we need to open another file or a URL. A link start has a type, and a URL.

```

3465 \def\hyper@@link{\let\Hy@reserved@a\relax
3466   \ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
3467 }
3468 \def\hyper@link@[#1]#2#3#4{%
3469   \begingroup
3470     \protected@edef\Hy@tempa{#2}%
3471     \Hy@safe@activestrue
3472     \edef\x{#3}%
3473     \ifx\Hy@tempa\@empty
3474       \toks0{\hyper@link{#1}}%
3475     \else
3476       \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
3477     \fi
3478     \toks2{#4}%
3479     \edef\Hy@tempa{\the\toks2}%
3480     \edef\x{\endgroup
3481       \ifx\Hy@tempa\@empty
3482         \noexpand\Hy@Warning{Suppressing empty link}%
3483       \else
3484         \the\toks0 {\x}{\the\toks2}}%
3485     \fi
3486   }%
3487   \x
3488 }

```

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.

```

3489 \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.

```
3490 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1:.\{#1}%
3491 }
```

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

```
3492 \def\@pdftempwordfile{file}%
3493 \def\@pdftempwordrun{run}%
3494 \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:

```
3495 \ifx\\\#6\\\%
3496 \expandafter\@hyper@linkfile file:#7\\\{#3}{#2}%
3497 \else
3498 \ifx\\\#4\\\%
3499 \expandafter\@hyper@linkfile file:#7\\\{#3}{#2}%
3500 \else
```

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

```
3501 \def\@pdftempa{#4}%
3502 \ifx\@pdftempa\@pdftempwordfile
3503 \expandafter\@hyper@linkfile#7\\\{#3}{#2}%
3504 \else
```

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

```
3505 \ifx\@pdftempa\@pdftempwordrun
3506 \ifHy@pdfa
3507 \PackageError{hyperref}{%
3508 PDF/A: Launch action is prohibited%
3509 }\@ehc
3510 \begingroup
3511 \leavevmode
3512 #2%
3513 \endgroup
3514 \else
3515 \expandafter\@hyper@launch#7\\\{#3}{#2}%
3516 \fi
3517 \else
```

otherwise its a URL

```
3518 \hyper@linkurl{#3}{#7\ifx\\\#2\\\else\hyper@hash#2\fi}%
3519 \fi
3520 \fi
3521 \fi
3522 \fi
3523 }
```

By default, turn run: into file:

```
3524 \def\@hyper@launch run:#1\\\#2#3{% filename, anchor text, linkname
3525 \hyper@linkurl{#2}{%
3526 \Hy@linkfileprefix
3527 #1%
```

```

3528 \ifx\\#3\\%
3529 \else
3530 \hyper@hash
3531 #3%
3532 \fi
3533 }%
3534 }

```

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

```

3535 \def\@hyper@linkfile file:#1\\#2#3{%
3536 %file url,link string, name
3537 \filename@parse{#1}%
3538 \ifx\filename@ext\relax
3539 \edef\filename@ext{\XR@ext}%
3540 \fi
3541 \def\use@file{\filename@area\filename@base.\filename@ext}%
3542 \ifx\filename@ext\XR@ext
3543 \hyper@linkfile{#2}{\use@file}{#3}%
3544 \else
3545 \ifx\@baseurl\@empty
3546 \hyper@linkurl{#2}{%
3547 \Hy@linkfileprefix\use@file\ifx\\#3\\%
3548 }%
3549 \else
3550 \hyper@linkurl{#2}{\use@file\ifx\\#3\\%
3551 \fi
3552 \fi
3553 }

```

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.

```

3554 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
3555 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
3556 \ifx\\#1\\%
3557 #2\Hy@WarningNoLine{empty link? #1: #2#3}%
3558 \else
3559 \def\anchor@spot{#2#3}%
3560 \let\put@me@back\@empty
3561 \ifx\relax#2\relax
3562 \else
3563 \ifHy@nesting
3564 \else
3565 \ifcat a\noexpand#2\relax
3566 \else
3567 \ifcat O\noexpand#2 \relax
3568 \else
3569 % \typeout{Anchor start is not alphanumeric %
3570 % on input line\the\inputlineno%
3571 % }%
3572 \let\anchor@spot\@empty
3573 \def\put@me@back{#2#3}%
3574 \fi

```

```

3575         \fi
3576     \fi
3577 \fi
3578 \ifHy@activeanchor
3579     \anchor@spot
3580 \else
3581     \hyper@anchor{#1}%
3582 \fi
3583 \expandafter\put@me@back
3584 \fi
3585 \let\anchor@spot\@empty
3586 }

```

## 18 Compatibility with the *L<sup>A</sup>T<sub>E</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.

```

3587 \let\htmladding\hyperimage
3588 \def\htmladdnormallink#1#2{\href{#2}{#1}}
3589 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
3590 \def\htmlref#1#2{% anchor text, label
3591     \label@hyperref[{#2}]{#1}%
3592 }

```

This is really too much. The *L<sup>A</sup>T<sub>E</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.

```

3593 \def\@@latextohtmlX{%
3594     \let\hhyperref\hyperref
3595     \def\hyperref##1##2##3##4{% anchor text for HTML
3596                                     % text to print before label in print
3597                                     % label
3598                                     % post-label text in print
3599         ##2\ref{##4}##3%
3600     }%
3601 }

```

## 19 Forms creation

Allow for creation of PDF or HTML forms. The effects here are limited somewhat by the need to support both output formats, so it may not be as clever as something which only wants to make PDF forms.

I (Sebastian) could not have started this without the encouragement of T V Raman.

### 19.1 Field flags

The field flags are organized in a bit set.

```

3602 \RequirePackage{bitset}

```

Each flag has a option name, an \if switch, and a bit position. The default is always ‘false’, the flag is clear. This is also the default of the switch created by \newif.

The names of the flags in the PDF specification (1.7) are used as lowercase option names.

\HyField@NewFlag #1: type: F annot flags, Ff field flags

#2: PDF name

#3: PDF position

```
3603 \def\HyField@NewFlag#1#2{%
3604   \lowercase{\HyField@NewOption{#2}}%
3605   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3606 }
```

\HyField@NewFlagOnly

```
3607 \def\HyField@NewFlagOnly#1#2{%
3608   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3609 }
```

\HyField@NewOption #1: option name

```
3610 \def\HyField@NewOption#1{%
3611   \expandafter\newif\csname ifFld@#1\endcsname
3612   \define@key{Field}{#1}[true]{%
3613     \lowercase{\Field@boolkey{##1}}{#1}%
3614   }%
3615 }
```

\HyField@NewBitsetFlag Package ‘bitset’ uses zero based positions, the PDF specification starts with one.

#1: option

#2: PDF name

#3: type: F annot flags, Ff field flags

#4: PDF position

```
3616 \def\HyField@NewBitsetFlag#1#2#3#4{%
3617   \begingroup
3618     \count@=#4\relax
3619     \advance\count@\m@ne
3620     \def\x##1{%
3621       \endgroup
3622       \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
3623       \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
3624         \expandafter\edef\csname HyField@#3@##1\endcsname{%
3625           (\number#4) #2%
3626         }%
3627       \else
3628         \expandafter\edef\csname HyField@#3@##1\endcsname{%
3629           \csname HyField@#3@##1\endcsname
3630           /#2%
3631         }%
3632       \fi
3633     }%
3634   \expandafter\x\expandafter{\the\count@}%
3635 }
```

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

```
3636 \def\HyField@UseFlag#1#2{%
3637   \lowercase{\HyField@UseFlag{#2}}{#1}%
3638 }
```

\HyField@@UseFlag

```
3639 \def\HyField@@UseFlag#1#2{%
3640   \bitsetSetValue{HyField@#2}{%
3641     \csname HyField@#2@#1\endcsname
3642   }{%
3643     \csname ifFld@#1\endcsname 1\else 0\fi
3644   }%
3645 }
```

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

```
3646 \def\HyField@SetFlag#1#2{%
3647   \lowercase{\HyField@@SetFlag{#2}}{#1}%
3648 }
```

\HyField@@SetFlag

```
3649 \def\HyField@@SetFlag#1#2{%
3650   \bitsetSetValue{HyField@#2}{%
3651     \csname HyField@#2@#1\endcsname
3652   }{1}%
3653 }
```

\HyField@PrintFlags

```
3654 \def\HyField@PrintFlags#1#2{%
3655   \ifHy@verbose
3656     \begingroup
3657     \let\Hy@temp\@empty
3658     \let\MessageBreak\relax
3659     \expandafter\@for\expandafter\x\expandafter:\expandafter=%
3660     \bitsetGetSetBitList{HyField@#1}\do{%
3661       \edef\Hy@temp{%
3662         \Hy@temp
3663         \csname HyField@#1@\x\endcsname\MessageBreak
3664       }%
3665     }%
3666     \edef\x{\endgroup
3667       \noexpand\Hy@Info{%
3668         Field flags: %
3669         \expandafter\ifx\@car#1\@nil S\else/\fi
3670         #1 %
3671         \bitsetGetDec{HyField@#1} %
3672         (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
3673         \Hy@temp
3674         for #2%
3675       }%
3676     }\x
3677   \fi
3678 }
```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```
3679 \HyField@NewFlag{Ff}{ReadOnly}{1}
3680 \HyField@NewFlag{Ff}{Required}{2}
3681 \HyField@NewFlag{Ff}{NoExport}{3}
```

“Table 8.75 Field flags specific to button fields”

```
3682 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
3683 \HyField@NewFlag{Ff}{Radio}{16}
3684 \HyField@NewFlag{Ff}{Pushbutton}{17}
3685 \HyField@NewFlag{Ff}{RadiosInUnison}{26}
```

“Table 8.77 Field flags specific to text fields”

```
3686 \HyField@NewFlag{Ff}{Multiline}{13}
3687 \HyField@NewFlag{Ff}{Password}{14}
3688 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
3689 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3690 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
3691 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
3692 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5
```

“Table 8.79 field flags specific to choice fields”

```
3693 \HyField@NewFlag{Ff}{Combo}{18}
3694 \HyField@NewFlag{Ff}{Edit}{19}
3695 \HyField@NewFlag{Ff}{Sort}{20}
3696 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
3697 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3698 \HyField@NewFlag{Ff}{CommitOnSelChange}{27}% PDF 1.5
```

Signature fields are not supported.

Until 6.76i hyperref uses field option ‘combo’ to set three flags ‘Combo’, ‘Edit’, and ‘Sort’. Option ‘popdown’ sets flag ‘Combo’ only.

```
3699 \newif\ifFld@popdown
3700 \define@key{Field}{popdown}[true]{%
3701 \lowercase{\Field@boolkey{#1}}{popdown}%
3702 }
```

Annotation flags. The form objects are widget annotations. There are two flags for readonly settings, the one in the annotation flags is ignored, instead the other in the field flags is used.

Flag Print is not much useful, because hyperref do not use the appearance entry of the annotations for most fields.

```
3703 \HyField@NewFlag{F}{Invisible}{1}
3704 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
3705 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
3706 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
3707 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
3708 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
3709 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
3710 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
3711 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

3712 \ifHy@pdfa
3713 \def\HyField@PDFAFldWarning#1#2{%
3714 \Hy@Warning{%
3715 PDF/A: Annotation flag ‘#1’ must\MessageBreak
3716 be set to ‘#2’%
3717 }%
3718 }%
3719 \Fld@invisiblefalse
3720 \def\Fld@invisibletrue{%
3721 \HyField@PDFAFldWarning{invisible}{false}%
3722 }%
3723 \Fld@hiddenfalse
3724 \def\Fld@hiddentrue{%
```

```

3725 \HyField@PDFAFIWarning{hidden}{false}%
3726 }%
3727 \Fld@printtrue
3728 \def\Fld@printfalse{%
3729 \HyField@PDFAFIWarning{print}{true}%
3730 }%
3731 \Fld@nozoomtrue
3732 \def\Fld@nozoomfalse{%
3733 \HyField@PDFAFIWarning{nozoom}{true}%
3734 }%
3735 \Fld@norotatetrue
3736 \def\Fld@norotatefalse{%
3737 \HyField@PDFAFIWarning{norotate}{true}%
3738 }%
3739 \Fld@noviewfalse
3740 \def\Fld@noviewtrue{%
3741 \HyField@PDFAFIWarning{noview}{false}%
3742 }%
3743 \fi

```

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

```

3744 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
3745 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
3746 \HyField@NewFlag{Submit}{GetMethod}{4}
3747 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
3748 \HyField@NewFlagOnly{Submit}{XFDF}{6}
3749 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
3750 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
3751 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
3752 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
3753 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
3754 \HyField@NewFlag{Submit}{ExclFKey}{12}
3755 \HyField@NewFlag{Submit}{EmbedForm}{14}

3756 \define@key{Field}{export}{%
3757 \lowercase{\def\Hy@temp{#1}}%
3758 \@ifundefined{Fld@export@Hy@temp}{%
3759 \onelevel@sanitize\Hy@temp
3760 \PackageError{hyperref}{%
3761 \Known export format '\Hy@temp'.\MessageBreak
3762 \Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
3763 }{\@ehc
3764 }{%
3765 \let\Fld@export\Hy@temp
3766 }%
3767 }
3768 \def\Fld@export{fdf}
3769 \@namedef{Fld@export@fdf}{0}%
3770 \@namedef{Fld@export@html}{1}%
3771 \@namedef{Fld@export@xfdf}{2}%
3772 \@namedef{Fld@export@pdf}{3}%

```

## 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

3773 \def\HyField@FlagsSubmit{%
3774 \bitsetReset{HyField@Submit}%
3775 \ifcase\@nameuse{Fld@export@Fld@export} %

```

```

3776 % FDF
3777 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3778 \HyField@UseFlag{Submit}{SubmitCoordinates}%
3779 \HyField@UseFlag{Submit}{IncludeAppendSaves}%
3780 \HyField@UseFlag{Submit}{IncludeAnnotations}%
3781 \HyField@UseFlag{Submit}{CanonicalFormat}%
3782 \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
3783 \HyField@UseFlag{Submit}{ExclFKey}%
3784 \HyField@UseFlag{Submit}{EmbedForm}%
3785 \or % HTML
3786 \HyField@SetFlag{Submit}{ExportFormat}%
3787 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3788 \HyField@UseFlag{Submit}{GetMethod}%
3789 \HyField@UseFlag{Submit}{SubmitCoordinates}%
3790 \HyField@UseFlag{Submit}{CanonicalFormat}%
3791 \or % XFDF
3792 \HyField@SetFlag{Submit}{XFDF}%
3793 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3794 \HyField@UseFlag{Submit}{SubmitCoordinates}%
3795 \HyField@UseFlag{Submit}{CanonicalFormat}%
3796 \or % PDF
3797 \HyField@SetFlag{Submit}{SubmitPDF}%
3798 \HyField@UseFlag{Submit}{GetMethod}%
3799 \fi
3800 \HyField@PrintFlags{Submit}{submit button field}%
3801 \bitsetIsEmpty{HyField@Submit}{%
3802 \def\Fld@submitflags{%
3803 }{%
3804 \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
3805 }%
3806 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

3807 \def\HyField@FlagsAnnot#1{%
3808 \bitsetReset{HyField@F}%
3809 \HyField@UseFlag{F}{Invisible}%
3810 \HyField@UseFlag{F}{Hidden}%
3811 \HyField@UseFlag{F}{Print}%
3812 \HyField@UseFlag{F}{NoZoom}%
3813 \HyField@UseFlag{F}{NoRotate}%
3814 \HyField@UseFlag{F}{NoView}%
3815 \HyField@UseFlag{F}{Locked}%
3816 \HyField@UseFlag{F}{ToggleNoView}%
3817 \HyField@UseFlag{F}{LockedContents}%
3818 \HyField@PrintFlags{F}{#1}%
3819 \bitsetIsEmpty{HyField@F}{%
3820 \def\Fld@annotflags{%
3821 }{%
3822 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
3823 }%
3824 }

```



#### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```
3825 \def\HyField@FlagsPushButton{%
3826   \HyField@FlagsAnnot{push button field}%
3827   \bitsetReset{HyField@Ff}%
3828   \HyField@UseFlag{Ff}{ReadOnly}%
3829   \HyField@UseFlag{Ff}{Required}%
3830   \HyField@UseFlag{Ff}{NoExport}%
3831   \HyField@SetFlag{Ff}{PushButton}%
3832   \HyField@PrintFlags{Ff}{push button field}%
3833   \bitsetIsEmpty{HyField@Ff}{%
3834     \def\Fld@flags{%
3835     }{%
3836     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3837   }%
3838 }
```

#### 19.1.5 Check box field

\HyField@FlagsCheckBox

```
3839 \def\HyField@FlagsCheckBox{%
3840   \HyField@FlagsAnnot{check box field}%
3841   \bitsetReset{HyField@Ff}%
3842   \HyField@UseFlag{Ff}{ReadOnly}%
3843   \HyField@UseFlag{Ff}{Required}%
3844   \HyField@UseFlag{Ff}{NoExport}%
3845   \HyField@PrintFlags{Ff}{check box field}%
3846   \bitsetIsEmpty{HyField@Ff}{%
3847     \def\Fld@flags{%
3848     }{%
3849     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3850   }%
3851 }
```

#### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```
3852 \def\HyField@FlagsRadioButton{%
3853   \HyField@FlagsAnnot{radio button field}%
3854   \bitsetReset{HyField@Ff}%
3855   \HyField@UseFlag{Ff}{ReadOnly}%
3856   \HyField@UseFlag{Ff}{Required}%
3857   \HyField@UseFlag{Ff}{NoExport}%
3858   \HyField@UseFlag{Ff}{NoToggleToOff}%
3859   \HyField@SetFlag{Ff}{Radio}%
3860   \HyField@UseFlag{Ff}{RadiosInUnison}%
3861   \HyField@PrintFlags{Ff}{radio button field}%
3862   \bitsetIsEmpty{HyField@Ff}{%
3863     \def\Fld@flags{%
3864     }{%
3865     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3866   }%
3867 }
```

### 19.1.7 Text fields

\HyField@FlagsText

```
3868 \def\HyField@FlagsText{%
3869   \HyField@FlagsAnnot{text field}%
3870   \bitsetReset{HyField@Ff}%
3871   \HyField@UseFlag{Ff}{ReadOnly}%
3872   \HyField@UseFlag{Ff}{Required}%
3873   \HyField@UseFlag{Ff}{NoExport}%
3874   \HyField@UseFlag{Ff}{Multiline}%
3875   \HyField@UseFlag{Ff}{Password}%
3876   \HyField@UseFlag{Ff}{FileSelect}%
3877   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
3878   \HyField@UseFlag{Ff}{DoNotScroll}%
3879   \ifFld@comb
3880     \ifcase0\ifFld@multiline
3881       \else\ifFld@password
3882       \else\ifFld@fileselect
3883       \else 1\fi\fi\fi\relax
3884     \PackageError{hyperref}{%
3885       Field option ‘comb’ cannot used together with\MessageBreak
3886       ‘multiline’, ‘password’, or ‘fileselect’%
3887     }\@ehc
3888   \else
3889     \HyField@UseFlag{Ff}{Comb}%
3890   \fi
3891 \fi
3892 \HyField@UseFlag{Ff}{RichText}%
3893 \HyField@PrintFlags{Ff}{text field}%
3894 \bitsetIsEmpty{HyField@Ff}{%
3895   \def\Fld@flags{%
3896   }{%
3897   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3898   }%
3899 }
```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```
3900 \def\HyField@FlagsChoice{%
3901   \HyField@FlagsAnnot{choice field}%
3902   \bitsetReset{HyField@Ff}%
3903   \HyField@UseFlag{Ff}{ReadOnly}%
3904   \HyField@UseFlag{Ff}{Required}%
3905   \HyField@UseFlag{Ff}{NoExport}%
3906   \HyField@UseFlag{Ff}{Combo}%
3907   \ifFld@combo
3908     \HyField@UseFlag{Ff}{Edit}%
3909   \fi
3910   \HyField@UseFlag{Ff}{Sort}%
3911   \HyField@UseFlag{Ff}{MultiSelect}%
3912   \ifFld@combo
3913     \ifFld@edit
3914       \HyField@UseFlag{Ff}{DoNotSpellCheck}%
3915     \fi
3916   \fi
3917   \HyField@UseFlag{Ff}{CommitOnSelChange}%

```

```

3918 \HyField@PrintFlags{Ff}{choice field}%
3919 \bitsetIsEmpty{HyField@Ff}{%
3920   \def\Fld@flags{}}%
3921 }{%
3922   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3923 }%
3924 }

```

## 19.2 Choice field

```

3925 \RequirePackage{kvsetkeys}[2007/09/29]

```

\HyField@PDFChoices #1: list of choices in key value syntax, key = exported name, value = displayed text.

Input: \Fld@default, \Fld@value, \ifFld@multiselect

Result: \Fld@choices with entries: /Opt, /DV, /V, /I.

```

3926 \def\HyField@PDFChoices#1{%
3927   \begingroup
3928   \gdef\Fld@choices{}%
3929   \def\HyTmp@optlist{}%
3930   \let\HyTmp@optitem\relax
3931   \count@=0 %
3932   \kv@parse{#1}{%
3933     \Hy@pdfstringdef\kv@key\kv@key
3934     \ifx\kv@value\relax
3935       \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
3936         \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
3937       \else
3938         \xdef\Fld@choices{\Fld@choices(\kv@key)}%
3939       \fi
3940     \else
3941       \Hy@pdfstringdef\kv@value\kv@value
3942       \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@value)]}%
3943     \fi
3944     \edef\HyTmp@optlist{%
3945       \HyTmp@optlist
3946       \HyTmp@optitem{the\count@}{\kv@key}0%
3947     }%
3948     \advance\count@ by 1 %
3949     \@gobbletwo
3950   }%
3951   \xdef\Fld@choices{/Opt[\Fld@choices]}%
3952   \ifFld@multiselect
3953     \HyField@@PDFChoices{DV}\Fld@default
3954     \HyField@@PDFChoices{V}\Fld@value
3955   \else
3956     \ifx\Fld@default\relax
3957     \else
3958       \pdfstringdef\Hy@gtemp\Fld@default
3959       \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
3960     \fi
3961     \ifx\Fld@value\relax
3962     \else
3963       \pdfstringdef\Hy@gtemp\Fld@value
3964       \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
3965     \fi
3966   \fi
3967   \endgroup

```

3968 }

\HyField@@PDFChoices

```

3969 \def\HyField@@PDFChoices#1#2{%
3970   \ifx#2\relax
3971   \else
3972     \count@=0 %
3973     \def\HyTmp@optitem##1##2##3{%
3974       \def\HyTmp@key{##2}%
3975       \ifx\HyTmp@key\Hy@gtemp
3976         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
3977           \HyTmp@optlist
3978           \HyTmp@optitem{##1}{##2}1%
3979         }%
3980         \let\HyTmp@found=Y%
3981       \else
3982         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
3983           \HyTmp@optlist
3984           \HyTmp@optitem{##1}{##2}##3%
3985         }%
3986       \fi
3987     }%
3988     \expandafter\comma@parse\expandafter{#2}{%
3989       \pdfstringdef\Hy@gtemp\comma@entry
3990       \let\HyTmp@found=N %
3991       \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
3992       \HyTmp@optlist
3993       \ifx\HyTmp@found Y%
3994         \advance\count@ by 1 %
3995       \else
3996         \@onelevel@sanitize\comma@entry
3997         \PackageWarning{hyperref}{%
3998           \string\ChoiceBox: Ignoring value ‘\comma@entry’,%
3999           \MessageBreak
4000           it cannot be found in the choices%
4001         }%
4002       \fi
4003       \@gobble
4004     }%
4005     \def\HyTmp@optitem##1##2##3{%
4006       \ifnum##3=1 %
4007         (##2)%
4008       \fi
4009     }%
4010     \ifcase\count@
4011     \or
4012       \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
4013     \else
4014       \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
4015       \ifx#1V%
4016         \def\HyTmp@optitem##1##2##3{%
4017           \ifnum##3=1 %
4018             \@firstofone{ ##1}%
4019           \fi
4020         }%
4021       \edef\HyTmp@optlist{\HyTmp@optlist}%
4022       \xdef\Fld@choices{%

```

```

4023         \Fld@choices
4024         /I[\expandafter\@firstofone\HyTmp@optlist]%
4025     }%
4026     \fi
4027     \fi
4028     \fi
4029 }

```

## 19.3 Forms

\HyField@SetKeys

```

4030 \def\HyField@SetKeys{%
4031     \setkeys{Field}%
4032 }

4033 \newif\ifFld@checked
4034 \newif\ifFld@disabled
4035 \Fld@checkedfalse
4036 \Fld@disabledfalse
4037 \newcount\Fld@menulength
4038 \newdimen\Fld@Width
4039 \newdimen\Fld@charsize
4040 \Fld@charsize=10\p@
4041 \def\Fld@maxlen{0}
4042 \def\Fld@align{0}
4043 \def\Fld@color{0 0 0 rg}
4044 \def\Fld@bcolor{1 1 1}
4045 \def\Fld@bordercolor{1 0 0}
4046 \def\Fld@bordersep{1\p@}
4047 \def\Fld@borderwidth{1}
4048 \def\Fld@borderstyle{S}
4049 \def\Fld@cbsymbol{4}
4050 \def\Fld@rotation{0}
4051 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
4052 \def\endForm{\@endForm}
4053 \newif\ifForm@html
4054 \Form@htmlfalse
4055 \def\Form@boolkey#1#2{%
4056     \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
4057 }
4058 \define@key{Form}{action}{%
4059     \hyper@normalise\Hy@DefFormAction{#1}%
4060 }
4061 \def\Hy@DefFormAction{\def\Form@action}
4062 \def\enc@html{html}
4063 \define@key{Form}{encoding}{%
4064     \def\Hy@tempa{#1}%
4065     \ifx\Hy@tempa\enc@html
4066         \Form@htmltrue
4067         \def\Fld@export{html}%
4068     \else
4069         \typeout{hyperref: form 'encoding' key set to #1 %
4070             -- unknown type%
4071         }%
4072         \Form@htmlfalse
4073     \fi
4074 }

```

```

4075 \define@key{Form}{method}{%
4076   \lowercase{\def\Hy@temp{#1}}%
4077   \@ifundefined{Form@method@\Hy@temp}{%
4078     \@onelevel@sanitize\Hy@temp
4079     \PackageError{hyperref}{%
4080       Unknown method '\Hy@temp'.\MessageBreak
4081       Known values are 'post' and 'get'%
4082     }\@ehc
4083   }{%
4084     \let\Form@method\Hy@temp
4085     \ifcase\@nameuse{Form@method@\Hy@temp} %
4086       \Fld@getmethodfalse
4087     \else
4088       \Fld@getmethodtrue
4089     \fi
4090   }%
4091 }
4092 \def\Form@method{}
4093 \@namedef{Form@method@post}{0}
4094 \@namedef{Form@method@get}{1}
4095 \def\Fld@boolkey#1#2{%
4096   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
4097 }
4098 \newtoks\Fld@toks
4099 \Fld@toks={ }%
4100 \def\Fld@addtoks#1#2{%
4101   \edef\@processme{\Fld@toks{\the\Fld@toks\space #1="#2"}}%
4102   \@processme
4103 }
4104 \def\Fld@checkequals#1=#2=#3\\{%
4105   \def\@currDisplay{#1}%
4106   \ifx\#2\\%
4107     \def\@currValue{#1}%
4108   \else
4109     \def\@currValue{#2}%
4110   \fi
4111 }
4112 \define@key{Field}{loc}{%
4113   \def\Fld@loc{#1}%
4114 }
4115 \define@key{Field}{checked}[true]{%
4116   \lowercase{\Fld@boolkey{#1}}{checked}%
4117 }
4118 \define@key{Field}{disabled}[true]{%
4119   \lowercase{\Fld@boolkey{#1}}{disabled}%
4120 }
4121 \define@key{Field}{accesskey}{%
4122   \Fld@addtoks{accesskey}{#1}%
4123 }
4124 \define@key{Field}{tabkey}{%
4125   \Fld@addtoks{tabkey}{#1}%
4126 }
4127 \define@key{Field}{name}{%
4128   \def\Fld@name{#1}%
4129 }
4130 \define@key{Field}{width}{%
4131   \def\Fld@width{#1}%

```

```

4132 \Field@Width#1\setbox0=\hbox{m}%
4133 }
4134 \define@key{Field}{maxlen}{%
4135 \def\Fld@maxlen{#1}%
4136 }
4137 \define@key{Field}{menulength}{%
4138 \Fld@menulength=#1\relax
4139 }
4140 \define@key{Field}{height}{%
4141 \def\Fld@height{#1}%
4142 }
4143 \define@key{Field}{charsize}{%
4144 \Fld@charsize#1%
4145 }
4146 \define@key{Field}{borderwidth}{%
4147 \def\Fld@borderwidth{#1}%
4148 }
4149 \define@key{Field}{borderstyle}{%
4150 \def\Fld@borderstyle{#1}%
4151 }
4152 \define@key{Field}{bordersep}{%
4153 \def\Fld@bordersep{#1}%
4154 }
4155 \define@key{Field}{default}{%
4156 \def\Fld@default{#1}%
4157 }
4158 \define@key{Field}{align}{%
4159 \def\Fld@align{#1}%
4160 }
4161 \define@key{Field}{value}{%
4162 \def\Fld@value{#1}%
4163 }
4164 \define@key{Field}{checkboxsymbol}{%
4165 \def\Fld@cbsymbol{#1}%
4166 }
4167 \define@key{Field}{rotation}{%
4168 \def\Fld@rotation{#1}%
4169 }
4170 \define@key{Field}{backgroundcolor}{%
4171 \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
4172 }
4173 \define@key{Field}{bordercolor}{%
4174 \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
4175 }
4176 \define@key{Field}{color}{%
4177 \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
4178 }
4179 \def\Fld@format@code{}
4180 \def\Fld@validate@code{}
4181 \def\Fld@calculate@code{}
4182 \def\Fld@keystroke@code{}
4183 \def\Fld@onfocus@code{}
4184 \def\Fld@onblur@code{}
4185 \def\Fld@onmousedown@code{}
4186 \def\Fld@onmouseup@code{}
4187 \def\Fld@onenter@code{}

```

```

4188 \def\Fld@onexit@code{}
4189 \def\Hy@temp#1{%
4190   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
4191 }
4192 \def\Hy@@temp#1#2{%
4193   \ifHy@pdfa
4194     \define@key{Field}{#2}{%
4195       \PackageError{hyperref}{%
4196         PDF/A: Additional action #2 is prohibited%
4197       }\@ehc
4198     }%
4199   \else
4200     \define@key{Field}{#2}{%
4201       \def#1{##1}%
4202     }%
4203   \fi
4204 }
4205 \Hy@temp{keystroke}
4206 \Hy@temp{format}
4207 \Hy@temp{validate}
4208 \Hy@temp{calculate}
4209 \Hy@temp{onfocus}
4210 \Hy@temp{onblur}
4211 \Hy@temp{onenter}
4212 \Hy@temp{onexit}
4213 \Hy@temp{onselect}
4214 \Hy@temp{onchange}
4215 \Hy@temp{onclick}
4216 \Hy@temp{ondblclick}
4217 \Hy@temp{onmousedown}
4218 \Hy@temp{onmouseup}
4219 \Hy@temp{onmouseover}
4220 \Hy@temp{onmousemove}
4221 \Hy@temp{onmouseout}
4222 \Hy@temp{onkeypress}
4223 \Hy@temp{onkeydown}
4224 \Hy@temp{onkeyup}
4225 %
4226 \DeclareRobustCommand\TextField{%
4227   \@ifnextchar[{\@TextField}{\@TextField[]}%
4228 }
4229 \DeclareRobustCommand\ChoiceMenu{%
4230   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
4231 }
4232 \DeclareRobustCommand\CheckBox{%
4233   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
4234 }
4235 \DeclareRobustCommand\PushButton{%
4236   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
4237 }
4238 \DeclareRobustCommand\Gauge{%
4239   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
4240 }
4241 \DeclareRobustCommand\Submit{%
4242   \@ifnextchar[{\@Submit}{\@Submit[]}%
4243 }
4244 \DeclareRobustCommand\Reset{%

```



```

4245 \@ifnextchar[{\@Reset}{\@Reset[]}%
4246 }
4247 \def\LayoutTextField#1#2{% label, field
4248   #1 #2%
4249 }
4250 \def\LayoutChoiceField#1#2{% label, field
4251   #1 #2%
4252 }
4253 \def\LayoutCheckField#1#2{% label, field
4254   #1 #2%
4255 }
4256 \def\LayoutPushButtonField#1{% button
4257   #1%
4258 }
4259 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4260 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4261 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4262 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4263 \def\MakeButtonField#1{%
4264   \sbox0{%
4265     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
4266   }%
4267   \@tempdima\ht0 %
4268   \advance\@tempdima by \Fld@borderwidth bp %
4269   \advance\@tempdima by \Fld@borderwidth bp %
4270   \ht0\@tempdima
4271   \@tempdima\dp0 %
4272   \advance\@tempdima by \Fld@borderwidth bp %
4273   \advance\@tempdima by \Fld@borderwidth bp %
4274   \dp0\@tempdima
4275   \box0\relax
4276 }
4277 \def\DefaultHeightofSubmit{14pt}
4278 \def\DefaultWidthofSubmit{2cm}
4279 \def\DefaultHeightofReset{14pt}
4280 \def\DefaultWidthofReset{2cm}
4281 \def\DefaultHeightofCheckBox{\baselineskip}
4282 \def\DefaultWidthofCheckBox{\baselineskip}
4283 \def\DefaultHeightofChoiceMenu{\baselineskip}
4284 \def\DefaultWidthofChoiceMenu{\baselineskip}
4285 \def\DefaultHeightofText{\baselineskip}
4286 \def\DefaultHeightofTextMultiline{4\baselineskip}
4287 \def\DefaultWidthofText{3cm}
4288 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
4289 \def\DefaultOptionsofReset{print,name=Reset,noexport}
4290 \def\DefaultOptionsofPushButton{print}
4291 \def\DefaultOptionsofCheckBox{print}
4292 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

4293 \def\DefaultOptionsofListBox{print}
4294 \def\DefaultOptionsofComboBox{print,edit,sort}
4295 \def\DefaultOptionsofPopdownBox{print}
4296 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

4297 \ifHy@figures
4298   \Hy@Info{Hyper figures ON}%
4299 \else
4300   \Hy@Info{Hyper figures OFF}%
4301 \fi
4302 \ifHy@nesting
4303   \Hy@Info{Link nesting ON}%
4304 \else
4305   \Hy@Info{Link nesting OFF}%
4306 \fi
4307 \ifHy@hyperindex
4308   \Hy@Info{Hyper index ON}%
4309 \else
4310   \Hy@Info{Hyper index OFF}%
4311 \fi
4312 \ifHy@backref
4313   \Hy@Info{backreferencing ON}%
4314 \else
4315   \Hy@Info{backreferencing OFF}%
4316 \fi
4317 \ifHy@colorlinks
4318   \Hy@Info{Link coloring ON}%
4319 \else
4320   \Hy@Info{Link coloring OFF}%
4321 \fi
4322 \ifHy@ocgcolorlinks
4323   \Hy@Info{Link coloring with OCG ON}%
4324 \else
4325   \Hy@Info{Link coloring with OCG OFF}%
4326 \fi
4327 \ifHy@pdfa
4328   \Hy@Info{PDF/A mode ON}%
4329 \else
4330   \Hy@Info{PDF/A mode OFF}%
4331 \fi

```

## 21 Low-level utility macros

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

```

4332 \edef\hyper@hash{\string#}
4333 \edef\hyper@tilde{\string~}
4334 \edef\hyper@quote{\string"}
4335 \let\@currentHref\@empty
4336 \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.

```

4337 \AfterBeginDocument{%
4338   \Hy@pdfstringtrue
4339   \PDF@SetupDoc
4340   \let\PDF@SetupDoc\@empty
4341   \Hy@DisableOption{pdfpagescrop}%
4342   \Hy@DisableOption{pdfpagemode}%
4343   \Hy@DisableOption{pdfnonfullscreenpagemode}%
4344   \Hy@DisableOption{pdfdirection}%
4345   \Hy@DisableOption{pdfviewarea}%
4346   \Hy@DisableOption{pdfviewclip}%

```

```

4347 \Hy@DisableOption{pdfprintarea}%
4348 \Hy@DisableOption{pdfprintclip}%
4349 \Hy@DisableOption{pdfprintscaling}%
4350 \Hy@DisableOption{pdfduplex}%
4351 \Hy@DisableOption{pdfpicktraybypdfsize}%
4352 \Hy@DisableOption{pdfprintpagerange}%
4353 \Hy@DisableOption{pdfnumcopies}%
4354 \Hy@DisableOption{pdfstartview}%
4355 \Hy@DisableOption{pdfstartpage}%
4356 \Hy@DisableOption{pdftoolbar}%
4357 \Hy@DisableOption{pdfmenubar}%
4358 \Hy@DisableOption{pdfwindowui}%
4359 \Hy@DisableOption{pdffitwindow}%
4360 \Hy@DisableOption{pdfcenterwindow}%
4361 \Hy@DisableOption{pdfdisplaydoctitle}%
4362 \Hy@DisableOption{pdfpagelayout}%
4363 \Hy@DisableOption{pdflang}%
4364 \Hy@DisableOption{baseurl}%
4365 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
4366 \Hy@pdfstringfalse
4367 }

```

## 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.

```

4368 \def\NoHyper{%
4369   \def\hyper@link@{##1}##2##3##4{##4}%
4370   \def\hyper@@anchor##1{%
4371     \global\let\hyper@livelink\hyper@link
4372     \gdef\hyper@link##1##2##3{##3}%
4373     \def\hyper@anchorstart##1{%
4374       \let\hyper@anchorend\@empty
4375       \def\hyper@linkstart##1##2{%
4376         \let\hyper@linkend\@empty
4377         \def\hyper@linkurl##1##2{##1}%
4378         \def\hyper@linkfile##1##2##3{##1}%
4379         \def\hyper@link@{##1}##2##3{%
4380           \let\Hy@backout\@gobble
4381         }
4382       \def\stop@hyper{%
4383         \def\hyper@link@{##1}##2##3##4{##4}%
4384         \let\Hy@backout\@gobble
4385         \def\hyper@@anchor##1{%
4386           \def\hyper@link##1##2##3{##3}%
4387           \def\hyper@anchorstart##1{%
4388             \let\hyper@anchorend\@empty
4389             \def\hyper@linkstart##1##2{%
4390               \let\hyper@linkend\@empty
4391               \def\hyper@linkurl##1##2{##1}%
4392               \def\hyper@linkfile##1##2##3{##1}%
4393               \def\hyper@link@{##1}##2##3{%
4394                 }
4395             \def\endNoHyper{%

```

```

4396 \global\let\hyper@link\hyper@livelink
4397 }
4398 \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:

```

4399 \def\*nohyperref
4400 \let\hyper@@anchor\@gobble
4401 \def\hyper@link#1#2#3{#3}%
4402 \let\hyper@anchorstart\@gobble
4403 \let\hyper@anchorend\@empty
4404 \let\hyper@linkstart\@gobbletwo
4405 \let\hyper@linkend\@empty
4406 \def\hyper@linkurl#1#2{#1}%
4407 \def\hyper@linkfile#1#2#3{#1}%
4408 \def\hyper@link@{#1}#2#3{#1}%
4409 \let\PDF@SetupDoc\@empty
4410 \let\PDF@FinishDoc\@empty

```

Some top-level commands:

```

4411 \def\Acrobatmenu#1#2{\leavevmode#2}
4412 \let\pdfstringdefDisableCommands\@gobbletwo
4413 \let\texorpdfstring\@firstoftwo
4414 \let\pdfbookmark\@undefined
4415 \newcommand\pdfbookmark[3]{}{}
4416 \let\phantomsection\@empty
4417 \let\hypersetup\@gobble
4418 \let\hyperbaseurl\@gobble
4419 \let\href\@gobble
4420 \let\hyperdef\@gobbletwo
4421 \let\hyperlink\@gobble
4422 \let\hypertarget\@gobble
4423 \def\hyperref{%
4424   \@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
4425 }
4426 \long\def\@gobbleopt[#1]{}
4427 \let\hyperpage\@empty
4428 \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}

```

4429 \end{package}
4430 \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.

```

4431 \if@filesw
4432 \ifHy@typexml
4433 \immediate\closeout\@mainaux
4434 \immediate\openout\@mainaux\jobname.aux\relax
4435 \immediate\write\@auxout{<relaxxml>\relax}%
4436 \fi
4437 \immediate\write\@auxout{%
4438 \string\ifx\string\hyper@anchor\string\@undefined^^J%
4439 \global\let\string\oldcontentsline\string\contentsline^^J%
4440 \gdef\string\contentsline%
4441 \string#1\string#2\string#3\string#4{%
4442 \string\oldcontentsline%
4443 {\string#1}{\string#2}{\string#3}}^^J%
4444 \global\let\string\oldnewlabel\string\newlabel^^J%
4445 \gdef\string\newlabel\string#1\string#2{%
4446 \string\newlabelxx{\string#1}\string#2^^J%
4447 \gdef\string\newlabelxx%
4448 \string#1\string#2\string#3\string#4\string#5\string#6{%
4449 \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.

```

4450 \string\AtEndDocument{%
4451 \let\string\contentsline\string\oldcontentsline^^J%
4452 \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.

```

4453 \string\else^^J%
4454 \global\let\string\hyper@last\relax^^J%
4455 \string\fi^^J%
4456 }%
4457 \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.

```

4458 \ifx\hyper@last\@undefined
4459 \def\@starttoc#1{%
4460 \begingroup
4461 \makeatletter
4462 \IfFileExists{\jobname.#1}{%
4463 \Hy@WarningNoLine{%
4464 old #1 file detected, not used; run LaTeX again%
4465 }%
4466 }{}%
4467 \if@filesw
4468 \expandafter\newwrite\csname tf@#1\endcsname
4469 \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
4470 \fi
4471 \@nobreakfalse
4472 \endgroup
4473 }%

```

```

4474 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
4475 \fi
4476 }

```

## 25 Title strings

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

```

4477 \ifHy@usetitle
4478 \let\HyOrg@title\title
4479 \let\HyOrg@author\author
4480 \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
4481 \def\Hy@scanopttitle[#1]{%
4482 \gdef\Hy@title{#1}%
4483 \HyOrg@title[#1]}%
4484 }%
4485 \def\Hy@scantitle#1{%
4486 \gdef\Hy@title{#1}%
4487 \HyOrg@title{#1}%
4488 }%
4489 \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
4490 \def\Hy@scanoptauthor[#1]{%
4491 \gdef\Hy@author{#1}%
4492 \HyOrg@author[#1]}%
4493 }%
4494 \def\Hy@scanauthor#1{%
4495 \gdef\Hy@author{#1}%
4496 \HyOrg@author{#1}%
4497 }%

```

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

```

4498 \begingroup
4499 \def\process@me#1\@nil#2{%
4500 \expandafter\let\expandafter\x\csname @#2\endcsname
4501 \edef\y{\expandafter\strip@prefix\meaning\x}%
4502 \def\c##1#1##2\@nil{%
4503 \ifx\\##1\\%
4504 \else
4505 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
4506 \expandafter{\x}%
4507 \fi
4508 }%
4509 \expandafter\c\y\relax#1\@nil
4510 }%
4511 \expandafter\process@me\string\@latex@\@nil{title}%
4512 \expandafter\process@me\string\@latex@\@nil{author}%
4513 \endgroup
4514 \fi
4515 \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.

```

4516 \def\Hy@UseMaketitleString#1{%
4517   \@ifundefined{Hy@#1}{}{%
4518     \begingroup
4519     \let\Hy@saved@hook\pdfstringdefPreHook
4520     \pdfstringdefDisableCommands{%
4521       \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
4522       \let\newline\\%
4523     }%
4524     \expandafter\ifx\csname @pdf#1\endcsname\@empty
4525       \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
4526         \csname Hy@#1\endcsname\@empty
4527       }%
4528     \fi
4529     \global\let\pdfstringdefPreHook\Hy@saved@hook
4530   \endgroup
4531 }%
4532 }
4533 \def\Hy@newline@title#1{ #1}
4534 \def\Hy@newline@author#1{, #1}
4535 \def\Hy@UseMaketitleInfos{%
4536   \Hy@UseMaketitleString{title}%
4537   \Hy@UseMaketitleString{author}%
4538 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdick.

## 27 Every page

```

4539 \RequirePackage{atbegshi}[2007/09/09]
4540 \def\Hy@EveryPageHook{}
4541 \def\Hy@EveryPageBoxHook{}
4542 \def\Hy@FirstPageHook{}
4543 \AtBeginShipout{%
4544   \Hy@EveryPageHook
4545   \ifx\Hy@EveryPageBoxHook\@empty
4546   \else
4547     \setbox\AtBeginShipoutBox=\vbox{%
4548       \offinterlineskip
4549       \Hy@EveryPageBoxHook
4550       \box\AtBeginShipoutBox
4551     }%
4552   \fi
4553 }
4554 \AtBeginShipoutFirst{%
4555   \Hy@FirstPageHook
4556 }
4557 \g@addto@macro\Hy@FirstPageHook{%
4558   \PDF@FinishDoc
4559   \gdef\PDF@FinishDoc{}%

```

4560 }

## 27.1 PDF /PageLabels

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

```

4561 \ifHy@pagelabels
4562   \begingroup\expandafter\expandafter\expandafter\endgroup
4563   \expandafter\ifx\csname thepage\endcsname\relax
4564     \Hy@pagelabelsfalse
4565     \Hy@WarningNoLine{%
4566       Option 'pdfpagelabels' is turned off\MessageBreak
4567       because \string\thepage\space is undefined%
4568     }%
4569     \csname fi\endcsname
4570     \csname iffalse\expandafter\endcsname
4571   \fi

```

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

```

4572   \def\thispdfpagelabel#1{%
4573     \gdef\HyPL@thisLabel{#1}%
4574   }%
4575   \global\let\HyPL@thisLabel\relax

```

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

```

4576   \def\HyPL@Labels{%

```

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

```

4577   \newcount\Hy@abspage
4578   \Hy@abspage=0 %

```

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

```

4579   \def\HyPL@LastType{init}%
4580   \def\HyPL@LastNumber{0}%
4581   \def\HyPL@LastPrefix{}%

```

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

```

4582   \def\HyPL@arabic{D}%
4583   \def\HyPL@Roman{R}%
4584   \def\HyPL@roman{r}%
4585   \def\HyPL@Alph{A}%
4586   \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.

```

4587   \def\HyPL@EveryPage{%
4588     \begingroup
4589     \ifx\HyPL@thisLabel\relax
4590       \let\HyPL@page\thepage
4591     \else
4592       \let\HyPL@page\HyPL@thisLabel
4593     \global\let\HyPL@thisLabel\relax
4594   \fi
4595   \let\HyPL@Type\relax
4596   \ifnum\the\c@page>0 %
4597     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
4598   \fi

```



```

4599 \let\Hy@temp Y%
4600 \ifx\HyPL@Type\HyPL@LastType
4601 \else
4602 \let\Hy@temp N%
4603 \fi
4604 \ifx\HyPL@Type\relax
4605 \pdfstringdef\HyPL@Prefix{\HyPL@page}%
4606 \else
4607 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
4608 \fi
4609 \ifx\HyPL@Prefix\HyPL@LastPrefix
4610 \else
4611 \let\Hy@temp N%
4612 \fi
4613 \if Y\Hy@temp
4614 \advance\c@page by -1 %
4615 \ifnum\HyPL@LastNumber=\the\c@page\relax
4616 \else
4617 \let\Hy@temp N%
4618 \fi
4619 \Hy@StepCount\c@page
4620 \fi
4621 \if N\Hy@temp
4622 \ifx\HyPL@Type\relax
4623 \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
4624 \else
4625 \HyPL@StorePageLabel{%
4626 \ifx\HyPL@Prefix\@empty
4627 \else
4628 /P(\HyPL@Prefix)%
4629 \fi
4630 /S/\csname HyPL\HyPL@Type\endcsname
4631 \ifnum\the\c@page=1 %
4632 \else
4633 \space/St \the\c@page
4634 \fi
4635 }%
4636 \fi
4637 \fi
4638 \xdef\HyPL@LastNumber{\the\c@page}%
4639 \global\let\HyPL@LastType\HyPL@Type
4640 \global\let\HyPL@LastPrefix\HyPL@Prefix
4641 \endgroup
4642 \Hy@GlobalStepCount\Hy@abspage
4643 }%

```

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

```

4644 \def\HyPL@CheckThePage#1\@nil{%
4645 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
4646 }%

```

`\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`.

```

4647 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
4648 \def\Hy@tempa{#4}%

```

```

4649 \def\Hy@tempb{\csname\endcsname\c@page}%
4650 \ifx\Hy@tempa\Hy@tempb
4651 \expandafter\ifx\csname HyPL#3\endcsname\relax
4652 \else
4653 \def\HyPL@Type{#3}%
4654 \def\HyPL@Prefix{#2}%
4655 \fi
4656 \else
4657 \begingroup
4658 \let\Hy@next\endgroup
4659 \let\HyPL@found\@undefined
4660 \def\arabic{\HyPL@Format{arabic}}%
4661 \def\Roman{\HyPL@Format{Roman}}%
4662 \def\roman{\HyPL@Format{roman}}%
4663 \def\Alph{\HyPL@Format{Alph}}%
4664 \def\alph{\HyPL@Format{alph}}%
4665 \protected@edef\Hy@temp{#1}%
4666 \ifx\HyPL@found\relax
4667 \toks@{\expandafter{\Hy@temp}}%
4668 \edef\Hy@next{\endgroup
4669 \noexpand\HyPL@@@CheckThePage\the\toks@
4670 \noexpand\HyPL@found\relax\noexpand\@nil
4671 }%
4672 \fi
4673 \Hy@next
4674 \fi
4675 }%

```

**\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`.

```

4676 \def\HyPL@Format#1#2{%
4677 \ifx\HyPL@found\@undefined
4678 \expandafter\ifx\csname c@#2\endcsname\c@page
4679 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
4680 \else
4681 \expandafter\noexpand\csname#1\endcsname{#2}%
4682 \fi
4683 \else
4684 \expandafter\noexpand\csname#1\endcsname{#2}%
4685 \fi
4686 }%

```

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

```

4687 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
4688 \def\Hy@tempa{#3}%
4689 \def\Hy@tempb{\HyPL@found\relax}%
4690 \ifx\Hy@tempa\Hy@tempb
4691 \def\HyPL@Type{#2}%
4692 \def\HyPL@Prefix{#1}%
4693 \fi
4694 }%

```

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

```

4695 \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`.

```
4696 \def\HyPL@Useless{0<</S/D>>}%
4697 \@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.

```
4698 \def\HyPL@SetPageLabels{%
4699   \@onelevel@sanitize\HyPL@Labels
4700   \ifx\HyPL@Labels\@empty
4701   \else
4702     \ifx\HyPL@Labels\HyPL@Useless
4703     \else
4704       \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
4705     \fi
4706   \fi
4707 }%
```

```
4708 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
4709 \fi
```

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

```
4710 \Hy@DisableOption{pdfpagelabels}
4711 </package>
```

### 27.1.1 pdfTeX and VTeX

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

`\Hy@PutCatalog`

```
4712 <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.

```
4713 <*vTeX>
4714 \edef\Hy@VTeXversion{%
4715   \ifx\VTeXversion\@undefined
4716     \z@
4717   \else
4718     \ifx\VTeXversion\relax
4719     \z@
4720   \else
4721     \VTeXversion
4722   \fi
4723 \fi
4724 }
4725 \begingroup
4726 \ifnum\Hy@VTeXversion<660 %
4727   \gdef\Hy@PutCatalog#1{%
4728     \Hy@WarningNoLine{%
4729       VTeX 6.59g or above required for pdfpagelabels%
4730     }%
4731   }%
4732 \else
```

```

4733 \gdef\Hy@PutCatalog#1{%
4734 \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
4735 }%
4736 \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
4737 \ifx\#2\%
4738 \else
4739 \immediate\special{!pdfpagelabels #2}%
4740 \fi
4741 }%
4742 \fi
4743 \endgroup
4744 \</vtex>

4745 <*pdftex | vtex>

```

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

```

4746 \ifHy@pagelabels
4747 \def\HyPL@StorePageLabel#1{%
4748 \toks@{\expandafter{\HyPL@Labels}}%
4749 \xdef\HyPL@Labels{%
4750 \the\toks@
4751 \the\Hy@abspage<<#1>>%
4752 }%
4753 }%

```

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.

```

4754 \@ifclassloaded{revtex4}{%
4755 \g@addto@macro\clear@document{\HyPL@SetPageLabels}%
4756 }{%
4757 \AtEndDocument{\clearpage\HyPL@SetPageLabels}%
4758 }%
4759 \fi
4760 \</pdftex | vtex>

```

## 27.1.2 pdfmarkbase, dvipdfm

**\Hy@PutCatalog**

```

4761 <dvipdfm>\def\Hy@PutCatalog#1{\@pdfm@mark{docview << #1 >>}}
4762 <*pdfmarkbase>
4763 \def\Hy@PutCatalog#1{%
4764 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
4765 }
4766 \</pdfmarkbase>

4767 <*pdfmarkbase | dvipdfm>
4768 \ifHy@pagelabels

```

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

```

4769 \def\HyPL@StorePageLabel#1{%
4770 \if@filesw
4771 \begingroup
4772 \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
4773 \immediate\write\@mainaux{%
4774 \string\HyPL@Entry{\Hy@tempa}%
4775 }%

```

```

4776     \endgroup
4777     \fi
4778 }%

```

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.

```

4779 \AfterBeginDocument{%
4780     \if@filesw
4781         \immediate\write\@mainaux{%
4782             \string\providecommand\string*\string\HyPL@Entry[1]{}%
4783         }%
4784     \fi
4785     \ifx\HyPL@Labels\@empty
4786         \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
4787     \else
4788         \HyPL@SetPageLabels
4789     \fi
4790     \let\HyPL@Entry\@gobble
4791 }%

```

`\HyPL@Entry`

```

4792 \def\HyPL@Entry#1{%
4793     \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
4794         \HyPL@Labels
4795         #1%
4796     }%
4797 }%

4798 \fi
4799 </pdfmarkbase | dvipdfm>

4800 <*package>

4801 \MaybeStopEarly

```

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

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

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

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

Start with a fallback for equations

```

4802 \def\Hy@CounterExists#1{%
4803     \begingroup\expandafter\expandafter\expandafter\endgroup
4804     \expandafter\ifx\csname c@#1\endcsname\relax

```

```

4805 \expandafter\@gobble
4806 \else
4807 \begingroup\expandafter\expandafter\expandafter\endgroup
4808 \expandafter\ifx\csname the#1\endcsname\relax
4809 \expandafter\expandafter\expandafter\@gobble
4810 \else
4811 \expandafter\expandafter\expandafter\@firstofone
4812 \fi
4813 \fi
4814 }
4815 \Hy@CounterExists{section}{%
4816 \newcommand\theHequation{\theHsection.\arabic{equation}}%
4817 }
4818 \Hy@CounterExists{part}{%
4819 \newcommand\theHpart{\arabic{part}}%
4820 }
4821 \@ifundefined{thechapter}{%
4822 \newcommand\theHsection {\arabic{section}}%
4823 \newcommand\theHfigure {\arabic{figure}}%
4824 \newcommand\theHtable {\arabic{table}}%
4825 }{%
4826 \newcommand\theHchapter {\arabic{chapter}}%
4827 \newcommand\theHfigure {\theHchapter.\arabic{figure}}%
4828 \newcommand\theHtable {\theHchapter.\arabic{table}}%
4829 \newcommand\theHsection {\theHchapter.\arabic{section}}%
4830 }
4831 \newcommand\theHsubsection {\theHsection.\arabic{subsection}}
4832 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
4833 \newcommand\theHparagraph {\theHsubsubsection.\arabic{paragraph}}
4834 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
4835 \newcommand\theHtheorem {\theHsection.\arabic{theorem}}
4836 \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.

```

4837 \let\H@item\item
4838 \newcounter{Item}
4839 \def\theHItem{\arabic{Item}}
4840 \def\item{%
4841 \@hyper@itemfalse
4842 \if@nmbrlist\@hyper@itemtrue\fi
4843 \H@item
4844 }
4845 \newcommand\theHenumi {\theHItem}
4846 \newcommand\theHenumii {\theHItem}
4847 \newcommand\theHenumiii {\theHItem}
4848 \newcommand\theHenumiv {\theHItem}
4849 \newcommand\theHHfootnote {\arabic{Hfootnote}}
4850 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
4851 \let\theHHmpfootnote\theHHfootnote

```

Tanmoy asked for this default handling of undefined `\theH<name>` situations. It really isn't clear what would be ideal, whether to turn off hyperizing of unknown elements, to pick up the textual definition of the counter, or to default it to something like `\arabic{name}`. We take the latter course, slightly worriedly.

```

4852 \let\H@refstepcounter\refstepcounter

```

```

4853 \edef\name@of@eq{equation}%
4854 \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.

```

4855 \newif\if@hyper@item
4856 \newif\if@skiphyperref
4857 \@hyper@itemfalse
4858 \@skiphyperreffalse
4859 \def\refstepcounter#1{%
4860   \ifHy@pdfstring
4861   \else
4862     \H@refstepcounter{#1}%
4863     \edef\This@name{#1}%
4864     \ifx\This@name\name@of@slide
4865     \else
4866       \if@skiphyperref
4867       \else
4868         \if@hyper@item
4869         \stepcounter{Item}%
4870         \hyper@refstepcounter{Item}%
4871         \@hyper@itemfalse
4872       \else
4873         \hyper@refstepcounter{#1}%
4874       \fi
4875     \fi
4876   \fi
4877 \fi
4878 }

```

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.

```

4879 \@ifpackageloaded{amsmath}{-}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

4880 \def\hyper@refstepcounter#1{%
4881   \edef\This@name{#1}%
4882   \ifx\This@name\name@of@eq
4883     \@ifundefined{theHequation}{%
4884       \make@stripped@name{\theequation}%
4885       \let\theHequation\newname
4886     }{%
4887     \fi
4888     \@ifundefined{theH#1}{%
4889       \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
4890     }{%
4891     \hyper@makecurrent{#1}%
4892     \ifmeasuring@
4893     \else
4894       \Hy@raisedlink{%
4895         \hyper@anchorstart{\@currentHref}\hyper@anchorend
4896       }%
4897     \fi
4898   }

```

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.

```

4899 \begingroup\expandafter\expandafter\expandafter\endgroup
4900 \expandafter\ifx\csname chapter\endcsname\relax
4901   \def\Hy@chapterstring{section}%
4902 \else
4903   \def\Hy@chapterstring{chapter}%
4904 \fi
4905 \def\Hy@appendixstring{appendix}
4906 \def\Hy@chapapp{\Hy@chapterstring}
4907 \let\HyOrg@appendix\appendix
4908 \def\appendix{%
4909   \@ifundefined{chapter}%
4910     {\gdef\theHsection{\Alph{section}}}%
4911     {\gdef\theHchapter{\Alph{chapter}}}%
4912   \xdef\Hy@chapapp{\Hy@appendixstring}%
4913   \HyOrg@appendix
4914 }
```

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

```

4915 \def\hyper@makecurrent#1{%
4916   \begingroup
4917     \edef\Hy@param{#1}%
4918     \ifx\Hy@param\Hy@chapterstring
4919       \let\Hy@param\Hy@chapapp
4920     \fi
4921     \ifHy@hypertextnames
4922       \let\@number\@firstofone
4923       \@ifundefined{latin@Alph}{-}{%
4924         \ifx\@Alph\greek@Alph
4925           \def\@Alph{Alph\@arabic}%
4926         \fi
4927       }%
4928       \ifx\@Alph\@Alph@bul
4929         \def\@Alph{Alph\@arabic}%
4930       \fi
4931       \ifx\@alph\@alph@bul
4932         \def\@alph{alph\@arabic}%
4933       \fi
4934       \ifHy@naturalnames
4935         \let\textlatin\@firstofone
4936         \xdef\@currentHlabel{\csname the#1\endcsname}%
4937       \else
4938         \xdef\@currentHlabel{\csname theH#1\endcsname}%
4939       \fi
4940       \xdef\@currentHref{%
4941         \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
4942       }%
4943     \else
4944       \Hy@GlobalStepCount\Hy@linkcounter
4945       \xdef\@currentHref{\Hy@param.the\Hy@linkcounter}%
4946     \fi
4947   \endgroup
4948 }
```



```

4949 \@ifpackageloaded{fancyvrb}{%
4950   \def\FV@StepLineNo{%
4951     \FV@SetLineNo
4952     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
4953     \FV@StepLineNo
4954   }%
4955 }{}

```

## 29 Package lastpage support

Package lastpage directly writes the `\newlabel` command to the aux file. Because package hyperref requires additional arguments, the internal command `\lastpage@putlabel` is redefined. The patch is deferred by `\AtBeginDocument`, because it is possible that package lastpage is loaded after package hyperref. The same algorithm (options hypertexnames and plainpages) is used to get the page anchor name as in `\Hy@EveryPageAnchor` (see sec. 38). The link will not work if option pageanchor is set to false.

`\lastpage@putlabel`

```

4956 \AtBeginDocument{%
4957   \@ifclassloaded{revtex4}{%
4958     \@namedef{ver@lastpage.sty}{1994/06/25}%
4959   }{}%
4960   \@ifpackageloaded{lastpage}{%
4961     \ifHy@pageanchor
4962     \else
4963       \Hy@WarningNoLine{%
4964         The \string\pageref{LastPage} link doesn't work\MessageBreak
4965         with disabled option 'pageanchor'%
4966       }%
4967     \fi
4968     \def\lastpage@putlabel{%
4969       \addtocounter{page}{-1}%
4970       \if@files@
4971         \begin@group
4972           \let\@number\@firstofone
4973           \ifHy@pageanchor
4974             \ifHy@hypertexnames
4975               \ifHy@plainpages
4976                 \def\Hy@temp{\arabic{page}}%
4977               \else
4978                 \Hy@unicodedefalse
4979                 \pdfstringdef\Hy@temp{\thepage}%
4980             \fi
4981           \else
4982             \def\Hy@temp{\the\Hy@pagecounter}%
4983           \fi
4984         \fi
4985         \immediate\write\@auxout{%
4986           \string\newlabel
4987             {LastPage}{\the\thepage}{\thepage}{\thepage}%
4988           \ifHy@pageanchor page.\Hy@temp\fi}{}}%
4989       }%
4990     \end@group
4991   \fi
4992   \addtocounter{page}{1}%
4993 }%

```

```

4994 \@ifclassloaded{revtex4}{%
4995 \begingroup
4996 \toks@{\expandafter{\lastpage@putlabel}}%
4997 \edef\x{\endgroup
4998 \def\noexpand\lastpage@putlabel{%
4999 \noexpand\stepcounter{page}%
5000 \the\toks@
5001 \noexpand\addtocounter{page}\noexpand\m@ne
5002 }%
5003 }%
5004 \x
5005 }{}%
5006 }{}%
5007 }
5008 \</package>
5009 \<*check>
5010 \checkpackage{lastpage}[1994/06/25]
5011 \checkcommand\def\lastpage@putlabel{%
5012 \addtocounter{page}{-1}%
5013 \immediate\write\@auxout{%
5014 \string\newlabel{LastPage}{\the\thepage}}%
5015 }%
5016 \addtocounter{page}{1}%
5017 }
5018 \</check>
5019 \<*package>

```

## 30 Package ifthen support

Since version 6.75a this is done in package nameref.

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

```

5020 \def\hypergetref#1{\getrefbykeydefault{#1}{\{??\}}
5021 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

## 31 Package titlesec and titletoc support

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

Package titlesec support:

```

5022 \@ifpackageloaded{titlesec}{%
5023 \def\ttl@Hy@steplink#1{%
5024 \Hy@GlobalStepCount\Hy@linkcounter
5025 \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
5026 \def\ttl@Hy@saveanchor{%
5027 \Hy@raisedlink{%
5028 \hyper@anchorstart{\@currentHref}\hyper@anchorend
5029 }%
5030 }%
5031 }%
5032 \def\ttl@Hy@refstepcounter#1{%
5033 \let\ttl@b\Hy@raisedlink
5034 \def\Hy@raisedlink##1{%
5035 \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
5036 }%

```

```

5037 \refstepcounter{#1}%
5038 \let\Hy@raisedlink\ttl@b
5039 }%
5040 {}

```

Package titletoc support:

```

5041 \@ifpackageloaded{titletoc}{%
5042 \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
5043 }{}

```

## 32 Package varioref support

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

```

5044 \def\Hy@varioref@undefined{???}{?}{?}{?}{?}
5045 \@ifpackageloaded{varioref}{%
5046 \def\vref@pagenum#1#2{%
5047 \ifundefined{r@#2}{%
5048 \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
5049 }{}%
5050 \edef#1{\getpagerefnumber{#2}}%
5051 }%
5052 }{}

```

## 33 Package longtable support

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

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

```

5053 \@ifpackageloaded{longtable}{%
5054 \beginingroup
5055 \def\y{\LT@array}%
5056 \ifundefined{scr@LT@array}{\def\y{\scr@LT@array}}%
5057 \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
5058 \expandafter\endgroup
5059 \expandafter\def\y[#1]##2{%
5060 \H@refstepcounter{#1}%
5061 \hyper@makecurrent{table}%
5062 \let\Hy@LT@currentHlabel\@currentHlabel
5063 \let\Hy@LT@currentHref\@currentHref
5064 #2\@sharp####4%
5065 }%
5066 }%
5067 \expandafter\expandafter\expandafter\x\y[#1]{#2}\@nil

```

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

```

5068 \beginingroup
5069 \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
5070 \endgroup
5071 \def\LT@start{%
5072 #1%
5073 \let\@currentHlabel\Hy@LT@currentHlabel
5074 \let\@currentHref\Hy@LT@currentHref

```

```

5075      \Hy@raisedlink{%
5076        \hyper@anchorstart{\@currentHref}\hyper@anchorend
5077      }%
5078      \ifvoid\LT@firsthead\copy
5079      #2%
5080    }%
5081  }%
5082  \expandafter\x\LT@start\@nil
5083 }{}

```

## 34 Equations

We want to make the whole equation a target anchor. Overload equation, temporarily reverting to original `\refstepcounter`. If, however, it is in AMS math, we do not do anything, as the tag mechanism is used there (see section 41). The exception is that we move the equation incrementation inside the math environment to avoid specials outside and a wrong vertical spacing of equation environments.

```

5084 \let\new@refstepcounter\refstepcounter
5085 \let\H@equation\equation
5086 \let\H@endequation\endequation
5087 \ifpackageloaded{amsmath}{%
5088   \long\def\Hy@temp{%
5089     \incr@eqnum
5090     \mathdisplay@push
5091     \st@rredfalse \global\@eqnswtrue
5092     \mathdisplay{equation}%
5093   }%
5094   \ifx\Hy@temp\equation
5095     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
5096       \csname iftrue\endcsname
5097   \else
5098     \long\def\equation{%
5099       \mathdisplay@push
5100       \st@rredfalse \global\@eqnswtrue
5101       \mathdisplay{equation}%
5102       \incr@eqnum
5103     }%
5104   \fi
5105 \fi
5106 }{%
5107 \def\equation{%
5108   \let\refstepcounter\H@refstepcounter
5109   \H@equation
5110   \@ifundefined{theHequation}{%
5111     \make@stripped@name{\theequation}%
5112     \let\theHequation\newname
5113   }{}%
5114   \hyper@makecurrent{equation}%
5115   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
5116   \let\refstepcounter\new@refstepcounter
5117 }%
5118 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
5119 }

```

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.

```

5120 \newif\if@eqnstar
5121 \@eqnstarfalse
5122 \let\H@eqnarray\eqnarray
5123 \let\H@endeqnarray\endeqnarray
5124 \def\eqnarray{%
5125   \let\Hy@reserved@a\relax
5126   \def\@currentHref{%
5127     \H@eqnarray
5128     \if@eqnstar
5129     \else
5130       \ifx\\ \@currentHref\\
5131       \else
5132         \ifundefined{theHequation}{%
5133           \make@stripped@name{theequation}%
5134           \let\theHequation\newname
5135         }{%
5136           \hyper@makecurrent{equation}%
5137           \hyper@anchorstart{\@currentHref}{\hyper@anchorend
5138         \fi
5139       \fi
5140   }
5141 \def\endeqnarray{%
5142   \H@endeqnarray
5143 }

```

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.

```

5144 \@namedef{eqnarray*}{%
5145   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
5146 }
5147 \@namedef{endeqnarray*}{%
5148   \nonumber\endeqnarray\@eqnstarfalse
5149 }

```

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

```

5150 \@ifundefined{subeqnarray}{%
5151   \let\H@subeqnarray\subeqnarray
5152   \let\H@endsubeqnarray\endsubeqnarray
5153   \def\subeqnarray{%
5154     \let\Hy@reserved@a\relax
5155     \H@subeqnarray
5156     \@ifundefined{theHequation}{%
5157       \make@stripped@name{theequation}%
5158       \let\theHequation\newname
5159     }{%
5160       \hyper@makecurrent{equation}%
5161       \hyper@anchorstart{\@currentHref}{\hyper@anchorend
5162     }%
5163   \def\endsubeqnarray{%
5164     \H@endsubeqnarray
5165   }%
5166   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
5167 }

```

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

```

5168 \def\make@stripped@name#1{%
5169   \begingroup
5170     \escapechar\m@ne
5171     \global\let\newname\@empty
5172     \protected@edef\Hy@tempa{#1}%
5173     \edef\@tempb{%
5174       \noexpand\@tfor\noexpand\Hy@tempa:=%
5175       \expandafter\strip@prefix\meaning\Hy@tempa
5176     }%
5177     \@tempb\do{%
5178       \if\Hy@tempa\else
5179       \if}\Hy@tempa\else
5180       \xdef\newname{\newname\Hy@tempa}%
5181     \fi
5182   \fi
5183 }%
5184 \endgroup
5185 }

```

Support for amsmath's subequations:

```

5186 \begingroup\expandafter\expandafter\expandafter\endgroup
5187 \expandafter\ifx\csname subequations\endcsname\relax
5188 \else
5189   \let\HyOrg@subequations\subequations
5190   \def\subequations{%
5191     \stepcounter{equation}%
5192     \protected@edef\theHparentequation{%
5193       \@ifundefined{theHequation}\theequation\theHequation
5194     }%
5195     \addtocounter{equation}{-1}%
5196     \HyOrg@subequations
5197     \def\theHequation{\theHparentequation\alph{equation}}%
5198     \ignorespaces
5199   }%
5200 \fi

```

## 35 Footnotes

The footnote mark is a hypertext link, and the text is a target. We separately number the footnotes sequentially through the text, separately from whatever labels the text assigns. Too hard to keep track of markers otherwise. If the raw forms `\footnotemark` and `\footnotetext` are used, force them to use un-hyper original.

Tabularx causes footnote problems, disable the linking if that is loaded.

```

5201 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
5202 \ifHy@hyperfootnotes
5203   \newcounter{Hfootnote}%
5204   \let\H@@footnotetext\@footnotetext
5205   \let\H@@footnotemark\@footnotemark
5206   \def\@xfootnotenext[#1]{%
5207     \begingroup
5208       \csname c@\@mpfn\endcsname #1\relax
5209       \unrestored@protected\xdef\@thefnmark{\thempfn}%
5210     \endgroup
5211     \ifx\@footnotetext\@mpfootnotetext

```

```

5212     \expandafter\H@@mpfootnotetext
5213     \else
5214     \expandafter\H@@footnotetext
5215     \fi
5216 }%
5217 \def\@xfootnotemark[#1]{%
5218     \begingroup
5219     \c@footnote #1\relax
5220     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
5221     \endgroup
5222     \H@@footnotemark
5223 }%
5224 \let\H@@mpfootnotetext\@mpfootnotetext
5225 \long\def\@mpfootnotetext#1{%
5226     \H@@mpfootnotetext{%
5227         \ifHy@nesting
5228             \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
5229         \else
5230             \Hy@raisedlink{%
5231                 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5232             }#1%
5233         \fi
5234     }%
5235 }%
5236 \long\def\@footnotetext#1{%
5237     \H@@footnotetext{%
5238         \ifHy@nesting
5239             \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
5240         \else
5241             \Hy@raisedlink{%
5242                 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5243             }%
5244             \let\@currentHlabel\Hy@footnote@currentHlabel
5245             \let\@currentHref\Hy@footnote@currentHref
5246             \let\@currentlabelname\@empty
5247             #1%
5248         \fi
5249     }%
5250 }%

```

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.

```

5251 \def\@footnotemark{%
5252     \leavevmode
5253     \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
5254     \stepcounter{Hfootnote}%
5255     \global\let\Hy@saved@currentHlabel\@currentHlabel
5256     \global\let\Hy@saved@currentHref\@currentHref
5257     \hyper@makecurrent{Hfootnote}%
5258     \global\let\Hy@footnote@currentHlabel\@currentHlabel
5259     \global\let\Hy@footnote@currentHref\@currentHref
5260     \global\let\@currentHlabel\Hy@saved@currentHlabel
5261     \global\let\@currentHref\Hy@saved@currentHref
5262     \hyper@linkstart{link}{\Hy@footnote@currentHref}%
5263     \@makefnmark
5264     \hyper@linkend

```

```

5265 \ifhmode\spacefactor\@x@sf\fi
5266 \relax
5267 }%

```

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

```

5268 \@ifpackageloaded{longtable}{%
5269 \CheckCommand*{\LT@p@ftntext}[1]{%
5270 \edef\@tempa{%
5271 \the\LT@p@ftn
5272 \noexpand\footnotetext[\the\c@footnote]%
5273 }%
5274 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
5275 }%
5276 \long\def\LT@p@ftntext#1{%
5277 \edef\@tempa{%
5278 \the\LT@p@ftn
5279 \begingroup
5280 \noexpand\c@footnote=\the\c@footnote\relax
5281 \noexpand\protected@xdef
5282 \noexpand\@thefnmark{\noexpand\thempfn}%
5283 \noexpand\protected@xdef\noexpand\@thefnmark{%
5284 \noexpand\thempfn
5285 }%
5286 \expandafter\expandafter\expandafter\noexpand
5287 \expandafter\expandafter\expandafter\Hy@LT@footnotetext
5288 \expandafter\expandafter\expandafter{%
5289 \expandafter\Hy@footnote@currentHref\expandafter
5290 }\expandafter{\Hy@footnote@currentHlabel}%
5291 }%
5292 \global\LT@p@ftn\expandafter{%
5293 \@tempa{#1}%
5294 \endgroup
5295 }%
5296 }%
5297 \long\def\Hy@LT@footnotetext#1#2#3{%
5298 \H@@footnotetext{%
5299 \ifHy@nesting
5300 \hyper@@anchor{#1}{#3}%
5301 \else
5302 \Hy@raisedlink{%
5303 \hyper@@anchor{#1}{\relax}%
5304 }%
5305 \def\@currentHlabel{#2}%
5306 \def\@currentHref{#1}%
5307 \let\@currentlabelname\@empty
5308 #3%
5309 \fi
5310 }%
5311 }%
5312 }-}%

```

Footnotes for fancyvrb (Fix by Manuel Pégourié-Gonnard).

```

5313 \@ifpackageloaded{fancyvrb}{%
5314 \def\V@@footnotetext{%
5315 \insert\footins\bgroup

```



```

5316 \csname reset@font\endcsname
5317 \footnotesize
5318 \interlinepenalty\interfootnotelinepenalty
5319 \splittopskip\footnotesep
5320 \splitmaxdepth\dp\strutbox
5321 \floatingpenalty \@MM
5322 \hsize\columnwidth
5323 \@parboxrestore
5324 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
5325 \@makefnintext{}%
5326 \rule{\z@}{\footnotesep}%
5327 \bgroup
5328 \aftergroup\V@@@footnotetext
5329 \Hy@raisedlink{%
5330   \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5331 }%
5332 \let\@currentHlabel\Hy@footnote@currentHlabel
5333 \let\@currentHref\Hy@footnote@currentHref
5334 \let\@currentlabelname\@empty
5335 \ignorespaces
5336 }%
5337 }{}%

```

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.

```

5338 \let\HyOrg@maketitle\maketitle
5339 \def\maketitle{%
5340   \let\Hy@saved@footnotemark\@footnotemark
5341   \let\Hy@saved@footnotetext\@footnotetext
5342   \let\@footnotemark\H@@footnotemark
5343   \let\@footnotetext\H@@footnotetext
5344   \@ifnextchar[\Hy@maketitle@optarg{% ]
5345     \HyOrg@maketitle
5346     \Hy@maketitle@end
5347   }%
5348 }%
5349 \def\Hy@maketitle@optarg[#1]{%
5350   \HyOrg@maketitle[#1]%
5351   \Hy@maketitle@end
5352 }%
5353 \def\Hy@maketitle@end{%
5354   \ifx\@footnotemark\H@@footnotemark
5355     \let\@footnotemark\Hy@saved@footnotemark
5356   \fi
5357   \ifx\@footnotetext\H@@footnotetext
5358     \let\@footnotetext\Hy@saved@footnotetext
5359   \fi
5360 }%

```

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

```

5361 \def\realfootnote{%
5362   \@ifnextchar[\@xfootnote{%
5363     \stepcounter{\@mpfn}%
5364     \protected@xdef\@thefnmark{\thempfn}%
5365     \H@@footnotemark\H@@footnotetext
5366   }%
5367 }%

```

```

5368 \fi
5369 \Hy@DisableOption{hyperfootnotes}

5370 \</package>
5371 \<*check>
5372 \checklatex
5373 \checkcommand\def\xfootnotenext[#1]{%
5374   \begingroup
5375     \csname c@\mpfn\endcsname #1\relax
5376     \unrestored@protected@xdef\@thefnmark{\thempfn}%
5377   \endgroup
5378   \@footnotetext
5379 }
5380 \checkcommand\def\xfootnotemark[#1]{%
5381   \begingroup
5382     \c@footnote #1\relax
5383     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
5384   \endgroup
5385   \@footnotemark
5386 }
5387 \checkcommand\def\@footnotemark{%
5388   \leavevmode
5389   \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
5390   \@makefnmark
5391   \ifhmode\spacefactor\x@sf\fi
5392   \relax
5393 }
5394 \</check>
5395 \<*package>

```

## 36 Float captions

Make the float caption the hypertext anchor; curiously enough, we can't just copy the definition of `\@caption`. Its all to do with expansion. It screws up. Sigh.

```

5396 \def\caption{%
5397   \ifx\@capytype\@undefined
5398     \@latex@error{\noexpand\caption outside float}\@ehd
5399     \expandafter\@gobble
5400   \else
5401     \H@refstepcounter\@capytype
5402     \let\Hy@tempa\@caption
5403     \@ifundefined{float@caption}{%
5404       }{%
5405         \expandafter\ifx\csname @float@c@\@capytype\endcsname
5406           \float@caption
5407         \let\Hy@tempa\Hy@float@caption
5408       \fi
5409     }%
5410     \expandafter\@firstofone
5411   \fi
5412   {\@dblarg{\Hy@tempa\@capytype}}}%
5413 }
5414 \long\def\@caption#1[#2]#3{%
5415   \expandafter\ifx\csname if@capstart\expandafter\endcsname
5416     \csname iftrue\endcsname
5417     \global\let\@currentHref\hc@currentHref

```

```

5418 \else
5419   \hyper@makecurrent{\@capytype}%
5420 \fi
5421 \def\@currentlabelname{#2}%
5422 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
5423   \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
5424 }%
5425 \begingroup
5426   \@parboxrestore
5427   \if@minipage
5428     \setminipage
5429   \fi
5430   \normalsize
5431   \expandafter\ifx\csname if@capstart\expandafter\endcsname
5432     \csname iftrue\endcsname
5433     \global\@capstartfalse
5434     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
5435   \else
5436     \@makecaption{\csname fnum@#1\endcsname}{%
5437       \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

5438   \ifHy@nesting
5439     \hyper@@anchor{\@currentHref}{#3}%
5440   \else
5441     \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
5442   \fi
5443 }%
5444 \fi
5445 \par
5446 \endgroup
5447 }

```

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.

```

5448 \let\Hy@float@caption\@caption
5449 \@ifpackageloaded{float}{%
5450   \def\Hy@float@caption{%
5451     \ifx\Hy@float@currentHref\@undefined
5452       \hyper@makecurrent{\@capytype}%
5453       \global\let\Hy@float@currentHref\@currentHref
5454     \else
5455       \let\@currentHref\Hy@float@currentHref
5456     \fi
5457     \float@caption
5458   }%
5459   \let\HyOrg@float@makebox\float@makebox
5460   \renewcommand{\float@makebox}[1]{%
5461     \HyOrg@float@makebox{%
5462       #1\relax
5463       \ifx\Hy@float@currentHref\@undefined
5464       \else
5465         \hyper@@anchor{\Hy@float@currentHref}{\relax}%
5466         \global\let\Hy@float@currentHref\@undefined
5467       \fi
5468     }%
5469   }%
5470 }{}

```

```

5471 </package>
5472 <*check>
5473 \checklatex[1999/06/01 - 2000/06/01]
5474 \checkcommand\def\caption{%
5475   \ifx\@capttype\@undefined
5476     \latexerror{\noexpand\caption outside float}\@ehd
5477     \expandafter\@gobble
5478   \else
5479     \refstepcounter\@capttype
5480     \expandafter\@firstofone
5481   \fi
5482   {\@dblarg{\@caption\@capttype}}}%
5483 }
5484 \checkcommand\long\def\@caption#1[#2]#3{%
5485   \par
5486   \addcontentsline{\csname ext@#1\endcsname}{#1}%
5487     {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
5488   \begingroup
5489     \@parboxrestore
5490     \if@minipage
5491       \setminipage
5492     \fi
5493     \normalsize
5494     \makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
5495   \endgroup
5496 }
5497 </check>
5498 <*package>

```

## 37 Bibliographic references

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

However, let's make an attempt to get *natbib* right, because that's a powerful, important package. Patrick Daly ([daly@linmpi.mpg.de](mailto:daly@linmpi.mpg.de)) has provided hooks for us, so all we need to do is activate them.

```

5499 \def\hyper@natlinkstart#1{%
5500   \Hy@backout{#1}%
5501   \hyper@linkstart{cite}{cite.#1}%
5502   \def\hyper@nat@current{#1}%
5503 }
5504 \def\hyper@natlinkend{%
5505   \hyper@linkend
5506 }
5507 \def\hyper@natlinkbreak#1#2{%
5508   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
5509 }
5510 \def\hyper@natanchorstart#1{%
5511   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
5512 }
5513 \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.

```

5514 \ifundefined{NAT@parse}{%
5515   \providecommand*\@extra@binfo{}%
5516   \providecommand*\@extra@b@citeb{}%
5517   \def\bibcite#1#2{%
5518     \newl@bel{b}{#1\@extra@binfo}{%
5519       \hyper@@link[cite]{}{cite.#1\@extra@b@citeb}{#2}%
5520     }%
5521   }%
5522   \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.”.

```

5523 \let\Hy@bibcite\bibcite
5524 \begingroup
5525   \ifundefined{bbl@cite@choice}{}{%
5526     \g@addto@macro\bbl@cite@choice{%
5527       \let\bibcite\Hy@bibcite
5528     }%
5529   }%
5530 \endgroup

```

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

```

5531 \providecommand*\@BIBLABEL{\@biblabel}%
5532 \def\@lbibitem[#1]#2{%
5533   \@skiphyperreftrue
5534   \H@item[%
5535     \ifx\Hy@raisedlink\@empty
5536       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
5537       \@BIBLABEL{#1}%
5538       \hyper@anchorend
5539     \else
5540       \Hy@raisedlink{%
5541         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
5542       }%
5543       \@BIBLABEL{#1}%
5544     \fi
5545     \hfill
5546   ]%
5547   \@skiphyperreffalse
5548   \if@filesw
5549     \begingroup
5550       \let\protect\noexpand
5551       \immediate\write\@auxout{%
5552         \string\bibcite{#2}{#1}%
5553       }%
5554     \endgroup
5555   \fi
5556   \ignorespaces
5557 }%

```

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

```

5558 \def\@bibitem#1{%
5559   \@skiphyperreftrue\H@item\@skiphyperreffalse
5560   \Hy@raisedlink{%

```

```

5561     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
5562   }%
5563   \if@filesw
5564     \begingroup
5565       \let\protect\noexpand
5566       \immediate\write\@auxout{%
5567         \string\bibcite{#1}{\the\value{\@listctr}}}%
5568     }%
5569   \endgroup
5570   \fi
5571   \ignorespaces
5572 }%
5573 }{}

5574 </package>
5575 <*check>
5576 \checklatex
5577 \checkcommand\def\@lbibitem[#1]#2{%
5578   \item[\@biblabel{#1}\hfill]%
5579   \if@filesw
5580     {%
5581       \let\protect\noexpand
5582       \immediate\write\@auxout{%
5583         \string\bibcite{#2}{#1}%
5584       }%
5585     }%
5586   \fi
5587   \ignorespaces
5588 }
5589 \checkcommand\def\@bibitem#1{%
5590   \item
5591   \if@filesw
5592     \immediate\write\@auxout{%
5593       \string\bibcite{#1}{\the\value{\@listctr}}}%
5594   }%
5595   \fi
5596   \ignorespaces
5597 }
5598 </check>
5599 <*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.

```

5600 \@ifclassloaded{revtex}{%
5601   \Hy@Info{*** compatibility with revtex **** }%
5602   \def\revtex@checking#1#2{%
5603     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
5604     \expandafter\def\csname b@#1\endcsname{#2}%
5605     \@SetMaxRnhefLabel{#1}%
5606     \expandafter\let\csname b@#1\endcsname\T@temp
5607   }%

```

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

```

5608   \@ifundefined{CITE}{\def\CITE{\cite}}{}%
5609   \providecommand*\@extra@b@citeb{}%
5610   \def\CITE[1]#2{%

```

```

5611 \let\@citea\@empty
5612 \leavevmode
5613 \unskip
5614 $\sim$
5615 \scriptstyle
5616 \@CITE{
5617   \@for\@citeb:=#2\do{
5618     \@citea
5619     \def\@citea{,\penalty\@m\ }
5620     \edef\@citeb{\expandafter\@firstofone\@citeb}%
5621     \if@filesw
5622       \immediate\write\@auxout{\string\citation{\@citeb}}%
5623     \fi
5624     \@ifundefined{b@\@citeb\extra@b@citeb}{
5625       \mbox{\reset@font\bfseries ?}%
5626       \G@refundefinedtrue
5627       \latex@warning{
5628         Citation '\@citeb' on page \thepage \space undefined%
5629       }%
5630     }{
5631       {\csname b@\@citeb\extra@b@citeb\endcsname}%
5632     }%
5633   }%
5634 }{#1}%
5635 }$%
5636 }%

```

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.

```

5637 \def\@citex[#1]#2{
5638   \let\@citea\@empty
5639   \@cite{
5640     \@for\@citeb:=#2\do{
5641       \@citea
5642       \def\@citea{,\penalty\@m\ }
5643       \edef\@citeb{\expandafter\@firstofone\@citeb}%
5644       \if@filesw
5645         \immediate\write\@auxout{\string\citation{\@citeb}}%
5646       \fi
5647       \@ifundefined{b@\@citeb\extra@b@citeb}{
5648         \mbox{\reset@font\bfseries ?}%
5649         \G@refundefinedtrue
5650         \latex@warning{
5651           Citation '\@citeb' on page \thepage \space undefined%
5652         }%
5653       }{
5654         \hbox{\csname b@\@citeb\extra@b@citeb\endcsname}%
5655       }%
5656     }%
5657   }{#1}%
5658 }%
5659 }{}

```

### 37.1 Package harvard

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

section for each bibliography entry.

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

```

5660 \ifpackageloaded{harvard}{%
5661   \AtBeginDocument{%
5662     \Hy@Info{*** compatibility with harvard *** }%
5663     \Hy@raiselinksfalse
5664     \def\harvardcite#1#2#3#4{%
5665       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{cite.#1}{#2}}%
5666       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{cite.#1}{#3}}%
5667       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{cite.#1}{#4}}%
5668       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
5669     }%
5670     \def\HAR@citetoaux#1{%
5671       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
5672       \ifHy@backref
5673         \ifx\@empty\@currentlabel
5674           \else
5675             \@bsphack
5676             \if@filesw
5677               \protected@write\@auxout{}{%
5678                 \string\writefile{brf}{%
5679                   \string\backcite{#1}{%
5680                     {thepage}{\@currentlabel}{\@currentHref}%
5681                   }%
5682                 }%
5683               }%
5684             \fi
5685             \@esphack
5686           \fi
5687         \fi
5688       }%
5689       \def\harvarditem{%
5690         \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
5691       }%
5692       \def\@harvarditem[#1]#2#3#4#5\par{%
5693         \item[]%
5694         \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
5695         \if@filesw
5696           \begingroup
5697             \def\protect##1{\string ##1\space}%
5698             \ifthenelse{\equal{#1}{\null}}{%
5699               {\def\next{#4}{#2}{#3}}%
5700             }{\def\next{#4}{#2}{#1}{#3}}%
5701             \immediate\write\@auxout{\string\harvardcite\codeof\next}%
5702           \endgroup
5703         \fi
5704         \protect\hspace*{-\labelwidth}%
5705         \protect\hspace*{-\labelsep}%
5706         \ignorespaces
5707         #5%
5708         \ifHy@backref
5709           \newblock
5710           \backref{\csname br@#4\endcsname}%
5711         \fi
5712       \par

```



```
5713 }%
```

`\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`:

```
5714 \long\def\HAR@checkcitations#1#2#3#4{%
5715   \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
5716   \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
5717     \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
5718     \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
5719       \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
5720       \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
5721         \else
5722           \@tempswatrue
5723         \fi
5724       \else
5725         \@tempswatrue
5726       \fi
5727     \else
5728       \@tempswatrue
5729     \fi
5730 }%
5731 }%

5732 }{}
```

## 37.2 Package chicago

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

```
5733 \@ifpackageloaded{chicago}{%
```

`\citeN`

```
5734 \def\citeN{%
5735   \def\@citesep{--1000}%
5736   \def\@cite##1##2{##1}%
5737   \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
5738   \@citedata@opt
5739 }%
```

`\shortciteN`

```
5740 \def\shortciteN{%
5741   \def\@citesep{--1000}%
5742   \def\@cite##1##2{##1}%
5743   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
5744   \@citedata@opt
5745 }%
```

`\@citedata@opt`

```
5746 \def\@citedata@opt{%
5747   \let\@cite@opt\@empty
5748   \@ifnextchar [{%
5749     \@tempswatrue
5750     \@citedatax@opt
5751   }{%
5752     \@tempswafalse
5753     \@citedatax[]%
```

```

5754 }%
5755 }%

```

`\@citedatax@opt`

```

5756 \def\@citedatax@opt[#1]{%
5757   \def\@cite@opt{, #1}%
5758   \@citedatax[#1]}%
5759 }%

5760 }{}

```

## 38 Page numbers

The last page should not contain a /Dur key, because there is no page after the last page. Therefore at the last page there should be a command `\hypersetup{pdfpageduration={}}`. This can be set with `\AtEndDocument`, but it can be too late, if the last page is already finished, or too early, if lots of float pages will follow. Therefore currently nothing is done by `hyperref`.

This where we supply a destination for each page.

```

5761 \def\Hy@EveryPageAnchor{%
5762   \Hy@DistillerDestFix
5763   \ifHy@pageanchor
5764     \ifHy@hypertextnames
5765     \ifHy@plainpages
5766       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
5767     \else
5768       \begingroup
5769         \let\@number\@firstofone
5770         \Hy@unicodedefalse
5771         \pdfstringdef\@the@H@page{\thepage}%
5772       \endgroup
5773       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
5774     \fi
5775   \else
5776     \Hy@GlobalStepCount\Hy@pagecounter
5777     \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}%
5778   \fi
5779   \vbox to 0pt{%
5780     \kern\voffset
5781     \kern\topmargin
5782     \kern-1bp\relax
5783     \hbox to 0pt{%
5784       \kern\hoffset
5785       \kern\ifodd\value{page}%
5786         \oddsidemargin
5787       \else
5788         \evensidemargin
5789       \fi
5790     \kern-1bp\relax
5791     \Hy@TempPageAnchor
5792     \hss
5793   }%
5794   \vss
5795 }%
5796 \fi
5797 }

```

```

5798 \g@addto@macro\Hy@EveryPageBoxHook{%
5799   \Hy@EveryPageAnchor
5800 }

```

## 39 Table of contents

TV Raman noticed that people who add arbitrary material into the TOC generate a bad or null link. We avoid that by checking if the current destination is empty. But if ‘the most recent destination’ is not what you expect, you will be in trouble.

```

5801 \begingroup\expandafter\expandafter\expandafter\endgroup
5802 \expandafter\ifx\csname chapter\endcsname\relax
5803   \def\toclevel@part{0}%
5804 \else
5805   \def\toclevel@part{-1}%
5806 \fi
5807 \def\toclevel@chapter{0}
5808 \def\toclevel@section{1}
5809 \def\toclevel@subsection{2}
5810 \def\toclevel@subsubsection{3}
5811 \def\toclevel@paragraph{4}
5812 \def\toclevel@subparagraph{5}
5813 \def\toclevel@figure{0}
5814 \def\toclevel@table{0}
5815 \@ifpackageloaded{listings}{%
5816   \providecommand*\theHlstlisting{\thelstlisting}%
5817   \providecommand*\toclevel@lstlisting{0}%
5818 }{}
5819 \@ifpackageloaded{listing}{%
5820   \providecommand*\theHlisting{\thelisting}%
5821   \providecommand*\toclevel@listing{0}%
5822 }{}
5823 \def\addcontentsline#1#2#3{% toc extension, type, tag
5824   \begingroup
5825     \let\label@gobble
5826     \let\textlatin@firstofone
5827     \ifx\@currentHref\@empty
5828       \Hy@Warning{%
5829         No destination for bookmark of \string\addcontentsline,%
5830         \MessageBreak destination is added%
5831       }%
5832     \phantomsection
5833   \fi
5834   \expandafter\ifx\csname toclevel@#2\endcsname\relax
5835     \begingroup
5836       \def\Hy@tempa{#1}%
5837       \ifx\Hy@tempa\Hy@bookmarkstype
5838         \Hy@WarningNoLine{%
5839           bookmark level for unknown #2 defaults to 0%
5840         }%
5841       \else
5842         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
5843       \fi
5844     \endgroup
5845     \expandafter\gdef\csname toclevel@#2\endcsname{0}%
5846   \fi
5847   \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%

```

```

5848 \Hy@writebookmark{\csname the#2\endcsname}%
5849 {#3}%
5850 {\@currentHref}%
5851 {\Hy@toclevel}%
5852 {#1}%
5853 \ifHy@verbose
5854 \def\Hy@tempa{#3}%
5855 \@onelevel@sanitize\Hy@tempa
5856 \typeout{pdftex: bookmark at \the\inputlineno: %
5857 {\csname the#2\endcsname}%
5858 {\Hy@tempa}%
5859 {\@currentHref}%
5860 {\Hy@toclevel}%
5861 {#1}%
5862 }%
5863 \fi
5864 \addtocontents{#1}{%
5865 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
5866 }%
5867 \endgroup
5868 }
5869 \def\contentsline#1#2#3#4{%
5870 \ifx\#4\%
5871 \csname l@#1\endcsname{#2}{#3}%
5872 \else
5873 \ifcase\Hy@linktoc % none
5874 \csname l@#1\endcsname{#2}{#3}%
5875 \or % section
5876 \csname l@#1\endcsname{%
5877 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
5878 }{#3}%
5879 \or % page
5880 \csname l@#1\endcsname{#2}{%
5881 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
5882 }%
5883 \else % all
5884 \csname l@#1\endcsname{%
5885 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
5886 }{%
5887 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
5888 }%
5889 \fi
5890 \fi
5891 }
5892 \end{package}
5893 \end{*check}
5894 \checklatex
5895 \checkcommand\def\addcontentsline#1#2#3{%
5896 \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
5897 }
5898 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
5899 \end{check}
5900 \end{*package}

```

## 40 New counters

The whole theorem business makes up new counters on the fly; we are going to intercept this. Sigh. Do it at the level where new counters are defined.

```
5901 \let\H@definecounter\@definecounter
5902 \def\@definecounter#1{%
5903   \H@definecounter{#1}%
5904   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
5905 }
```

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.

```
5906 \let\H@newctr\@newctr
5907 \def\@newctr#1[#2]{%
5908   \H@newctr#1[#2]%
5909   \expandafter\def\csname theH#1\endcsname{%
5910     \csname the\@ifundefined{theH#2}-{H}#2\endcsname.\arabic{#1}%
5911   }%
5912 }
```

## 41 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 (SR).

Version 6.77p uses a patch by Ross Moore.

```
5913 \ifpackageloaded{amsmath}{%
5914   \def\Hy@make@anchor{%
5915     \Hy@GlobalStepCount\Hy@linkcounter
5916     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5917     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5918   }%
5919   \def\Hy@make@df@tag@@#1{%
5920     \gdef\df@tag{%
5921       \maketag@@@{\Hy@make@anchor#1}%
5922       \def\@currentlabel{#1}%
5923     }%
5924   }%
5925   \def\Hy@make@df@tag@@@#1{%
5926     \gdef\df@tag{%
5927       \tagform@{\Hy@make@anchor#1}%
5928       \toks@{\p@equation{#1}}%
5929       \edef\@currentlabel{\the\toks@}%
5930     }%
5931   }%
5932   \let\HyOrg@make@df@tag@@\make@df@tag@@
5933   \let\HyOrg@make@df@tag@@@ \make@df@tag@@@
5934   \let\make@df@tag@@\Hy@make@df@tag@@
5935   \let\make@df@tag@@@ \Hy@make@df@tag@@@
5936 }{}
```

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

```
5937 \ifpackagewith{hyperref}{pdf $\TeX$ }{%
```

```

5938 \let\H@seteqlabel\@seteqlabel
5939 \def\@seteqlabel#1{%
5940   \H@seteqlabel{#1}%
5941   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5942   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5943 }%
5944 }{}

```

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

```

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

```

#### 41.1 \@addtoreset and \numberwithin patches

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

```

5945 \let\HyOrg@addtoreset\@addtoreset
5946 \def\@addtoreset#1#2{%
5947   \HyOrg@addtoreset{#1}{#2}%
5948   \expandafter\xdef\csname theH#1\endcsname{%
5949     \expandafter\noexpand
5950     \csname the\@ifundefined{theH#2}{}H#2\endcsname
5951     .\noexpand\the\noexpand\value{#1}%
5952   }%
5953 }

```

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

```

5954 </package>
5955 <*check>
5956 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
5957 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
5958   \@ifundefined{c#2}{\@nocounterr{#2}}{%
5959     \@ifundefined{c#3}{\@nocnterr{#3}}{%
5960       \@addtoreset{#2}{#3}%
5961       \@xp\xdef\csname the#2\endcsname{%
5962         \@xp@nx\csname the#3\endcsname .\@nx#1{#2}%
5963       }%
5964     }%
5965   }%
5966 }%
5967 </check>
5968 <*package>
5969 \@ifpackageloaded{amsmath}{%
5970   \@ifpackagelater{amsmath}{1999/12/14}{%
5971     \renewcommand*\numberwithin[3][\arabic]{%
5972       \@ifundefined{c#2}{\@nocounterr{#2}}{%
5973         \@ifundefined{c#3}{\@nocnterr{#3}}{%
5974           \HyOrg@addtoreset{#2}{#3}%
5975           \@xp\xdef\csname the#2\endcsname{%

```

```

5976         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
5977     }%
5978     \@xp\xdef\csname theH#2\endcsname{%
5979         \@xp\@nx
5980         \csname the\@ifundefined{theH#3}{}H#3\endcsname
5981         .\@nx#1{#2}%
5982     }%
5983 }%
5984 }%
5985 }%
5986 }{%
5987     \Hy@WarningNoLine{%
5988         \string\numberwithin\space of package ‘amsmath’ %
5989         only fixed\MessageBreak
5990         for version 2000/06/06 v2.12 or newer%
5991     }%
5992 }%
5993 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

5994 \ifHy@figures
5995   \let\Hy@Gin@setfile\Gin@setfile
5996   \def\Gin@setfile#1#2#3{%
5997       \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
5998   }%
5999 \fi
6000 \Hy@DisableOption{hyperfigures}

```

## 43 hyperindex entries

Internal command names are prefixed with \HyInd@.

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

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

```

6001 \ifHy@hyperindex
6002   \def\HyInd@ParenLeft{(%}
6003   \def\HyInd@ParenRight{)%}
6004   \Hy@nextfalse
6005   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
6006   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
6007   \begingroup
6008     \lccode‘\|=\expandafter\HyInd@EncapChar\relax
6009     \lowercase{\endgroup
6010       \ifHy@next
6011         \let\HyInd@org@wrindex\@wrindex
6012         \def\@wrindex#1#2{\HyInd@wrindex{#1}#2||\}%
6013         \def\HyInd@wrindex#1#2|#3|#4\{

```

```

6014 \ifx\#3\%
6015 \HyInd@org@wrindex{#1}{#2|hyperpage}%
6016 \else
6017 \def\Hy@temp@A{#3}%
6018 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
6019 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
6020 \relax
6021 \HyInd@org@wrindex{#1}{#2|#3}%
6022 \else
6023 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
6024 \fi
6025 \fi
6026 }%
6027 \else
6028 \def\@wrindex#1{\@wrindex#1||\}%
6029 \def\@wrindex#1|#2|#3\{\%
6030 \if@filesw
6031 \ifx\#2\%
6032 \protected@write\@indexfile{}\%
6033 \string\indexentry{#1|hyperpage}{\thepage}%
6034 }%
6035 \else
6036 \def\Hy@temp@A{#2}%
6037 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
6038 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
6039 \relax
6040 \protected@write\@indexfile{}\%
6041 \string\indexentry{#1|#2}{\thepage}%
6042 }%
6043 \else
6044 \protected@write\@indexfile{}\%
6045 \string\indexentry{#1|#2hyperpage}{\thepage}%
6046 }%
6047 \fi
6048 \fi
6049 \fi
6050 \endgroup
6051 \@esphack
6052 }%
6053 \fi
6054 }%
6055 \fi
6056 \Hy@DisableOption{hyperindex}
6057 \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.

```

6058 \def\hyperpage#1{\@hyperpage#1----\}
6059 \def\@hyperpage#1--#2--#3\{\%
6060 \ifx\#2\%
6061 \@commahyperpage{#1}%
6062 \else
6063 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
6064 \fi
6065 }
6066 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
6067 \def\@commahyperpage#1, #2,#3\{\%
6068 \ifx\#2\%

```



```

6069 \HyInd@pagelink{#1}%
6070 \else
6071 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
6072 \fi
6073 }

```

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

```

6074 \def\HyInd@pagelink#1{%
6075 \begingroup
6076 \toks@={}%
6077 \HyInd@removespaces#1 \@nil
6078 \endgroup
6079 }
6080 \def\HyInd@removespaces#1 #2\@nil{%
6081 \toks@=\expandafter{\the\toks@#1}%
6082 \ifx\#2\%
6083 \edef\x{\the\toks@}%
6084 \ifx\x\empty
6085 \else
6086 \hyperlink{page.\the\toks@}{\the\toks@}%
6087 \fi
6088 \else
6089 \Hy@ReturnAfterFi{%
6090 \HyInd@removespaces#2\@nil
6091 }%
6092 \fi
6093 }

```

## 44 Compatibility with foiltex

```

6094 \@ifclassloaded{foils}{%
6095 \providecommand*\ext@table{lot}%
6096 \providecommand*\ext@figure{lof}%
6097 }{}

```

## 45 Compatibility with seminar slide package

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

```

6098 \@ifclassloaded{seminar}{%
6099 \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}%
6100 }{%
6101 \Hy@seminarslidesfalse
6102 }
6103 \@ifpackageloaded{slidesec}{%
6104 \newcommand\theHslidesection {\arabic{slidesection}}%
6105 \newcommand\theHslidesubsection{%
6106 \theHslidesection.\arabic{slidesubsection}}%
6107 }%
6108 \def\slide@heading[#1]#2{%
6109 \H@refstepcounter{slidesection}%
6110 \@addtoreset{slidesubsection}{slidesection}%
6111 \addtocontents{los}{%
6112 \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
6113 {\@SCTR}{slideheading.\theslidesection}}%

```

```

6114 }%
6115 \def\Hy@tempa{#2}%
6116 \ifx\Hy@tempa\@empty
6117 \else
6118 {%
6119   \edef\@currentlabel{%
6120     \csname p@slidesection\endcsname\theslidesection
6121   }%
6122   \makeslideheading{#2}%
6123 }%
6124 \fi
6125 \gdef\theslideheading{#1}%
6126 \gdef\theslidesubheading{}%
6127 \ifHy@bookmarksnumbered
6128   \def\Hy@slidetitle{\theslidesection\space #1}%
6129 \else
6130   \def\Hy@slidetitle{#1}%
6131 \fi
6132 \ifHy@hypertextnames
6133   \ifHy@naturalnames
6134     \hyper@@anchor{slideheading.\theslidesection}{\relax}%
6135     \Hy@writebookmark
6136       {\theslidesection}%
6137       {\Hy@slidetitle}%
6138       {slideheading.\theslidesection}%
6139       {1}%
6140       {toc}%
6141   \else
6142     \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
6143     \Hy@writebookmark
6144       {\theslidesection}%
6145       {\Hy@slidetitle}%
6146       {slideheading.\theHslidesection}%
6147       {1}%
6148       {toc}%
6149   \fi
6150 \else
6151   \Hy@GlobalStepCount\Hy@linkcounter
6152   \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
6153   \Hy@writebookmark
6154     {\theslidesection}%
6155     {\Hy@slidetitle}%
6156     {slideheading.\the\Hy@linkcounter}%
6157     {1}%
6158     {toc}%
6159 \fi
6160 }%
6161 \def\slide@subheading[#1]#2{%
6162   \H@refstepcounter{slidesubsection}%
6163   \addtocontents{los}{%
6164     \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
6165     {\@SCTR}{slideheading.\theslidesubsection}%
6166   }%
6167   \def\Hy@tempa{#2}%
6168   \ifx\Hy@tempa\@empty
6169   \else
6170     {%

```

```

6171         \edef\@currentlabel{%
6172             \csname p@slidessubsection\endcsname\theslidessubsection
6173         }%
6174         \makeslidesubheading{#2}%
6175     }%
6176 \fi
6177 \gdef\theslidesubheading{#1}%
6178 \ifHy@bookmarksnumbered
6179     \def\Hy@slidetitle{\theslidessubsection\space #1}%
6180 \else
6181     \def\Hy@slidetitle{#1}%
6182 \fi
6183 \ifHy@hypertextnames
6184     \ifHy@naturalnames
6185         \hyper@@anchor{slideheading.\theslidessubsection}{\relax}%
6186         \Hy@writebookmark
6187             {\theslidessubsection}%
6188             {\Hy@slidetitle}%
6189             {slideheading.\theslidessubsection}%
6190             {2}%
6191             {toc}%
6192     \else
6193         \hyper@@anchor{slideheading.\theHslidessubsection}{\relax}%
6194         \Hy@writebookmark
6195             {\theslidessubsection}%
6196             {\Hy@slidetitle}%
6197             {slideheading.\theHslidessubsection}%
6198             {2}%
6199             {toc}%
6200     \fi
6201 \else
6202     \Hy@GlobalStepCount\Hy@linkcounter
6203     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
6204     \Hy@writebookmark
6205         {\theslidessubsection}%
6206         {\Hy@slidetitle}%
6207         {slideheading.\the\Hy@linkcounter}%
6208         {1}%
6209         {toc}%
6210 \fi
6211 }%
6212 \providecommand*\listslidesname{List of Slides}%
6213 \def\listofslides{%
6214     \section*{%
6215         \listslidesname
6216         \@mkboth{%
6217             \expandafter\MakeUppercase\listslidesname
6218         }{%
6219             \expandafter\MakeUppercase\listslidesname
6220         }%
6221     }%
6222     \def\l@slide##1##2##3##4{%
6223         \slide@undottedcline{%
6224             \slidenumberline{##3}{\hyperlink{##4}{##2}}%
6225         }{%
6226         }%
6227         \let\l@subslide\l@slide

```

```

6228 \startlos
6229 }%
6230 \def\slide@contents{%
6231 \def\l@slide##1##2##3##4{%
6232 \slide@cline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
6233 }%
6234 \let\l@subslide\@gobblefour
6235 \startlos
6236 }%
6237 \def\Slide@contents{%
6238 \def\l@slide##1##2##3##4{%
6239 \ifcase\lslide@flag
6240 \message{##1 ** \the\c@slide@section}%
6241 \ifnum##1>\c@slide@section
6242 \def\lslide@flag{1}%
6243 {%
6244 \large
6245 \slide@cline{%
6246 \slidenumberline{$\Rightarrow\bullet$}%
6247 {\hyperlink{##4}{##2}}%
6248 }{##3}%
6249 }%
6250 \else
6251 {%
6252 \large
6253 \slide@cline{%
6254 \slidenumberline{$\surd\;\bullet$}%
6255 {\hyperlink{##4}{##2}}%
6256 }{##3}%
6257 }%
6258 \fi
6259 \or
6260 \def\lslide@flag{2}%
6261 {%
6262 \large
6263 \slide@cline{%
6264 \slidenumberline{$\bullet$}%
6265 {\hyperlink{##4}{##2}}%
6266 }{##3}%
6267 }%
6268 \or
6269 {%
6270 \large
6271 \slide@cline{%
6272 \slidenumberline{$\bullet$}%
6273 {\hyperlink{##4}{##2}}%
6274 }{##3}%
6275 }%
6276 \fi
6277 }%
6278 \def\l@subslide##1##2##3##4{%
6279 \ifnum\lslide@flag=1 %
6280 \undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
6281 \fi
6282 }%
6283 \def\lslide@flag{0}%
6284 \startlos

```

```

6285 }%
6286 {}

```

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.)

```

6287 \ifHy@texht
6288   \expandafter\endinput
6289 \fi
6290 \let\real@setref\@setref
6291 \def\@setref#1#2#3{% csname, extract group, refname
6292   \ifx#1\relax
6293     \protect\G@refundefinedtrue
6294     \nfss@text{\reset@font\bfseries ??}%
6295     \@latex@warning{%
6296       Reference ‘#3’ on page \thepage \space undefined%
6297     }%
6298   \else
6299     \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
6300   \fi
6301 }

```

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

```

6302 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
6303   \begingroup
6304     \toks0={\hyper@@link{#5}{#4}}%
6305     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
6306     \edef\x{\endgroup
6307       \the\toks0 {\the\toks1 }%
6308     }%
6309   \x
6310 }
6311 \def\@pagesetref#1#2#3{% csname, extract macro, ref
6312   \ifx#1\relax
6313     \protect\G@refundefinedtrue
6314     \nfss@text{\reset@font\bfseries ??}%
6315     \@latex@warning{%
6316       Reference ‘#3’ on page \thepage \space undefined%
6317     }%
6318   \else
6319     \protect\hyper@@link
6320     {\expandafter\@fifthoffive#1}%
6321     {page.\expandafter\@secondoffive#1}%
6322     {\expandafter\@secondoffive#1}%
6323   \fi
6324 }
6325 </package>
6326 <*check>
6327 \checklatex
6328 \checkcommand\def\@setref#1#2#3{%
6329   \ifx#1\relax
6330     \protect\G@refundefinedtrue
6331     \nfss@text{\reset@font\bfseries ??}%
6332     \@latex@warning{%
6333       Reference ‘#3’ on page \thepage\space undefined%
6334     }%
6335   \else

```

```

6336 \expandafter#2#1\null
6337 \fi
6338 }
6339 </check>
6340 <*package>

```

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

```

6341 \def\HyRef@StarSetRef#1{%
6342 \begingroup
6343 \Hy@safe@activetrue
6344 \edef\x{#1}%
6345 \@onelevel@sanitize\x
6346 \edef\x{\endgroup
6347 \noexpand\HyRef@@StarSetRef
6348 \expandafter\noexpand\csname r@\x\endcsname{\x}%
6349 }%
6350 \x
6351 }
6352 \def\HyRef@@StarSetRef#1#2#3{%
6353 \ifx#1\@undefined
6354 \let#1\relax
6355 \fi
6356 \real@setref#1#3{#2}%
6357 }
6358 \def\@refstar#1{%
6359 \HyRef@StarSetRef{#1}\@firstoffive
6360 }
6361 \def\@pagerefstar#1{%
6362 \HyRef@StarSetRef{#1}\@secondoffive
6363 }
6364 \AtBeginDocument{%
6365 \@ifpackageloaded{varioref}{%
6366 \def\@Refstar#1{%
6367 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
6368 }%
6369 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
6370 \MakeUppercase#1%
6371 }%
6372 \DeclareRobustCommand*\Ref*{%
6373 \@ifstar\@Refstar\HyRef@Ref
6374 }%
6375 \def\HyRef@Ref#1{%
6376 \hyperref[#{#1}]{\Ref*{#1}}%
6377 }%
6378 \def\Vr@f#1{%
6379 \leavevmode\unskip\vref@space
6380 \hyperref[#{#1}]{%
6381 \Ref*{#1}%
6382 \let\vref@space\nobreakspace
6383 \@vpageref[\unskip]{#1}%
6384 }%
6385 }%
6386 \def\vr@f#1{%
6387 \leavevmode\unskip\vref@space
6388 \begingroup
6389 \let\T@pageref\@pagerefstar
6390 \hyperref[#{#1}]{%

```

```

6391         \ref*{#1}%
6392         \vpageref[\unskip]{#1}%
6393     }%
6394 \endgroup
6395 }%
6396 }{}%
6397 }
6398 \DeclareRobustCommand*{\autopageref}{%
6399     \ifstar{%
6400         \HyRef@autopagerefname\pageref*%
6401     }\HyRef@autopageref
6402 }
6403 \def\HyRef@autopageref#1{%
6404     \hyperref[#{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
6405 }
6406 \def\HyRef@autopagerefname{%
6407     \ifundefined{pageautorefname}{%
6408         \ifundefined{pagename}{%
6409             \Hy@Warning{No autoref name for 'page'}%
6410         }{%
6411             \pagename\nobreakspace
6412         }%
6413     }{%
6414         \pageautorefname\nobreakspace
6415     }%
6416 }
6417 \DeclareRobustCommand*{\autoref}{%
6418     \ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@{link}}%
6419 }
6420 \def\HyRef@autoref#1#2{%
6421     \begingroup
6422         \Hy@safe@activetrue
6423         \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
6424     \endgroup
6425 }
6426 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
6427     \HyRef@ShowKeysRef{#2}%
6428     \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
6429         \edef\HyRef@thisref{%
6430             \expandafter\@fourthoffive#1\@empty\@empty\@empty
6431         }%
6432         \expandafter\HyRef@testreftype\HyRef@thisref.\.%
6433         \Hy@safe@activesfalse
6434         #3{%
6435             \expandafter\@fifthoffive#1\@empty\@empty\@empty
6436         }{%
6437             \expandafter\@fourthoffive#1\@empty\@empty\@empty
6438         }{%
6439             \HyRef@currentHtag
6440             \expandafter\@firstoffive#1\@empty\@empty\@empty
6441             \null
6442         }%
6443     \else
6444         \protect\G@refundefinedtrue
6445         \nfss@text{\reset@font\bfseries ??}%
6446         \@latex@warning{%
6447             Reference '#2' on page \thepage\space undefined%

```

```

6448 }%
6449 \fi
6450 }
6451 \def\HyRef@testreftype#1.#2\{%
6452 \@ifundefined{#1autorefname}{%
6453 \@ifundefined{#1name}{%
6454 \HyRef@StripStar#1\*\@nil{#1}%
6455 \@ifundefined{\HyRef@name autorefname}{%
6456 \@ifundefined{\HyRef@name name}{%
6457 \def\HyRef@currentHtag{%
6458 \Hy@Warning{No autoref name for '#1'}%
6459 }{%
6460 \edef\HyRef@currentHtag{%
6461 \expandafter\noexpand\csname\HyRef@name name\endcsname
6462 \noexpand~%
6463 }%
6464 }%
6465 }{%
6466 \edef\HyRef@currentHtag{%
6467 \expandafter\noexpand\csname\HyRef@name autorefname\endcsname
6468 \noexpand~%
6469 }%
6470 }%
6471 }{%
6472 \edef\HyRef@currentHtag{%
6473 \expandafter\noexpand\csname#1name\endcsname
6474 \noexpand~%
6475 }%
6476 }%
6477 }{%
6478 \edef\HyRef@currentHtag{%
6479 \expandafter\noexpand\csname#1autorefname\endcsname
6480 \noexpand~%
6481 }%
6482 }%
6483 }
6484 \def\HyRef@StripStar#1*\@nil#3{%
6485 \def\HyRef@name{#2}%
6486 \ifx\HyRef@name\HyRef@CaseStar
6487 \def\HyRef@name{#1}%
6488 \else
6489 \def\HyRef@name{#3}%
6490 \fi
6491 }
6492 \def\HyRef@CaseStar{*}
6493 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

6494 \let\HyRef@ShowKeysRef\@gobble
6495 \def\HyRef@ShowKeysInit{%
6496 \begingroup\expandafter\expandafter\expandafter\endgroup
6497 \expandafter\ifx\csname SK@@label\endcsname\relax
6498 \else
6499 \ifx\SK@ref\@empty
6500 \else
6501 \def\HyRef@ShowKeysRef{%

```



```

6502      \SK@\SK@@ref
6503      }%
6504      \fi
6505      \fi
6506 }
6507 \@ifpackageloaded{showkeys}{%
6508   \HyRef@ShowKeysInit
6509 }{%
6510   \AtBeginDocument{%
6511     \@ifpackageloaded{showkeys}{%
6512       \HyRef@ShowKeysInit
6513     }{}%
6514   }%
6515 }

```

Defaults for the names that `\autoref` uses.

```

6516 \providecommand*{\AMSautorefname}{\equationautorefname}
6517 \providecommand*{\Hfootnoteautorefname}{\footnoteautorefname}
6518 \providecommand*{\Itemautorefname}{\itemautorefname}
6519 \providecommand*{\itemautorefname}{item}
6520 \providecommand*{\equationautorefname}{Equation}
6521 \providecommand*{\footnoteautorefname}{footnote}
6522 \providecommand*{\itemautorefname}{item}
6523 \providecommand*{\figureautorefname}{Figure}
6524 \providecommand*{\tableautorefname}{Table}
6525 \providecommand*{\partautorefname}{Part}
6526 \providecommand*{\appendixautorefname}{Appendix}
6527 \providecommand*{\chapterautorefname}{chapter}
6528 \providecommand*{\sectionautorefname}{section}
6529 \providecommand*{\subsectionautorefname}{subsection}
6530 \providecommand*{\subsubsectionautorefname}{subsubsection}
6531 \providecommand*{\paragraphautorefname}{paragraph}
6532 \providecommand*{\subparagraphautorefname}{subparagraph}
6533 \providecommand*{\FancyVerbLineautorefname}{line}
6534 \providecommand*{\theoremautorefname}{Theorem}
6535 \providecommand*{\pageautorefname}{page}
6536 </package>

```

## 46 Configuration files

### 46.1 PS/PDF strings

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

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

```

6537 <*pdftex | dvipdfm | vtex | pdfmarkbase | dviwindo>
6538 \RequirePackage{pdfTeXcmds}[2007/11/11]
6539 \begingroup\expandafter\expandafter\expandafter\endgroup
6540 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
6541   \begingroup
6542     \catcode'\| =0 %
6543     \@makeother\| %

```

```

6544 |@firstofone{|endgroup
6545 |def|Hy@pstringdef#1#2{%
6546 |begingroup
6547 |edef~{|string~}%
6548 |xdef|Hy@gtemp{#2}%
6549 |endgroup
6550 |let#1|Hy@gtemp
6551 |@onelevel@sanitize#1%
6552 |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
6553 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
6554 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
6555 }%
6556 |def|Hy@ExchangeBackslash#1\#2|@nil{%
6557 #1%
6558 |ifx|\#2\|%%
6559 |else
6560 \\\%
6561 |Hy@ReturnAfterFi{%
6562 |Hy@ExchangeBackslash#2|@nil
6563 }%
6564 |fi
6565 }%
6566 }%
6567 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
6568 #1%
6569 \ifx\\#2\\%
6570 \else
6571 \@backslashchar(%
6572 \Hy@ReturnAfterFi{%
6573 \Hy@ExchangeLeftParenthesis#2\@nil
6574 }%
6575 \fi
6576 }%
6577 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
6578 #1%
6579 \ifx\\#2\\%
6580 \else
6581 \@backslashchar)%
6582 \Hy@ReturnAfterFi{%
6583 \Hy@ExchangeRightParenthesis#2\@nil
6584 }%
6585 \fi
6586 }%
6587 \else
6588 \def\Hy@pstringdef#1#2{%
6589 \begingroup
6590 \edef~{\string~}%
6591 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
6592 \endgroup
6593 \let#1\Hy@gtemp
6594 }%
6595 \fi
6596 </pdfTeX | dvipdfm | vTeX | pdfmarkbase | dviwindo>

```

## 46.2 pdfTeX

```
6597 <*pdfTeX>
```

This driver is for Han The Thanh's T<sub>E</sub>X variant which produces PDF directly. This has new primitives to do PDF things, which usually translate almost directly to PDF code, so there is a lot of flexibility which we do not at present harness.

Set PDF version if requested by option pdfversion.

- pdfT<sub>E</sub>X 1.10a, 2003-01-16: \pdfoptionpdfminorversion

- pdfT<sub>E</sub>X 1.30, 2005-08-08: \pdfminorversion

```

6598 \let\Hy@pdfminorversion\relax
6599 \begingroup\expandafter\expandafter\expandafter\endgroup
6600 \expandafter\ifx\csname pdfminorversion\endcsname\relax
6601   \begingroup\expandafter\expandafter\expandafter\endgroup
6602   \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
6603     \else
6604       \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
6605     \fi
6606   \else
6607     \def\Hy@pdfminorversion{\pdfminorversion}%
6608   \fi
6609 \ifundefined{Hy@pdfminorversion}{%
6610   \PackageInfo{hyperref}{%
6611     PDF version is not set, because pdfTeX is too old (<1.10a)%
6612   }%
6613 }{%
6614   \ifHy@ocgcolorlinks
6615     \ifnum\Hy@pdfminorversion<5 %
6616       \setkeys{Hyp}{pdfversion=1.5}%
6617     \fi
6618   \fi
6619   \ifHy@setpdfversion
6620     \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
6621     \else
6622       \Hy@pdfminorversion=\Hy@pdfversion\relax
6623     \fi
6624     \PackageInfo{hyperref}{%
6625       \expandafter\string\Hy@pdfminorversion
6626       :=\number\Hy@pdfversion\space
6627     }%
6628   \fi
6629   \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
6630 }
6631 \Hy@DisableOption{pdfversion}%
6632 \ifHy@ocgcolorlinks
6633   \immediate\pdfobj{%
6634     <<%
6635       /Type/OCG%
6636       /Name(View)%
6637       /Usage<<%
6638         /Print<<%
6639         /PrintState/OFF%
6640       >>%
6641       /View<<%
6642         /ViewState/ON%
6643       >>%
6644     >>%
6645   >>%
6646 }%
```

```

6647 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
6648 \immediate\pdfobj{%
6649   <<%
6650     /Type/OCG%
6651     /Name(Print)%
6652     /Usage<<%
6653       /Print<<%
6654         /PrintState/ON%
6655       >>%
6656     /View<<%
6657       /ViewState/OFF%
6658     >>%
6659   >>%
6660 }%
6661 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
6662 \immediate\pdfobj{%
6663   [%
6664     \OBJ@OCG@view\space\OBJ@OCG@print
6665   ]%
6666 }%
6667 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
6668 \pdfcatalog{%
6669   /OCProperties<<%
6670     /OCGs \OBJ@OCGs
6671     /D<<%
6672       /OFF[\OBJ@OCG@print]%
6673       /AS[%
6674         <<%
6675           /Event/View%
6676           /OCGs \OBJ@OCGs
6677           /Category[/View]%
6678         >>%
6679         <<%
6680           /Event/Print%
6681           /OCGs \OBJ@OCGs
6682           /Category[/Print]%
6683         >>%
6684         <<%
6685           /Event/Export%
6686           /OCGs \OBJ@OCGs
6687           /Category[/Print]%
6688         >>%
6689       ]%
6690     >>%
6691   >>%
6692 }%
6693 \begin{group}
6694 \edef\x{\endgroup
6695   \pdfpageresources{%
6696     /Properties<<%
6697       /OCView \OBJ@OCG@view
6698       /OCPrint \OBJ@OCG@print
6699     >>%
6700   }%
6701 }%
6702 }%
6703 \x

```

```

6704 \AtBeginDocument{%
6705   \def\Hy@colorlink#1{%
6706     \begingroup
6707       \ifHy@ocgcolorlinks
6708         \def\Hy@ocgcolor{#1}%
6709         \setbox0=\color@hbox
6710       \else
6711         \HyColor@UseColor#1%
6712       \fi
6713   }%
6714   \def\Hy@endcolorlink{%
6715     \ifHy@ocgcolorlinks
6716       \color@endbox
6717       \mbox{%
6718         \pdfliteral page{/OC/OCPrint BDC}%
6719         \rlap{\copy0}%
6720         \pdfliteral page{EMC/OC/OCView BDC}%
6721         \begingroup
6722           \expandafter\HyColor@UseColor\Hy@ocgcolor
6723           \box0 %
6724         \endgroup
6725         \pdfliteral page{EMC}%
6726       }%
6727     \fi
6728   \endgroup
6729 }%
6730 }%
6731 \else
6732 \Hy@DisableOption{ocgcolorlinks}%
6733 \fi

```

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

```

6734 \def\setpdflinkmargin#1{\pdflinkmargin#1}
6735 \ifx\pdfstartlink\undefined% less than version 14
6736   \let\pdfstartlink\pdfannotlink
6737   \let\pdflinkmargin\@tempdima
6738   \let\pdfxform\pdfform
6739   \let\pdflastxform\pdfastform
6740   \let\pdfrefxform\pdfrefform
6741 \else
6742   \pdflinkmargin1pt %
6743 \fi

```

First set up the default linking

```

6744 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

6745 \def\new@pdflink#1{%
6746   \ifHy@verbose
6747     \typeout{pdftex: define anchor at line \the\inputlineno: #1}%
6748   \fi
6749   \Hy@SaveLastskip
6750   \Hy@pstringdef\Hy@pstringDest{#1}%
6751   \Hy@DestName\Hy@pstringDest\@pdfview
6752   \Hy@RestoreLastskip
6753 }
6754 \let\pdf@endanchor\@empty

```

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

```
6755 \def\Hy@DestName#1#2{%
6756   \pdfdest name{#1}#2\relax
6757 }
```

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.

```
6758 \providecommand*\@pdfborder{0 0 1}
6759 \providecommand*\@pdfborderstyle{}
6760 \def\Hy@undefinedname{UNDEFINED}
6761 \def\find@pdflink#1#2{%
6762   \leavevmode
6763   \protected@edef\Hy@testname{#2}%
6764   \ifx\Hy@testname\@empty
6765     \let\Hy@testname\Hy@undefinedname
6766   \else
6767     \Hy@pstringdef\Hy@testname\Hy@testname
6768   \fi
6769   \Hy@StartlinkName{%
6770     \ifHy@pdfa /F 4\fi
6771     \Hy@setpdfborder
6772     \ifx\@pdfhighlight\@empty
6773       \else
6774         /H\@pdfhighlight
6775       \fi
6776       \ifx\CurrentBorderColor\relax
6777       \else
6778         /C[\CurrentBorderColor]%
6779       \fi
6780   }\Hy@testname
6781   \expandafter\Hy@colorlink\csname @#1color\endcsname
6782 }
6783 \def\Hy@StartlinkName#1#2{%
6784   \pdfstartlink attr{#1}goto name{#2}\relax
6785 }
6786 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
6787 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
6788 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
6789 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
6790 \def\hyper@linkstart#1#2{%
6791   \@ifundefined{#@#1bordercolor}{%
6792     \let\CurrentBorderColor\relax
6793   }{%
6794     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6795   }%
6796   \find@pdflink{#1}{#2}%
6797 }
6798 \def\hyper@linkend{\close@pdflink}
6799 \def\hyper@link#1#2#3{%
6800   \@ifundefined{#@#1bordercolor}{%
6801     \let\CurrentBorderColor\relax
6802   }{%
6803     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6804   }%

```

```

6805 \find@pdflink{#1}{#2}#3%
6806 \close@pdflink
6807 }
6808 \let\CurrentBorderColor\@linkbordercolor
6809 \def\hyper@linkurl#1#2{%
6810 \begingroup
6811 \Hy@pstringdef\Hy@pstringURI{#2}%
6812 \hyper@chars
6813 \leavevmode
6814 \pdfstartlink
6815 attr{%
6816 \Hy@setpdfborder
6817 \ifx\@pdfhighlight\@empty
6818 \else
6819 /H\@pdfhighlight
6820 \fi
6821 \ifx\@urlbordercolor\relax
6822 \else
6823 /C[\@urlbordercolor]%
6824 \fi
6825 }%
6826 user{%
6827 /Subtype/Link%
6828 \ifHy@pdfa /F 4\fi
6829 /A<<%
6830 /Type/Action%
6831 /S/URI%
6832 /URI(\Hy@pstringURI)%
6833 >>%
6834 }%
6835 \relax
6836 \Hy@colorlink\@urlcolor#1%
6837 \close@pdflink
6838 \endgroup
6839 }
6840 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
6841 \begingroup
6842 \Hy@pstringdef\Hy@pstringF{#2}%
6843 \Hy@pstringdef\Hy@pstringD{#3}%
6844 \leavevmode
6845 \pdfstartlink
6846 attr{%
6847 \Hy@setpdfborder
6848 \ifx\@pdfhighlight\@empty
6849 \else
6850 /H\@pdfhighlight
6851 \fi
6852 \ifx\@filebordercolor\relax
6853 \else
6854 /C[\@filebordercolor]%
6855 \fi
6856 }%
6857 user {%
6858 /Subtype/Link%
6859 \ifHy@pdfa /F 4\fi
6860 /A<<%
6861 /F(\Hy@pstringF)%

```

```

6862      /S/GoToR%
6863      \Hy@SetNewWindow

```

If #3 is empty, page 0; if its a number, Page number, otherwise a named destination.

```

\afterassignment\xxx\count@=0\foo!%

```

```

\def\xxx#1!{%
  \ifx\xxx#1\xxx
    foo was an integer
  \else
    it wasnt
  \fi}

```

```

6864      \ifx\#3\%
6865      /D[0 \@pdfstartview]%
6866      \else
6867      /D(\Hy@pstringD)%
6868      \fi
6869      >>%
6870      }%
6871      \relax
6872      \Hy@colorlink\@filecolor#1%
6873      \close@pdflink
6874      \endgroup
6875 }
6876 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
6877   \begingroup
6878     \Hy@pstringdef\Hy@pstringF{#1}%
6879     \Hy@pstringdef\Hy@pstringP{#3}%
6880     \leavevmode
6881     \pdfstartlink
6882     attr{%
6883       \Hy@setpdfborder
6884       \ifx\@pdfhighlight\@empty
6885       \else
6886       /H\@pdfhighlight
6887       \fi
6888       \ifx\@runbordercolor\relax
6889       \else
6890       /C[\@runbordercolor]%
6891       \fi
6892     }%
6893     user {%
6894       /Subtype/Link%
6895       \ifHy@pdfa /F 4\fi
6896       /A<<%
6897       /F(\Hy@pstringF)%
6898       /S/Launch%
6899       \Hy@SetNewWindow
6900       \ifx\#3\%
6901       \else
6902       /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
6903       \fi
6904     >>%
6905     }%
6906     \relax
6907     \Hy@colorlink\@runcolor#2%

```



```

6908 \close@pdflink
6909 \endgroup
6910 }

```

\@pdfproducer

```

6911 \ifx\@pdfproducer\relax
6912 \begingroup\expandafter\expandafter\expandafter\endgroup
6913 \expandafter\ifx\csname luatexversion\endcsname\relax
6914 \def\@pdfproducer{pdfTeX}%
6915 \ifx\eTeXversion\@undefined
6916 \else
6917 \ifx\eTeXversion\relax
6918 \else
6919 \ifnum\eTeXversion>0 %
6920 \def\@pdfproducer{pdfTeX}%
6921 \fi
6922 \fi
6923 \fi
6924 \ifx\pdfTeXversion\@undefined
6925 \else
6926 \ifnum\pdfTeXversion<100 %
6927 \edef\@pdfproducer{%
6928 \@pdfproducer
6929 \the\pdfTeXversion.\pdfTeXrevision
6930 }%
6931 \else
6932 \ifnum\pdfTeXversion<130 %
6933 \edef\@pdfproducer{%
6934 \@pdfproducer-
6935 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
6936 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
6937 \pdfTeXrevision
6938 }%
6939 \else
6940 \ifnum\pdfTeXversion<140 %
6941 \else
6942 \def\@pdfproducer{pdfTeX}%
6943 \fi
6944 \edef\@pdfproducer{%
6945 \@pdfproducer-
6946 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
6947 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
6948 \pdfTeXrevision
6949 }%
6950 \fi
6951 \fi
6952 \fi
6953 \else
6954 \begingroup
6955 \count@=\luatexversion
6956 \divide\count@ by 100 %
6957 \edef\x{\the\count@}%
6958 \count@=-\x\relax
6959 \multiply\count@ by 100 %
6960 \advance\count@ by \luatexversion
6961 \edef\x{\endgroup
6962 \def\noexpand\@pdfproducer{%

```

```

6963         LuaTeX-\x.\the\count@.\luatexrevision
6964     }%
6965 }%
6966 \x
6967 \fi
6968 \fi

```

\PDF@SetupDox

```

6969 \def\PDF@SetupDoc{%
6970   \ifx\@pdfpagescrop\@empty
6971   \else
6972     \edef\process@me{%
6973       \pdfpagesattr={%
6974         /CropBox[\@pdfpagescrop]%
6975         \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
6976         \else
6977           ^^J\the\pdfpagesattr
6978         \fi
6979       }%
6980     }%
6981     \process@me
6982   \fi
6983   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6984   \pdfcatalog{%
6985     /PageMode/\@pdfpagemode
6986     \ifx\@baseurl\@empty
6987     \else
6988       /URI<</Base(\Hy@pstringB)>>%
6989     \fi
6990   }%
6991   \ifx\@pdfstartpage\@empty
6992   \else
6993     \ifx\@pdfstartview\@empty
6994     \else
6995       openaction goto page\@pdfstartpage{\@pdfstartview}%
6996     \fi
6997   \fi
6998   \edef\Hy@temp{%
6999     \ifHy@toolbar\else /HideToolbar true\fi
7000     \ifHy@menubar\else /HideMenubar true\fi
7001     \ifHy@windowui\else /HideWindowUI true\fi
7002     \ifHy@fitwindow /FitWindow true\fi
7003     \ifHy@centerwindow /CenterWindow true\fi
7004     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7005     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7006     \Hy@UseNameKey{Direction}\@pdfdirection
7007     \Hy@UseNameKey{ViewArea}\@pdfviewarea
7008     \Hy@UseNameKey{ViewClip}\@pdfviewclip
7009     \Hy@UseNameKey{PrintArea}\@pdfprintarea
7010     \Hy@UseNameKey{PrintClip}\@pdfprintclip
7011     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7012     \Hy@UseNameKey{Duplex}\@pdfduplex
7013     \ifx\@pdfpicktraybypdfsize\@empty
7014     \else
7015       /PickTrayByPDFSize \@pdfpicktraybypdfsize
7016     \fi
7017     \ifx\@pdfprintpagerange\@empty

```

```

7018     \else
7019         /PrintPageRange[\@pdfprintpagerange]%
7020     \fi
7021     \ifx\@pdfnumcopies\@empty
7022     \else
7023         /NumCopies \@pdfnumcopies
7024     \fi
7025 }%
7026 \pdfcatalog{%
7027     \ifx\Hy@temp\@empty
7028     \else
7029         /ViewerPreferences<<\Hy@temp>>%
7030     \fi
7031     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7032     \ifx\@pdflang\@empty
7033     \else
7034         /Lang(\@pdflang)%
7035     \fi
7036 }%
7037 }

```

\PDF@FinishDoc

```

7038 \def\PDF@FinishDoc{%
7039     \Hy@UseMaketitleInfos
7040     \pdfinfo{%
7041         /Author(\@pdfauthor)%
7042         /Title(\@pdftitle)%
7043         /Subject(\@pdfsubject)%
7044         /Creator(\@pdfcreator)%
7045         \ifx\@pdfcreationdate\@empty
7046         \else
7047             /CreationDate(\@pdfcreationdate)%
7048         \fi
7049         \ifx\@pdfmoddate\@empty
7050         \else
7051             /ModDate(\@pdfmoddate)%
7052         \fi
7053         \ifx\@pdfproducer\relax
7054         \else
7055             /Producer(\@pdfproducer)%
7056         \fi
7057         /Keywords(\@pdfkeywords)%
7058     }%
7059     \Hy@DisableOption{pdfauthor}%
7060     \Hy@DisableOption{pdftitle}%
7061     \Hy@DisableOption{pdfsubject}%
7062     \Hy@DisableOption{pdfcreator}%
7063     \Hy@DisableOption{pdfcreationdate}%
7064     \Hy@DisableOption{pdfmoddate}%
7065     \Hy@DisableOption{pdfproducer}%
7066     \Hy@DisableOption{pdfkeywords}%
7067 }

```

\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.

```

7068 \def\hyper@pagetransition{%

```

```

7069 \ifx\@pdfpagetransition\relax
7070 \else
7071   \expandafter\Hy@RemoveTransPageAttr
7072   \the\pdfpageattr^^J/Trans{>>\END
7073   \ifx\@pdfpagetransition\@empty
7074   \else
7075     \edef\@processme{%
7076       \global\pdfpageattr{%
7077         \the\pdfpageattr
7078         ^^J/Trans << /S /\@pdfpagetransition\space >>%
7079     }%
7080   }%
7081   \@processme
7082 \fi
7083 \fi
7084 }

```

**\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.

```

7085 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
7086   \ifx\#2\%
7087     \global\pdfpageattr{#1}%
7088   \else
7089     \Hy@RemoveTransPageAttr#1#4\END
7090   \fi
7091 }

```

**\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.

```

7092 \def\hyper@pageduration{%
7093   \ifx\@pdfpageduration\relax
7094   \else
7095     \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{ } \END
7096     \ifx\@pdfpageduration\@empty
7097     \else
7098       \edef\@processme{%
7099         \global\pdfpageattr{%
7100           \the\pdfpageattr
7101           ^^J/Dur \@pdfpageduration\space
7102         }%
7103       }%
7104       \@processme
7105     \fi
7106   \fi
7107 }

```

**\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.

```

7108 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
7109   \ifx\#2\%
7110     \global\pdfpageattr{#1}%

```

```

7111 \else
7112 \Hy@RemoveDurPageAttr#1#4\END
7113 \fi
7114 }

```

`\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).

```

7115 \def\hyper@pagehidden{%
7116 \ifHy@useHidKey
7117 \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
7118 \ifHy@pdfpagehidden
7119 \edef\@processme{%
7120 \global\pdfpageattr{%
7121 \the\pdfpageattr
7122 ^^J/Hid true % SPACE
7123 }%
7124 }%
7125 \@processme
7126 \fi
7127 \fi
7128 }

```

`\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.

```

7129 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
7130 \ifx\#2\%
7131 \global\pdfpageattr{#1}%
7132 \else
7133 \Hy@RemoveHidPageAttr#1#4\END
7134 \fi
7135 }

7136 \g@addto@macro\Hy@EveryPageHook{%
7137 \hyper@pagetransition
7138 \hyper@pageduration
7139 \hyper@pagehidden
7140 }

```

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.

```

7141 \pdfoutput=1
7142 \pdfcompresslevel=9
7143 \AtBeginDocument{%
7144 \ifHy@setpagesize
7145 \expandafter\@firstofone
7146 \else
7147 \expandafter\@gobble
7148 \fi
7149 {%
7150 \@ifclassloaded{seminar}{%
7151 \setlength{\pdfhorigin}{1truein}%
7152 \setlength{\pdfvorigin}{1truein}%
7153 \ifportrait
7154 \ifdim\paperwidth=\z@

```

```

7155         \else
7156             \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
7157         \fi
7158         \ifdim\paperheight=\z@
7159         \else
7160             \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
7161         \fi
7162     \else
7163         \ifdim\paperheight=\z@
7164         \else
7165             \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
7166         \fi
7167         \ifdim\paperwidth=\z@
7168         \else
7169             \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
7170         \fi
7171     \fi
7172 }{%
7173     \@ifundefined{stockwidth}{%
7174         \ifdim\paperwidth=\z@
7175         \else
7176             \setlength{\pdfpagewidth}{\paperwidth}%
7177         \fi
7178         \ifdim\paperheight=\z@
7179         \else
7180             \setlength{\pdfpageheight}{\paperheight}%
7181         \fi
7182     }{%
7183         \ifdim\stockwidth=\z@
7184         \else
7185             \setlength{\pdfpagewidth}{\stockwidth}%
7186         \fi
7187         \ifdim\stockheight=\z@
7188         \else
7189             \setlength{\pdfpageheight}{\stockheight}%
7190         \fi
7191     }%
7192 }%
7193 }%
7194 \Hy@DisableOption{setpagesize}%
7195 }
7196 \def\Acrobatmenu#1#2{%
7197     \Hy@Acrobatmenu{#1}{#2}{%
7198         \pdfstartlink
7199         attr{%
7200             \Hy@setpdfborder
7201             \ifx\@pdfhighlight\@empty
7202             \else
7203                 /H\@pdfhighlight
7204             \fi
7205             \ifx\@menubordercolor\relax
7206             \else
7207                 /C[\@menubordercolor]%
7208             \fi
7209         }%
7210         user{%
7211             /Subtype/Link%

```

```

7212      \ifHy@pdfa /F 4\fi
7213      /A<<%
7214      /S/Named/N/#1%
7215      >>%
7216      }%
7217      \relax
7218      \Hy@colorlink\@menucolor#2%
7219      \close@pdflink
7220      }%
7221      }
7222      </pdftex>
7223      <*hypertex>

```

### 46.3 hypertex

The Hyper $\TeX$  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.

```

7224 \def\PDF@FinishDoc{}
7225 \def\PDF@SetupDoc{%
7226   \ifx\@baseurl\@empty
7227     \else
7228       \special{html:<base href="\@baseurl">}%
7229     \fi
7230 }
7231 \def\hyper@anchor#1{%
7232   \Hy@SaveLastskip
7233   \begingroup

```

```

7234 \let\protect=\string
7235 \hyper@chars
7236 \special{html:<a name=\hyper@quote #1\hyper@quote>}%
7237 \endgroup
7238 \Hy@activeanchortrue
7239 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7240 \special{html:</a>}%
7241 \Hy@activeanchorfalse
7242 \Hy@RestoreLastskip
7243 }
7244 \def\hyper@anchorstart#1{%
7245 \Hy@SaveLastskip
7246 \begingroup
7247 \hyper@chars
7248 \special{html:<a name=\hyper@quote#1\hyper@quote>}%
7249 \endgroup
7250 \Hy@activeanchortrue
7251 }
7252 \def\hyper@anchorend{%
7253 \special{html:</a>}%
7254 \Hy@activeanchorfalse
7255 \Hy@RestoreLastskip
7256 }
7257 \def\@urltype{url}
7258 \def\hyper@linkstart#1#2{%
7259 \expandafter\Hy@colorlink\csname @#1color\endcsname
7260 \def\Hy@tempa{#1}%
7261 \ifx\Hy@tempa\@urltype
7262 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7263 \else
7264 \begingroup
7265 \hyper@chars
7266 \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
7267 \endgroup
7268 \fi
7269 }
7270 \def\hyper@linkend{%
7271 \special{html:</a>}%
7272 \Hy@endcolorlink
7273 }
7274 \def\hyper@linkfile#1#2#3{%
7275 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
7276 }
7277 \def\hyper@linkurl#1#2{%

```

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

```

7278 \leavevmode
7279 \ifHy@raiselinks
7280 \setbox\@tempboxa=\color@hbox #1\color@endbox
7281 \@linkdim\dp\@tempboxa
7282 \lower\@linkdim\hbox{%
7283 \hyper@chars
7284 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7285 }%
7286 \Hy@colorlink\@urlcolor#1%
7287 \@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).

```

7288 \advance\@linkdim by -6.5\p@
7289 \raise\@linkdim\hbox{\special{html:</a>}}%
7290 \Hy@endcolorlink
7291 \else
7292 \begingroup
7293 \hyper@chars
7294 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7295 \Hy@colorlink\@urlcolor#1%
7296 \special{html:</a>}%
7297 \Hy@endcolorlink
7298 \endgroup
7299 \fi
7300 }
7301 \def\hyper@link#1#2#3{%
7302 \hyper@linkurl{#3}{##2}%
7303 }
7304 \def\hyper@image#1#2{%
7305 \begingroup
7306 \hyper@chars
7307 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
7308 \endgroup
7309 }
7310 </hypertex>
7311 <*dviwindo>

```

## 46.4 dviwindo

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

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

```

7312 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
7313 \def\hyper@anchor#1{%
7314 \Hy@SaveLastskip
7315 \begingroup
7316 \let\protect=\string
7317 \special{mark: #1}%
7318 \endgroup
7319 \Hy@activeanchortrue
7320 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7321 \Hy@activeanchorfalse
7322 \Hy@RestoreLastskip
7323 }
7324 \def\hyper@anchorstart#1{%
7325 \Hy@SaveLastskip
7326 \special{mark: #1}%

```

```

7327 \Hy@activeanchortrue
7328 }
7329 \def\hyper@anchorend{%
7330 \Hy@activeanchorfalse
7331 \Hy@RestoreLastskip
7332 }
7333 \def\hyper@linkstart#1#2{%
7334 \expandafter\Hy@colorlink\csname @#1color\endcsname
7335 \special{button: %
7336 10000000 %
7337 \number\baselineskip\space
7338 #2%
7339 }%
7340 }
7341 \def\hyper@linkend{%
7342 \Hy@endcolorlink
7343 }
7344 \def\hyper@link#1#2#3{%
7345 \setbox\@tempboxa=\color@hbox #3\color@endbox
7346 \leavevmode
7347 \ifHy@raiselinks
7348 \@linkdim\dp\@tempboxa
7349 \lower\@linkdim\hbox{%
7350 \special{button: %
7351 \number\wd\@tempboxa\space
7352 \number\ht\@tempboxa\space
7353 #2%
7354 }%
7355 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
7356 \Hy@endcolorlink
7357 }%
7358 \@linkdim\ht\@tempboxa
7359 \advance\@linkdim by -6.5\p@
7360 \raise\@linkdim\hbox{}%
7361 \else
7362 \special{button: %
7363 \number\wd\@tempboxa\space
7364 \number\ht\@tempboxa\space
7365 #2%
7366 }%
7367 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
7368 \Hy@endcolorlink
7369 \fi
7370 }
7371 \def\hyper@linkurl#1#2{%
7372 \begingroup
7373 \hyper@chars
7374 \leavevmode
7375 \setbox\@tempboxa=\color@hbox #1\color@endbox
7376 \ifHy@raiselinks
7377 \@linkdim\dp\@tempboxa
7378 \lower\@linkdim\hbox{%
7379 \special{button: %
7380 \number\wd\@tempboxa\space
7381 \number\ht\@tempboxa\space
7382 launch: \wwwbrowser\space
7383 #2%

```

```

7384     }%
7385     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7386 }%
7387 \@linkdim\ht\@tempboxa
7388 \advance\@linkdim by -6.5\p@
7389 \raise\@linkdim\hbox{}%
7390 \else
7391 \special{button: %
7392 \number\wd\@tempboxa\space
7393 \number\ht\@tempboxa\space
7394 launch: \wwwbrowser\space
7395 #2%
7396 }%
7397 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7398 \fi
7399 \endgroup
7400 }
7401 \def\hyper@linkfile#1#2#3{%
7402 \begingroup
7403 \hyper@chars
7404 \leavevmode
7405 \setbox\@tempboxa=\color@hbox #1\color@endbox
7406 \ifHy@raiselinks
7407 \@linkdim\dp\@tempboxa
7408 \lower\@linkdim\hbox{%
7409 \special{button: %
7410 \number\wd\@tempboxa\space
7411 \number\ht\@tempboxa\space
7412 #3,%
7413 file: #2%
7414 }%
7415 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7416 }%
7417 \@linkdim\ht\@tempboxa
7418 \advance\@linkdim by -6.5\p@
7419 \raise\@linkdim\hbox{}%
7420 \else
7421 \special{button: %
7422 \number\wd\@tempboxa\space
7423 \number\ht\@tempboxa\space
7424 #3,%
7425 file: #2%
7426 }%
7427 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7428 \fi
7429 \endgroup
7430 }
7431 \ifx\@pdfproducer\relax
7432 \def\@pdfproducer{dviwindo + Distiller}%
7433 \fi
7434 \def\PDF@FinishDoc{%
7435 \Hy@UseMaketitleInfos
7436 \special{PDF: Keywords \@pdfkeywords}%
7437 \special{PDF: Title \@pdftitle}%
7438 \special{PDF: Creator \@pdfcreator}%
7439 \ifx\@pdfcreationdate\@empty
7440 \else

```

```

7441     \special{PDF: CreationDate \@pdfcreationdate}%
7442 \fi
7443 \ifx\@pdfmoddate\@empty
7444 \else
7445     \special{PDF: ModDate \@pdfmoddate}%
7446 \fi
7447 \special{PDF: Author \@pdfauthor}%
7448 \ifx\@pdfproducer\relax
7449 \else
7450     \special{PDF: Producer \@pdfproducer}%
7451 \fi
7452 \special{PDF: Subject \@pdfsubject}%
7453 \Hy@DisableOption{pdfauthor}%
7454 \Hy@DisableOption{pdftitle}%
7455 \Hy@DisableOption{pdfsubject}%
7456 \Hy@DisableOption{pdfcreator}%
7457 \Hy@DisableOption{pdfcreationdate}%
7458 \Hy@DisableOption{pdfmoddate}%
7459 \Hy@DisableOption{pdfproducer}%
7460 \Hy@DisableOption{pdfkeywords}%
7461 }
7462 \def\PDF@SetupDoc{%
7463     \ifx\@baseurl\@empty
7464     \else
7465         \special{PDF: Base \@baseurl}%
7466     \fi
7467     \ifx\@pdfpagescrop\@empty\else
7468         \special{PDF: BBox \@pdfpagescrop}%
7469     \fi
7470     \def\Hy@temp{%
7471     \ifx\@pdfstartpage\@empty
7472     \else
7473         \ifx\@pdfstartview\@empty
7474         \else
7475             \edef\Hy@temp{%
7476             ,Page=\@pdfstartpage
7477             ,View=\@pdfstartview
7478             }%
7479         \fi
7480     \fi
7481     \edef\Hy@temp{%
7482     \noexpand\pdfmark{%
7483     pdfmark=/DOCVIEW,%
7484     PageMode=/\@pdfpagemode
7485     \Hy@temp
7486     }%
7487     }%
7488     \Hy@temp
7489     \ifx\@pdfpagescrop\@empty
7490     \else
7491         \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7492     \fi
7493     \edef\Hy@temp{%
7494     \ifHy@toolbar\else /HideToolbar true\fi
7495     \ifHy@menubar\else /HideMenubar true\fi
7496     \ifHy>windowui\else /HideWindowUI true\fi
7497     \ifHy@fitwindow /FitWindow true\fi

```

```

7498 \ifHy@centerwindow /CenterWindow true\fi
7499 \ifHy@displaydoctitle /DisplayDocTitle true\fi
7500 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7501 \Hy@UseNameKey{Direction}\@pdfdirection
7502 \Hy@UseNameKey{ViewArea}\@pdfviewarea
7503 \Hy@UseNameKey{ViewClip}\@pdfviewclip
7504 \Hy@UseNameKey{PrintArea}\@pdfprintarea
7505 \Hy@UseNameKey{PrintClip}\@pdfprintclip
7506 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7507 \Hy@UseNameKey{Duplex}\@pdfduplex
7508 \ifx\@pdfpicktraybypdfsize\@empty
7509 \else
7510 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7511 \fi
7512 \ifx\@pdfprintpagerange\@empty
7513 \else
7514 /PrintPageRange[\@pdfprintpagerange]%
7515 \fi
7516 \ifx\@pdfnumcopies\@empty
7517 \else
7518 /NumCopies \@pdfnumcopies
7519 \fi
7520 }%
7521 \pdfmark{pdfmark=/PUT,%
7522 Raw={%
7523 \string{Catalog\string}<<%
7524 \ifx\Hy@temp\@empty
7525 \else
7526 /ViewerPreferences<<\Hy@temp>>%
7527 \fi
7528 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7529 \ifx\@pdflang\@empty
7530 \else
7531 /Lang(\@pdflang)%
7532 \fi
7533 >>%
7534 }%
7535 }%
7536 }
7537 </dviwindo>
7538 <*dvi pdfm>

```

## 46.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

7539 \newsavebox{\pdfm@box}
7540 \def\@pdfm@mark#1{\special{pdf:#1}}
7541 \def\@pdfm@dest#1{%
7542 \Hy@SaveLastskip
7543 \beginingroup
7544 \Hy@pstringdef\Hy@pstringDest{#1}%
7545 \def\x{XYZ}%
7546 \ifx\x\@pdfview
7547 \def\x{XYZ @xpos @ypos null}%
7548 \else
7549 \def\x{FitH}%
7550 \ifx\x\@pdfview

```

```

7551     \def\x{FitH @ypos}%
7552 \else
7553     \def\x{FitBH}%
7554     \ifx\x\@pdfview
7555         \def\x{FitBH @ypos}%
7556     \else
7557         \def\x{FitV}%
7558         \ifx\x\@pdfview
7559             \def\x{FitV @xpos}%
7560         \else
7561             \def\x{FitBV}%
7562             \ifx\x\@pdfview
7563                 \def\x{FitBV @xpos}%
7564             \else
7565                 \def\x{Fit}%
7566                 \ifx\x\@pdfview
7567                     \let\x\@pdfview
7568                 \else
7569                     \def\x{FitB}%
7570                     \ifx\x\@pdfview
7571                         \let\x\@pdfview
7572                     \else
7573                         \def\x{FitR}%
7574                         \ifx\x\@pdfview
7575                             \Hy@Warning{'pdfview=FitR' is not supported}%
7576                             \def\x{XYZ @xpos @ypos null}%
7577                         \else
7578                             \@onelevel@sanitize\@pdfview
7579                             \Hy@Warning{Unknown value '\@pdfview' for pdfview}%
7580                             \def\x{XYZ @xpos @ypos null}%
7581                         \fi
7582                     \fi
7583                 \fi
7584             \fi
7585         \fi
7586     \fi
7587 \fi
7588 \fi
7589 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
7590 \endgroup
7591 \Hy@RestoreLastskip
7592 }
7593 \providecommand*\@pdfview{XYZ}
7594 \providecommand*\@pdfborder{0 0 1}
7595 \providecommand*\@pdfborderstyle{}
7596 \def\hyper@anchor#1{%
7597     \@pdfm@dest{#1}%
7598 }
7599 \def\hyper@anchorstart#1{%
7600     \Hy@activeanchortrue
7601     \@pdfm@dest{#1}%
7602 }
7603 \def\hyper@anchorend{%
7604     \Hy@activeanchorfalse
7605 }
7606 \ifHy@ocgcolorlinks
7607     \def\OBJ@OCG@view{@OCG@view}%

```

```

7608 \pdfmarkmark{%
7609   obj \OBJ@OCG@view <<%
7610     /Type/OCG%
7611     /Name(View)%
7612     /Usage<<%
7613       /Print<<%
7614         /PrintState/OFF%
7615       >>%
7616     /View<<%
7617       /ViewState/ON%
7618     >>%
7619   >>%
7620 >>%
7621 }%
7622 \pdfmarkmark{close \OBJ@OCG@view}%
7623 \def\OBJ@OCG@print{\OCG@print}%
7624 \pdfmarkmark{%
7625   obj \OBJ@OCG@print <<%
7626     /Type/OCG%
7627     /Name(Print)%
7628     /Usage<<%
7629       /Print<<%
7630         /PrintState/ON%
7631       >>%
7632     /View<<%
7633       /ViewState/OFF%
7634     >>%
7635   >>%
7636 >>%
7637 }%
7638 \pdfmarkmark{close \OBJ@OCG@print}%
7639 \def\OBJ@OCGs{\OCGs}%
7640 \pdfmarkmark{%
7641   obj \OBJ@OCGs [%
7642     \OBJ@OCG@view\space\OBJ@OCG@print
7643   ]%
7644 }%
7645 \pdfmarkmark{close \OBJ@OCGs}%
7646 \pdfmarkmark{%
7647   put @catalog <<%
7648     /OCProperties<<%
7649       /OCGs \OBJ@OCGs
7650     /D<<%
7651       /OFF[\OBJ@OCG@print]%
7652     /AS[%
7653       <<%
7654         /Event/View%
7655         /OCGs \OBJ@OCGs
7656         /Category[/View]%
7657       >>%
7658     <<%
7659       /Event/Print%
7660       /OCGs \OBJ@OCGs
7661       /Category[/Print]%
7662     >>%
7663   <<%
7664     /Event/Export%

```

```

7665         /OCGs \OBJ@OCGs
7666         /Category[/Print]%
7667     >>%
7668 ]%
7669 >>%
7670 >>%
7671 >>%
7672 }%
7673 \@pdfm@mark{%
7674     put @resources <<%
7675     /Properties<<%
7676     /OCView \OBJ@OCG@view
7677     /OCPrint \OBJ@OCG@print
7678     >>%
7679 >>%
7680 }%
7681 \AtBeginDocument{%
7682     \def\Hy@colorlink#1{%
7683         \begingroup
7684         \ifHy@ocgcolorlinks
7685             \def\Hy@ocgcolor{#1}%
7686             \setbox0=\color@hbox
7687         \else
7688             \HyColor@UseColor#1%
7689         \fi
7690     }%
7691     \def\Hy@endcolorlink{%
7692         \ifHy@ocgcolorlinks
7693             \color@endbox
7694             \mbox{%
7695                 \@pdfm@mark{content /OC/OCPrint BDC}%
7696                 \rlap{\copy0}%
7697                 \@pdfm@mark{content EMC/OC/OCView BDC}%
7698                 \begingroup
7699                     \expandafter\HyColor@UseColor\Hy@ocgcolor
7700                     \box0 %
7701                 \endgroup
7702                 \@pdfm@mark{content EMC}%
7703             }%
7704         \fi
7705     \endgroup
7706 }%
7707 }%
7708 \else
7709     \Hy@DisableOption{ocgcolorlinks}%
7710 \fi
7711 \def\Hy@undefinedname{UNDEFINED}
7712 \def\hyper@linkstart#1#2{%
7713     \protected@edef\Hy@testname{#2}%
7714     \ifx\Hy@testname\@empty
7715         \let\Hy@testname\Hy@undefinedname
7716     \else
7717         \Hy@pstringdef\Hy@testname\Hy@testname
7718     \fi
7719     \@pdfm@mark{%
7720         bann<<%
7721         /Type/Annot%

```



```

7722         /Subtype/Link%
7723         \ifHy@pdfa /F 4\fi
7724         \Hy@setpdfborder
7725         \expandafter\ifx\csname @#1bordercolor\endcsname\relax
7726         \else
7727             /C[\csname @#1bordercolor\endcsname]%
7728         \fi
7729         /A<<%
7730         /S/GoTo%
7731         /D(\Hy@testname)%
7732         >>%
7733         >>%
7734     }%
7735     \expandafter\Hy@colorlink\csname @#1color\endcsname
7736 }
7737 \def\hyper@linkend{%
7738     \Hy@endcolorlink
7739     \@pdfm@mark{eann}%
7740 }
7741 \def\hyper@link#1#2#3{%
7742     \hyper@linkstart{#1}{#2}#3\hyper@linkend
7743 }
7744 \def\hyper@linkfile#1#2#3{%
7745     \Hy@pstringdef\Hy@pstringF{#2}%
7746     \Hy@pstringdef\Hy@pstringD{#3}%
7747     \leavevmode
7748     \@pdfm@mark{%
7749         bann<<%
7750         /Type/Annot%
7751         /Subtype/Link%
7752         \ifHy@pdfa /F 4\fi
7753         \Hy@setpdfborder
7754         \ifx\@filebordercolor\relax
7755         \else
7756             /C[\@filebordercolor]%
7757         \fi
7758         /A<<%
7759         /S/GoToR%
7760         /F(\Hy@pstringF)%
7761         /D\ifx\@#3\@pdfstartview\else(\Hy@pstringD)\fi
7762         \Hy@SetNewWindow
7763         >>%
7764         >>%
7765     }%
7766     \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7767     \@pdfm@mark{eann}%
7768 }
7769 \def\hyper@linkurl#1#2{%
7770     \Hy@pstringdef\Hy@pstringURI{#2}%
7771     \leavevmode
7772     \@pdfm@mark{%
7773         bann<<%
7774         /Type/Annot%
7775         /Subtype/Link%
7776         \ifHy@pdfa /F 4\fi
7777         \Hy@setpdfborder
7778         \ifx\@urlbordercolor\relax

```

```

7779     \else
7780         /C[\@urlbordercolor]%
7781     \fi
7782     /A<<%
7783         /S/URI%
7784         /URI(\Hy@pstringURI)%
7785     >>%
7786 >>%
7787 }%
7788 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7789 \@pdfm@mark{eann}%
7790 }
7791 \def\Acrobatmenu#1#2{%
7792 \Hy@Acrobatmenu{#1}{#2}{%
7793     \@pdfm@mark{%
7794         bann<<%
7795             /Type/Annot%
7796             /Subtype/Link%
7797             \ifHy@pdfa /F 4\fi
7798             /A<<%
7799             /S/Named%
7800             /N/#1%
7801         >>%
7802         \Hy@setpdfborder
7803         \ifx\@menubordercolor\relax
7804             \relax
7805             /C[\@menubordercolor]%
7806         \fi
7807         >>%
7808     }%
7809     \Hy@colorlink\@menucolor#2\Hy@endcolorlink
7810     \@pdfm@mark{eann}%
7811 }%
7812 }
7813 \ifx\@pdfproducer\relax
7814 \def\@pdfproducer{dvipdfm}%

```

Detect Xe<sub>TeX</sub>. However, but xdvipdfmx will overwrite it in the final PDF file.

```

7815 \begingroup\expandafter\expandafter\expandafter\endgroup
7816 \expandafter\ifx\csname XeTeXversion\endcsname\relax
7817 \else
7818     \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
7819 \fi
7820 \fi
7821 \def\PDF@FinishDoc{%
7822 \Hy@UseMaketitleInfos
7823 \@pdfm@mark{%
7824     docinfo<<%
7825         /Title(\@pdftitle)%
7826         /Subject(\@pdfsubject)%
7827         /Creator(\@pdfcreator)%
7828         \ifx\@pdfcreationdate\empty
7829         \else
7830             /CreationDate(\@pdfcreationdate)%
7831         \fi
7832         \ifx\@pdfmoddate\empty
7833         \else
7834             /ModDate(\@pdfmoddate)%

```

```

7835     \fi
7836     /Author(\@pdfauthor)%
7837     \ifx\@pdfproducer\relax
7838     \else
7839         /Producer(\@pdfproducer)%
7840     \fi
7841     /Keywords(\@pdfkeywords)%
7842     >>%
7843 }%
7844 \Hy@DisableOption{pdfauthor}%
7845 \Hy@DisableOption{pdftitle}%
7846 \Hy@DisableOption{pdfsubject}%
7847 \Hy@DisableOption{pdfcreator}%
7848 \Hy@DisableOption{pdfcreationdate}%
7849 \Hy@DisableOption{pdfmoddate}%
7850 \Hy@DisableOption{pdfproducer}%
7851 \Hy@DisableOption{pdfkeywords}%
7852 }

7853 \def\PDF@SetupDoc{%
7854     \edef\Hy@temp{%
7855         \ifHy@toolbar\else /HideToolbar true\fi
7856         \ifHy@menubar\else /HideMenubar true\fi
7857         \ifHy>windowui\else /HideWindowUI true\fi
7858         \ifHy@fitwindow /FitWindow true\fi
7859         \ifHy@centerwindow /CenterWindow true\fi
7860         \ifHy@displaydoctitle /DisplayDocTitle true\fi
7861         \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7862         \Hy@UseNameKey{Direction}\@pdfdirection
7863         \Hy@UseNameKey{ViewArea}\@pdfviewarea
7864         \Hy@UseNameKey{ViewClip}\@pdfviewclip
7865         \Hy@UseNameKey{PrintArea}\@pdfprintarea
7866         \Hy@UseNameKey{PrintClip}\@pdfprintclip
7867         \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7868         \Hy@UseNameKey{Duplex}\@pdfduplex
7869         \ifx\@pdfpicktraybypdfsize\@empty
7870         \else
7871             /PickTrayByPDFSize \@pdfpicktraybypdfsize
7872         \fi
7873         \ifx\@pdfprintpagerange\@empty
7874         \else
7875             /PrintPageRange[\@pdfprintpagerange]%
7876         \fi
7877         \ifx\@pdfnumcopies\@empty
7878         \else
7879             /NumCopies \@pdfnumcopies
7880         \fi
7881     }%
7882     \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7883     \@pdfm@mark{%
7884         docview<<%
7885         \ifx\@pdfstartpage\@empty
7886         \else
7887             \ifx\@pdfstartview\@empty
7888             \else
7889                 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
7890             \fi
7891         \fi

```

```

7892 \ifx\@baseurl\@empty
7893 \else
7894 /URI<</Base(\Hy@pstringB)>>%
7895 \fi
7896 /PageMode/\@pdfpagemode
7897 \ifx\Hy@temp\@empty
7898 \else
7899 /ViewerPreferences<<\Hy@temp>>%
7900 \fi
7901 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7902 \ifx\@pdflang\@empty
7903 \else
7904 /Lang(\@pdflang)%
7905 \fi
7906 >>%
7907 }%
7908 \ifx\@pdfpagescrop\@empty
7909 \else
7910 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
7911 \fi
7912 }
7913 </dvipdfm>

```

## 46.6 VTeX typesetting system

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

```

7914 <*vtexhtml>
7915 \RequirePackage{vtexhtml}
7916 \newif\if@Localurl
7917 \def\PDF@FinishDoc{}
7918 \def\PDF@SetupDoc{%
7919 \ifx\@baseurl\@empty
7920 \else
7921 \special{!direct <base href="\@baseurl">}%
7922 \fi
7923 }
7924 \def\@urltype{url}
7925 \def\hyper@link#1#2#3{%
7926 \leavevmode
7927 \special{!direct <a href=\hyper@quote\hyper@hash#2\hyper@quote>}%
7928 #3%
7929 \special{!direct </a>}%
7930 }
7931 \def\hyper@linkurl#1#2{%
7932 \begingroup
7933 \hyper@chars
7934 \leavevmode
7935 \MathBSuppress=1\relax
7936 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
7937 #1%
7938 \MathBSuppress=0\relax
7939 \special{!direct </a>}%
7940 \endgroup
7941 }
7942 \def\hyper@linkfile#1#2#3{%
7943 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%

```

```

7944 }
7945 \def\hyper@linkstart#1#2{%
7946   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
7947     \@Localurltrue
7948     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
7949   \else
7950     \@Localurlfalse
7951     \begingroup
7952       \hyper@chars
7953       \special{!aref #2}%
7954     \endgroup
7955   \fi
7956 }
7957 \def\hyper@linkend{%
7958   \if@Localurl
7959     \special{!endaref}%
7960   \else
7961     \special{!direct </a>}%
7962   \fi
7963 }
7964 \def\hyper@anchorstart#1{%
7965   \Hy@SaveLastskip
7966   \begingroup
7967     \hyper@chars
7968     \special{!aname #1}%
7969     \special{!direct <a name=\hyper@quote#1\hyper@quote>}%
7970   \endgroup
7971   \Hy@activeanchortrue
7972 }
7973 \def\hyper@anchorend{%
7974   \special{!direct </a>}%
7975   \Hy@activeanchorfalse
7976   \Hy@RestoreLastskip
7977 }
7978 \def\hyper@anchor#1{%
7979   \Hy@SaveLastskip
7980   \begingroup
7981     \let\protect=\string
7982     \hyper@chars
7983     \leavevmode
7984     \special{!aname #1}%
7985     \special{!direct <a name=\hyper@quote #1\hyper@quote>}%
7986   \endgroup
7987   \Hy@activeanchortrue
7988   \bgroup\anchor@spot\egroup
7989   \special{!direct </a>}%
7990   \Hy@activeanchorfalse
7991   \Hy@RestoreLastskip
7992 }
7993 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
7994 \def\@endForm{}
7995 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7996   \typeout{Sorry, TeXpider does not yet support FORM gauges}%
7997 }
7998 \def\@TextField[#1]#2{% parameters, label
7999   \typeout{Sorry, TeXpider does not yet support FORM text fields}%
8000 }

```

```

8001 \def\@CheckBox[#1]#2{% parameters, label
8002 \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
8003 }
8004 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8005 \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
8006 }
8007 \def\@PushButton[#1]#2{% parameters, label
8008 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
8009 }
8010 \def\@Reset[#1]#2{%
8011 \typeout{Sorry, TeXpider does not yet support FORMs}%
8012 }
8013 \def\@Submit[#1]#2{%
8014 \typeout{Sorry, TeXpider does not yet support FORMs}%
8015 }
8016 \</vtexhtml>
8017 \<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.

```

8018 \ifx\mediaheight\@undefined
8019 \else
8020 \ifx\mediaheight\relax
8021 \else
8022 \ifHy@setpagesize
8023 \providecommand*\VTeXInitMediaSize{%
8024 \@ifundefined{stockwidth}{%
8025 \ifdim\paperheight>0pt %
8026 \setlength\mediaheight\paperheight
8027 \fi
8028 \ifdim\paperheight>0pt %
8029 \setlength\mediawidth\paperwidth
8030 \fi
8031 }{%
8032 \ifdim\stockheight>0pt %
8033 \setlength\mediaheight\stockheight
8034 \fi
8035 \ifdim\stockwidth>0pt %
8036 \setlength\mediawidth\stockwidth
8037 \fi
8038 }%
8039 }%
8040 \AtBeginDocument{\VTeXInitMediaSize}%
8041 \fi
8042 \Hy@DisableOption{setpagesize}%
8043 \fi
8044 \fi

```

Older versions of VTeX require xyz in lower case.

```

8045 \providecommand*\@pdfview{xyz}
8046 \providecommand*\@pdfborder{0 0 1}
8047 \providecommand*\@pdfborderstyle{}
8048 \let\CurrentBorderColor\@linkbordercolor
8049 \def\hyper@anchor#1{%
8050 \Hy@SaveLastskip
8051 \begingroup
8052 \let\protect=\string

```

```

8053 \hyper@chars
8054 \special{!aname #1;\@pdfview}%
8055 \endgroup
8056 \Hy@activeanchortrue
8057 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8058 \Hy@activeanchorfalse
8059 \Hy@RestoreLastskip
8060 }
8061 \def\hyper@anchorstart#1{%
8062 \Hy@SaveLastskip
8063 \begingroup
8064 \hyper@chars
8065 \special{!aname #1;\@pdfview}%
8066 \endgroup
8067 \Hy@activeanchortrue
8068 }
8069 \def\hyper@anchorend{%
8070 \Hy@activeanchorfalse
8071 \Hy@RestoreLastskip
8072 }
8073 \def\@urltype{url}
8074 \def\Hy@undefinedname{UNDEFINED}
8075 \def\hyper@linkstart#1#2{%
8076 \Hy@pstringdef\Hy@pstringURI{#2}%
8077 \expandafter\Hy@colorlink\csname @#1color\endcsname
8078 \@ifundefined{#@1bordercolor}{%
8079 \let\CurrentBorderColor\relax
8080 }{%
8081 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8082 }%
8083 \def\Hy@tempa{#1}%
8084 \ifx\Hy@tempa\@urltype
8085 \special{!%
8086 \href <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
8087 a=<%
8088 \ifHy@pdfa /F 4\fi
8089 \Hy@setpdfborder
8090 \ifx\CurrentBorderColor\relax
8091 \else
8092 /C [\CurrentBorderColor]%
8093 \fi
8094 >%
8095 }%
8096 \else
8097 \protected@edef\Hy@testname{#2}%
8098 \ifx\Hy@testname\@empty
8099 \let\Hy@testname\Hy@undefinedname
8100 \fi
8101 \special{!%
8102 \href \Hy@testname;%
8103 a=<%
8104 \ifHy@pdfa /F 4\fi
8105 \Hy@setpdfborder
8106 \ifx\CurrentBorderColor\relax
8107 \else
8108 /C [\CurrentBorderColor]%
8109 \fi

```

```

8110     >%
8111   }%
8112 \fi
8113 }
8114 \def\hyper@linkend{%
8115   \special{!endaref}%
8116   \Hy@endcolorlink
8117 }
8118 \def\hyper@linkfile#1#2#3{%
8119   \leavevmode
8120   \special{!%
8121     aref <%
8122     \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
8123     f=#2>#3;%
8124     a=<%
8125     \ifHy@pdfa /F 4\fi
8126     \Hy@setpdfborder
8127     \ifx\@filebordercolor\relax
8128     \else
8129       /C [\@filebordercolor]%
8130     \fi
8131     >%
8132   }%
8133   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
8134   \special{!endaref}%
8135 }
8136 \def\hyper@linkurl#1#2{%
8137   \begingroup
8138     \Hy@pstringdef\Hy@pstringURI{#2}%
8139     \hyper@chars
8140     \leavevmode
8141     \special{!%
8142       aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
8143       a=<%
8144       \ifHy@pdfa /F 4\fi
8145       \Hy@setpdfborder
8146       \ifx\@urlbordercolor\relax
8147       \else
8148         /C [\@urlbordercolor]%
8149       \fi
8150       >%
8151     }%
8152     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
8153     \special{!endaref}%
8154   \endgroup
8155 }
8156 \def\hyper@link#1#2#3{%
8157   \@ifundefined{@#1bordercolor}{%
8158     \let\CurrentBorderColor\relax
8159   }{%
8160     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8161   }%
8162   \leavevmode
8163   \protected@edef\Hy@testname{#2}%
8164   \ifx\Hy@testname\@empty
8165     \let\Hy@testname\Hy@undefinedname
8166   \fi

```



```

8167 \special{!%
8168   aref \Hy@testname;%
8169   a=<%
8170     \ifHy@pdfa /F 4\fi
8171     \Hy@setpdfborder
8172     \ifx\CurrentBorderColor\relax
8173     \else
8174       /C [\CurrentBorderColor]%
8175     \fi
8176   >%
8177 }%
8178 \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
8179 \special{!endaref}%
8180 }
8181 \def\hyper@image#1#2{%
8182   \hyper@linkurl{#2}{#1}%
8183 }
8184 \def\@hyper@launch run:#1\#2#3{%
8185   \Hy@pstringdef\Hy@pstringF{#1}%
8186   \Hy@pstringdef\Hy@pstringP{#3}%
8187   \leavevmode
8188   \special{!aref %
8189     <u=%
8190       /Type/Action%
8191       /S/Launch%
8192       /F(\Hy@pstringF)%
8193       \Hy@SetNewWindow
8194       \ifx\#3\\\else /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>\fi%
8195     >;%
8196     a=<%
8197       \ifHy@pdfa /F 4\fi
8198       \Hy@setpdfborder
8199       \ifx\@runbordercolor\relax
8200       \else
8201         /C[\@runbordercolor]%
8202       \fi
8203     >%
8204   }%
8205   \Hy@colorlink\@runcolor#2\Hy@endcolorlink
8206   \special{!endaref}%
8207 }
8208 \def\Acrobatmenu#1#2{%
8209   \Hy@Acrobatmenu{#1}{#2}{%
8210     \special{!%
8211       aref <u=/S /Named /N /#1>;%
8212       a=<%
8213         \ifHy@pdfa /F 4\fi
8214         \Hy@setpdfborder
8215         \ifx\@menubordercolor\relax
8216         \else
8217           /C[\@menubordercolor]%
8218         \fi
8219       >%
8220     }%
8221     \Hy@colorlink\@menucolor#2\Hy@endcolorlink
8222     \special{!endaref}%
8223   }%

```

8224 }

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

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

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

```
8225 \ifnum\Hy\TeXversion<702 %
8226 \else
8227   \def\hyper@pagetransition{%
8228     \ifx\@pdfpagetransition\relax
8229     \else
8230       \ifx\@pdfpagetransition\@empty
```

Standard incantation.

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

```
8231   \else
8232     \hvtex@parse@trans\@pdfpagetransition
8233   \fi
8234 \fi
8235 }%
```

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

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

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

Transition codes:

```
8236 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
8237 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
8238 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
8239 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
8240 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
8241 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
8242 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%
```

Optional parameters:

```
8243 \def\hvtex@par@dimension{/Dm}%
8244 \def\hvtex@par@direction{/Di}%
8245 \def\hvtex@par@duration{/D}%
8246 \def\hvtex@par@motion{/M}%
```

Tokenizer:

```
8247 \def\hvtex@gettoken{\expandafter\hvtex@gettoken\hvtex@buffer\@nil}%
```

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

```
8248 \def\hvtex@gettoken@#1 #2\@nil{%
```

```

8249 \edef\hvtex@token{#1}%
8250 \edef\hvtex@buffer{#2}%
8251 }%
8252 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

8253 \let\hvtex@trans@code\@empty
8254 \let\hvtex@param@dimension\@empty
8255 \let\hvtex@param@direction\@empty
8256 \let\hvtex@param@duration\@empty
8257 \let\hvtex@param@motion\@empty
8258 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

8259 \hvtex@gettoken
8260 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

8261 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

8262 \else
8263 \hvtex@gettoken
8264 \fi
8265 \fi
8266 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

8267 \hvtex@trans@params
8268 }%

```

Reentrant macro to parse optional parameters.

```

8269 \def\hvtex@trans@params{%
8270 \ifx\hvtex@buffer\@empty
8271 \else
8272 \hvtex@gettoken
8273 \let\hvtex@trans@par\hvtex@token
8274 \ifx\hvtex@buffer\@empty
8275 \else
8276 \hvtex@gettoken
8277 \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.

```

8278 \let\hvtex@param@duration\hvtex@token
8279 \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

8280 \expandafter\edef\expandafter\hvtex@param@motion
8281 \expandafter{\expandafter\@gobble\hvtex@token}%
8282 \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

8283 \expandafter\edef\expandafter\hvtex@param@dimension
8284 \expandafter{\expandafter\@gobble\hvtex@token}%
8285 \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).

```

8286 \let\hvtex@param@direction\hvtex@token
8287 \fi\fi\fi\fi
8288 \fi

```

```

8289 \fi
8290 \ifx\hvtex@buffer\@empty
8291 \let\next\hvtex@produce@trans
8292 \else
8293 \let\next\hvtex@trans@params
8294 \fi
8295 \next
8296 }%

```

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

```

8297 \def\hvtex@produce@trans{%
8298 \let\vtex@trans@special\@empty
8299 \if S\hvtex@trans@code
8300 \edef\vtex@trans@special{\hvtex@trans@code
8301 \hvtex@param@dimension\hvtex@param@motion}%
8302 \else\if B\hvtex@trans@code
8303 \edef\vtex@trans@special{%
8304 \hvtex@trans@code\hvtex@param@dimension
8305 }%
8306 \else\if X\hvtex@trans@code
8307 \edef\vtex@trans@special{%
8308 \hvtex@trans@code\hvtex@param@motion
8309 }%
8310 \else\if W\hvtex@trans@code
8311 \edef\vtex@trans@special{%
8312 \hvtex@trans@code\hvtex@param@direction
8313 }%
8314 \else\if D\hvtex@trans@code
8315 \let\vtex@trans@special\hvtex@trans@code
8316 \else\if R\hvtex@trans@code
8317 \let\vtex@trans@special\hvtex@trans@code
8318 \else\if G\hvtex@trans@code
8319 \edef\vtex@trans@special{%
8320 \hvtex@trans@code\hvtex@param@direction
8321 }%
8322 \fi\fi\fi\fi\fi\fi\fi
8323 \ifx\vtex@trans@special\@empty
8324 \else
8325 \ifx\hvtex@param@duration\@empty
8326 \else
8327 \setlength{\dimen@}{\hvtex@param@duration\p}%

```

I'm not guilty of possible overflow.

```

8328 \multiply\dimen@\@m
8329 \edef\vtex@trans@special{%
8330 \vtex@trans@special,\strip@pt\dimen@
8331 }%
8332 \fi

```

And all the mess is just for this.

```

8333 \special{!trans \vtex@trans@special}%
8334 \fi
8335 }%

8336 \def\hyper@pageduration{%
8337 \ifx\@pdfpageduration\relax
8338 \else
8339 \ifx\@pdfpageduration\@empty

```

```

8340      \special{!duration-}%
8341      \else
8342      \special{!duration \@pdfpageduration}%
8343      \fi
8344  \fi
8345 }%
8346 \def\hyper@pagehidden{%
8347   \ifHy@useHidKey
8348   \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
8349   \fi
8350 }%
8351 \g@addto@macro\Hy@EveryPageBoxHook{%
8352   \hyper@pagetransition
8353   \hyper@pageduration
8354   \hyper@pagehidden
8355 }%
8356 \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

```

8357 \ifx\@pdfproducer\relax
8358   \def\@pdfproducer{VTeX}%
8359   \ifnum\Hy@VTeXversion>\z@
8360     \count@\VTeXversion
8361     \divide\count@ 100 %
8362     \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
8363     \multiply\count@ -100 %
8364     \advance\count@\VTeXversion
8365     \edef\@pdfproducer{%
8366       \@pdfproducer
8367       .\ifnum\count@<10 0\fi\the\count@
8368       \ifx\VTeXOS\@undefined\else
8369         \ifnum\VTeXOS>0 %
8370           \ifnum\VTeXOS<6 %
8371             \space(
8372             \ifcase\VTeXOS
8373             \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
8374             \fi
8375             )%
8376           \fi
8377         \fi
8378       \fi
8379       ,\space
8380       \ifnum\OpMode=\@ne PDF\else PS\fi
8381       \space backend%
8382       \ifx\gexmode\@undefined\else
8383         \ifnum\gexmode>\z@\space with GeX\fi
8384       \fi
8385     }%

```

```
8386 \fi
8387 \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).

```
8388 \def\PDF@SetupDoc{%
8389 \ifx\@pdfpagescrop\@empty
8390 \else
8391 \special{!pdfinfo b=<\@pdfpagescrop>}%
8392 \fi
8393 \ifx\@pdfstartpage\@empty
8394 \else
8395 \ifx\@pdfstartview\@empty
8396 \else
8397 \special{!onopen Page\@pdfstartpage}%
8398 \fi
8399 \fi
8400 \special{!pdfinfo p=</\@pdfpagemode>}%
8401 \ifx\@baseurl\@empty
8402 \else
8403 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
8404 \fi
8405 \special{!pdfinfo v=<<<%
8406 \ifHy@toolbar\else /HideToolbar true\fi
8407 \ifHy@menubar\else /HideMenubar true\fi
8408 \ifHy>windowui\else /HideWindowUI true\fi
8409 \ifHy@fitwindow /FitWindow true\fi
8410 \ifHy@centerwindow /CenterWindow true\fi
8411 \ifHy@displaydoctitle /DisplayDocTitle true\fi
8412 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8413 \Hy@UseNameKey{Direction}\@pdfdirection
8414 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8415 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8416 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8417 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8418 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8419 \Hy@UseNameKey{Duplex}\@pdfduplex
8420 \ifx\@pdfpicktraybypdfsize\@empty
8421 \else
8422 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8423 \fi
8424 \ifx\@pdfprintpagerange\@empty
8425 \else
8426 /PrintPageRange[\@pdfprintpagerange]%
8427 \fi
```

```

8428 \ifx\@pdfnumcopies\@empty
8429 \else
8430 /NumCopies \@pdfnumcopies
8431 \fi
8432 >>>}%
8433 \ifx\@pdfpagelayout\@empty
8434 \else
8435 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
8436 \fi
8437 }%
8438 \def\PDF@FinishDoc{%
8439 \Hy@UseMaketitleInfos
8440 \special{!pdfinfo a=<\@pdfauthor>}%
8441 \special{!pdfinfo t=<\@pdftitle>}%
8442 \special{!pdfinfo s=<\@pdfsubject>}%
8443 \special{!pdfinfo c=<\@pdfcreator>}%
8444 \ifx\@pdfproducer\relax
8445 \else
8446 \special{!pdfinfo r=<\@pdfproducer>}%
8447 \fi
8448 \special{!pdfinfo k=<\@pdfkeywords>}%
8449 \Hy@DisableOption{pdfauthor}%
8450 \Hy@DisableOption{pdftitle}%
8451 \Hy@DisableOption{pdfsubject}%
8452 \Hy@DisableOption{pdfcreator}%
8453 \Hy@DisableOption{pdfcreationdate}%
8454 \Hy@DisableOption{pdfmoddate}%
8455 \Hy@DisableOption{pdfproducer}%
8456 \Hy@DisableOption{pdfkeywords}%
8457 }
8458 \end{document}

```

## 46.7 Fix for Adobe bug number 466320

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

```

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

```

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

```

8459 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
8460 <package>\providecommand*\Hy@DistillerDestFix{}
8461 <*pdfmark | dviwindo>
8462 \def\Hy@DistillerDestFix{%
8463 \begin{group}
8464 \let\x\literalps@out

```

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

```

8465 \ifnum \@ifundefined{OpMode}{0}{}%
8466 \@ifundefined{gexmode}{0}{}%
8467 \ifnum\gexmode>0 \OpMode\else 0\fi
8468 }>1 %
8469 \def\x##1{%

```

```

8470      \immediate\special{!=##1}%
8471      }%
8472      \fi
8473      \x{%
8474      /product where{%
8475      pop %
8476      product(Distiller)search{%
8477      pop pop pop %
8478      version(.)search{%
8479      exch pop exch pop%
8480      (3011)eq{%
8481      gsave %
8482      newpath 0 0 moveto closepath clip%
8483      /Courier findfont 10 scalefont setfont %
8484      72 72 moveto(.)show %
8485      grestore%
8486      }if%
8487      }{pop}ifelse%
8488      }{pop}ifelse%
8489      }if%
8490      }%
8491      \endgroup
8492 }
8493 </pdfmark | dviwindo>

```

## 46.8 Direct pdfmark support (dvipdf and pdfmark)

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

```

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

```

and the correct definitions of the following PostScript procedures:

```

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

```

```

8494 <*pdfmark | dvipdf>
8495 \def\hyper@anchor#1{%
8496   \Hy@SaveLastskip
8497   \begingroup
8498     \pdfmark[\anchor@spot]{%
8499       pdfmark=/DEST,%
8500       linktype=anchor,%
8501       View=/\@pdfview \@pdfviewparams,%
8502       DestAnchor={#1}%
8503     }%
8504   \endgroup
8505   \Hy@RestoreLastskip
8506 }
8507 <*dvipdf>
8508 \def\hyper@anchorstart#1{\Hy@activeanchortrue}
8509 \def\hyper@anchorend{\Hy@activeanchorfalse}
8510 \def\hyper@linkstart#1#2{%

```



```

8511 \expandafter\Hy@colorlink\csname @#1color\endcsname
8512 \xdef\hyper@currentanchor{#2}%
8513 }
8514 \def\hyper@linkend{%
8515 \Hy@endcolorlink
8516 }
8517 </dvipdf>
8518 <*pdfmark>
8519 \@ifundefined{hyper@anchorstart}{\endinput}{}
8520 \def\hyper@anchorstart#1{%
8521 \Hy@SaveLastskip
8522 \literalps@out{H.S}%
8523 \xdef\hyper@currentanchor{#1}%
8524 \Hy@activeanchortrue
8525 }
8526 \def\hyper@anchorend{%
8527 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
8528 \pdfmark{%
8529 pdfmark=/DEST,%
8530 linktype=anchor,%
8531 View=/\@pdfview \@pdfviewparams,%
8532 DestAnchor=\hyper@currentanchor,%
8533 }%
8534 \Hy@activeanchorfalse
8535 \Hy@RestoreLastskip
8536 }
8537 \def\hyper@linkstart#1#2{%
8538 \ifHy@breaklinks
8539 \else
8540 \leavevmode\hbox\bgroup
8541 \fi
8542 \expandafter\Hy@colorlink\csname @#1color\endcsname
8543 \literalps@out{H.S}%
8544 \xdef\hyper@currentanchor{#2}%
8545 \gdef\hyper@currentlinktype{#1}%
8546 }
8547 \def\hyper@linkend{%
8548 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
8549 \@ifundefined{@\hyper@currentlinktype bordercolor}{%
8550 \let\Hy@tempcolor\relax
8551 }{%
8552 \edef\Hy@tempcolor{%
8553 \csname @\hyper@currentlinktype bordercolor\endcsname
8554 }%
8555 }%
8556 \pdfmark{%
8557 pdfmark=/ANN,%
8558 linktype=link,%
8559 Subtype=/Link,%
8560 PDFAMFlags=4,%
8561 Dest=\hyper@currentanchor,%
8562 AcroHighlight=\@pdfhighlight,%
8563 Border=\@pdfborder,%
8564 BorderStyle=\@pdfborderstyle,%
8565 Color=\Hy@tempcolor,%
8566 Raw=H.B%
8567 }%

```

```

8568 \Hy@endcolorlink
8569 \ifHy@breaklinks
8570 \else
8571 \egroup
8572 \fi
8573 }
8574 (*pdfmark)

```

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

```

8575 \beginngroup
8576 \catcode'P=12 %
8577 \catcode'T=12 %
8578 \lowercase{\endgroup
8579 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
8580 }
8581 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
8582 (/pdfmark)

```

`\hyper@pagetransition`

```

8583 \def\hyper@pagetransition{%
8584 \ifx\@pdfpagetransition\relax
8585 \else
8586 \ifx\@pdfpagetransition\@empty
8587 % 1. Does an old entry have to be deleted?
8588 % 2. If 1=yes, how to delete?
8589 \else
8590 \pdfmark{%
8591 pdfmark=/PUT,%
8592 Raw={%
8593 \string{ThisPage\string}%
8594 <</Trans << /S /\@pdfpagetransition\space >> >>%
8595 }%
8596 }%
8597 \fi
8598 \fi
8599 }

```

`\hyper@pageduration`

```

8600 \def\hyper@pageduration{%
8601 \ifx\@pdfpageduration\relax
8602 \else
8603 \ifx\@pdfpageduration\@empty
8604 % 1. Does an old entry have to be deleted?
8605 % 2. If 1=yes, how to delete?
8606 \else
8607 \pdfmark{%
8608 pdfmark=/PUT,%
8609 Raw={%
8610 \string{ThisPage\string}%
8611 <</Dur \@pdfpageduration>>%
8612 }%
8613 }%
8614 \fi
8615 \fi
8616 }

```

\hyper@pagehidden

```
8617 \def\hyper@pagehidden{%
8618   \ifHy@useHidKey
8619     \pdfmark{%
8620       pdfmark=/PUT,%
8621       Raw={%
8622         \string{ThisPage\string}%
8623         <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
8624       }%
8625     }%
8626   \fi
8627 }

8628 \g@addto@macro\Hy@EveryPageBoxHook{%
8629   \hyper@pagetransition
8630   \hyper@pageduration
8631   \hyper@pagehidden
8632 }

8633 </pdfmark>
8634 \def\hyper@image#1#2{%
8635   \hyper@linkurl{#2}{#1}%
8636 }
8637 \def\Hy@undefinedname{UNDEFINED}
8638 \def\hyper@link#1#2#3{%
8639   \@ifundefined{@#1bordercolor}{%
8640     \let\Hy@tempcolor\relax
8641   }{%
8642     \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
8643   }%
8644   \begingroup
8645     \protected@edef\Hy@testname{#2}%
8646     \ifx\Hy@testname\@empty
8647       \let\Hy@testname\Hy@undefinedname
8648     \fi
8649   <*dvipdf>
8650     \pdfmark[{#3}]{%
8651       pdfmark=/LNK,%
8652       },%
8653     linktype={#1},%
8654     AcroHighlight=\@pdfhighlight,%
8655     Border=\@pdfborder,%
8656     BorderStyle=\@pdfborderstyle,%
8657     Color=\Hy@tempcolor,%
8658     Dest=\Hy@testname
8659   }%
8660 </dvipdf>
8661 <*pdfmarkbase>
8662   \pdfmark[{#3}]{%
8663     Color=\Hy@tempcolor,%
8664     linktype={#1},%
8665     AcroHighlight=\@pdfhighlight,%
8666     Border=\@pdfborder,%
8667     BorderStyle=\@pdfborderstyle,%
8668     pdfmark=/ANN,%
8669     Subtype=/Link,%
8670     PDFAFlags=4,%
8671     Dest=\Hy@testname
```

```

8672     }%
8673 </pdfmarkbase>
8674 \endgroup
8675 }
8676 \newtoks\pdf@docset
8677 \def\PDF@FinishDoc{%
8678   \Hy@UseMaketitleInfos
8679   \let\Hy@temp\@empty
8680   \ifx\@pdfcreationdate\@empty
8681   \else
8682     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
8683   \fi
8684   \ifx\@pdfmoddate\@empty
8685   \else
8686     \expandafter\def\expandafter\Hy@temp\expandafter{%
8687       \Hy@temp
8688       ModDate=\@pdfmoddate,%
8689     }%
8690   \fi
8691   \ifx\@pdfproducer\relax
8692   \else
8693     \expandafter\def\expandafter\Hy@temp\expandafter{%
8694       \Hy@temp
8695       Producer=\@pdfproducer,%
8696     }%
8697   \fi
8698   \expandafter
8699   \pdfmark\expandafter{%
8700     \Hy@temp
8701     pdfmark=/DOCINFO,%
8702     Title=\@pdftitle,%
8703     Subject=\@pdfsubject,%
8704     Creator=\@pdfcreator,%
8705     Author=\@pdfauthor,%
8706     Keywords=\@pdfkeywords
8707   }%
8708   \Hy@DisableOption{pdfauthor}%
8709   \Hy@DisableOption{pdftitle}%
8710   \Hy@DisableOption{pdfsubject}%
8711   \Hy@DisableOption{pdfcreator}%
8712   \Hy@DisableOption{pdfcreationdate}%
8713   \Hy@DisableOption{pdfmoddate}%
8714   \Hy@DisableOption{pdfproducer}%
8715   \Hy@DisableOption{pdfkeywords}%
8716 }
8717 \def\PDF@SetupDoc{%
8718   \def\Hy@temp{}%
8719   \ifx\@pdfstartpage\@empty
8720   \else
8721     \ifx\@pdfstartview\@empty
8722     \else
8723       \edef\Hy@temp{%
8724         ,Page=\@pdfstartpage
8725         ,View=\@pdfstartview
8726       }%
8727     \fi
8728   \fi

```

```

8729 \edef\Hy@temp{%
8730   \noexpand\pdfmark{%
8731     pdfmark=/DOCVIEW,%
8732     PageMode=/\@pdfpagemode
8733     \Hy@temp
8734   }%
8735 }%
8736 \Hy@temp
8737 \ifx\@pdfpagescrop\@empty
8738 \else
8739   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
8740 \fi
8741 \edef\Hy@temp{%
8742   \ifHy@toolbar\else /HideToolbar true\fi
8743   \ifHy@menubar\else /HideMenubar true\fi
8744   \ifHy>windowui\else /HideWindowUI true\fi
8745   \ifHy@fitwindow /FitWindow true\fi
8746   \ifHy@centerwindow /CenterWindow true\fi
8747   \ifHy@displaydoctitle /DisplayDocTitle true\fi
8748   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8749   \Hy@UseNameKey{Direction}\@pdfdirection
8750   \Hy@UseNameKey{ViewArea}\@pdfviewarea
8751   \Hy@UseNameKey{ViewClip}\@pdfviewclip
8752   \Hy@UseNameKey{PrintArea}\@pdfprintarea
8753   \Hy@UseNameKey{PrintClip}\@pdfprintclip
8754   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8755   \Hy@UseNameKey{Duplex}\@pdfduplex
8756   \ifx\@pdfpicktraybypdfsize\@empty
8757   \else
8758     /PickTrayByPDFSize \@pdfpicktraybypdfsize
8759   \fi
8760   \ifx\@pdfprintpagerange\@empty
8761   \else
8762     /PrintPageRange[\@pdfprintpagerange]%
8763   \fi
8764   \ifx\@pdfnumcopies\@empty
8765   \else
8766     /NumCopies \@pdfnumcopies
8767   \fi
8768 }%
8769 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8770 \pdfmark{%
8771   pdfmark=/PUT,%
8772   Raw={%
8773     \string{Catalog\string}<<%
8774     \ifx\Hy@temp\@empty
8775     \else
8776       /ViewerPreferences<<\Hy@temp>>%
8777     \fi
8778     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8779     \ifx\@pdflang\@empty
8780     \else
8781       /Lang(\@pdflang)%
8782     \fi
8783     \ifx\@baseurl\@empty
8784     \else
8785       /URI<</Base(\Hy@pstringB)>>%

```

```

8786         \fi
8787     >>%
8788 }%
8789 }%
8790 }
8791 </pdfmark | dvipdf>
8792 <*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.

```

8793 \newif\ifHy@pdfmarkerror
8794 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
8795 \def\pdfmark@[#1]#2{%
8796     \Hy@pdfmarkerrorfalse
8797     \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
8798     \@processme
8799     \let\pdf@type\relax
8800     \setkeys{PDF}{#2}%
8801     \ifHy@pdfmarkerror
8802     \else
8803         \ifx\pdf@type\relax
8804             \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
8805             \ifx\#1\%
8806                 \else
8807                     \pdf@rect{#1}%
8808                 \fi
8809             \else
8810                 \ifx\#1\%
8811 <*pdfmarkbase>
8812         \literalps@out{%
8813             [\the\pdf@toks\space\pdf@type\space pdfmark%
8814         }%
8815 </pdfmarkbase>
8816 <dvipdf> \literalps@out{/ANN >>}%
8817     \else
8818         \@ifundefined{@\pdf@linktype color}{%
8819             \Hy@colorlink\@linkcolor
8820         }{%
8821             \expandafter\Hy@colorlink
8822                 \csname @\pdf@linktype color\endcsname
8823         }%
8824         \pdf@rect{#1}%
8825 <*pdfmarkbase>
8826         \literalps@out{%
8827             [\the\pdf@toks\space\pdf@type\space pdfmark%
8828         }%
8829 </pdfmarkbase>
8830 <dvipdf> \literalps@out{/ANN >>}%
8831         \Hy@endcolorlink
8832     \fi
8833 \fi
8834 \fi
8835 }

```

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}
```

```
8836 \newsavebox{\pdf@box}
8837 \providecommand*{\Hy@setouterhbox}{\sbox}
8838 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
8839 \def\Hy@DEST{/DEST}
8840 \def\pdf@rect#1{%
8841   \dvpdf \literalps@out{/ANN \pdf@type\space\the\pdf@toks\space <<#1%
8842   \leavevmode
8843   \ifHy@breaklinks
8844     \Hy@setouterhbox\pdf@box{#1}%
8845   \else
8846     \sbox\pdf@box{#1}%
8847   \fi
8848   \dimen@ \ht\pdf@box
8849   \ifdim\dp\pdf@box=\z@
8850     \literalps@out{H.S}%
8851   \else
8852     \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
8853   \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...).

```
8854 \ifHy@breaklinks
8855   \expandafter\Hy@breaklinksunhbox
8856 \else
8857   \expandafter\box
8858 \fi
8859 \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

8860 \ifdim\dimen@=\z@
8861   \literalps@out{H.R}%
8862 \else
8863   \raise\dimen@\hbox{\literalps@out{H.R}}%
8864 \fi
8865 \ifx\pdf@type\Hy@DEST
8866 \else
8867   \pdf@addtoksx{H.B}%
8868 \fi
8869 }
```

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.

```

8870 \newtoks\pdf@toks
8871 \newtoks\pdf@defaulttoks
8872 \pdf@defaulttoks={}
8873 \def\pdf@addtoks#1#2{%
8874   \edef\@processme{\pdf@toks{\the\pdf@toks\space /#2 #1}}%
8875   \@processme
8876 }
8877 \def\pdf@addtoksx#1{%
8878   \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
8879   \@processme
8880 }
8881 \def\PDFdefaults#1{%
8882   \pdf@defaulttoks={#1}%
8883 }

```

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

```

8884 % what is the type of pdfmark?
8885 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
8886 % what is the link type?
8887 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
8888 \def\pdf@linktype{link}
8889 % parameter is a stream of PDF
8890 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
8891 % parameter is a name
8892 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
8893 % parameter is a array
8894 \define@key{PDF}{Border}{%
8895   \edef\Hy@temp{#1}%
8896   \ifx\Hy@temp\@empty
8897   \else
8898     \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
8899   \fi
8900 }
8901 \let\Hy@BorderArrayPatch\@empty
8902 % parameter is a dictionary
8903 \define@key{PDF}{BorderStyle}{%
8904   \edef\Hy@temp{#1}%
8905   \ifx\Hy@temp\@empty
8906   \else
8907     \pdf@addtoks{<<#1>>}{BS}%
8908   \fi
8909 }
8910 % parameter is a array
8911 \define@key{PDF}{Color}{%
8912   \ifx\relax#1\relax
8913   \else
8914     \pdf@addtoks{[#1]}{Color}% hash-ok
8915   \fi
8916 }
8917 % parameter is a string
8918 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
8919 % parameter is a integer
8920 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
8921 % parameter is a array
8922 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
8923 % parameter is a string
8924 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
8925 % parameter is a string or file

```



```

8926 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
8927 % parameter is a destination
8928 \define@key{PDF}{Dest}{%
8929   \Hy@pstringdef\Hy@pstringDest{#1}%
8930   \ifx\Hy@pstringDest\@empty
8931     \Hy@pdfmarkerrortrue
8932     \Hy@Warning{Destination with empty name ignored}%
8933   \else
8934     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
8935   \fi
8936 }
8937 \define@key{PDF}{DestAnchor}{%
8938   \Hy@pstringdef\Hy@pstringDest{#1}%
8939   \ifx\Hy@pstringDest\@empty
8940     \Hy@pdfmarkerrortrue
8941     \Hy@Warning{Destination with empty name ignored}%
8942   \else
8943     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
8944   \fi
8945 }
8946 % parameter is a string
8947 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
8948 % parameter is a string
8949 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
8950 % parameter is a int
8951 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
8952 \define@key{PDF}{PDFAFlags}{%
8953   \ifHy@pdfa
8954     \pdf@addtoks{#1}{F}%
8955   \fi
8956 }
8957 % parameter is a name
8958 \define@key{PDF}{AcroHighlight}{%
8959   \begingroup
8960     \edef\x{#1}%
8961     \expandafter\endgroup\ifx\x\@empty
8962     \else
8963       \pdf@addtoks{#1}{H}%
8964     \fi
8965 }
8966 % parameter is a string
8967 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
8968 % parameter is a string
8969 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
8970 % parameter is a string
8971 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
8972 % parameter is a string
8973 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
8974 % parameter is a Boolean
8975 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
8976 % parameter is a integer or name
8977 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
8978 % parameter is a name
8979 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
8980 % parameter is a string
8981 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
8982 % parameter is a array

```

```

8983 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
8984 % parameter is a integer
8985 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
8986 % parameter is a name
8987 <pdfmarkbase>\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
8988 <dvipdf>\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{}}
8989 % parameter is a string
8990 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
8991 % parameter is a string
8992 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
8993 % parameter is a string
8994 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
8995 % parameter is an array
8996 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
8997 % parameter is a string
8998 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

8999 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
9000 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
9001 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
9002 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9003 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
9004 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
9005 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
9006 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9007 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
9008 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
9009 </pdfmarkbase | dvipdf>
9010 <*pdfmark | dvipdf>
9011 \def\Acrobatmenu#1#2{%
9012   \Hy@Acrobatmenu{#1}{#2}{%
9013     \pdfmark[{#2}]{%
9014       linktype=menu,%
9015       pdfmark=/ANN,%
9016       AcroHighlight=\@pdfhighlight,%
9017       Border=\@pdfborder,%
9018       BorderStyle=\@pdfborderstyle,%
9019       Action={<< /Subtype /Named /N /#1 >>},%
9020       Subtype=/Link,%
9021       PDFAFlags=4%
9022     }%
9023   }%
9024 }

```

And now for some useful examples:

```

9025 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
9026 \def\PDFNextPage@[#1]#2{%
9027   \pdfmark[{#2}]{%
9028     #1,%
9029     Border=\@pdfborder,%
9030     BorderStyle=\@pdfborderstyle,%
9031     Color=.2 .1 .5,%
9032     pdfmark=/ANN,%
9033     Subtype=/Link,%
9034     PDFAFlags=4,%
9035     Page=/Next%
9036   }%

```

```

9037 }
9038 \def\PDFPreviousPage{%
9039   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
9040 }
9041 \def\PDFPreviousPage@[#1]#2{%
9042   \pdfmark[#{#2}]{%
9043     #1,%
9044     Border=\@pdfborder,%
9045     BorderStyle=\@pdfborderstyle,%
9046     Color=.4 .4 .1,%
9047     pdfmark=/ANN,%
9048     Subtype=/Link,%
9049     PDFAFlags=4,%
9050     Page=/Prev%
9051   }%
9052 }
9053 \def\PDFOpen#1{%
9054   \pdfmark{#1,pdfmark=/DOCVIEW}%
9055 }

```

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

```

9056 \def\hyper@linkurl#1#2{%
9057   \begingroup
9058     \Hy@pstringdef\Hy@pstringURI{#2}%
9059     \hyper@chars
9060     \leavevmode
9061     \pdfmarkbase
9062     \pdfmark[#{#1}]{%
9063       pdfmark=/ANN,%
9064       linktype=url,%
9065       AcroHighlight=\@pdfhighlight,%
9066       Border=\@pdfborder,%
9067       BorderStyle=\@pdfborderstyle,%
9068       Color=\@urlbordercolor,%
9069       Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
9070       Subtype=/Link,%
9071       PDFAFlags=4%
9072     }%
9073   \pdfmarkbase
9074   \dvipdf
9075   \pdfmark[#{#1}]{%
9076     pdfmark=/LNK,%
9077     linktype=url,%
9078     AcroHighlight=\@pdfhighlight,%
9079     Border=\@pdfborder,%
9080     BorderStyle=\@pdfborderstyle,%
9081     Color=\@urlbordercolor,%
9082     Action={URI /URI <\Hy@hstringURI>}%
9083   }%
9084   \dvipdf
9085   \endgroup
9086 }
9087 \def\hyper@linkfile#1#2#3{%
9088   \begingroup
9089     \Hy@pstringdef\Hy@pstringF{#2}%
9090     \Hy@pstringdef\Hy@pstringD{#3}%
9091     \leavevmode
9092     \pdfmark

```

```

9093 \pdfmark[{#1}]{%
9094 pdfmark=/ANN,%
9095 Subtype=/Link,%
9096 PDFAFlags=4,%
9097 AcroHighlight=\pdfhighlight,%
9098 Border=\pdfborder,%
9099 BorderStyle=\pdfborderstyle,%
9100 linktype=file,%
9101 Color=\@filebordercolor,%
9102 Action={%
9103 <<%
9104 /S/GoToR%
9105 \Hy@SetNewWindow
9106 /F(\Hy@pstringF)%
9107 /D\ifx\#3\0 \pdfstartview\else(\Hy@pstringD)cvn\fi
9108 >>%
9109 }%
9110 }%
9111 </pdfmark>
9112 <*dvipdf>
9113 \pdfmark[{#1}]{%
9114 pdfmark=/LNK,%
9115 linktype=file,%
9116 AcroHighlight=\pdfhighlight,%
9117 Border=\pdfborder,%
9118 BorderStyle=\pdfborderstyle,%
9119 Color=\@filebordercolor,%
9120 Action={%
9121 <<%
9122 /S/GoToR%
9123 \Hy@SetNewWindow
9124 /F(\Hy@pstringF)%
9125 /D\ifx\#3\0 \pdfstartview\else(\Hy@pstringD)cvn\fi
9126 >>%
9127 }%
9128 }%
9129 </dvipdf>
9130 \endgroup
9131 }
9132 \def\hyper@launch run:#1\#2#3{%
9133 \begingroup
9134 \Hy@pstringdef\Hy@pstringF{#1}%
9135 \Hy@pstringdef\Hy@pstringP{#3}%
9136 \leavevmode
9137 <*pdfmark>
9138 \pdfmark[{#2}]{%
9139 pdfmark=/ANN,%
9140 Subtype=/Link,%
9141 PDFAFlags=4,%
9142 AcroHighlight=\pdfhighlight,%
9143 Border=\pdfborder,%
9144 BorderStyle=\pdfborderstyle,%
9145 linktype=run,%
9146 Color=\@runbordercolor,%
9147 Action={%
9148 <<%
9149 /S/Launch%

```

```

9150      \Hy@SetNewWindow
9151      /F(\Hy@pstringF)%
9152      \ifx\|#3\|%
9153      \else
9154      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9155      \fi
9156      >>%
9157      }%
9158      }%
9159 </pdfmark>
9160 <*dvipdf>
9161   \pdfmark[{#2}]{%
9162     pdfmark=/LNK,%
9163     linktype=file,%
9164     AcroHighlight=@pdfhighlight,%
9165     Border=@pdfborder,%
9166     BorderStyle=@pdfborderstyle,%
9167     Color=@filebordercolor,%
9168     Action={%
9169       <<%
9170       /S/GoToR%
9171       \Hy@SetNewWindow
9172       /F(\Hy@pstringF)%
9173       \ifx\|#3\|%
9174       \else
9175       /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9176       \fi
9177       >>%
9178       }%
9179     }%
9180 </dvipdf>
9181   \endgroup
9182 }
9183 </pdfmark | dvipdf>

```

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

## 46.9 Rokicki's dvips

dvips thinks in 10ths of a big point, its coordinate space is resolution dependent, and its *y* axis starts at the top of the page. Other drivers can and will be different!

The work is done in SDict, because we add in some header definitions in a moment.

```

9184 <*dvips>
9185 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
9186 \def\headerps@out#1{\special{! #1}}%
9187 \input{pdfmark.def}%
9188 \ifx\@pdfproducer\relax
9189   \def\@pdfproducer{dvips + Distiller}%
9190 \fi
9191 \providecommand*\@pdfborder{0 0 1}
9192 \providecommand*\@pdfborderstyle{}
9193 \providecommand*\@pdfview{XYZ}
9194 \providecommand*\@pdfviewparams{ H.V}
9195 \def\Hy@BorderArrayPatch{BorderArrayPatch}
9196 \AtBeginShipoutFirst{%
9197   \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.

```
9198 /DvipsToPDF{72.27 mul Resolution div} def%
9199 /PDFToDvips{72.27 div Resolution mul} def%
9200 /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.

```
9201 /BorderArrayPatch{%
9202   [exch%
9203     dup dup type/integertype eq exch type/realtype eq or%
9204     {BPToDvips}if%
9205     }forall]%
9206   }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.

```
9207 /HyperBorder {1 PDFToDvips} def%
9208 /H.V {pdf@hoff pdf@voff null} def%
9209 /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

```
9210 /H.S {%
9211   currentpoint %
9212   HyperBorder add /pdf@lly exch def %
9213   dup DvipsToPDF 72 add /pdf@hoff exch def %
9214   HyperBorder sub /pdf@llx exch def%
9215 } 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

```
9216 /H.L {%
9217   2 sub dup%
9218   /HyperBasePt exch def %
9219   PDFToDvips /HyperBaseDvips exch def %
9220   currentpoint %
9221   HyperBaseDvips sub /pdf@ury exch def%
9222   /pdf@urx exch def%
9223 } def%
9224 /H.A {%
```

```

9225      H.L %
9226 % | /pdf@voff| = the distance from the top of the page to a point
9227 % | \baselineskip| above the current point in PDF coordinates
9228      currentpoint exch pop %
9229      vsize 72 sub exch DvipsToPDF %
9230      HyperBasePt sub % baseline skip
9231      sub /pdf@voff exch def%
9232    } def%
9233    /H.R {%
9234      currentpoint %
9235      HyperBorder sub /pdf@ury exch def %
9236      HyperBorder add /pdf@urx exch def %
9237 % | /pdf@voff| = the distance from the top of the page to the current point, in
9238 % PDF coordinates
9239      currentpoint exch pop vsize 72 sub %
9240      exch DvipsToPDF sub /pdf@voff exch def%
9241    } def %
9242    systemdict /pdfmark known%
9243    {%
9244      userdict /?pdfmark systemdict /exec get put%
9245    }{%
9246      userdict /?pdfmark systemdict /pop get put %
9247      userdict /pdfmark systemdict /cleartomark get put%
9248    }%
9249    ifelse%
9250  }%
9251 }
9252 \AfterBeginDocument{%
9253   \ifx\special@paper\@empty\else
9254     \ifHy@setpagesize
9255       \special{papersize=\special@paper}%
9256     \fi
9257     \Hy@DisableOption{setpagesize}%
9258   \fi
9259 }
9260 </dvips>

```

## 46.10 VTeX's vtexpdfmark driver

This part is derived from the dvips (many names reflect this).

The origin seems to be the same as TeX's origin, 1 in from the left and 1 in downwards from the top. The direction of the  $y$  axis is downwards, the opposite of the dvips case. Units seems to be pt or bp.

```

9261 <*vtexpdfmark>
9262 \input{pdfmark.def}%
9263 \ifx\@pdfproducer\relax
9264   \ifnum\OpMode=\@one
9265     \def\@pdfproducer{VTeX}%
9266   \else
9267     \def\@pdfproducer{VTeX + Distiller}%
9268   \fi
9269 \fi
9270 \def\literalps@out#1{\special{pS:#1}}%
9271 \def\headerps@out#1{\immediate\special{pS:#1}}%
9272 \providecommand*\@pdfborder{0 0 1}
9273 \providecommand*\@pdfborderstyle{}

```

```

9274 \providecommand*\@pdfview{XYZ}
9275 \providecommand*\@pdfviewparams{ H.V}

9276 \AtBeginShipoutFirst{%
9277   \headerps@out{%
9278     /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.

```

9279   /HyperBorder {1} def%
9280   /H.V {pdf@hoff pdf@voff null} def%
9281   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

9282   /H.S {%
9283     currentpoint %
9284     HyperBorder sub%
9285     /pdf@lly exch def %
9286     dup 72 add /pdf@hoff exch def %
9287     HyperBorder sub%
9288     /pdf@llx exch def%
9289   } def%

```

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

```

9290   /H.L {%
9291     2 sub%
9292     /HyperBasePt exch def %
9293     currentpoint %
9294     HyperBasePt add HyperBorder add%
9295     /pdf@ury exch def %
9296     HyperBorder add%
9297     /pdf@urx exch def%
9298   } def%
9299   /H.A {%
9300     H.L %
9301     currentpoint exch pop %
9302     vsize 72 sub exch %
9303     HyperBasePt add add%
9304     /pdf@voff exch def%
9305   } def%

```

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

```

9306   /H.R {%
9307     currentpoint %
9308     HyperBorder add%
9309     /pdf@ury exch def %
9310     HyperBorder add%
9311     /pdf@urx exch def %
9312     currentpoint exch pop vsize 72 sub add%
9313     /pdf@voff exch def%
9314   } def %
9315   systemdict /pdfmark known%
9316   {%
9317     userdict /?pdfmark systemdict /exec get put%
9318   }{%
9319     userdict /?pdfmark systemdict /pop get put %

```



```

9320      userdict /pdfmark systemdict /cleartomark get put%
9321    }%
9322    ifelse%
9323  }%
9324 }
9325 </vtexpdfmark>

```

## 46.11 Textures

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

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

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

```

9326 <*textures>
9327 \begingroup
9328   \obeylines %
9329   \gdef\Hy@ps@CR{\noexpand
9330     }%
9331 \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`.

```

9332 \def\literalps@out#1{%
9333   \special{postscript 0 0 transform}%
9334   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
9335 }%
9336 %

```

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.

```

9337 \def\headerps@out#1{%
9338   \special{%
9339     prepostscript TeXdict begin\Hy@ps@CR
9340       #1\Hy@ps@CR
9341     end%
9342   }%
9343 }%
9344 %

```

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.

```

9345 \AtBeginShipoutFirst{%

```

```

9346 \headerps@out{%
9347   /betterpdfmark {%
9348     systemdict begin %
9349     dup /BP eq%
9350     {cleartomark gsave nulldevice []}%
9351     {dup /EP eq%
9352       {cleartomark cleartomark grestore}%
9353       {cleartomark}%
9354     }ifelse%
9355   }ifelse %
9356 end%
9357 }def\Hy@ps@CR
9358 __pdfmark__ not{/pdfmark /betterpdfmark load def}if %
9359 systemdict /pdfmark known%
9360 {%
9361   userdict /?pdfmark systemdict /load get put%
9362 }{%
9363   userdict /?pdfmark systemdict /pop get put%
9364 }%
9365 ifelse%
9366 }% end of \headerps@out
9367 }% end of \AtBeginShipoutFirst
9368 %
9369 \input{pdfmark.def}%
9370 %
9371 \ifx\@pdfproducer\relax
9372   \def\@pdfproducer{Textures + Distiller}%
9373 \fi
9374 \providecommand*\@pdfborder{0 0 1}
9375 \providecommand*\@pdfborderstyle{}
9376 \providecommand*\@pdfview{XYZ}
9377 \providecommand*\@pdfviewparams{ H.V}
9378 %

```

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  $\TeX$ .

```

9379 \headerps@out{%

```

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

```

9380 /vsize {\Hy@pageheight} def%
9381 /DvipsToPDF {} def%
9382 /PDFToDvips {} def%
9383 /BPToDvips {} def%
9384 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
9385 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
9386 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
9387 /H.S {%
9388   currentpoint %
9389   HyperBorder add /pdf@lly exch def %
9390   dup DvipsToPDF 72 add /pdf@hoff exch def %
9391   HyperBorder sub /pdf@llx exch def%
9392 } def\Hy@ps@CR
9393 /H.L {%
9394   2 sub %
9395   PDFToDvips /HyperBase exch def %

```

```

9396     currentpoint %
9397     HyperBase sub /pdf@ury exch def%
9398     /pdf@urx exch def%
9399 } def\Hy@ps@CR
9400 /H.A {%
9401     H.L %
9402     currentpoint exch pop %
9403     vsize 72 sub exch DvipsToPDF %
9404     HyperBase sub % baseline skip
9405     sub /pdf@voff exch def%
9406 } def\Hy@ps@CR
9407 /H.R {%
9408     currentpoint %
9409     HyperBorder sub /pdf@ury exch def %
9410     HyperBorder add /pdf@urx exch def %
9411     currentpoint exch pop vsize 72 sub %
9412     exch DvipsToPDF sub /pdf@voff exch def%
9413 } def\Hy@ps@CR
9414 }

9415 \AfterBeginDocument{%
9416     \ifHy@colorlinks
9417         \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
9418     \fi
9419 }

```

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.

```

9420 \expandafter\let\expandafter\keepPDF@SetupDoc
9421     \csname PDF@SetupDoc\endcsname
9422 \def\PDF@SetupDoc{%
9423     \ifx\@baseurl\@empty
9424     \else
9425         \special{html:<base href="\@baseurl">}%
9426     \fi
9427     \keepPDF@SetupDoc
9428 }

9429 \def\hyper@anchor#1{%
9430     \Hy@SaveLastskip
9431     \begingroup
9432         \let\protect=\string
9433         \special{html:<a name=\hyper@quote #1\hyper@quote>}%
9434     \endgroup
9435     \Hy@activeanchortrue
9436     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9437     \special{html:</a>}%
9438     \Hy@activeanchorfalse
9439     \Hy@RestoreLastskip
9440 }

9441 \def\hyper@anchorstart#1{%
9442     \Hy@SaveLastskip
9443     \begingroup
9444         \hyper@chars
9445         \special{html:<a name=\hyper@quote#1\hyper@quote>}%
9446     \endgroup
9447     \Hy@activeanchortrue
9448 }

9449 \def\hyper@anchorend{%

```

```

9450 \special{html:</a>}}%
9451 \Hy@activeanchorfalse
9452 \Hy@RestoreLastskip
9453 }
9454 \def\@urltype{url}
9455 \def\hyper@linkstart#1#2{%
9456 \expandafter\Hy@colorlink\csname @#1color\endcsname
9457 \def\Hy@tempa{#1}%
9458 \ifx\Hy@tempa\@urltype
9459 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9460 \else
9461 \begingroup
9462 \hyper@chars
9463 \special{html:<a href=\hyper@quote\##2\hyper@quote>}}%
9464 \endgroup
9465 \fi
9466 }
9467 \def\hyper@linkend{%
9468 \special{html:</a>}}%
9469 \Hy@endcolorlink
9470 }
9471 \def\hyper@linkfile#1#2#3{%
9472 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
9473 }
9474 \def\hyper@linkurl#1#2{%
9475 \leavevmode
9476 \ifHy@raiselinks
9477 \setbox\@tempboxa=\color@hbox #1\color@endbox
9478 \@linkdim\dp\@tempboxa
9479 \lower\@linkdim\hbox{%
9480 \hyper@chars
9481 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9482 }%
9483 \Hy@colorlink\@urlcolor#1%
9484 \@linkdim\ht\@tempboxa
9485 \advance\@linkdim by -6.5\p@
9486 \raise\@linkdim\hbox{\special{html:</a>}}}%
9487 \Hy@endcolorlink
9488 \else
9489 \begingroup
9490 \hyper@chars
9491 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9492 \Hy@colorlink\@urlcolor#1%
9493 \special{html:</a>}}%
9494 \Hy@endcolorlink
9495 \endgroup
9496 \fi
9497 }
9498 \def\hyper@link#1#2#3{%
9499 \hyper@linkurl{#3}{\##2}%
9500 }
9501 \def\hyper@image#1#2{%
9502 \begingroup
9503 \hyper@chars
9504 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
9505 \endgroup
9506 }

```

9507 </textures>

## 46.12 dvipsone

```
9508 % \subsection{dvipsone driver}
9509 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
9510 % |\special| commands.
9511 <*dvipsone>
9512 \providecommand*\@pdfborder{0 0 1}
9513 \providecommand*\@pdfborderstyle{}
9514 \input{pdfmark.def}%
9515 \ifx\@pdfproducer\relax
9516   \def\@pdfproducer{dvipsone + Distiller}%
9517 \fi
9518 \def\literalps@out#1{\special{ps:#1}}%
9519 \def\headerps@out#1{\special{! #1}}%
9520 \def\PDF@FinishDoc{%
9521   \Hy@UseMaketitleInfos
9522   \special{PDF: Keywords \@pdfkeywords}%
9523   \special{PDF: Title \@pdftitle}%
9524   \special{PDF: Creator \@pdfcreator}%
9525   \ifx\@pdfcreationdate\@empty
9526   \else
9527     \special{PDF: CreationDate \@pdfcreationdate}%
9528   \fi
9529   \ifx\@pdfmoddate\@empty
9530   \else
9531     \special{PDF: ModDate \@pdfmoddate}%
9532   \fi
9533   \special{PDF: Author \@pdfauthor}%
9534   \ifx\@pdfproducer\relax
9535   \else
9536     \special{PDF: Producer \@pdfproducer}%
9537   \fi
9538   \special{PDF: Subject \@pdfsubject}%
9539   \Hy@DisableOption{pdfauthor}%
9540   \Hy@DisableOption{pdftitle}%
9541   \Hy@DisableOption{pdfsubject}%
9542   \Hy@DisableOption{pdfcreator}%
9543   \Hy@DisableOption{pdfcreationdate}%
9544   \Hy@DisableOption{pdfmoddate}%
9545   \Hy@DisableOption{pdfproducer}%
9546   \Hy@DisableOption{pdfkeywords}%
9547 }
9548 \def\PDF@SetupDoc{%
9549   \def\Hy@temp{}%
9550   \ifx\@pdfstartpage\@empty
9551   \else
9552     \ifx\@pdfstartview\@empty
9553     \else
9554       \edef\Hy@temp{%
9555         ,Page=\@pdfstartpage
9556         ,View=\@pdfstartview
9557       }%
9558     \fi
9559   \fi
9560   \edef\Hy@temp{%
```

```

9561     \noexpand\pdfmark{%
9562         pdfmark=/DOCVIEW,%
9563         PageMode=/\@pdfpagemode
9564         \Hy@temp
9565     }%
9566 }%
9567 \Hy@temp
9568 \ifx\@pdfpagescrop\@empty
9569 \else
9570     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9571 \fi
9572 \edef\Hy@temp{%
9573     \ifHy@toolbar\else /HideToolbar true\fi
9574     \ifHy@menubar\else /HideMenubar true\fi
9575     \ifHy>windowui\else /HideWindowUI true\fi
9576     \ifHy@fitwindow /FitWindow true\fi
9577     \ifHy@centerwindow /CenterWindow true\fi
9578     \ifHy@displaydoctitle /DisplayDocTitle true\fi
9579     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9580     \Hy@UseNameKey{Direction}\@pdfdirection
9581     \Hy@UseNameKey{ViewArea}\@pdfviewarea
9582     \Hy@UseNameKey{ViewClip}\@pdfviewclip
9583     \Hy@UseNameKey{PrintArea}\@pdfprintarea
9584     \Hy@UseNameKey{PrintClip}\@pdfprintclip
9585     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9586     \Hy@UseNameKey{Duplex}\@pdfduplex
9587     \ifx\@pdfpicktraybypdfsize\@empty
9588     \else
9589         /PickTrayByPDFSize \@pdfpicktraybypdfsize
9590     \fi
9591     \ifx\@pdfprintpagerange\@empty
9592     \else
9593         /PrintPageRange[\@pdfprintpagerange]%
9594     \fi
9595     \ifx\@pdfnumcopies\@empty
9596     \else
9597         /NumCopies \@pdfnumcopies
9598     \fi
9599 }%
9600 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9601 \pdfmark{%
9602     pdfmark=/PUT,%
9603     Raw={%
9604         \string{Catalog\string}<<%
9605         \ifx\Hy@temp\@empty
9606         \else
9607             /ViewerPreferences<<\Hy@temp>>%
9608         \fi
9609         \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9610         \ifx\@pdflang\@empty
9611         \else
9612             /Lang(\@pdflang)%
9613         \fi
9614         \ifx\@baseurl\@empty
9615         \else
9616             /URI<</Base(\Hy@pstringB)>>%
9617         \fi

```

```

9618      >>%
9619    }%
9620  }%
9621 }
9622 \providecommand*\pdfview{XYZ}
9623 \providecommand*\pdfviewparams{ %
9624   gsave revscl currentpoint grestore %
9625   72 add exch pop null exch null%
9626 }
9627 \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  $\TeX$ .

```

9628 \special{headertext=%

```

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

```

9629 /DvipsToPDF { 65781 div } def%
9630 /PDFToDvips { 65781 mul } def%
9631 /BPToDvips{65781 mul}def%
9632 /HyperBorder { 1 PDFToDvips } def%
9633 /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.

```

9634   /BorderArrayPatch{%
9635     [exch{%
9636       dup dup type/integertype eq exch type/realtype eq or%
9637       {BPToDvips}if%
9638     }forall]%
9639   }def%
9640 /H.S {%
9641   currentpoint %
9642   HyperBorder add /pdf@lly exch def %
9643   dup DvipsToPDF 72 add /pdf@hoff exch def %
9644   HyperBorder sub /pdf@llx exch def%
9645 } def%
9646 /H.L {%
9647   2 sub %
9648   PDFToDvips /HyperBase exch def %
9649   currentpoint %
9650   HyperBase sub /pdf@ury exch def%
9651   /pdf@urx exch def%
9652 } def%
9653 /H.A {%
9654   H.L %
9655   currentpoint exch pop %
9656   HyperBase sub % baseline skip
9657   DvipsToPDF /pdf@voff exch def%
9658 } def%
9659 /H.R {%
9660   currentpoint %
9661   HyperBorder sub /pdf@ury exch def %
9662   HyperBorder add /pdf@urx exch def %
9663   currentpoint exch pop DvipsToPDF /pdf@voff exch def%
9664 } def %

```

```

9665 systemdict%
9666 /pdfmark known%
9667 {%
9668   userdict /?pdfmark /exec load put%
9669 }{%
9670   userdict /?pdfmark /pop load put %
9671   userdict /pdfmark systemdict /cleartomark get put%
9672 }%
9673 ifelse%
9674 }
9675 </dvipsone>
9676 <*dvipdf>
9677 \def\literalps@out#1{\special{pdf: #1}}%
9678 \providecommand*\@pdfborder{0 0 1}
9679 \providecommand*\@pdfborderstyle{}
9680 </dvipdf>

```

### 46.13 TeX4ht

```

9681 <*tex4ht>
9682 \@ifpackageloaded{tex4ht}{%
9683   \typeout{hyperref tex4ht: tex4ht already loaded}%
9684 }{%
9685   \RequirePackage[htex4ht]{tex4ht}%
9686 }
9687 \hyperlinkfileprefix{}
9688 \def\PDF@FinishDoc{}
9689 \def\PDF@SetupDoc{%
9690   \ifx\@baseurl\@empty
9691     \else
9692       \special{t4ht=<base href="\@baseurl">}%
9693     \fi
9694 }
9695 \def\hyper@anchor#1{%
9696   \Hy@SaveLastskip
9697   \begingroup
9698     \let\protect=\string
9699     \special{t4ht=<a name=\hyper@quote #1\hyper@quote>}%
9700   \endgroup
9701   \Hy@activeanchortrue
9702   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9703   \special{t4ht=</a>}%
9704   \Hy@activeanchorfalse
9705   \Hy@RestoreLastskip
9706 }
9707 \def\hyper@anchorstart#1{%
9708   \Hy@SaveLastskip
9709   \begingroup
9710     \hyper@chars\special{t4ht=<a name=\hyper@quote#1\hyper@quote>}%
9711   \endgroup
9712   \Hy@activeanchortrue
9713 }
9714 \def\hyper@anchorend{%
9715   \special{t4ht=</a>}%
9716   \Hy@activeanchorfalse
9717   \Hy@RestoreLastskip
9718 }
9719 \def\@urltype{url}

```



```

9720 \def\hyper@linkstart#1#2{%
9721   \expandafter\Hy@colorlink\csname @#1color\endcsname
9722   \def\Hy@tempa{#1}%
9723   \ifx\Hy@tempa\@urlltype
9724     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
9725   \else
9726     \begingroup
9727       \hyper@chars
9728       \special{t4ht=<a href=\hyper@quote\##2\hyper@quote>}%
9729     \endgroup
9730   \fi
9731 }
9732 \def\hyper@linkend{%
9733   \special{t4ht=</a>}%
9734   \Hy@endcolorlink
9735 }
9736 \def\hyper@linkfile#1#2#3{%
9737   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
9738 }
9739 \def\hyper@linkurl#1#2{%
9740   \leavevmode
9741   \ifHy@raiselinks
9742     \setbox\@tempboxa=\color@hbox #1\color@endbox
9743     \@linkdim\dp\@tempboxa
9744     \lower\@linkdim\hbox{%
9745       \begingroup
9746         \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
9747       \endgroup
9748     }%
9749     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9750     \@linkdim\ht\@tempboxa
9751     \advance\@linkdim by -6.5\p@
9752     \raise\@linkdim\hbox{\special{t4ht=</a>}}%
9753   \else
9754     \begingroup
9755       \hyper@chars
9756       \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
9757       \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9758       \special{t4ht=</a>}%
9759     \endgroup
9760   \fi
9761 }
9762 \def\hyper@link#1#2#3{%
9763   \hyper@linkurl{#3}{\##2}%
9764 }
9765 \def\hyper@image#1#2{%
9766   \begingroup
9767     \hyper@chars
9768     \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
9769   \endgroup
9770 }
9771 \let\autoref\ref
9772 \ifx \rEfLiNK \UnDef
9773   \def\rEfLiNK #1#2{#2}%
9774 \fi
9775 \def\backref#1{}
9776 </tex4ht>

```

```

9777 <*tex4htcfg>
9778 \IfFileExists{\jobname.cfg}{\endinput}{}
9779 \Preamble{html}
9780   \begin{document}%
9781 \EndPreamble
9782 \def\TeX{\TeX}
9783 \def\OMEGA{\Omega}
9784 \def\LaTeX{\LaTeX}
9785 \def\LaTeXe{\LaTeX2e}
9786 \def\eTeX{e-TeX}
9787 \def\MF{Metafont}
9788 \def\MP{Metapost}
9789 </tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

9790 <*pdfmark>
9791 \long\def\@Form[#1]{%
9792 \AtBeginShipoutFirst{%
9793   \headerps@out{%
9794     [%
9795       /_objdef{pdfDocEncoding}%
9796       /type/dict%
9797 /OBJ pdfmark%
9798 [%
9799   {pdfDocEncoding}%
9800   <<%
9801     /Type/Encoding%
9802     /Differences[%
9803       24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
9804       /tilde %
9805       39/quotesingle %
9806       96/grave %
9807       128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
9808       /fraction/guilsinglleft/guilsinglright/minus/perthousand%
9809       /quotedblbase/quotedblleft/quotedblright/quoteleft%
9810       /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
9811       /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
9812       164/currency %
9813       166/brokenbar %
9814       168/dieresis/copyright/ordfeminine %
9815       172/logicalnot/.notdef/registered/macron/degree/plusminus%
9816       /twosuperior/threesuperior/acute/mu %
9817       183/periodcentered/cedilla/onesuperior/ordmasculine %
9818       188/onequarter/onehalf/threequarters %
9819       192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
9820       /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
9821       /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
9822       /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
9823       /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
9824       /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
9825       /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
9826       /iacute/icircumflex/idieresis/eth/ntilde/ograve/oacute%
9827       /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
9828       /ucircumflex/udieresis/yacute/thorn/ydieresis%
9829     ]%

```

```

9830 >>%
9831 /PUT pdfmark%
9832 [%
9833   /_objdef{ZaDb}%
9834   /type/dict%
9835 /OBJ pdfmark%
9836 [%
9837   {ZaDb}%
9838   <<%
9839     /Type/Font%
9840     /Subtype/Type1%
9841     /Name/ZaDb%
9842     /BaseFont/ZapfDingbats%
9843   >>%
9844 /PUT pdfmark%
9845 [%
9846   /_objdef{Helv}%
9847   /type/dict%
9848 /OBJ pdfmark%
9849 [%
9850   {Helv}%
9851   <<%
9852     /Type/Font%
9853     /Subtype/Type1%
9854     /Name/Helv%
9855     /BaseFont/Helvetica%
9856     /Encoding{pdfDocEncoding}%
9857   >>%
9858 /PUT pdfmark%
9859 [%
9860   /_objdef{aform}%
9861   /type/dict%
9862 /OBJ pdfmark%
9863 [%
9864   /_objdef{afields}%
9865   /type/array%
9866 /OBJ pdfmark%
9867 [%
9868 [%
9869   /BBox[0 0 100 100]%
9870   /_objdef{Check}%
9871 /BP pdfmark %
9872 1 0 0 setrgbcolor%
9873 /ZapfDingbats 80 selectfont %
9874 20 20 moveto%
9875 (4)show%
9876 [/EP pdfmark%
9877 [%
9878   /BBox[0 0 100 100]%
9879   /_objdef{Cross}%
9880 /BP pdfmark %
9881 1 0 0 setrgbcolor%
9882 /ZapfDingbats 80 selectfont %
9883 20 20 moveto%
9884 (8)show%
9885 [/EP pdfmark%
9886 [%

```

```

9887    /BBox[0 0 250 100]%
9888    /_objdef{Submit}%
9889    /BP pdfmark %
9890    0.6 setgray %
9891    0 0 250 100 rectfill %
9892    1 setgray %
9893    2 2 moveto %
9894    2 98 lineto %
9895    248 98 lineto %
9896    246 96 lineto %
9897    4 96 lineto %
9898    4 4 lineto %
9899    fill %
9900    0.34 setgray %
9901    248 98 moveto %
9902    248 2 lineto %
9903    2 2 lineto %
9904    4 4 lineto %
9905    246 4 lineto %
9906    246 96 lineto %
9907    fill%
9908    /Helvetica 76 selectfont %
9909    0 setgray %
9910    8 22.5 moveto%
9911    (Submit)show%
9912    [/EP pdfmark%
9913    [%
9914    /BBox[0 0 250 100]%
9915    /_objdef{SubmitP}%
9916    /BP pdfmark %
9917    0.6 setgray %
9918    0 0 250 100 rectfill %
9919    0.34 setgray %
9920    2 2 moveto %
9921    2 98 lineto %
9922    248 98 lineto %
9923    246 96 lineto %
9924    4 96 lineto %
9925    4 4 lineto %
9926    fill %
9927    1 setgray %
9928    248 98 moveto %
9929    248 2 lineto %
9930    2 2 lineto %
9931    4 4 lineto %
9932    246 4 lineto %
9933    246 96 lineto %
9934    fill%
9935    /Helvetica 76 selectfont %
9936    0 setgray %
9937    10 20.5 moveto%
9938    (Submit)show%
9939    [/EP pdfmark%
9940    }?pdfmark%
9941    [%
9942    {aform}%
9943    <<%

```

```

9944 /Fields{afields}%
9945 /DR<<%
9946 /Font<<%
9947 /ZaDb{ZaDb}%
9948 /Helv{Helv}%
9949 >>%
9950 >>%
9951 /DA(/Helv 10 Tf 0 g)%
9952 /CO{corder}%
9953 \ifHy@pdfa
9954 \else
9955 /NeedAppearances true%
9956 \fi
9957 >>%
9958 /PUT pdfmark%
9959 [%
9960 {Catalog}%
9961 <<%
9962 /AcroForm{aform}%
9963 >>%
9964 /PUT pdfmark%
9965 [%
9966 /_objdef{corder}%
9967 /type/array%
9968 /OBJ pdfmark% dps
9969 }]%
9970 \setkeys{Form}{#1}%
9971 }
9972 \def\@endForm{}
9973 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9974 \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
9975 }
9976 \def\@TextField[#1]#2{% parameters, label
9977 \def\Fld@name{#2}%
9978 \def\Fld@default{}%
9979 \let\Fld@value\@empty
9980 \def\Fld@width{\DefaultWidthofText}%
9981 \def\Fld@height{%
9982 \ifFld@multiline
9983 \DefaultHeightofTextMultiline
9984 \else
9985 \DefaultHeightofText
9986 \fi
9987 }%
9988 \begingroup
9989 \Field@toks={ }%
9990 \expandafter\HyField@SetKeys\expandafter{%
9991 \DefaultOptionsofText,#1%
9992 }%
9993 \HyField@FlagsText
9994 \ifFld@hidden\def\Fld@width{1sp}\fi
9995 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
9996 \LayoutTextField{#2}{%
9997 \Hy@escapeform\PDFForm@Text
9998 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
9999 pdfmark=/ANN,Raw={\PDFForm@Text}%
10000 }%

```

```

10001 }%
10002 \endgroup
10003 }
10004 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10005 \def\Fld@name{#2}%
10006 \let\Fld@default\relax
10007 \let\Fld@value\relax
10008 \def\Fld@width{\DefaultWidthofChoiceMenu}%
10009 \def\Fld@height{\DefaultHeightofChoiceMenu}%
10010 \beginingroup
10011 \Fld@menulength=0 %
10012 \@tempdima\z@
10013 \@for\@curropt:=#3\do{%
10014 \expandafter\Fld@checkequals\@curropt==\%
10015 \Hy@StepCount\Fld@menulength
10016 \settowidth{\@tempdimb}{\@currDisplay}%
10017 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10018 }%
10019 \advance\@tempdima by 15\p@
10020 \Field@toks={ }%
10021 \beginingroup
10022 \HyField@SetKeys{#1}%
10023 \edef\x{\endgroup
10024 \noexpand\expandafter
10025 \noexpand\HyField@SetKeys
10026 \noexpand\expandafter{%
10027 \expandafter\noexpand\csname DefaultOptionsof%
10028 \ifFld@radio
10029 Radio%
10030 \else
10031 \ifFld@combo
10032 \ifFld@popdown
10033 PopdownBox%
10034 \else
10035 ComboBox%
10036 \fi
10037 \else
10038 ListBox%
10039 \fi
10040 \fi
10041 \endcsname
10042 }%
10043 }\x
10044 \HyField@SetKeys{#1}%
10045 \ifFld@hidden\def\Fld@width{1sp}\fi
10046 \ifx\Fld@value\relax
10047 \let\Fld@value\Fld@default
10048 \fi
10049 \LayoutChoiceField{#2}{%
10050 \ifFld@radio
10051 \HyField@FlagsRadioButton
10052 @@Radio{#3}%
10053 \else
10054 \beginingroup
10055 \HyField@FlagsChoice
10056 \ifdim\Fld@width<\@tempdima
10057 \ifdim\@tempdima<1cm\@tempdima1cm\fi

```

```

10058         \edef\Fld@width{\the\@tempdima}%
10059     \fi
10060     \ifFld@combo
10061     \else
10062         \@tempdima=\the\Fld@menulength\Fld@charsize
10063         \advance\@tempdima by \Fld@borderwidth bp %
10064         \advance\@tempdima by \Fld@borderwidth bp %
10065         \edef\Fld@height{\the\@tempdima}%
10066     \fi
10067     \@@ListBox{#3}%
10068 \endgroup
10069 \fi
10070 }%
10071 \endgroup
10072 }
10073 \def\@@Radio#1{%
10074     \Fld@listcount=0 %
10075     \@for\@curropt:=#1\do{%
10076         \expandafter\Fld@checkequals\@curropt==\%
10077         \Hy@StepCount\Fld@listcount
10078         \@currDisplay\space
10079         \Hy@escapeform\PDFForm@Radio
10080         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
10081             pdfmark=/ANN,%
10082             Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
10083         } % deliberate space between radio buttons
10084     }%
10085 }
10086 \newcount\Fld@listcount
10087 \def\@@ListBox#1{%
10088     \HyField@PDFChoices{#1}%
10089     \Hy@escapeform\PDFForm@List
10090     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
10091         pdfmark=/ANN,Raw={\PDFForm@List}%
10092     }%
10093 }
10094 \def\@PushButton[#1]#2{% parameters, label
10095     \def\Fld@name{#2}%
10096     \begingroup
10097         \Field@toks={ }%
10098         \expandafter\HyField@SetKeys\expandafter{%
10099             \DefaultOptionsofPushButton,#1%
10100         }%
10101         \ifHy@pdfa
10102             \PackageError{hyperref}{%
10103                 PDF/A: Push button with JavaScript is prohibited%
10104             }{\@ehc
10105                 \LayoutPushButtonField{%
10106                     \leavevmode
10107                     \MakeButtonField{#2}%
10108                 }%
10109             \else
10110                 \HyField@FlagsPushButton
10111                 \ifFld@hidden\def\Fld@width{1sp}\fi
10112                 \LayoutPushButtonField{%
10113                     \leavevmode
10114                     \Hy@escapeform\PDFForm@Push

```

```

10115         \pdfmark[\MakeButtonField{#2}]{%
10116             pdfmark=/ANN,Raw={\PDFForm@Push}%
10117         }%
10118     }%
10119     \fi
10120 \endgroup
10121 }
10122 \def\@Submit[#1]#2{%
10123     \Field@toks={ }%
10124     \def\Fld@width{\DefaultWidthofSubmit}%
10125     \def\Fld@height{\DefaultHeightofSubmit}%
10126     \begingroup
10127         \expandafter\HyField@SetKeys\expandafter{%
10128             \DefaultOptionsofSubmit,#1%
10129         }%
10130         \HyField@FlagsPushButton
10131         \HyField@FlagsSubmit
10132         \ifFld@hidden\def\Fld@width{1sp}\fi
10133         \Hy@escapeform\PDFForm@Submit
10134         \pdfmark[\MakeButtonField{#2}]{%
10135             pdfmark=/ANN,%
10136             Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
10137         }%
10138     \endgroup
10139 }
10140 \def\@Reset[#1]#2{%
10141     \Field@toks={ }%
10142     \def\Fld@width{\DefaultWidthofReset}%
10143     \def\Fld@height{\DefaultHeightofReset}%
10144     \begingroup
10145         \expandafter\HyField@SetKeys\expandafter{%
10146             \DefaultOptionsofReset,#1%
10147         }%
10148         \leavevmode
10149         \ifHy@pdfa
10150             \PackageError{hyperref}{%
10151                 PDF/A: Reset action is prohibited%
10152             }\@ehc
10153             \MakeButtonField{#2}%
10154         \else
10155             \HyField@FlagsPushButton
10156             \ifFld@hidden\def\Fld@width{1sp}\fi
10157             \Hy@escapeform\PDFForm@Reset
10158             \pdfmark[\MakeButtonField{#2}]{%
10159                 pdfmark=/ANN,Raw={\PDFForm@Reset}%
10160             }%
10161         \fi
10162     \endgroup
10163 }%
10164 \def\@CheckBox[#1]#2{% parameters, label
10165     \def\Fld@name{#2}%
10166     \def\Fld@default{0}%
10167     \begingroup
10168         \def\Fld@width{\DefaultWidthofCheckBox}%
10169         \def\Fld@height{\DefaultHeightofCheckBox}%
10170         \Field@toks={ }%
10171         \expandafter\HyField@SetKeys\expandafter{%

```



```

10172     \DefaultOptionsofCheckBox,#1%
10173   }%
10174   \HyField@FlagsCheckBox
10175   \ifFld@hidden\def\Fld@width{1sp}\fi
10176   \LayoutCheckField{#2}{%
10177     \Hy@escapeform\PDFForm@Check
10178     \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
10179       pdfmark=/ANN,Raw={\PDFForm@Check}%
10180     }%
10181   }%
10182   \endgroup
10183 }
10184 \pdfmark

```

## 47.2 dvipdf

```

10185 \dvipdf
10186 \def\@Form[#1]{\typeout{Sorry, I do not support FORMs}}
10187 \def\@endForm{}
10188 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10189   \typeout{Sorry, dvipdf does not support FORM gauges}%
10190 }
10191 \def\@TextField[#1]#2{% parameters, label
10192   \typeout{Sorry, dvipdf does not support FORM text fields}%
10193 }
10194 \def\@CheckBox[#1]#2{% parameters, label
10195   \typeout{Sorry, dvipdf does not support FORM checkboxes}%
10196 }
10197 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10198   \typeout{Sorry, dvipdf does not support FORM choice menus}%
10199 }
10200 \def\@PushButton[#1]#2{% parameters, label
10201   \typeout{Sorry, dvipdf does not support FORM pushbuttons}%
10202 }
10203 \def\@Reset[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
10204 \def\@Submit[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
10205 \dvipdf

```

## 47.3 HyperTeX

```

10206 \hypertex
10207 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
10208 \def\@endForm{}
10209 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10210   \typeout{Sorry, HyperTeX does not support FORM gauges}%
10211 }
10212 \def\@TextField[#1]#2{% parameters, label
10213   \typeout{Sorry, HyperTeX does not support FORM text fields}%
10214 }
10215 \def\@CheckBox[#1]#2{% parameters, label
10216   \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
10217 }
10218 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10219   \typeout{Sorry, HyperTeX does not support FORM choice menus}%
10220 }
10221 \def\@PushButton[#1]#2{% parameters, label
10222   \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
10223 }
10224 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}

```

```

10225 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
10226 \end{hypertex}

```

## 47.4 TeX4ht

```

10227 \def\@Form[#1]{%
10228   \setkeys{Form}{#1}%
10229   \HCode{<form action="\Form@action" method="\Form@method">}%
10230 }
10231 \def\@endForm{\HCode{</form>}}
10232 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10233   \typeout{Sorry, TeX4ht does not support gauges}%
10234 }
10235 \def\@TextField[#1]#2{% parameters, label
10236   \let\Hy@reserved@a\empty
10237   \def\Fld@name{#2}%
10238   \def\Fld@default{}%
10239   \bgroup
10240     \Field@toks={ }%
10241     \setkeys{Field}{#1}%
10242     \HCode{<label for="\Fld@name">#2</label>}%
10243     \ifFld@password
10244       \@@PasswordField
10245     \else
10246       \@@TextField
10247     \fi
10248   \egroup
10249 }
10250 \def\@@PasswordField{%
10251   \HCode{%
10252     <input type="password" %
10253       id="\Fld@name" %
10254       name="\Fld@name" %
10255       \ifFld@hidden type="hidden" \fi
10256       value="\Fld@default" %
10257       \the\Field@toks
10258     >%
10259   }%
10260 }
10261 \def\@@TextField{%
10262   \ifFld@multiline
10263     \HCode{<textarea %
10264       \ifFld@readonly readonly \fi
10265       id="\Fld@name" %
10266       name="\Fld@name" %
10267       \ifFld@hidden type="hidden" \fi
10268       \the\Field@toks>%
10269     }%
10270     \Fld@default
10271     \HCode{</textarea>}%
10272   \else
10273     \HCode{<input type="text" %
10274       \ifFld@readonly readonly \fi
10275       id="\Fld@name" %
10276       name="\Fld@name" %
10277       \ifFld@hidden type="hidden" \fi
10278       value="\Fld@default" %
10279     }%
10280   }%

```

```

10280     \the\Field@toks>%
10281   }%
10282 \fi
10283 }
10284 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10285   \def\Fld@name{#2}%
10286   \def\Fld@default{}%
10287   \let\Hy@reserved@a\relax
10288   \begingroup
10289     \expandafter\Fld@findlength#3\\%
10290     \Field@toks={ }%
10291     \setkeys{Field}{#1}%
10292     #2%
10293     \ifFld@radio
10294       \expandafter\@@Radio#3\\%
10295     \else
10296       \expandafter\@@Menu#3\\%
10297     \fi
10298   \endgroup
10299 }
10300 \def\Fld@findlength#1\\{%
10301   \Fld@menulength=0 %
10302   \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
10303 }
10304 \def\@@Menu#1\\{%
10305   \HCode{<select size="\the\Fld@menulength" %
10306     name="\Fld@name" %
10307     \the\Field@toks>%
10308   }%
10309   \@for\@curropt:=#1\do{%
10310     \expandafter\Fld@checkequals\@curropt==\\%
10311     \HCode{<option %
10312       \ifx\@curropt\Fld@default selected \fi
10313       value="\@currValue">\@currDisplay</option>%
10314     }%
10315   }%
10316   \HCode{</select>}%
10317 }
10318 \def\@@Radio#1\\{%
10319   \@for\@curropt:=#1\do{%
10320     \expandafter\Fld@checkequals\@curropt==\\%
10321     \HCode{<input type="radio" %
10322       \ifx\@curropt\Fld@default checked \fi
10323       name="\Fld@name" %
10324       value="\@currValue" %
10325       \the\Field@toks>%
10326     }%
10327     \@currDisplay
10328   }%
10329 }
10330 \def\@PushButton[#1]#2{% parameters, label
10331   \def\Fld@name{#2}%
10332   \bgroup
10333     \Field@toks={ }%
10334     \setkeys{Field}{#1}%
10335     \HCode{<input type="button" %
10336       name="\Fld@name" %

```

```

10337         value="#2" %
10338         \the\Field@toks>%
10339     }%
10340     \HCode{</button>}%
10341 \egroup
10342 }
10343 \def\@Submit[#1]#2{%
10344     \HCode{<button type="submit">#2</button>}%
10345 }
10346 \def\@Reset[#1]#2{%
10347     \HCode{<button type="reset">#2</button>}%
10348 }
10349 \def\@CheckBox[#1]#2{% parameters, label
10350     \let\Hy@reserved@a\@empty
10351     \def\Fld@name{#2}%
10352     \def\Fld@default{0}%
10353     \bgroup
10354         \Field@toks={ }%
10355         \setkeys{Field}{#1}%
10356         \HCode{<input type="checkbox" %
10357             \ifFld@checked checked \fi
10358             \ifFld@disabled disabled \fi
10359             \ifFld@readonly readonly \fi
10360             name="\Fld@name" %
10361             \ifFld@hidden type="hidden" \fi
10362             value="\Fld@default" %
10363             \the\Field@toks>%
10364             #2%
10365         }%
10366     \egroup
10367 }
10368 </tex4ht>

```

## 47.5 pdfTeX

```

10369 <*pdftex>
10370 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10371     \typeout{Sorry, pdftex does not support FORM gauges}%
10372 }
10373 \def\MakeFieldObject#1#2{\sbox0{#1}%
10374     \immediate\pdfxform0 %
10375     \expandafter\edef\csname #2Object\endcsname{%
10376         \the\pdflastxform\space 0 R%
10377     }%
10378 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
10379 }%
10380 \def\@Form[#1]{%
10381     \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
10382     \setkeys{Form}{#1}%
10383     \ifnum\pdftexversion>13 %
10384         \pdfrefobj\OBJ@pdfdocencoding
10385         \pdfrefobj\OBJ@ZaDb
10386         \pdfrefobj\OBJ@Helv
10387         \pdfrefobj\OBJ@acroform
10388     \fi
10389     \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
10390     \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

10391 \beginngroup
10392 \fontfamily{pzd}%
10393 \fontencoding{U}%
10394 \fontseries{m}%
10395 \fontshape{n}%
10396 \selectfont
10397 \char123 %
10398 \endgroup
10399 }{Ding}%
10400 \MakeFieldObject{%
10401 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
10402 }{Submit}%
10403 \MakeFieldObject{%
10404 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
10405 }{SubmitP}%
10406 }
10407 \def\@endForm{}
10408 \def\@TextField[#1]#2{% parameters, label
10409 \def\Fld@name{#2}%
10410 \def\Fld@default{}%
10411 \let\Fld@value\@empty
10412 \def\Fld@width{\DefaultWidthofText}%
10413 \def\Fld@height{%
10414 \ifFld@multiline
10415 \DefaultHeightofTextMultiline
10416 \else
10417 \DefaultHeightofText
10418 \fi
10419 }%
10420 \beginngroup
10421 \Field@toks={ }%
10422 \expandafter\HyField@SetKeys\expandafter{%
10423 \DefaultOptionsofText,#1%
10424 }%
10425 \PDFForm@Name
10426 \HyField@FlagsText
10427 \ifFld@hidden\def\Fld@width{1sp}\fi
10428 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
10429 \LayoutTextField{#2}{%
10430 \Hy@escapeform\PDFForm@Text
10431 \pdfstartlink user {\PDFForm@Text}\relax
10432 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
10433 }%
10434 \endgroup
10435 }
10436 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10437 \def\Fld@name{#2}%
10438 \let\Fld@default\relax
10439 \let\Fld@value\relax
10440 \def\Fld@width{\DefaultWidthofChoiceMenu}%
10441 \def\Fld@height{\DefaultHeightofChoiceMenu}%
10442 \beginngroup
10443 \Fld@menulength=0 %
10444 \@tempdima\z@
10445 \@for\@curropt:=#3\do{%
10446 \expandafter\Fld@checkequals\@curropt==\%
10447 \Hy@StepCount\Fld@menulength

```

```

10448     \settowidth{\@tempdimb}{\@currDisplay}%
10449     \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10450 }%
10451 \advance\@tempdima by 15\p@
10452 \Field@toks={ }%
10453 \begingroup
10454   \HyField@SetKeys{#1}%
10455 \edef\x{\endgroup
10456   \noexpand\expandafter
10457   \noexpand\HyField@SetKeys
10458   \noexpand\expandafter{%
10459     \expandafter\noexpand\csname DefaultOptionsof%
10460       \ifFld@radio
10461         Radio%
10462       \else
10463         \ifFld@combo
10464           \ifFld@popdown
10465             PopdownBox%
10466           \else
10467             ComboBox%
10468           \fi
10469         \else
10470           ListBox%
10471         \fi
10472       \fi
10473     \endcsname
10474   }%
10475 }\x
10476 \HyField@SetKeys{#1}%
10477 \PDFForm@Name
10478 \ifFld@hidden\def\Fld@width{1sp}\fi
10479 \ifx\Fld@value\relax
10480   \let\Fld@value\Fld@default
10481 \fi
10482 \LayoutChoiceField{#2}{%
10483   \ifFld@radio
10484     \HyField@FlagsRadioButton
10485     \@@Radio{#3}%
10486   \else
10487     \begingroup
10488     \HyField@FlagsChoice
10489     \ifdim\Fld@width<\@tempdima
10490       \ifdim\@tempdima<1cm\@tempdima1cm\fi
10491       \edef\Fld@width{\the\@tempdima}%
10492     \fi
10493     \ifFld@combo
10494     \else
10495       \@tempdima=\the\Fld@menulength\Fld@charsize
10496       \advance\@tempdima by \Fld@borderwidth bp %
10497       \advance\@tempdima by \Fld@borderwidth bp %
10498       \edef\Fld@height{\the\@tempdima}%
10499     \fi
10500     \@@Listbox{#3}%
10501   \endgroup
10502 \fi
10503 }%
10504 \endgroup

```

```

10505 }
10506 \def\@@Radio#1{%
10507   \Fld@listcount=0 %
10508   \@for\@curropt:=#1\do{%
10509     \expandafter\Fld@checkequals\@curropt==\\%
10510     \Hy@StepCount\Fld@listcount
10511     \@currDisplay\space
10512     \leavevmode
10513     \Hy@escapeform\PDFForm@Radio
10514     \pdfstartlink user {%
10515       \PDFForm@Radio
10516       /AP<<%
10517       /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.

```

10518       /\@currValue\space \DingObject
10519       >>%
10520       >>%
10521     }%
10522     \relax
10523     \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
10524     \space % deliberate space between radio buttons
10525   }%
10526 }
10527 \newcount\Fld@listcount
10528 \def\@@ListBox#1{%
10529   \HyField@PDFChoices{#1}%
10530   \leavevmode
10531   \Hy@escapeform\PDFForm@List
10532   \pdfstartlink user {\PDFForm@List}\relax
10533   \MakeChoiceField{\Fld@width}{\Fld@height}%
10534   \pdfendlink
10535 }
10536 \def\@PushButton[#1]#2{% parameters, label
10537   \def\Fld@name{#2}%
10538   \beginngroup
10539     \Field@toks={ }%
10540     \expandafter\HyField@SetKeys\expandafter{%
10541       \DefaultOptionsofPushButton,#1%
10542     }%
10543     \PDFForm@Name
10544     \ifHy@pdfa
10545       \PackageError{hyperref}{%
10546         PDF/A: Push button with JavaScript is prohibited%
10547       }\@ehc
10548       \LayoutPushButtonField{%
10549         \leavevmode
10550         \MakeButtonField{#2}%
10551       }%
10552     \else
10553       \HyField@FlagsPushButton
10554       \ifFld@hidden\def\Fld@width{1sp}\fi
10555       \LayoutPushButtonField{%
10556         \leavevmode
10557         \Hy@escapeform\PDFForm@Push
10558         \pdfstartlink user {\PDFForm@Push}\relax

```

```

10559         \MakeButtonField{#2}%
10560         \pdfendlink
10561     }%
10562     \fi
10563 \endgroup
10564 }
10565 \def \@Submit[#1]#2{%
10566     \Field@toks={ }%
10567     \def \Fld@width{\DefaultWidthofSubmit}%
10568     \def \Fld@height{\DefaultHeightofSubmit}%
10569     \begingroup
10570         \expandafter\HyField@SetKeys\expandafter{%
10571             \DefaultOptionsofSubmit,#1%
10572         }%
10573         \HyField@FlagsPushButton
10574         \HyField@FlagsSubmit
10575         \ifFld@hidden\def \Fld@width{1sp}\fi
10576         \leavevmode
10577         \Hy@escapeform\PDFForm@Submit
10578         \pdfstartlink user {%
10579             \PDFForm@Submit
10580             /AP<</N \SubmitObject/D \SubmitPObject>>%
10581         }%
10582         \relax
10583         \MakeButtonField{#2}%
10584         \pdfendlink
10585     \endgroup
10586 }
10587 \def \@Reset[#1]#2{%
10588     \Field@toks={ }%
10589     \def \Fld@width{\DefaultWidthofReset}%
10590     \def \Fld@height{\DefaultHeightofReset}%
10591     \begingroup
10592         \expandafter\HyField@SetKeys\expandafter{%
10593             \DefaultOptionsofReset,#1%
10594         }%
10595         \leavevmode
10596         \ifHy@pdfa
10597             \PackageError{hyperref}{%
10598                 PDF/A: Reset action is prohibited%
10599             }\@ehc
10600             \MakeButtonField{#2}%
10601         \else
10602             \HyField@FlagsPushButton
10603             \ifFld@hidden\def \Fld@width{1sp}\fi
10604             \Hy@escapeform\PDFForm@Reset
10605             \pdfstartlink user {\PDFForm@Reset}\relax
10606             \MakeButtonField{#2}%
10607             \pdfendlink
10608         \fi
10609     \endgroup
10610 }
10611 \def \@CheckBox[#1]#2{% parameters, label
10612     \def \Fld@name{#2}%
10613     \def \Fld@default{0}%
10614     \begingroup
10615         \def \Fld@width{\DefaultWidthofCheckBox}%

```



```

10616 \def\Fld@height{\DefaultHeightofCheckBox}%
10617 \Field@toks={ }%
10618 \expandafter\HyField@SetKeys\expandafter{%
10619 \DefaultOptionsofCheckBox,#1%
10620 }%
10621 \PDFForm@Name
10622 \HyField@FlagsCheckBox
10623 \ifFld@hidden\def\Fld@width{1sp}\fi
10624 \LayoutCheckField{#2}{%
10625 \Hy@escapeform\PDFForm@Check
10626 \pdfstartlink user {\PDFForm@Check}\relax
10627 \MakeCheckField{\Fld@width}{\Fld@height}%
10628 \pdfendlink
10629 }%
10630 \endgroup
10631 }
10632 \pdfobj {%
10633 <<%
10634 /Type/Encoding%
10635 /Differences[%
10636 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
10637 /ring/tilde %
10638 39/quotesingle %
10639 96/grave %
10640 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10641 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
10642 /quotedblbase/quotedblleft/quotedblright/quoteleft%
10643 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
10644 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
10645 164/currency %
10646 166/brokenbar %
10647 168/dieresis/copyright/ordfeminine %
10648 172/logicalnot/.notdef/registered/macron/degree/plusminus%
10649 /twosuperior/threesuperior/acute/mu %
10650 183/periodcentered/cedilla/onesuperior/ordmasculine %
10651 188/onequarter/onehalf/threequarters %
10652 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
10653 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
10654 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
10655 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
10656 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
10657 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
10658 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
10659 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
10660 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
10661 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
10662 ]%
10663 >>%
10664 }
10665 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
10666 \pdfobj{%
10667 <<%
10668 /Type/Font%
10669 /Subtype/Type1%
10670 /Name/ZaDb%
10671 /BaseFont/ZapfDingbats%
10672 >>%

```

```

10673 }
10674 \edef\OBJ@ZaDb{\the\pdflastobj}
10675 \pdfobj{%
10676   <<%
10677     /Type/Font%
10678     /Subtype/Type1%
10679     /Name/Helv%
10680     /BaseFont/Helvetica%
10681     /Encoding \OBJ@pdfdocencoding\space 0 R%
10682   >>%
10683 }
10684 \edef\OBJ@Helv{\the\pdflastobj}
10685 \pdfobj{%
10686   <<%
10687     /Fields []%
10688     /DR<<%
10689       /Font<<%
10690         /ZaDb \OBJ@ZaDb\space 0 R%
10691         /Helv \OBJ@Helv\space 0 R%
10692       >>%
10693     >>%
10694     /DA(/Helv 10 Tf 0 g)%
10695     \ifHy@pdfa
10696     \else
10697       /NeedAppearances true%
10698     \fi
10699   >>%
10700 }
10701 \edef\OBJ@acroform{\the\pdflastobj}
10702 </pdfTeX>

```

## 47.6 dvipdfm

D. P. Story adapted the pdfTeX forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```

10703 < *dvipdfm>

```

\@Gauge

```

10704 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10705   \typeout{Sorry, dvipdfm does not support FORM gauges}%
10706 }

```

\@Form

```

10707 \def\@Form[#1]{%
10708   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
10709   \setkeys{Form}{#1}%
10710   \@pdfm@mark{obj @afields []}%
10711   \@pdfm@mark{obj @corder []}%
10712   \@pdfm@mark{%
10713     obj @aform <<%
10714       /Fields @afields%
10715       /DR<<%
10716       /Font<<%
10717         /ZaDb @OBJ@ZaDb%
10718         /Helv @OBJ@Helv%
10719       >>%
10720     >>%

```

```

10721      /DA(/Helv 10 Tf 0 g)%
10722      /CO @corder%
10723      \ifHy@pdfa
10724      \else
10725          /NeedAppearances true%
10726      \fi
10727      >>%
10728  }%
10729  \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
10730 }

\@endForm

10731 \def\@endForm{ }

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.
10732 \def\dvipdfm@setdim{%
10733   height \the\ht\pdfm@box\space
10734   width \the\wd\pdfm@box\space
10735   depth \the\dp\pdfm@box\space
10736 }

\HyField@AnnotCount
10737 \newcount\HyField@AnnotCount
10738 \HyField@AnnotCount=\z@

\HyField@AdvanceAnnotCount
10739 \def\HyField@AdvanceAnnotCount{%
10740   \global\advance\HyField@AnnotCount\@ne
10741 }

\HyField@TheAnnotCount
10742 \def\HyField@TheAnnotCount{%
10743   \the\HyField@AnnotCount
10744 }

\@TextField
10745 \def\@TextField[#1]#2{% parameters, label
10746   \def\Fld@name{#2}%
10747   \def\Fld@default{ }%
10748   \let\Fld@value\@empty
10749   \def\Fld@width{\DefaultWidthofText}%
10750   \def\Fld@height{%
10751     \ifFld@multiline
10752       \DefaultHeightofTextMultiline
10753     \else
10754       \DefaultHeightofText
10755     \fi
10756   }%
10757   \begingroup
10758     \Field@toks={ }%
10759     \expandafter\HyField@SetKeys\expandafter{%
10760       \DefaultOptionsofText,#1%
10761     }%
10762     \PDFForm@Name
10763     \HyField@FlagsText
10764     \ifFld@hidden\def\Fld@width{1sp}\fi

```

```

10765 \ifx\Fld@value\empty\def\Fld@value{\Fld@default}\fi
10766 \setbox\pdfm@box=\hbox{%
10767   \MakeTextField{\Fld@width}{\Fld@height}%
10768 }%
10769 \HyField@AdvanceAnnotCount
10770 \LayoutTextField{#2}{%
10771   \Hy@escapeform\PDFForm@Text
10772   \@pdfm@mark{%
10773     ann @text\HyField@TheAnnotCount\space
10774     \dvipdfm@setdim << \PDFForm@Text >>%
10775   }%
10776 }%
10777 \unhbox\pdfm@box
10778 \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
10779 % record in @afields array
10780 \endgroup
10781 }

```

\@ChoiceMenu

```

10782 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10783   \def\Fld@name{#2}%
10784   \let\Fld@default\relax
10785   \let\Fld@value\relax
10786   \def\Fld@width{\DefaultWidthofChoiceMenu}%
10787   \def\Fld@height{\DefaultHeightofChoiceMenu}%
10788   \begingroup
10789     \Fld@menulength=0 %
10790     \@tempdima\z@
10791     \@for\@curropt:=#3\do{%
10792       \expandafter\Fld@checkequals\@curropt==\%
10793       \Hy@StepCount\Fld@menulength
10794       \settowidth{\@tempdimb}{\@currDisplay}%
10795       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10796     }%
10797     \advance\@tempdima by 15\p@
10798     \Field@toks={ }%
10799     \begingroup
10800       \HyField@SetKeys{#1}%
10801     \edef\x{\endgroup
10802       \noexpand\expandafter
10803       \noexpand\HyField@SetKeys
10804       \noexpand\expandafter{%
10805         \expandafter\noexpand\csname DefaultOptionsof%
10806           \ifFld@radio
10807             Radio%
10808           \else
10809             \ifFld@combo
10810               \ifFld@popdown
10811                 PopdownBox%
10812               \else
10813                 ComboBox%
10814               \fi
10815             \else
10816               ListBox%
10817             \fi
10818           \fi
10819         \endcsname

```

```

10820     }%
10821   }\x
10822   \HyField@SetKeys{#1}%
10823   \PDFForm@Name
10824   \ifFld@hidden\def\Fld@width{1sp}\fi
10825   \ifx\Fld@value\relax
10826     \let\Fld@value\Fld@default
10827   \fi
10828   \LayoutChoiceField{#2}{%
10829     \ifFld@radio
10830       \HyField@FlagsRadioButton
10831       \@@Radio{#3}%
10832     \else
10833       \begingroup
10834         \HyField@FlagsChoice
10835         \ifdim\Fld@width<\@tempdima
10836           \ifdim\@tempdima<1cm\@tempdima1cm\fi
10837           \edef\Fld@width{\the\@tempdima}%
10838         \fi
10839         \ifFld@combo
10840         \else
10841           \@tempdima=\the\Fld@menulength\Fld@charsize
10842           \advance\@tempdima by \Fld@borderwidth bp %
10843           \advance\@tempdima by \Fld@borderwidth bp %
10844           \edef\Fld@height{\the\@tempdima}%
10845         \fi
10846         \@@ListBox{#3}%
10847       \endgroup
10848     \fi
10849   }%
10850 \endgroup
10851 }

```

\@@Radio

```

10852 \def\@@Radio#1{%
10853   \Fld@listcount=0 %
10854   \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
10855   \@for\@curropt:=#1\do{%
10856     \expandafter\Fld@checkequals\@curropt==\%
10857     \Hy@StepCount\Fld@listcount
10858     \@currDisplay\space
10859     \leavevmode
10860     \Hy@escapeform\PDFForm@Radio
10861     \ifnum\Fld@listcount=1 %
10862       \HyField@AdvanceAnnotCount
10863     \fi
10864     \@pdfm@mark{%
10865       ann \ifnum\Fld@listcount=1 @radio\HyField@TheAnnotCount\space\fi
10866       \dvi pdfm@setdim
10867       <<%
10868         \PDFForm@Radio
10869         /AP<</N<</\@currValue /null>>>>%
10870       >>%
10871     }%
10872     \unhcopy\pdfm@box\space% deliberate space between radio buttons
10873     \ifnum\Fld@listcount=1 %
10874       \@pdfm@mark{put @afields @radio\HyField@TheAnnotCount}%

```

```

10875     \fi
10876   }%
10877 }

\Fld@listcount

10878 \newcount\Fld@listcount

@@@Listbox

10879 \def\@@Listbox#1{%
10880   \HyField@PDFChoices{#1}%
10881   \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
10882   \leavevmode
10883   \Hy@escapeform\PDFForm@List
10884   \HyField@AdvanceAnnotCount
10885   \@pdfm@mark{%
10886     ann @list\HyField@TheAnnotCount\space
10887     \dvipdfm@setdim
10888     <<\PDFForm@List>>%
10889   }%
10890   \unhbox\pdfm@box
10891   \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
10892 }

@PushButton

10893 \def\@PushButton[#1]#2{% parameters, label
10894   \def\Fld@name{#2}%
10895   \begingroup
10896     \Field@toks={ }%
10897     \expandafter\HyField@SetKeys\expandafter{%
10898       \DefaultOptionsofPushButton,#1%
10899     }%
10900     \PDFForm@Name
10901     \ifHy@pdfa
10902       \PackageError{hyperref}{%
10903         PDF/A: Push button with JavaScript is prohibited%
10904       }\@ehc
10905       \LayoutPushButtonField{%
10906         \leavevmode
10907         \MakeButtonField{#2}%
10908       }%
10909     \else
10910       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10911       \HyField@FlagsPushButton
10912       \ifFld@hidden\def\Fld@width{1sp}\fi
10913       \HyField@AdvanceAnnotCount
10914       \LayoutPushButtonField{%
10915         \leavevmode
10916         \Hy@escapeform\PDFForm@Push
10917         \@pdfm@mark{%
10918           ann @push\HyField@TheAnnotCount\space
10919           \dvipdfm@setdim
10920           <<\PDFForm@Push>>%
10921         }%
10922       }%
10923       \unhbox\pdfm@box
10924       \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
10925     \fi

```

```

10926 \endgroup
10927 }

\@Submit
10928 \def\@Submit[#1]#2{%
10929   \Field@toks={ }%
10930   \def\Fld@width{\DefaultWidthofSubmit}%
10931   \def\Fld@height{\DefaultHeightofSubmit}%
10932   \begingroup
10933     \expandafter\HyField@SetKeys\expandafter{%
10934       \DefaultOptionsofSubmit,#1%
10935     }%
10936     \HyField@FlagsPushButton
10937     \HyField@FlagsSubmit
10938     \ifFld@hidden\def\Fld@width{1sp}\fi
10939     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10940     \leavevmode
10941     \Hy@escapeform\PDFForm@Submit
10942     \HyField@AdvanceAnnotCount
10943     \@pdfm@mark{%
10944       ann @submit\HyField@TheAnnotCount\space
10945       \dvi pdfm@setdim
10946       <<\PDFForm@Submit>>%
10947     }%
10948     \unhbox\pdfm@box%
10949     \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
10950 \endgroup
10951 }

\@Reset
10952 \def\@Reset[#1]#2{%
10953   \Field@toks={ }%
10954   \def\Fld@width{\DefaultWidthofReset}%
10955   \def\Fld@height{\DefaultHeightofReset}%
10956   \begingroup
10957     \expandafter\HyField@SetKeys\expandafter{%
10958       \DefaultOptionsofReset,#1%
10959     }%
10960     \leavevmode
10961     \ifHy@pdfa
10962       \PackageError{hyperref}{%
10963         PDF/A: Reset action is prohibited%
10964       }\@ehc
10965       \MakeButtonField{#2}%
10966     \else
10967       \HyField@FlagsPushButton
10968       \ifFld@hidden\def\Fld@width{1sp}\fi
10969       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10970       \Hy@escapeform\PDFForm@Reset
10971       \HyField@AdvanceAnnotCount
10972       \@pdfm@mark{%
10973         ann @reset\HyField@TheAnnotCount\space
10974         \dvi pdfm@setdim
10975         <<\PDFForm@Reset>>%
10976       }%
10977       \unhbox\pdfm@box
10978       \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%

```

```

10979     \fi
10980   \endgroup
10981 }

\@CheckBox

10982 \def\@CheckBox[#1]#2{% parameters, label
10983   \def\Fld@name{#2}%
10984   \def\Fld@default{0}%
10985   \begingroup
10986     \def\Fld@width{\DefaultWidthofCheckBox}%
10987     \def\Fld@height{\DefaultHeightofCheckBox}%
10988     \Field@toks={ }%
10989     \expandafter\HyField@SetKeys\expandafter{%
10990       \DefaultOptionsofCheckBox,#1%
10991     }%
10992     \PDFForm@Name
10993     \HyField@FlagsCheckBox
10994     \ifFld@hidden\def\Fld@width{1sp}\fi
10995     \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
10996     \HyField@AdvanceAnnotCount
10997     \LayoutCheckField{#2}{%
10998       \Hy@escapeform\PDFForm@Check
10999       \@pdfm@mark{%
11000         ann @check\HyField@TheAnnotCount\space
11001         \dvi pdfm@setdim
11002         <<\PDFForm@Check>>%
11003       }%
11004       \unhbox\pdfm@box
11005       \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
11006     }%
11007   \endgroup
11008 }

11009 \@pdfm@mark{obj @OBJpdfdocencoding%
11010   <<%
11011     /Type/Encoding%
11012     /Differences[%
11013       24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
11014       39/quotesingle %
11015       96/grave %
11016       128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
11017       /fraction/guilsinglleft/guilsinglright/minus/perthousand%
11018       /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
11019       /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
11020       /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
11021       164/currency %
11022       166/brokenbar %
11023       168/dieresis/copyright/ordfeminine %
11024       172/logicalnot/.notdef/registered/macron/degree/plusminus%
11025       /twosuperior/threesuperior/acute/mu %
11026       183/periodcentered/cedilla/onesuperior/ordmasculine %
11027       188/onequarter/onehalf/threequarters %
11028       192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
11029       /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
11030       /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
11031       /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
11032       /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
11033       /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%

```



```

11034      /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
11035      /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
11036      /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
11037      /thorn/ydieresis%
11038    ]%
11039  >>%
11040 }
11041 \@pdfmark{obj @OBJZaDb%
11042   <<%
11043     /Type/Font%
11044     /Subtype/Type1%
11045     /Name/ZaDb%
11046     /BaseFont/ZapfDingbats%
11047   >>%
11048 }
11049 \@pdfmark{obj @OBJHelv%
11050   <<%
11051     /Type/Font%
11052     /Subtype/Type1%
11053     /Name/Helv%
11054     /BaseFont/Helvetica%
11055     /Encoding @OBJpdfdocencoding%
11056   >>%
11057 }
11058 </dvipdfm>

```

## 47.7 Common forms part

```
11059 <*pdfform>
```

\Hy@escapestring

```

11060 \begingroup\expandafter\expandafter\expandafter\endgroup
11061 \expandafter\ifx\csname pdfescapestring\endcsname\relax
11062   \let\Hy@escapestring\@firstofone
11063   \def\Hy@escapeform#1{%
11064     \ifHy@escapeform
11065       \def\Hy@escapestring##1{%
11066         \noexpand\Hy@escapestring{\noexpand##1}%
11067       }%
11068     \edef\Hy@temp{#1}%
11069     \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
11070     \def\Hy@escapestring##1{%
11071       \@ifundefined{Hy@esc@\string##1}{%
11072         ##1%
11073         \ThisShouldNotHappen
11074       }{%
11075         \csname Hy@esc@\string##1\endcsname
11076       }%
11077     }%
11078   \else
11079     \let\Hy@escapestring\@firstofone
11080   \fi
11081 }%
11082 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
11083   \ifx\#3\%
11084   \else
11085     \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%

```

```

11086     \Hy@ReturnAfterFi{%
11087     \Hy@@escapeform#3\@nil
11088     }%
11089     \fi
11090 }%
11091 \else
11092 \def\Hy@escapeform#1{%
11093   \ifHy@escapeform
11094     \let\Hy@escapestring\pdfescapestring
11095   \else
11096     \let\Hy@escapestring\@firstofone
11097   \fi
11098 }%
11099 \Hy@escapeform{}%
11100 \fi

```

\PDFForm@Name

```

11101 \def\PDFForm@Name{%
11102   \begingroup
11103   \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
11104     \ifHy@unicode
11105       \Hy@unicodedefalse
11106     \fi
11107   \fi
11108   \pdfstringdef\Hy@gtemp\Fld@name
11109 \endgroup
11110 \let\Fld@name\Hy@gtemp
11111 }

```

\PDFForm@Check

```

11112 \def\PDFForm@Check{%
11113   /Subtype/Widget%
11114   \Fld@annotflags
11115   /T(\Fld@name)%
11116   /FT/Btn%
11117   \Fld@flags
11118   /Q \Fld@align
11119   /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
11120   /MK<<%
11121     \ifnum\Fld@rotation=\z@
11122     \else
11123       /R \Fld@rotation
11124     \fi
11125     \ifx\Fld@bordercolor\relax
11126     \else
11127       /BC[\Fld@bordercolor]%
11128     \fi
11129     \ifx\Fld@bcolor\relax
11130     \else
11131       /BG[\Fld@bcolor]%
11132     \fi
11133     /CA(\Hy@escapestring{\Fld@cbsymbol})%
11134   >>%
11135   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
11136     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11137   /H/P%
11138   \ifFld@checked /V/Yes\else /V/Off\fi

```

11139 }

\PDFForm@Push

```
11140 \ifHy@pdfa
11141 \else
11142   \def\PDFForm@Push{%
11143     /Subtype/Widget%
11144     \Fld@annotflags
11145     /T(\Fld@name)%
11146     /FT/Btn%
11147     \Fld@flags
11148     /H/P%
11149     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11150     \ifcase0\ifnum\Fld@rotation=\z@   \else 1\fi
11151       \ifx\Fld@bordercolor\relax\else 1\fi
11152       \space
11153     \else
11154       /MK<<%
11155         \ifnum\Fld@rotation=\z@
11156         \else
11157           /R \Fld@rotation
11158         \fi
11159         \ifx\Fld@bordercolor\relax
11160         \else
11161           /BC[\Fld@bordercolor]%
11162         \fi
11163       >>%
11164     \fi
11165     /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick})>>%
11166   }%
11167 \fi
```

\Fld@additionalactions

```
11168 \def\Fld@@additionalactions{%
K input (keystroke) format
11169   \ifx\Fld@keystroke@code\@empty
11170   \else
11171     /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
11172   \fi
F display format
11173   \ifx\Fld@format@code\@empty
11174   \else
11175     /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
11176   \fi
V validation
11177   \ifx\Fld@validate@code\@empty
11178   \else
11179     /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
11180   \fi
C calculation
11181   \ifx\Fld@calculate@code\@empty
11182   \else
11183     /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
11184   \fi
```

Fo receiving the input focus

```
11185 \ifx\Fld@onfocus@code\@empty
11186 \else
11187 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
11188 \fi
```

Bl loosing the input focus (blurred)

```
11189 \ifx\Fld@onblur@code\@empty
11190 \else
11191 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
11192 \fi
```

D pressing the mouse button (down)

```
11193 \ifx\Fld@onmousedown@code\@empty
11194 \else
11195 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
11196 \fi
```

U releasing the mouse button (up)

```
11197 \ifx\Fld@onmouseup@code\@empty
11198 \else
11199 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
11200 \fi
```

E cursor enters the annotation's active area.

```
11201 \ifx\Fld@onenter@code\@empty
11202 \else
11203 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
11204 \fi
```

X cursor exits the annotation's active area.

```
11205 \ifx\Fld@onexit@code\@empty
11206 \else
11207 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
11208 \fi
11209 }
```

```
11210 \def\Fld@additionalactions{%
11211 \if-\Fld@@additionalactions-%
11212 \else
11213 \ifHy@pdfa
11214 \else
11215 /AA<<\Fld@@additionalactions>>%
11216 \fi
11217 \fi
11218 }
```

\PDFForm@List

```
11219 \def\PDFForm@List{%
11220 /Subtype/Widget%
11221 \Fld@annotflags
11222 /T(\Fld@name)%
11223 /FT/Ch%
11224 \Fld@flags
11225 /Q \Fld@align
11226 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11227 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11228 \ifx\Fld@bordercolor\relax\else 1\fi
11229 \ifx\Fld@bcolor\relax \else 1\fi
11230 \space
```

```

11231 \else
11232   /MK<<%
11233   \ifnum\Fld@rotation=\z@
11234   \else
11235     /R \Fld@rotation
11236   \fi
11237   \ifx\Fld@bordercolor\relax
11238   \else
11239     /BC[\Fld@bordercolor]%
11240   \fi
11241   \ifx\Fld@bcolor\relax
11242   \else
11243     /BG[\Fld@bcolor]%
11244   \fi
11245   >>%
11246 \fi
11247 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
11248   \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11249 \Fld@choices
11250 \Fld@additionalactions
11251 }

```

\PDFForm@Radio

```

11252 \def\PDFForm@Radio{%
11253   /Subtype/Widget%
11254   \Fld@annotflags
11255   /T(\Fld@name)%
11256   /FT/Btn%
11257   \Fld@flags
11258   /H/P%
11259   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11260   /MK<<%
11261   \ifnum\Fld@rotation=\z@
11262   \else
11263     /R \Fld@rotation
11264   \fi
11265   \ifx\Fld@bordercolor\relax
11266   \else
11267     /BC[\Fld@bordercolor]%
11268   \fi
11269   \ifx\Fld@bcolor\relax
11270   \else
11271     /BG[\Fld@bcolor]%
11272   \fi
11273   /CA(H)%
11274   >>%
11275   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
11276     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11277   \ifx\@currValue\Fld@default
11278     /V/\Fld@default
11279   \else
11280     /V/Off%
11281   \fi
11282   \Fld@additionalactions
11283 }

```

\PDFForm@Text

```

11284 \def\PDFForm@Text{%
11285   /Subtype/Widget%
11286   \Fld@annotflags
11287   /T(\Fld@name)%
11288   /FT/Tx%
11289   \Fld@flags
11290   /Q \Fld@align
11291   /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
11292   \ifcase0\ifnum\Fld@rotation=\z@   \else 1\fi
11293       \ifx\Fld@bordercolor\relax\else 1\fi
11294       \ifx\Fld@bcolor\relax   \else 1\fi
11295       \space
11296   \else
11297       /MK<<%
11298       \ifnum\Fld@rotation=\z@
11299       \else
11300       /R \Fld@rotation
11301       \fi
11302       \ifx\Fld@bordercolor\relax
11303       \else
11304       /BC[\Fld@bordercolor]%
11305       \fi
11306       \ifx\Fld@bcolor\relax
11307       \else
11308       /BG[\Fld@bcolor]%
11309       \fi
11310       >>%
11311   \fi
11312   /DA(/Helv \strip@pt\Fld@charsize\space Tf%
11313       \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11314   /DV(\Hy@escapestring{\Fld@default})%
11315   /V(\Hy@escapestring{\Fld@value})%
11316   \Fld@additionalactions
11317   \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
11318 }

```

\PDFForm@Submit

```

11319 \def\PDFForm@Submit{%
11320   /Subtype/Widget%
11321   \Fld@annotflags
11322   /T(\Fld@name)%
11323   /FT/Btn%
11324   \Fld@flags
11325   /H/P%
11326   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11327   \ifcase0\ifnum\Fld@rotation=\z@   \else 1\fi
11328       \ifx\Fld@bordercolor\relax\else 1\fi
11329       \space
11330   \else
11331       /MK<<%
11332       \ifnum\Fld@rotation=\z@
11333       \else
11334       /R \Fld@rotation
11335       \fi
11336       \ifx\Fld@bordercolor\relax
11337       \else
11338       /BC[\Fld@bordercolor]%

```

```

11339     \fi
11340     >>%
11341 \fi
11342 /A<<%
11343   /S/SubmitForm%
11344   /F<<%
11345     /FS/URL%
11346     /F(\Hy@escapestring{\Form@action})%
11347   >>%
11348   \Fld@submitflags
11349 >>%
11350 }

```

\PDFForm@Reset

```

11351 \ifHy@pdfa
11352 \else
11353   \def\PDFForm@Reset{%
11354     /Subtype/Widget%
11355     \Fld@annotflags
11356     /T(\Fld@name)%
11357     /FT/Btn%
11358     \Fld@flags
11359     /H/P%
11360     /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
11361     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11362       \ifx\Fld@bordercolor\relax\else 1\fi
11363       \space
11364     \else
11365       /MK<<%
11366         \ifnum\Fld@rotation=\z@
11367         \else
11368           /R \Fld@rotation
11369         \fi
11370         \ifx\Fld@bordercolor\relax
11371         \else
11372           /BC[\Fld@bordercolor]%
11373         \fi
11374       /CA (Clear)
11375       /AC (Done)
11376     >>%
11377   \fi
11378   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11379   /A<</S/ResetForm>>%
11380 }%
11381 \fi

11382 </pdfform>
11383 <*package>

```

## 48 Bookmarks in the PDF file

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

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the infor-

mation we need? We do the *same* for \@sssect, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual

```

11384 \def\phantomsection{%
11385   \Hy@GlobalStepCount\Hy@linkcounter
11386   \xdef\@currentHref{section*.\the\Hy@linkcounter}%
11387   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
11388 }
11389 \</package>

```

## 48.1 Bookmarks

```
11390 \<*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.

```

11391 \def\Hy@writebookmark#1#2#3#4#5{%
11392   % section number, text, label, level, file
11393   \ifx\WriteBookmarks\relax%
11394   \else
11395     \ifnum#4>\Hy@bookmarksdepth\relax
11396     \else
11397       \@@writetorep{#1}{#2}{#3}{#4}{#5}%
11398     \fi
11399   \fi
11400 }
11401 \def\Hy@currentbookmarklevel{0}
11402 \def\Hy@numberline#1{#1 }
11403 \def\@@writetorep#1#2#3#4#5{%
11404   \begingroup
11405     \edef\Hy@tempa{#5}%
11406     \ifx\Hy@tempa\Hy@bookmarkstype
11407       \edef\Hy@level{#4}%
11408       \ifx\Hy@levelcheck Y%
11409         \@tempcnta\Hy@level\relax
11410         \advance\@tempcnta by -1 %
11411         \ifnum\Hy@currentbookmarklevel<\@tempcnta
11412           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
11413           \advance\@tempcnta by 1 %
11414           \Hy@Warning{%
11415             Difference (\the\@tempcnta) between bookmark levels is %
11416             greater \MessageBreak than one, level fixed%
11417           }%
11418           \@tempcnta\Hy@currentbookmarklevel
11419           \advance\@tempcnta by 1 %
11420           \edef\Hy@level{\the\@tempcnta}%
11421         \fi
11422       \else
11423         \global\let\Hy@levelcheck Y%
11424       \fi
11425       \global\let\Hy@currentbookmarklevel\Hy@level
11426       \@tempcnta\Hy@level\relax
11427       \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
11428       \advance\@tempcnta by -1 %

```



```

11429 \edef\Hy@tempa{#3}%
11430 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
11431 \ifx\Hy@tempa\Hy@tempb
11432   \Hy@Warning{%
11433     The anchor of a bookmark and its parent's must not%
11434     \MessageBreak be the same. Added a new anchor%
11435   }%
11436   \phantomsection
11437 \fi
11438 \ifHy@bookmarksnumbered
11439   \let\numberline\Hy@numberline
11440   \let\partnumberline\Hy@numberline
11441   \let\chapternumberline\Hy@numberline
11442 \else
11443   \let\numberline\@gobble
11444   \let\partnumberline\@gobble
11445   \let\chapternumberline\@gobble
11446 \fi
11447 \pdfstringdef\Hy@tempa{#2}%
11448 \if@filesw
11449   \protected@write\@outlinefile{}{%
11450     \protect\BOOKMARK
11451       [\Hy@level] [\@bookmarkopenstatus{\Hy@level}] {#3}%
11452     {\Hy@tempa}{\Hy@tempb}%
11453   }%
11454 \fi
11455 \fi
11456 \endgroup
11457 }

```

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

```

11458 \newcommand{\currentpdfbookmark}{%
11459   \pdfbookmark[\Hy@currentbookmarklevel]%
11460 }
11461 \newcommand{\subpdfbookmark}{%
11462   \@tempcnta\Hy@currentbookmarklevel
11463   \Hy@StepCount\@tempcnta
11464   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
11465 }
11466 \newcommand{\belowpdfbookmark}[2]{%
11467   \@tempcnta\Hy@currentbookmarklevel
11468   \Hy@StepCount\@tempcnta
11469   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
11470   \advance\@tempcnta by -1 %
11471   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
11472 }

```

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.

```

11473 \renewcommand\pdfbookmark[3][0]{%
11474   \Hy@writebookmark{}{#2}{#3.#1}{#1}{toc}%
11475   \hyper@anchorstart{#3.#1}\hyper@anchorend
11476 }
11477 \def\BOOKMARK{\ifnextchar[\@BOOKMARK\@@BOOKMARK[1][-]}
11478 \def\@BOOKMARK[#1]{\ifnextchar[\@BOOKMARK[#1]\@@BOOKMARK[#1][-]}

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used

in the texinfo pdf macros.

The VTEX section was written originally by VTEX, but then amended by Denis Girou (denis.girou@idris.fr), then by Taco Hoekwater (taco.hoekwater@wkap.nl). The problem is that VTEX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping \ and the like.

```
11479 <*vtex>
```

```
11480 \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.

```
11481 \begingroup
11482   \catcode'\'=12 %
11483   \ifnum\Hy@VTeXversion<650 %
11484     \catcode\'=12 %
11485     \gdef\hv@pdf@char#1#2#3{%
11486       \char
11487       \ifcase'#1#2#3 %
11488         "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
11489         \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
11490         \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
11491         \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
11492         \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
11493         \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
11494         \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
11495         \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
11496         \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
11497         \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
11498         \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
11499         \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
11500         \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
11501         \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
11502         \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
11503         \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
11504         \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
11505         \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
11506         \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
11507         \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
11508         \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
11509         \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
11510         \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
11511         \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
11512         \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
11513         \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
11514         \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
11515         \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
11516         \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
11517         \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
11518         \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
11519         \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
11520       \fi
11521     }%
11522   \else
11523     \gdef\hv@pdf@char{\char'}%
11524   \fi
11525 \endgroup
```

\@@BOOKMARK

```
11526 \def\@@BOOKMARK[#1][#2]#3#4#5{%
11527   \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
11528   \edef\@mycount{\the\@serial@counter}%
11529   \Hy@StepCount\@serial@counter
11530   \edef\@parcount{%
11531     \expandafter\ifx\csname @count@#5\endcsname\relax
11532     0%
11533     \else
11534       \csname @count@#5\endcsname
11535     \fi
11536   }%
11537   \immediate\special{%
11538     !outline #3;p=\@parcount,i=\@mycount,%
11539     s=\ifx#2-c\else o\fi,t=#4%
11540   }%
11541 }%
```

\ReadBookmarks

```
11542 \def\ReadBookmarks{%
11543   \begingroup
11544     \def\O{\hv@pdf@char 0}%
11545     \def\1{\hv@pdf@char 1}%
11546     \def\2{\hv@pdf@char 2}%
11547     \def\3{\hv@pdf@char 3}%
11548     \def\({}%
11549     \def\)}%
11550     \def\do##1{%
11551       \ifnum\the\catcode'##1=\active
11552         \@makeother##1%
11553       \fi
11554     }%
11555     \dospecials
11556     \InputIfFileExists{\jobname.out}{-}{-}%
11557   \endgroup
11558   \ifx\WriteBookmarks\relax
11559   \else
11560     \if@filesw
11561       \newwrite\@outlinefile
11562       \immediate\openout\@outlinefile=\jobname.out\relax
11563       \ifHy@typexml
11564         \immediate\write\@outlinefile{<relaxxml>\relax}%
11565       \fi
11566     \fi
11567   \fi
11568 }

11569 </vtex>
11570 <!*vtex>
11571 \def\ReadBookmarks{%
11572   \begingroup
11573     \escapechar='\\%
11574     \let\escapechar\@gobble %
11575     \def\@@BOOKMARK[##1][##2]###4##5{\calc@bm@number{##5}}%
11576     \InputIfFileExists{\jobname.out}{-}{-}%
11577     \ifx\WriteBookmarks\relax
11578       \global\let\WriteBookmarks\relax
```

```

11579 \fi
11580 \def\@@BOOKMARK[##1][##2]##3##4##5{%
11581 \def\Hy@temp{##4}%
11582 (*pdfTex)
11583 \Hy@pstringdef\Hy@pstringName{##3}%
11584 \Hy@OutlineName{}\Hy@pstringName{%
11585 ##2\check@bm@number{##3}%
11586 }{%
11587 \expandafter\strip@prefix\meaning\Hy@temp
11588 }%
11589 </pdfTex>
11590 (*pdfmark)
11591 \Hy@pstringdef\Hy@pstringName{##3}%
11592 \pdfmark{%
11593 pdfmark=/OUT,%
11594 Count={##2\check@bm@number{##3}},%
11595 Dest={\Hy@pstringName},%
11596 Title=\expandafter\strip@prefix\meaning\Hy@temp
11597 }%
11598 </pdfmark>
11599 (*dvipdfm)
11600 \Hy@pstringdef\Hy@pstringName{##3}%
11601 \@pdfm@mark{%
11602 outline \ifHy@DvipdfmxOutlineOpen
11603 [%
11604 \ifnum##21>\z@
11605 \else
11606 -%
11607 \fi
11608 ] %
11609 \fi
11610 ##1<<%
11611 /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
11612 /A<<%
11613 /S/GoTo%
11614 /D(\Hy@pstringName)%
11615 >>%
11616 >>%
11617 }%
11618 </dvipdfm>
11619 }%
11620 {%
11621 \def\WriteBookmarks{0}%
11622 \InputIfFileExists{\jobname.out}{\}{}%
11623 }%
11624 {%\escapechar\m@ne\InputIfFileExists{\jobname.out}{\}{}}%
11625 \ifx\WriteBookmarks\relax
11626 \else
11627 \if@files
11628 \newwrite\@outlinefile
11629 \immediate\openout\@outlinefile=\jobname.out\relax
11630 \ifHy@typexml
11631 \immediate\write\@outlinefile{<relaxxml>\relax}%
11632 \fi
11633 \fi
11634 \fi
11635 \endgroup

```

```

11636 }
11637 <*pdfTex>
11638 \def\Hy@OutlineName#1#2#3#4{%
11639   \pdfOutline goto name{#2}count#3{#4}%
11640 }
11641 </pdfTex>
11642 \def\check@bm@number#1{%
11643   \expandafter\ifx\csname B_#1\endcsname\relax
11644     0%
11645   \else
11646     \csname B_#1\endcsname
11647   \fi
11648 }
11649 \def\calc@bm@number#1{%
11650   \@tempcnta=\check@bm@number{#1}\relax
11651   \advance\@tempcnta by 1 %
11652   \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
11653 }
11654 </!vtex>

11655 \ifHy@implicit
11656 \else
11657   \expandafter\endinput
11658 \fi

11659 </outlines>
11660 <*outlines | hypertex>

11661 \let\H@old@ssect\@ssect
11662 \def\@ssect#1#2#3#4#5{%
11663   \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
11664   \phantomsection
11665 }
11666 \let\H@old@schapter\@schapter
11667 \def\@schapter#1{%
11668   \H@old@schapter{#1}%
11669   \begingroup
11670     \let\mkboth\@gobbletwo
11671     \Hy@GlobalStepCount\Hy@linkcounter
11672     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11673     \Hy@raisedlink{%
11674       \hyper@anchorstart{\@currentHref}\hyper@anchorend
11675     }%
11676   \endgroup
11677 }

```

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:

```

11678 \ifundefined{@chapter}{%
11679   \let\Hy@org@chapter\@chapter
11680   \def\@chapter{%
11681     \def\Hy@next{%
11682       \Hy@GlobalStepCount\Hy@linkcounter
11683       \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11684       \Hy@raisedlink{%
11685         \hyper@anchorstart{\@currentHref}\hyper@anchorend
11686       }%
11687     }%

```

```

11688 \ifnum\c@secnumdepth>\m@ne
11689 \ifundefined{if@mainmatter}%
11690 \iftrue{\csname if@mainmatter\endcsname}%
11691 \let\Hy@next\relax
11692 \fi
11693 \fi
11694 \Hy@next
11695 \Hy@org@chapter
11696 }%
11697 }

11698 \let\H@old@part\@part
11699 \begingroup\expandafter\expandafter\expandafter\endgroup
11700 \expandafter\ifx\csname chapter\endcsname\relax
11701 \let\Hy@secnum@part\z@
11702 \else
11703 \let\Hy@secnum@part\m@ne
11704 \fi
11705 \def\@part{%
11706 \ifnum\Hy@secnum@part>\c@secnumdepth
11707 \phantomsection
11708 \fi
11709 \H@old@part
11710 }

11711 \let\H@old@spart\@spart
11712 \def\@spart#1{%
11713 \H@old@spart{#1}%
11714 \Hy@GlobalStepCount\Hy@linkcounter
11715 \xdef\@currentHref{part*.\the\Hy@linkcounter}%
11716 \Hy@raisedlink{%
11717 \hyper@anchorstart{\@currentHref}\hyper@anchorend
11718 }%
11719 }

11720 \let\H@old@sect\@sect
11721 \def\@sect#1#2#3#4#5#6[#7]#8{%
11722 \ifnum #2>\c@secnumdepth
11723 \Hy@GlobalStepCount\Hy@linkcounter
11724 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
11725 \fi
11726 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}%
11727 \ifnum #2>\c@secnumdepth
11728 \Hy@raisedlink{%
11729 \hyper@anchorstart{\@currentHref}\hyper@anchorend
11730 }%
11731 \fi
11732 }

11733 </outlines | hypertext>
11734 <*outlines>

11735 \expandafter\def\csname Parent-4\endcsname{}
11736 \expandafter\def\csname Parent-3\endcsname{}
11737 \expandafter\def\csname Parent-2\endcsname{}
11738 \expandafter\def\csname Parent-1\endcsname{}
11739 \expandafter\def\csname Parent0\endcsname{}
11740 \expandafter\def\csname Parent1\endcsname{}
11741 \expandafter\def\csname Parent2\endcsname{}
11742 \expandafter\def\csname Parent3\endcsname{}
11743 \expandafter\def\csname Parent4\endcsname{}

```

11744  $\langle$ /outlines $\rangle$

## 49 Compatibility with koma-script classes

11745  $\langle$ \*outlines | hypertex $\rangle$

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 komascript versions since 2001/01/01, because Markus Kohm supports hyperref in komascript.

```
11746 \def\Hy@tempa{%
11747   \def\@addchap[##1]##2{%
11748     \typeout{##2}%
11749     \if@twoside
11750       \mkboth{##1}{}%
11751     \else
11752       \mkboth{}{##1}%
11753     \fi
11754     \addtocontents{lof}{\protect\addvspace{10\p@}}%
11755     \addtocontents{lot}{\protect\addvspace{10\p@}}%
11756     \Hy@GlobalStepCount\Hy@linkcounter
11757     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11758     \Hy@raisedlink{%
11759       \hyper@anchorstart{\@currentHref}\hyper@anchorend
11760     }%
11761     \if@twocolumn
11762       \topnewpage[\@makeschapterhead{##2}]%
11763     \else
11764       \@makeschapterhead{##2}%
11765       \afterheading
11766     \fi
11767     \addcontentsline{toc}{chapter}{##1}%
11768   }%
11769 }
11770 \@ifclassloaded{scrbook}{%
11771   \@ifclasslater{scrbook}{2001/01/01}{%
11772     \let\Hy@tempa\@empty
11773   }{}%
11774 }{%
11775   \@ifclassloaded{scrreprt}{%
11776     \@ifclasslater{scrreprt}{2001/01/01}{%
11777       \let\Hy@tempa\@empty
11778     }{}%
11779   }{}%
11780   \let\Hy@tempa\@empty
11781 }%
11782 }%
11783 \Hy@tempa
11784  $\langle$ /outlines | hypertex $\rangle$ 
```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek oberdiek@ruf.uni-freiburg.de

### 50.1 PD1 encoding

11785  $\langle$ \*pd1enc $\rangle$

11786 \DeclareFontEncoding{PD1}{-}{-}

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

11787 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed

11788 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return

11789 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab

11790 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace

11791 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed

#### Accents

11792 \DeclareTextAccent{\`}{PD1}{\textgrave}

11793 \DeclareTextAccent{\'}{PD1}{\textacute}

11794 \DeclareTextAccent{\~}{PD1}{\textcircumflex}

11795 \DeclareTextAccent{\~}{PD1}{\texttilde}

11796 \DeclareTextAccent{\"}{PD1}{\textdieresis}

11797 \DeclareTextAccent{\r}{PD1}{\textring}

11798 \DeclareTextAccent{\v}{PD1}{\textcaron}

11799 \DeclareTextAccent{\.}{PD1}{\textdotaccent}

11800 \DeclareTextAccent{\c}{PD1}{\textcedilla}

11801 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textgrave}

11802 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}

11803 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\textcircumflex}

11804 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}

11805 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textdieresis}

11806 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}

11807 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}

11808 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}

11809 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}

11810 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}

#### Accent glyph names

11811 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve

11812 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron

11813 \DeclareTextCommand{\textcircumflex}{PD1}{\032} % circumflex

11814 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent

11815 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut

11816 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek

11817 \DeclareTextCommand{\textring}{PD1}{\036} % ring

11818 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde

\040: space

\041: exclam

11819 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042

11820 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign

11821 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar

11822 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent

11823 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand

\047: quotesingle

11824 \DeclareTextCommand{\textparenleft}{PD1}{\string\()} % parenleft \050

11825 \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



```

11826 \DeclareTextCommand{\textless}{PD1}{<} % less \074
\075: equal
11827 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076
\077: question
\100: at
\101... \132: A...Z
\133: bracketleft
11828 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash
\135: bracketright
11829 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum
11830 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
11831 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave
\141... \172: a...z
11832 \DeclareTextCompositeCommand{\.}{PD1}{i}{i} % i
11833 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
11834 \DeclareTextCommand{\textbar}{PD1}{|} % bar
11835 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
11836 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde
No glyph \177 in PDFDocEncoding.
11837 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
11838 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
11839 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl
11840 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis
11841 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
11842 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
11843 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
11844 \DeclareTextCommand{\textfractionmark}{PD1}{\207} % fraction, \207
11845 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft
11846 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
11847 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
11848 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
11849 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
11850 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
11851 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright
11852 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
11853 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
11854 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
11855 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark
11856 \DeclareTextCommand{\textfi}{PD1}{\223} % fi ?? \223
11857 \DeclareTextCommand{\textfl}{PD1}{\224} % fl ?? \224
11858 \DeclareTextCommand{\L}{PD1}{\225} % Lslash, \225
11859 \DeclareTextCommand{\OE}{PD1}{\226} % OE
11860 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron
11861 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230} % Ydieresis
11862 \DeclareTextCommand{\IJ}{PD1}{\230}
11863 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231} % Zcaron, \231
11864 \DeclareTextCommand{\i}{PD1}{\232} % dotlessi, \232
11865 \DeclareTextCommand{\l}{PD1}{\233} % lslash, \233
11866 \DeclareTextCommand{\oe}{PD1}{\234} % oe
11867 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
11868 \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.
11869 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
11870 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown

```

```

11871 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
11872 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
11873 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
11874 \DeclareTextCommand{\textyen}{PD1}{\245} % yen
11875 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
11876 \DeclareTextCommand{\textsection}{PD1}{\247} % section
11877 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
11878 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
11879 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
11880 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
11881 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

No glyph \255 in PDFDocEncoding.

11882 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
11883 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
11884 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
11885 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
11886 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
11887 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
11888 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
11889 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
11890 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
11891 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
11892 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
11893 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior
11894 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine
11895 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright
11896 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter
11897 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf
11898 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters
11899 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown
11900 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300} % Agrave
11901 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301} % Aacute
11902 \DeclareTextCompositeCommand{\`}{PD1}{A}{\302} % Acircumflex
11903 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303} % Atilde
11904 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304} % Adieresis
11905 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring
11906 \DeclareTextCommand{\AE}{PD1}{\306} % AE
11907 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla
11908 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310} % Egrave
11909 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311} % Eacute
11910 \DeclareTextCompositeCommand{\`}{PD1}{E}{\312} % Ecircumflex
11911 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313} % Edieresis
11912 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314} % Igrave
11913 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315} % Iacute
11914 \DeclareTextCompositeCommand{\`}{PD1}{I}{\316} % Icircumflex
11915 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317} % Idieresis
11916 \DeclareTextCommand{\DH}{PD1}{\320} % Eth
11917 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth
11918 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321} % Ntilde
11919 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322} % Ograve
11920 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323} % Oacute
11921 \DeclareTextCompositeCommand{\`}{PD1}{O}{\324} % Ocircumflex
11922 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325} % Otilde
11923 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326} % Odieresis
11924 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply
11925 \DeclareTextCommand{\O}{PD1}{\330} % Oslash
11926 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331} % Ugrave

```

```

11927 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute
11928 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333} % Ucircumflex
11929 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis
11930 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335} % Yacute
11931 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn
11932 \DeclareTextCommand{\ss}{PD1}{\337} % germandbls
11933 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340} % agrave
11934 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute
11935 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342} % acircumflex
11936 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343} % atilde
11937 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344} % adieresis
11938 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring
11939 \DeclareTextCommand{\ae}{PD1}{\346} % ae
11940 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla
11941 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350} % egrave
11942 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute
11943 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352} % ecircumflex
11944 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353} % edieresis
11945 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354} % igrave
11946 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
11947 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
11948 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
11949 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356} % icircumflex
11950 \DeclareTextCompositeCommand{\~}{PD1}{i}{\356} % icircumflex
11951 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
11952 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
11953 \DeclareTextCommand{\dh}{PD1}{\360} % eth
11954 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361} % ntilde
11955 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362} % ograve
11956 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363} % oacute
11957 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364} % ocircumflex
11958 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365} % otilde
11959 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366} % odieresis
11960 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
11961 \DeclareTextCommand{\o}{PD1}{\370} % oslash
11962 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371} % ugrave
11963 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372} % uacute
11964 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373} % ucircumflex
11965 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374} % udieresis
11966 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375} % yacute
11967 \DeclareTextCommand{\th}{PD1}{\376} % thorn
11968 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377} % ydieresis
11969 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

11970 \DeclareTextCommand{\SS}{PD1}{SS}
11971 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

11972 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
11973 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
11974 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
11975 \DeclareTextCommand{\textgrq}{PD1}{\textquotleft}
11976 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
11977 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
11978 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
11979 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

11980 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
11981 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
11982 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
11983 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
11984 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
11985 \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;

```

11986 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
11987 \DeclareTextCompositeCommand{\'}{PD1}{c}{c} % cacute
11988 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
11989 \DeclareTextCompositeCommand{\'}{PD1}{n}{n} % nacute
11990 \DeclareTextCompositeCommand{\'}{PD1}{s}{s} % sacute
11991 \DeclareTextCompositeCommand{\'}{PD1}{z}{z} % zacute
11992 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot
11993 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
11994 \DeclareTextCompositeCommand{\'}{PD1}{C}{C} % Cacute
11995 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
11996 \DeclareTextCompositeCommand{\'}{PD1}{N}{N} % Nacute
11997 \DeclareTextCompositeCommand{\'}{PD1}{S}{S} % Sacute
11998 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z} % Zacute
11999 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot

```

```

12000 </pdlenc>

```

## 50.2 PU encoding

```

12001 <*puenc>
12002 \DeclareFontEncoding{PU}{-}{}

```

### 50.2.1 Basic Latin

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

```

12003 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
12004 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
12005 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
12006 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
12007 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed

```

#### Accents

```

12008 \DeclareTextAccent{\'}{PU}{\textgrave}
12009 \DeclareTextAccent{\'}{PU}{\textacute}
12010 \DeclareTextAccent{\~}{PU}{\textcircumflex}
12011 \DeclareTextAccent{\~}{PU}{\texttilde}
12012 \DeclareTextAccent{"}{PU}{\textdieresis}
12013 \DeclareTextAccent{\r}{PU}{\textring}
12014 \DeclareTextAccent{\v}{PU}{\textcaron}
12015 \DeclareTextAccent{\.}{PU}{\textdotaccent}
12016 \DeclareTextAccent{\c}{PU}{\textcedilla}
12017 \DeclareTextAccent{\U}{PU}{\textbreve}
12018 \DeclareTextAccent{\C}{PU}{\textdoublegrave}
12019 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textgrave}
12020 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
12021 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textcircumflex}
12022 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
12023 \DeclareTextCompositeCommand{"}{PU}{\@empty}{\textdieresis}
12024 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
12025 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
12026 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}

```

```

12027 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
12028 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
12029 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}
12030 \DeclareTextCommand{\=}{PU}[1]{\TextSymbolUnavailable{\={#1}}#1}
12031 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
12032 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
12033 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}

Accent glyph names
12034 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
12035 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
12036 \DeclareTextCommand{\textcircumflex}{PU}{\80\032} % circumflex
12037 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
12038 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
12039 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
12040 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
12041 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
12042 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave

\040: space
\041: exclam

12043 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
12044 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
12045 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
12046 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
12047 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand

\047: quotesingle

12048 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft
12049 \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

12050 \DeclareTextCommand{\textless}{PU}{<} % less \80\074
\075: equal

12051 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076

\077: question
\100: at
\101... \132: A...Z
\133: bracketleft

12052 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash
\135: bracketright

12053 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum
12054 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore
12055 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave

\141... \172: a...z

12056 \DeclareTextCompositeCommand{\.}{PU}{i} % i
12057 \DeclareTextCommand{\j}{PU}{j} % jdotless

```

```

12058 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft
12059 \DeclareTextCommand{\textbar}{PU}{|} % bar
12060 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright
12061 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde

```

No glyph \177 in PDFDocEncoding.

## 50.2.2 Latin-1 Supplement

```

12062 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212
12063 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223
12064 \DeclareTextCommand{\textfl}{PU}{fl} % fl ?? \80\224

```

There are two positions for the glyphs from \80\225 until \80\236. See the test files testbmoe., testbml, testbmisc, testbmzc, and testbmyi for details. Problematic are all positions, but especially \OE, \oe, and \i.

```

12065 %\DeclareTextCommand{\OE}{PU}{OE} % OE
12066 %\DeclareTextCommand{\oe}{PU}{oe} % oe

```

The euro \240 is inserted in version 1.3 of the pdf specification.

```

12067 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown
12068 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent
12069 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling
12070 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency
12071 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen
12072 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar
12073 \DeclareTextCommand{\textsection}{PU}{\80\247} % section
12074 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis
12075 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright
12076 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine
12077 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft
12078 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot

```

No glyph \255 in PDFDocEncoding.

```

12079 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered
12080 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron
12081 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree
12082 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus
12083 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior
12084 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior
12085 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute
12086 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu
12087 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph
12088 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered
12089 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla
12090 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior
12091 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine
12092 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright
12093 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter
12094 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf
12095 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters
12096 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown
12097 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300} % Agrave
12098 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute
12099 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\302} % Acircumflex
12100 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\303} % Atilde
12101 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis
12102 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring
12103 \DeclareTextCommand{\AE}{PU}{\80\306} % AE
12104 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla

```

```

12105 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310} % Egrave
12106 \DeclareTextCompositeCommand{\' }{PU}{E}{\80\311} % Eacute
12107 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312} % Ecircumflex
12108 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis
12109 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314} % Igrave
12110 \DeclareTextCompositeCommand{\' }{PU}{I}{\80\315} % Iacute
12111 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316} % Icircumflex
12112 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317} % Idieresis
12113 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth
12114 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321} % Ntilde
12115 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322} % Ograve
12116 \DeclareTextCompositeCommand{\' }{PU}{O}{\80\323} % Oacute
12117 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324} % Ocircumflex
12118 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325} % Otilde
12119 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326} % Odieresis
12120 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply
12121 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash
12122 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331} % Ugrave
12123 \DeclareTextCompositeCommand{\' }{PU}{U}{\80\332} % Uacute
12124 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333} % Ucircumflex
12125 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334} % Udieresis
12126 \DeclareTextCompositeCommand{\' }{PU}{Y}{\80\335} % Yacute
12127 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn
12128 \DeclareTextCommand{\ss}{PU}{\80\337} % germandbls
12129 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340} % agrave
12130 \DeclareTextCompositeCommand{\' }{PU}{a}{\80\341} % aacute
12131 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342} % acircumflex
12132 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343} % atilde
12133 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344} % adieresis
12134 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
12135 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
12136 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
12137 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350} % egrave
12138 \DeclareTextCompositeCommand{\' }{PU}{e}{\80\351} % eacute
12139 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352} % ecircumflex
12140 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353} % edieresis
12141 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354} % igrave
12142 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354} % igrave
12143 \DeclareTextCompositeCommand{\' }{PU}{i}{\80\355} % iacute
12144 \DeclareTextCompositeCommand{\' }{PU}{i}{\80\355} % iacute
12145 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
12146 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
12147 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
12148 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
12149 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
12150 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361} % ntilde
12151 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362} % ograve
12152 \DeclareTextCompositeCommand{\' }{PU}{o}{\80\363} % oacute
12153 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364} % ocircumflex
12154 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365} % otilde
12155 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366} % odieresis
12156 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
12157 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
12158 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371} % ugrave
12159 \DeclareTextCompositeCommand{\' }{PU}{u}{\80\372} % uacute
12160 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373} % ucircumflex
12161 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374} % udieresis

```

```

12162 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375} % yacute
12163 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
12164 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377} % ydieresis
12165 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```

12166 \DeclareTextCommand{\SS}{PU}{SS}

```

Aliases (german.sty)

```

12167 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
12168 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
12169 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
12170 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
12171 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
12172 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
12173 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
12174 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

12175 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
12176 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
12177 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
12178 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
12179 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

### 50.2.3 Latin Extended-A

```

12180 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000} % Amacron
12181 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001} % amacron
12182 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002} % Abreve
12183 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003} % abreve
12184 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004} % Aogonek
12185 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005} % aogonek
12186 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006} % Cacute
12187 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007} % cacute
12188 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010} % Ccircumflex
12189 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011} % ccircumflex
12190 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012} % Cdot
12191 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013} % cdot
12192 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014} % Ccaron
12193 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015} % ccaron
12194 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016} % Dcaron
12195 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017} % dcaron
12196 \DeclareTextCommand{\DJ}{PU}{\81\020} % Dslash
12197 \DeclareTextCommand{\dj}{PU}{\81\021} % dslash
12198 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022} % Emacron
12199 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023} % emacron
12200 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024} % Ebreve
12201 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025} % ebreve
12202 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026} % Edot
12203 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027} % edot
12204 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030} % Eogonek
12205 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031} % eogonek
12206 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032} % Ecaron
12207 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033} % ecaron
12208 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034} % Gcircumflex
12209 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035} % gcircumflex
12210 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036} % Gbreve
12211 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037} % gbreve
12212 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040} % Gdot

```



12213 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041} % gdot  
12214 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042} % Gcedilla  
12215 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043} % gcedilla  
12216 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044} % Hcircumflex  
12217 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045} % hcircumflex  
12218 \DeclareTextCommand{\textHslash}{PU}{\81\046} % Hslash  
12219 \DeclareTextCommand{\texthslash}{PU}{\81\047} % hslash  
12220 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050} % Itilde  
12221 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde  
12222 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde  
12223 \DeclareTextCompositeCommand{=} {PU}{I}{\81\052} % Imacron  
12224 \DeclareTextCompositeCommand{=} {PU}{i}{\81\053} % imacron  
12225 \DeclareTextCompositeCommand{=} {PU}{i}{\81\053} % imacron  
12226 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054} % Ibreve  
12227 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve  
12228 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve  
12229 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056} % Iogonek  
12230 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek  
12231 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek  
12232 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060} % Idot  
12233 \DeclareTextCommand{\i}{PU}{\81\061} % idotless  
12234 % IJlig  
12235 % ijlig  
12236 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064} % Jcircumflex  
12237 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex  
12238 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex  
12239 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla  
12240 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla  
12241 % kgreen  
12242 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute  
12243 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute  
12244 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla  
12245 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla  
12246 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron  
12247 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron  
12248 % L middle dot  
12249 % l middle dot  
12250 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash  
12251 \DeclareTextCommand{\l}{PU}{\81\102} % lslash  
12252 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute  
12253 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute  
12254 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla  
12255 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla  
12256 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron  
12257 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron  
12258 % n apostrophe  
12259 \DeclareTextCommand{\NG}{PU}{\81\112} % NG  
12260 \DeclareTextCommand{\ng}{PU}{\81\113} % ng  
12261 \DeclareTextCompositeCommand{=} {PU}{O}{\81\114} % Omacron  
12262 \DeclareTextCompositeCommand{=} {PU}{o}{\81\115} % omacron  
12263 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve  
12264 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve  
12265 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute  
12266 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute  
12267 \DeclareTextCommand{\OE}{PU}{\81\122} % OE  
12268 \DeclareTextCommand{\oe}{PU}{\81\123} % oe  
12269 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute

```

12270 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
12271 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
12272 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
12273 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
12274 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
12275 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
12276 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
12277 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134} % Scircumflex
12278 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135} % scircumflex
12279 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
12280 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
12281 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
12282 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
12283 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
12284 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
12285 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
12286 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
12287 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
12288 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
12289 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150} % Utilde
12290 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151} % utilde
12291 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152} % Umacron
12292 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153} % umacron
12293 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
12294 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
12295 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring
12296 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
12297 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
12298 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute
12299 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Ugonek
12300 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % ugonek
12301 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164} % Wcircumflex
12302 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165} % wcircumflex
12303 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166} % Ycircumflex
12304 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167} % ycircumflex
12305 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170} % Ydieresis
12306 \DeclareTextCommand{\IJ}{PU}{\81\170}
12307 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
12308 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
12309 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
12310 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
12311 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
12312 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

```

## 50.2.4 Latin Extended-B

```

12313 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
12314 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
12315 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
12316 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
12317 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
12318 \DeclareTextCompositeCommand{\v}{PU}{\i}{\81\320} % icaron
12319 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
12320 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
12321 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
12322 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
12323 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
12324 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash

```

```

12325 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
12326 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
12327 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
12328 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
12329 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Oogonek
12330 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

```

## 50.2.5 Greek

```

12331 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}
12332 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}
12333 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
12334 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
12335 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}
12336 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
12337 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
12338 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
12339 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
12340 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
12341 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}
12342 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
12343 \DeclareTextCommand{\textBeta}{PU}{\83\222}
12344 \DeclareTextCommand{\textGamma}{PU}{\83\223}
12345 \DeclareTextCommand{\textDelta}{PU}{\83\224}
12346 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
12347 \DeclareTextCommand{\textZeta}{PU}{\83\226}
12348 \DeclareTextCommand{\textEta}{PU}{\83\227}
12349 \DeclareTextCommand{\textTheta}{PU}{\83\230}
12350 \DeclareTextCommand{\textIota}{PU}{\83\231}
12351 \DeclareTextCommand{\textKappa}{PU}{\83\232}
12352 \DeclareTextCommand{\textLambda}{PU}{\83\233}
12353 \DeclareTextCommand{\textMu}{PU}{\83\234}
12354 \DeclareTextCommand{\textNu}{PU}{\83\235}
12355 \DeclareTextCommand{\textXi}{PU}{\83\236}
12356 \DeclareTextCommand{\textOmicron}{PU}{\83\237}
12357 \DeclareTextCommand{\textPi}{PU}{\83\240}
12358 \DeclareTextCommand{\textRho}{PU}{\83\241}
12359 \DeclareTextCommand{\textSigma}{PU}{\83\243}
12360 \DeclareTextCommand{\textTau}{PU}{\83\244}
12361 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}
12362 \DeclareTextCommand{\textPhi}{PU}{\83\246}
12363 \DeclareTextCommand{\textChi}{PU}{\83\247}
12364 \DeclareTextCommand{\textPsi}{PU}{\83\250}
12365 \DeclareTextCommand{\textOmega}{PU}{\83\251}
12366 \DeclareTextCompositeCommand{\"}{PU}{\textIota}{\83\252}
12367 \DeclareTextCompositeCommand{\"}{PU}{\textUpsilon}{\83\253}
12368 \DeclareTextCompositeCommand{\'}{PU}{\textalpha}{\83\254}
12369 \DeclareTextCompositeCommand{\'}{PU}{\textepsilon}{\83\255}
12370 \DeclareTextCompositeCommand{\'}{PU}{\texteta}{\83\256}
12371 \DeclareTextCompositeCommand{\'}{PU}{\textiota}{\83\257}
12372 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}
12373 \DeclareTextCompositeCommand{\"}{PU}{\textupsilonacute}{\83\260}
12374 \DeclareTextCommand{\textalpha}{PU}{\83\261}
12375 \DeclareTextCommand{\textbeta}{PU}{\83\262}
12376 \DeclareTextCommand{\textgamma}{PU}{\83\263}
12377 \DeclareTextCommand{\textdelta}{PU}{\83\264}
12378 \DeclareTextCommand{\textepsilon}{PU}{\83\265}
12379 \DeclareTextCommand{\textzeta}{PU}{\83\266}

```

```

12380 \DeclareTextCommand{\texteta}{PU}{\83\267}
12381 \DeclareTextCommand{\texttheta}{PU}{\83\270}
12382 \DeclareTextCommand{\textiota}{PU}{\83\271}
12383 \DeclareTextCommand{\textkappa}{PU}{\83\272}
12384 \DeclareTextCommand{\textlambda}{PU}{\83\273}
12385 \DeclareTextCommand{\textmu}{PU}{\83\274}
12386 \DeclareTextCommand{\textnu}{PU}{\83\275}
12387 \DeclareTextCommand{\textxi}{PU}{\83\276}
12388 \DeclareTextCommand{\textomicron}{PU}{\83\277}
12389 \DeclareTextCommand{\textpi}{PU}{\83\300}
12390 \DeclareTextCommand{\textrho}{PU}{\83\301}
12391 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
12392 \DeclareTextCommand{\textsigma}{PU}{\83\303}
12393 \DeclareTextCommand{\texttau}{PU}{\83\304}
12394 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
12395 \DeclareTextCommand{\textphi}{PU}{\83\306}
12396 \DeclareTextCommand{\textchi}{PU}{\83\307}
12397 \DeclareTextCommand{\textpsi}{PU}{\83\310}
12398 \DeclareTextCommand{\textomega}{PU}{\83\311}
12399 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}
12400 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}
12401 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}
12402 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}
12403 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}
12404 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}
12405 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}
12406 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}
12407 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}
12408 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}
12409 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}
12410 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}
12411 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}
12412 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}
12413 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}
12414 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}
12415 %\DeclareTextCommand{\textvarkappa}{PU}{\83\360}
12416 %\DeclareTextCommand{\textvarrho}{PU}{\83\361}

```

## 50.2.6 Cyrillic

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names.

```

12417 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
12418 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}%
12419 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
12420 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% GJE
12421 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
12422 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
12423 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
12424 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI
12425 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
12426 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
12427 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE
12428 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
12429 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% KJE
12430 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
12431 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
12432 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A

```

```

12433 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
12434 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
12435 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
12436 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
12437 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
12438 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
12439 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
12440 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I
12441 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
12442 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}%
12443 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
12444 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
12445 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM
12446 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN
12447 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O
12448 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE
12449 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER
12450 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES
12451 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE
12452 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U
12453 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF
12454 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA
12455 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE
12456 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE
12457 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA
12458 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA
12459 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN
12460 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU
12461 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN
12462 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E
12463 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU
12464 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA
12465 \DeclareTextCommand{\cyr a}{PU}{\84\060}% a
12466 \DeclareTextCommand{\cyr b}{PU}{\84\061}% be
12467 \DeclareTextCommand{\cyr v}{PU}{\84\062}% ve
12468 \DeclareTextCommand{\cyr g}{PU}{\84\063}% ghe
12469 \DeclareTextCommand{\cyr d}{PU}{\84\064}% de
12470 \DeclareTextCommand{\cyr e}{PU}{\84\065}% ie
12471 \DeclareTextCommand{\cyr zh}{PU}{\84\066}% zhe
12472 \DeclareTextCommand{\cyr z}{PU}{\84\067}% ze
12473 \DeclareTextCommand{\cyr i}{PU}{\84\070}% i
12474 \DeclareTextCommand{\cyr ishrt}{PU}{\84\071}% short i
12475 \DeclareTextCompositeCommand{\U}{PU}{\cyr i}{\84\071}%
12476 \DeclareTextCommand{\cyr k}{PU}{\84\072}% ka
12477 \DeclareTextCommand{\cyr l}{PU}{\84\073}% el
12478 \DeclareTextCommand{\cyr m}{PU}{\84\074}% em
12479 \DeclareTextCommand{\cyr n}{PU}{\84\075}% en
12480 \DeclareTextCommand{\cyr o}{PU}{\84\076}% o
12481 \DeclareTextCommand{\cyr p}{PU}{\84\077}% pe
12482 \DeclareTextCommand{\cyr r}{PU}{\84\100}% er
12483 \DeclareTextCommand{\cyr s}{PU}{\84\101}% es
12484 \DeclareTextCommand{\cyr t}{PU}{\84\102}% te
12485 \DeclareTextCommand{\cyr u}{PU}{\84\103}% u
12486 \DeclareTextCommand{\cyr f}{PU}{\84\104}% ef
12487 \DeclareTextCommand{\cyr h}{PU}{\84\105}% ha
12488 \DeclareTextCommand{\cyr c}{PU}{\84\106}% tse
12489 \DeclareTextCommand{\cyr ch}{PU}{\84\107}% che

```

12490 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% sha  
12491 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% shcha  
12492 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% hard sign  
12493 \DeclareTextCommand{\cyrery}{PU}{\84\113}% yeru  
12494 \DeclareTextCommand{\cyrstsn}{PU}{\84\114}% soft sign  
12495 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% e  
12496 \DeclareTextCommand{\cyrYu}{PU}{\84\116}% yu  
12497 \DeclareTextCommand{\cyrYa}{PU}{\84\117}% ya  
12498 \DeclareTextCommand{\cyrYo}{PU}{\84\121}% io  
12499 \DeclareTextCompositeCommand{"}{PU}{\cyr}{\84\121}%  
12500 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% dje  
12501 \DeclareTextCompositeCommand{'}{PU}{\cyr}{\84\123}% gje  
12502 \DeclareTextCommand{\cyrie}{PU}{\84\124}% ukrainian ie  
12503 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% dze  
12504 \DeclareTextCommand{\cyrri}{PU}{\84\126}% byelorussian-ukrainian i  
12505 \DeclareTextCommand{\cyrri}{PU}{\84\127}% yi  
12506 \DeclareTextCommand{\cyrje}{PU}{\84\130}% je  
12507 \DeclareTextCommand{\cyrlje}{PU}{\84\131}%lje  
12508 \DeclareTextCommand{\cyrnje}{PU}{\84\132}%nje  
12509 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% tshe  
12510 \DeclareTextCompositeCommand{'}{PU}{\cyrk}{\84\134}% kje  
12511 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% short u  
12512 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% dzhe  
12513 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA  
12514 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega  
12515 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT  
12516 \DeclareTextCommand{\cyrYat}{PU}{\84\143}% yat  
12517 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E  
12518 \DeclareTextCommand{\cyriote}{PU}{\84\145}% iotified e  
12519 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS  
12520 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% little yus  
12521 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS  
12522 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% iotified little yus  
12523 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS  
12524 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% big yus  
12525 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS  
12526 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% iotified big yus  
12527 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI  
12528 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% ksi  
12529 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI  
12530 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi  
12531 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA  
12532 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita  
12533 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA  
12534 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa  
12535 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\166}% IZHITSA double grave  
12536 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave  
12537 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK  
12538 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk  
12539 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA  
12540 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega  
12541 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo  
12542 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo  
12543 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT  
12544 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot  
12545 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA  
12546 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa

12547 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign  
12548 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO  
12549 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION  
12550 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA  
12551 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA  
12552 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn  
12553 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn  
12554 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke  
12555 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke  
12556 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook  
12557 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook  
12558 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender  
12559 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender  
12560 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender  
12561 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender  
12562 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender  
12563 \DeclareTextCommand{\cyrkds}{PU}{\84\233}% ka descender  
12564 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke  
12565 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke  
12566 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke  
12567 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% ka stroke  
12568 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA  
12569 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka  
12570 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender  
12571 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender  
12572 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE  
12573 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe  
12574 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook  
12575 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook  
12576 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA  
12577 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha  
12578 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender  
12579 \DeclareTextCommand{\cyrstdsc}{PU}{\84\253}% es descender  
12580 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender  
12581 \DeclareTextCommand{\cyrtstdsc}{PU}{\84\255}% te descender  
12582 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U  
12583 \DeclareTextCommand{\cyr}{PU}{\84\257}% straight u  
12584 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke  
12585 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% straight u stroke  
12586 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender  
12587 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% ha descender  
12588 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE  
12589 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% ligature te tse  
12590 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender  
12591 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender  
12592 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke  
12593 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% che vertical stroke  
12594 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA  
12595 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha  
12596 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhasian CHE  
12597 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhasian che  
12598 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% abkhasian CHE descender  
12599 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhasian che descender  
12600 \DeclareTextCommand{\CYRpaloehka}{PU}{\84\300}% paloehka  
12601 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve  
12602 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% zhe breve  
12603 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook

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12604 \DeclareTextCommand{\cyrk hk}{PU}{\84\304}% ka hook
12605 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook
12606 \DeclareTextCommand{\cyrn hk}{PU}{\84\310}% en hook
12607 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE
12608 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che
12609 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve
12610 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve
12611 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% A diaeresis
12612 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% a diaeresis
12613 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE
12614 \DeclareTextCommand{\cyrae}{PU}{\84\325}% ligature a ie
12615 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve
12616 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve
12617 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA
12618 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% schwa
12619 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis
12620 \DeclareTextCompositeCommand{"}{PU}{\cyrschwa}{\84\333}% schwa diaeresis
12621 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% ZHE diaeresis
12622 \DeclareTextCompositeCommand{"}{PU}{\cyrz h}{\84\335}% zhe diaeresis
12623 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% ZE diaeresis
12624 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% ze diaeresis
12625 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhasian DZE
12626 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhasian dze
12627 \DeclareTextCompositeCommand{=}{PU}{\CYRI}{\84\342}% I macron
12628 \DeclareTextCompositeCommand{=}{PU}{\cyri}{\84\343}% i macron
12629 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% I diaeresis
12630 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% i diaeresis
12631 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% O diaeresis
12632 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% o diaeresis
12633 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O
12634 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% barred o
12635 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% barred O diaeresis
12636 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% barred o diaeresis
12637 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U macron
12638 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% u macron
12639 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U diaeresis
12640 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% u diaeresis
12641 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U double acute
12642 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% u double acute
12643 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% CHE diaeresis
12644 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% che diaeresis
12645 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% YERU diaeresis
12646 \DeclareTextCompositeCommand{"}{PU}{\cyrery}{\84\371}% yeru diaeresis

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### 50.2.7 Symbols

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12647 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash
12648 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash
12649 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030} % quoteleft
12650 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright
12651 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase
12652 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
12653 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
12654 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
12655 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
12656 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
12657 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet

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12658 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
12659 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
12660 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
12661 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
12662 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
12663 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
12664 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160} % superscript zero
12665 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164} % superscript four
12666 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165} % superscript five
12667 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166} % superscript six
12668 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167} % superscript seven
12669 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170} % superscript eight
12670 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171} % superscript nine
12671 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200} % subscript zero
12672 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201} % subscript one
12673 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202} % subscript two
12674 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203} % subscript three
12675 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204} % subscript four
12676 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205} % subscript five
12677 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206} % subscript six
12678 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207} % subscript seven
12679 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210} % subscript eight
12680 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211} % subscript nine
12681 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
12682 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}
12683 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
12684 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
12685 %\DeclareTextCommand{\cyrlangle}{PU}{\9043\051}
12686 %\DeclareTextCommand{\cyrrangle}{PU}{\9043\052}

12687 </puenc>

```

## 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

12688 <*puvnenc>

12689 \DeclareTextCommand{\abreve}{PU}{\81\003}
12690 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
12691 \DeclareTextCommand{\dj}{PU}{\81\021}
12692 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
12693 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
12694 \DeclareTextCommand{\ohorn}{PU}{\81\241}
12695 \DeclareTextCommand{\uhorn}{PU}{\81\260}
12696 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
12697 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
12698 \DeclareTextCommand{\DJ}{PU}{\81\020}
12699 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
12700 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
12701 \DeclareTextCommand{\OHORN}{PU}{\81\240}
12702 \DeclareTextCommand{\UHORN}{PU}{\81\257}

12703 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
12704 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
12705 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
12706 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
12707 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
12708 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
12709 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}

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12710 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}  
12711 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}  
12712 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}  
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12821 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
12822 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
12823 </puvnenc>

```

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```
12824 \DeclareTextCommand{*puarenc}

12825 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LETTER HAMZA
12826 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADDA A
12827 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA A
12828 \DeclareTextCommand{\wawhamza}{PU}{\86\044} % 0624;afii57412;ARABIC LETTER WAW WITH HAMZA AE
12829 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HA
12830 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
12831 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF
12832 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH
12833 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA
12834 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH
12835 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH
12836 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM
12837 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH
12838 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH
12839 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL
12840 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL
12841 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH
12842 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN
12843 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN
12844 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN
12845 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD
12846 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD
12847 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH
12848 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH
12849 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN
12850 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN
12851 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEL
12852 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afii57441;ARABIC LETTER FEH
12853 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF
12854 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF
12855 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM
12856 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LETTER MEEM
12857 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON
12858 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH
12859 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afii57448;ARABIC LETTER WAW
12860 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afii57449;ARABIC LETTER ALEF MAKSURA
12861 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afii57450;ARABIC LETTER YEH

12862 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afii57451;ARABIC FATHATAN
12863 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afii57452;ARABIC DAMMATAN
12864 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN
12865 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afii57454;ARABIC FATHA
12866 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afii57455;ARABIC DAMMA
12867 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA
12868 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA
12869 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afii57458;ARABIC SUKUN

Farsi

12870 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afii57506;ARABIC LETTER PEH
12871 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afii57507;ARABIC LETTER TCHEH
12872 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afii57508;ARABIC LETTER JEH
12873 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afii?????;FARSI LETTER KAF
12874 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF
12875 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afii?????;FARSI LETTER YEH
```

```
12876 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
12877 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ
12878 \puarenc
```

## **51 End of file hyccheck.tex**

```
12879 \*check
12880 \typeout{}
12881 \begin{document}
12882 \end{document}
12883 \check
```

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