

Hypertext marks in \LaTeX

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1 Documentation overview for `hyperref`

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

Manual The user documentation is also available as HTML.

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

ChangeLog This file records the version history.

Options This file provides a short option summary.

Bookmark talk, slides Slides for the talk “PDF information and navigation elements with `hyperref`, `pdfTeX` and `thumbpdf`” at Euro \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 \LaTeX ”

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3 File hycheck.tex

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

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

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

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

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

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

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

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

`\HyC@checkPackage`

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

`\checkcommand` The macro `\checkcommand` parses the next tokens as a \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 \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^AT_EX 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^AT_EX, 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^AT_EX processing.

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

```

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

```

4.3 Switches

```

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

```

```

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

```

Defaults for the switches are now set.

```

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

```

```

312 \Hy@typexmlfalse
313 \Hy@unicodedefalse
314 \Hy@usetitlefalse
315 \Hy@verbosefalse
316 \Hy>windowuitrue
317 \Hy@displaydoctitlefalse

```

5 Common help macros

`\Hy@StepCount`

```

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

```

`\Hy@GlobalStepCount`

```

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

320 \newdimen\@linkdim
321 \let\Hy@driver\@empty
322 \let\MaybeStopEarly\relax
323 \newcount\Hy@linkcounter
324 \newcount\Hy@pagecounter
325 \Hy@linkcounter0
326 \Hy@pagecounter0

```

5.1 Macros for recursions

`\Hy@ReturnAfterElseFi` The commands `\Hy@ReturnAfterElseFi` and `\Hy@ReturnAfterFi` avoid a too deep
`\Hy@ReturnAfterFi` `\if`-nesting especially for recursive macros.

```

327 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
328 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

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

```

5.2 Babel's protection of shorthand characters

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

```

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

```

5.3 Coordinate transformations

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

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

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

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

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

Example (T_EX):

```

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

\hypercalcbp

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

```

6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

6.1 Description of PDF strings

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

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

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

6.2 Definition of `\pdfstringdef`

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

Important: In \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 \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 \TeX string is expanded the first time to get a PDF string.
3. Postprocessing. The result of the expansion is checked and converted to the final form.

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

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

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

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

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

```
376 \begingroup
```

6.2.1 Preprocessing

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

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

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

```
377 \escapechar'\%
```

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

```
378 \edef\0{\string\0}%
379 \edef\1{\string\1}%
380 \edef\2{\string\2}%
381 \edef\3{\string\3}%
```

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

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

```
382 \ifHy@unicode
383 \edef\8{\string\8}%
384 \edef\9{\string\9}%
385 \fontencoding{PU}%
386 \HyPsd@UTFviii
387 \else
388 \fontencoding{PD1}%
389 \fi
390 \enc@update
```

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

```
391 \@inmathwarn\pdfstringdef
```

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

```
392 \let\@inmathwarn\HyPsd@inmathwarn
```

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

```
393 \let\add@accent\HyPsd@add@accent
```

Commands that don't use NFSS directly. There are several commands that prints characters in the printable ASCII area that don't obey the NFSS, so they have to be redefined here.

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

Newline `\newline` or `\\` do not work in bookmarks, in text annotations they should expand to `\r`. In pdf strings `\\` stands for a backslash. Therefore the commands are disabled now. The user can redefine them for a result what he want:

backslash: `\pdfstringdefDisableCommands{\let\\\textbackslash}`

new line: `\pdfstringdefDisableCommands{\let\\\textCR}`

disabled: `\pdfstringdefDisableCommands{\let\\\empty}`

At any case, however, the optional argument or the star cannot be scanned in a 100% sure manner.

```
406 \def\{\pdfstringdefWarn\\}%
407 \def\newline{\pdfstringdefWarn\newline}%
```

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

```
408 \def\TeX{\TeX}%
409 \def\LaTeX{La\TeX}%
410 \def\LaTeXe{LaTeX2e}%
411 \def\eTeX{e-\TeX}%
412 \def\SliTeX{Sli\TeX}%
413 \def\MF{Metafont}%
414 \def\MP{Metapost}%
```

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

```
415 \let\emph\@firstofone
416 \let\textnormal\@firstofone
417 \let\textrm\@firstofone
418 \let\textsf\@firstofone
419 \let\texttt\@firstofone
420 \let\textbf\@firstofone
421 \let\textmd\@firstofone
422 \let\textit\@firstofone
```

```

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

```

Package color.

```

449 \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).

```

450 \let\textlatin\@firstofone
451 \@ifundefined{language@group}{-}{%
452   \csname HyPsd@babel@\language@group\endcsname
453 }%
454 \HyPsd@GreekPatch

455 \let\@safe@activetrue\relax
456 \let\@safe@activesfalse\relax

```

Disable \cyr, used in russianb.ldf.

```

457 \let\cyr\relax

```

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

```

458 \let\es@roman\@Roman

```

Package german.

```

459 \let\glqq\textglqq
460 \let\grqq\textgrqq
461 \let\glq\textglq
462 \let\grq\textgrq
463 \let\flqq\textflqq
464 \let\frqq\textfrqq
465 \let\flq\textflq
466 \let\frq\textfrq

```

Package french. The support is deferred, because it needs `\GenericError` to be disabled (see below).

Package FrenchPro. This package uses:

```

\ifmid@expandable{not fully expandable code}{fully expandable code}
467 \let\ifmid@expandable\@firstoftwo

```

AMS classes.

```

468 \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.

```

469 \let\hspace\HyPsd@hspace

```

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

```

470 \let\label\@gobble
471 \let\index\@gobble
472 \let\glossary\@gobble
473 \let\href\@secondoftwo
474 \let\@mkboth\@gobbletwo

```

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

```

475 \let\ref\HyPsd@ref
476 \let\pageref\HyPsd@pageref
477 \let\autoref\HyPsd@autoref

```

Miscellaneous commands.

```

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

```

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

```

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

```

Patch for cjk bookmarks.

```

481 \ifHy@CJKbookmarks
482 \HyPsd@CJKhook
483 \fi

```

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

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

```

484 \Hy@pdfstringtrue
485 \pdfstringdefPreHook

```

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

```

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

```

Package xspace.

```

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

```

Redefinitions of miscellaneous commands. Hyphenation does not make sense.

```

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

```

```

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

```

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

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

```

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

```

6.2.2 Expansion

There are several possibilities to expand tokens within L^AT_EX:

\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_EX and reported as errors in order to force the user to write correct things. So he get no wrong results by forgetting the proofreading of his text. But the *disadvantage* is that old wrong code cannot processed without errors. Mainly the error message is very cryptic and for the normal user hard to understand. T_EX 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^AT_EX'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).

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

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

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

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

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

6.2.3 Postprocessing

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

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

Protecting spaces and removing grouping characters. In order to check the tokens we must separate them. This will be done with \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.

```

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

```

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

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

After $\backslash\text{HyPsd@CheckCatcodes}$ 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.

```

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

```

$\backslash\text{HyPsd@CheckCatcodes}$ 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.

```

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

```

Backslash. The double backslash disturbs parsing octal sequences, for example in an string like `abc\\051` the sequence `\051` is detected although the second `\` belongs to the first backslash.

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

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

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

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

Right parenthesis. Also `\xspace` detects a right parenthesis. For the `\xspace` support and the following parenthesis check the different parenthesis notations `)`, `\)`, and `\051` are converted to one type `\)` and before `\HyPsd@empty` with the meaning of `\relax` is introduced for `\xspace`. By redefining to `\@empty` `\HyPsd@empty` can easily removed later.

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

Support for package `xspace`. `\xspace` looks for the next token and decides if it expands to a space or not. Following tokens prevent its transformation to a space: Beginning and end of group, handled above by replacing by an italic correction, several punctuation marks, a closing parentheses, and several spaces.

Without package `xspace` there are tokens with catcode 11 and 12, `\HyPsd@empty` and `\HyPsd@SPACEOPTI`. With package `xspace` marker for the italic correction `\/` and `\xspace` come with. In the package `xspace` case the two markers are replaced by commands and an `\edef` performs the `\xspace` processing.

In the opposite of the original `\xspace` `\HyPsd@xspace` uses an argument instead of a `\futurelet`, so we have to provide such an argument, if `\HyPsd@xspace` comes last.

Because `\HyPsd@Subst` with several equal tokens (`--`) needs a safe last token, in both cases the string gets an additional `\HyPsd@empty`.

```

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

```

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

```

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

```

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

```

577     \let\HyPsd@empty\@empty

```

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

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

```

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

```

Optimizing spaces. Spaces are often used, but they have a very long form `\040`. They are converted back to real spaces, but not all, so that no space follows after another. In the bookmark case several spaces are written to the `.out` file, but if the entries are read back, several spaces are merged to a single one.

With Unicode the spaces are replaced by their octal sequences.

```

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

```

Converting to Unicode. At last the eight bit letters have to be converted to Unicode, the masks \8 and \9 are removed and the Unicode marker is added.

```

593 \endgroup
594 \begingroup
595 \ifHy@unicode
596 \HyPsd@ConvertToUnicode#1%

```

Try conversion back to PDFDocEncoding.

```

597 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
598 \@ifundefined{StringEncodingConvertTest}{%
599 }{%
600 \EdefUnescapeString\HyPsd@temp#1%
601 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
602 {utf16be}{pdfdoc}{%
603 \EdefEscapeString\HyPsd@temp\HyPsd@temp
604 \global\let#1\HyPsd@temp
605 \Hy@unicodedefalse
606 }{}%
607 }%
608 \fi
609 \fi

```

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

```

610 \pdfstringdefPostHook#1%
611 \endgroup
612 }

```

\Hy@pdfstringdef

```

613 \def\Hy@pdfstringdef#1#2{%
614 \pdfstringdef\Hy@gtemp{#2}%
615 \let#1\Hy@gtemp
616 }

```

6.3 Encodings

6.3.1 PD1 encoding

The PD1 encoding implements the PDFDocEncoding for use with L^AT_EX 2_ε's NFSS. Because the informational strings are not set by T_EX'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_EX does not process it anyway. So use CM.

```

617 \@ifundefined{T@PD1}{\input{pd1enc.def}}{}
618 \DeclareFontFamily{PD1}{pdf}{}
619 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
620 \DeclareFontSubstitution{PD1}{pdf}{m}{n}

```

6.3.2 PU encoding

The PU encoding implements the Unicode encoding for use with L^AT_EX'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`.

```

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

```

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_EX's stomach, the second contains the replacement for PDF strings.

```

628 \newcommand*{\texorpdfstring}{%
629   \ifHy@pdfstring
630     \expandafter\@secondoftwo
631   \else
632     \expandafter\@firstoftwo
633   \fi
634 }

```

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`.

```

635 \@ifundefined{pdfstringdefPreHook}{%
636   \let\pdfstringdefPreHook\@empty
637 }{}
638 \@ifundefined{pdfstringdefPostHook}{%
639   \let\pdfstringdefPostHook\@gobble
640 }{}

```

`\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^AT_EX commands like `\@gobble` or `\@firstofone`.

```

641 \def\pdfstringdefDisableCommands{%
642   \begingroup
643     \makeatletter

```

```

644 \HyPsd@DisableCommands
645 }

```

\HyPsd@DisableCommands

```

646 \long\def\HyPsd@DisableCommands#1{%
647   \toks0=\expandafter{\pdfstringdefPreHook}%
648   \toks1={#1}%
649   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
650 \endgroup
651 }

```

\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.

```

652 \def\pdfstringdefWarn#1{%
653   \expandafter\noexpand\csname<- \string#1\endcsname
654 }

```

6.5 Help macros for expansion

6.5.1 Babel languages

```

655 \newif\ifHy@next

```

Nothing to do for english.

```

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

```

```

683 }%
684 }
685 \@ifundefined{macedonian@sh@"@sel}{-}{%
686   \def\HyPsd@babel@macedonian{%
687     \declare@shorthand{macedonian}{"}{-}%
688     \declare@shorthand{macedonian}{"}{-}%
689   }%
690 }
691 \@ifundefined{ngerman@sh@"@sel}{-}{%
692   \def\HyPsd@babel@ngerman{%
693     \declare@shorthand{ngerman}{"}{-}%
694     \declare@shorthand{ngerman}{"}{-}%
695   }%
696 }
697 \@ifundefined{portuges@sh@"@sel}{-}{%
698   \def\HyPsd@babel@portuges{%
699     \declare@shorthand{portuges}{"}{-}%
700   }%
701 }
702 \@ifundefined{russian@sh@"@sel}{-}{%
703   \def\HyPsd@babel@russian{%
704     \declare@shorthand{russian}{"}{-}%
705     \declare@shorthand{russian}{"}{-}%
706   }%
707 }
708 \@ifundefined{slovene@sh@"@sel}{-}{%
709   \def\HyPsd@babel@slovene{%
710     \declare@shorthand{slovene}{"}{-}%
711   }%
712 }

```

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

```

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

```

```

739 }%
740 }
741 \@ifundefined{greek@sh@\string~@sel}{%
742   \let\HyPsd@GreekPatch\@empty
743 }{%
744   \def\HyPsd@GreekPatch{%
745     \let\greeknumeral\HyPsd@greeknumeral
746     \let\Greeknumeral\HyPsd@Greeknumeral
747   }%
748 }
749 \def\HyPsd@greeknumeral#1{%
750   \HyPsd@GreekNum\@firstoftwo{#1}%
751 }
752 \def\HyPsd@Greeknumeral#1{%
753   \HyPsd@GreekNum\@secondoftwo{#1}%
754 }
755 \def\HyPsd@GreekNum#1#2{%
756   \ifHy@unicode
757     \ifnum#2<\@ne
758       \@arabic{#2}%
759     \else
760       \ifnum#2<1000000 %
761         \HyPsd@@GreekNum#1{#2}%
762       \else
763         \@arabic{#2}%
764       \fi
765     \fi
766   \else
767     \@arabic{#2}%
768   \fi
769 }
770 \def\HyPsd@@GreekNum#1#2{%
771   \ifnum#2<\@m
772     \ifnum#2<10 %
773       \expandafter\HyPsd@GreekNumI
774       \expandafter\@gobble\expandafter#1\number#2%
775     \else
776       \ifnum#2<100 %
777         \expandafter\HyPsd@GreekNumII
778         \expandafter\@gobble\expandafter#1\number#2%
779       \else
780         \expandafter\HyPsd@GreekNumIII
781         \expandafter\@gobble\expandafter#1\number#2%
782       \fi
783     \fi
784     \ifnum#2>\z@
785       \textnumeralsigngreek
786     \fi
787   \else
788     \ifnum#2<\@M
789       \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
790     \else
791       \ifnum#2<100000 %
792         \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
793       \else
794         \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
795       \fi

```

```

796     \fi
797     \fi
798 }
799 \def\HyPsd@GreekNumI#1#2#3{%
800     #1{%
801         \ifnum#3>\z@
802             \textnumeralsignlowergreek
803         \fi
804     }%
805     \expandafter#2%
806     \ifcase#3 %
807         {}{}%
808     \or\textalpha\textAlpha
809     \or\textbeta\textBeta
810     \or\textgamma\textGamma
811     \or\textdelta\textDelta
812     \or\textepsilon\textEpsilon
813     \or\textstigmagreek\textStigmagreek
814     \or\textzeta\textZeta
815     \or\texteta\textEta
816     \or\texttheta\textTheta
817     \else
818         {}{}%
819     \fi
820 }
821 \def\HyPsd@GreekNumII#1#2#3#4{%
822     #1{%
823         \ifnum#3>\z@
824             \textnumeralsignlowergreek
825         \fi
826     }%
827     \expandafter#2%
828     \ifcase#3 %
829         {}{}%
830     \or\textiota\textIota
831     \or\textkappa\textKappa
832     \or\textlambda\textLambda
833     \or\textmu\textMu
834     \or\textnu\textNu
835     \or\textxi\textXi
836     \or\textomicron\textOmicron
837     \or\textpi\textPi
838     \or\textkoppagreek\textKoppagreek
839     \else
840         {}{}%
841     \fi
842     \HyPsd@GreekNumI#1#2#4%
843 }
844 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
845     #1{%
846         \ifnum#3>\z@
847             \textnumeralsignlowergreek
848         \fi
849     }%
850     \expandafter#2%
851     \ifcase#3 %
852         {}{}%

```

```

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

```

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 ($\geq 0x40$).

```

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

```

```

898 }%
899 \count@=127 %
900 \@whilenum\count@<255 \do{%
901   \advance\count@ by 1 %
902   \lccode'\~=\count@
903   \lowercase{%
904     \toks@\expandafter{\the\toks@ ~}%
905   }%
906 }%
907 \toks@\expandafter{\the\toks@ !}%
908 \xdef\HyPsd@CJKhook{\the\toks@}%
909 \endgroup

```

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

```

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

```

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

```

918 \def\HyPsd@DecimalToOctal#1{%
919   \ifcase #1 %
920     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
921     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
922     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
923     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
924     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
925     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
926     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
927     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
928     \or @\or A\or B\or C\or D\or E\or F\or G%
929     \or H\or I\or J\or K\or L\or M\or N\or O%
930     \or P\or Q\or R\or S\or T\or U\or V\or W%
931     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
932     \or \140\or a\or b\or c\or d\or e\or f\or g%
933     \or h\or i\or j\or k\or l\or m\or n\or o%
934     \or p\or q\or r\or s\or t\or u\or v\or w%
935     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
936     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
937     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
938     \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
939     \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
940     \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
941     \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
942     \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
943     \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
944     \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
945     \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
946     \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
947     \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
948     \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
949     \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%

```

```

950     \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
951     \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
952   \fi
953 }

```

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 \LaTeX 2_ε 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 (\LaTeX 2_ε 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}

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

```

```

964 \else
965     \expandafter#2%
966 \fi
967 }
968 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
969 \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

```

970 \def\HyPsd@add@accent#1#2{%
971     \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
972     #2%
973 }%

```

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.

```

974 \def\HyPsd@LetUnexpandableSpace#1{%
975     \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
976 }

```

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

```

977 \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.

```

978 \edef\HyPsd@XSPACE{\string#\string X}
979 \edef\HyPsd@ITALCORR{\string#\string I}
980 \edef\HyPsd@GLYPHERR{\string#\string G}

```

6.5.7 \hspace fix

\HyPsd@hspace

```

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

```

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

```

982 \def\HyPsd@@hspace#1*#2\END{%
983     \ifx\#2\%
984         \HyPsd@hspacetest{#1}%

```

```

985 \else
986   \expandafter\HyPsd@hspacetest
987 \fi
988 }

```

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

```

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

```

6.5.8 Fix for AMS classes

```

990 \ifundefined{tocsection}{%
991   \let\HyPsd@AMSclassfix\relax
992 }{%
993   \def\HyPsd@AMSclassfix{%
994     \let\tocpart\HyPsd@tocsection
995     \let\tocchapter\HyPsd@tocsection
996     \let\tocappendix\HyPsd@tocsection
997     \let\tocsection\HyPsd@tocsection
998     \let\tocsubsection\HyPsd@tocsection
999     \let\tocsubsubsection\HyPsd@tocsection
1000     \let\tocparagraph\HyPsd@tocsection
1001   }%
1002   \def\HyPsd@tocsection#1#2#3{%
1003     \if @#2@ \else \if @#1@ \else #1 \fi #2. \fi
1004     #3%
1005   }%
1006 }

```

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.

```

1007 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%

```

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

```

1008 \def\HyPsd@@ref#1*#2\END{%
1009   \ifx\#2\%
1010     \HyPsd@@@ref{#1}%
1011   \else
1012     \expandafter\HyPsd@@@ref
1013   \fi
1014 }%

```

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

```

1015 \def\HyPsd@@@ref#1{%
1016   \expandafter\ifx\csname r@#1\endcsname\relax
1017     ??%
1018   \else
1019     \expandafter\expandafter\expandafter
1020     \@car\csname r@#1\endcsname\@nil
1021   \fi
1022 }

```

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

```

1023 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

```

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

```

1024 \def\HyPsd@@pageref#1*#2\END{%
1025   \ifx\#2\%
1026     \HyPsd@@pageref{#1}%
1027   \else
1028     \expandafter\HyPsd@@pageref
1029   \fi
1030 }

```

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

```

1031 \def\HyPsd@@@pageref#1{%
1032   \expandafter\ifx\csname r@#1\endcsname\relax
1033     ??%
1034   \else
1035     \expandafter\expandafter\expandafter\expandafter
1036     \expandafter\expandafter\expandafter\@car
1037     \expandafter\expandafter\expandafter\@gobble
1038     \csname r@#1\endcsname\@nil
1039   \fi
1040 }

```

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

1041 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}

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

```

1042 \def\HyPsd@@autoref#1*#2\END{%
1043   \ifx\#2\%
1044     \HyPsd@@@autoref{#1}%
1045   \else
1046     \expandafter\HyPsd@@@autoref
1047     \fi
1048 }

```

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

```

1049 \def\HyPsd@@@autorefname#1{%
1050   \expandafter\ifx\csname r@#1\endcsname\relax
1051     ??%
1052   \else
1053     \expandafter\expandafter\expandafter\HyPsd@autorefname
1054       \csname r@#1\endcsname{}{}{}{}\@nil
1055     \expandafter\expandafter\expandafter
1056       \@car\csname r@#1\endcsname\@nil
1057   \fi
1058 }

```

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

```

1059 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1060   \ifx\\#4\\%
1061     \else
1062       \HyPsd@@autorefname#4.\@nil
1063     \fi
1064 }

```

\HyPsd@@autorefname

```

1065 \def\HyPsd@autorefname#1.#2\@nil{%
1066   \@ifundefined{#1autorefname}{%
1067     \@ifundefined{#1name}{%
1068       }{%
1069         \csname#1name\endcsname\space
1070       }%
1071     }{%
1072       \csname#1autorefname\endcsname\space
1073     }%
1074 }

```

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 unlimited 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
1075 \begingroup
1076   \def\x#1#2{%
1077     \endgroup
1078     \let#1\def
1079     \def\HyPsd@DefCommand##1##2##{%
1080       #1%
1081       \expandafter\noexpand
1082         \csname\expandafter@gobble\string##1\@empty\endcsname
1083       \@gobble
1084     }%
1085     \let#2\let
1086     \def\HyPsd@LetCommand##1{%
1087       \expandafter\ifx\csname##1\expandafter\endcsname
1088         \csname iftrue\endcsname

```

```

1089     \pdfstringdefWarn\let
1090     \expandafter\@gobble
1091   \else
1092     \expandafter\ifx\csname##1\expandafter\endcsname
1093       \csname iffalse\endcsname
1094     \pdfstringdefWarn\let
1095     \expandafter\expandafter\expandafter\@gobble
1096   \else
1097     #2%
1098     \expandafter\noexpand
1099     \csname##1\expandafter\expandafter\expandafter\endcsname
1100   \fi
1101 \fi
1102 }%
1103 }%
1104 \expandafter\x\csname <def>-command\expandafter\endcsname
1105     \csname <let>-command\endcsname
1106 \def\HyPsd@LetCommand#1{%
1107   \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1108   \expandafter\expandafter\expandafter{%
1109     \expandafter\@gobble\string#1\@empty
1110   }%
1111 }

```

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.

```

1112 \def\HyPsd@ifnextchar{%
1113   \pdfstringdefWarn\@ifnextchar
1114   \expandafter\@gobbletwo\@gobble
1115 }

```

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

```

1116 \def\HyPsd@new@ifnextchar{%
1117   \pdfstringdefWarn\new@ifnextchar
1118   \expandafter\@gobbletwo\@gobble
1119 }

```

6.5.12 \@protected@testopt@ifnextchar

`\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`.

```

1120 \def\HyPsd@protected@testopt#1{%
1121   \pdfstringdefWarn#1%
1122   \@gobbletwo
1123 }

```

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:

```
1124 \def\HyPsd@Warning#1{%
1125   \begingroup
1126     \def\space{ }%
1127     \Hy@Warning{#1}%
1128   \endgroup
1129 }
```

6.6.2 Protecting spaces

```
1130 \RequirePackage{etexcmds}[2007/09/09]
1131 \ifetex@unexpanded
1132   \expandafter\@secondoftwo
1133 \else
1134   \expandafter\@firstoftwo
1135 \fi
1136 {%
```

`\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`.

```
1137   \def\HyPsd@ProtectSpaces#1{%
1138     \iftrue
1139       \expandafter\HyPsd@@ProtectSpacesFi
1140       \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1141     \fi
1142   }%
```

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

```
1143   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1144     \fi
1145     \ifx\scrollmode#2\scrollmode
1146       \HyPsd@RemoveMask#1\HyPsd@End#3%
1147     \else
1148       \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1149       \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1150     \fi
1151   }%
```

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.

```
1152   \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1153     \toks@\expandafter{#1}%
1154     \xdef#2{\the\toks@}%
1155   }%
1156 }{%
1157   \let\HyPsd@fi\fi
1158   \def\HyPsd@ProtectSpaces#1{%
```

```

1159 \xdef#1{%
1160 \iftrue
1161 \expandafter\HyPsd@@ProtectSpacesFi
1162 \expandafter\expandafter\@empty#1| %
1163 \HyPsd@fi
1164 }%
1165 \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1166 }%
1167 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1168 \fi
1169 \etex@unexpanded{#1}%
1170 \ifx\scrollmode#2\scrollmode
1171 \else
1172 \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1173 \HyPsd@fi
1174 }%
1175 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1176 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1177 }%
1178 }

```

6.6.3 Remove grouping braces

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

```

1179 \def\HyPsd@RemoveBraces#1{%
1180 \ifx\scrollmode#1\scrollmode
1181 \else
1182 \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1183 \fi
1184 }

```

`\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`.

```

1185 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1186 \fi
1187 \def\Hy@temp@A{#1#2}%
1188 \def\Hy@temp@B{#3}%
1189 \ifx\Hy@temp@A\Hy@temp@B
1190 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1191 \HyPsd@String#1%
1192 }%
1193 \ifx\scrollmode#2\scrollmode
1194 \else
1195 \Hy@ReturnAfterFiFiEnd{%
1196 \HyPsd@RemoveBraces{#2}%
1197 }%
1198 \fi
1199 \else
1200 \def\Hy@temp@A{#1}%

```

```

1201 \HyPsd@AppendItalcorr\HyPsd@String
1202 \ifx\Hy@temp@A\@empty
1203 \Hy@ReturnAfterElseFiFiEnd{%
1204 \HyPsd@RemoveBraces{#2}%
1205 }%
1206 \else
1207 \HyPsd@ProtectSpaces\Hy@temp@A
1208 \HyPsd@AppendItalcorr\Hy@temp@A
1209 \Hy@ReturnAfterFiFiEnd{%
1210 \expandafter\HyPsd@RemoveBraces\expandafter
1211 {\Hy@temp@A#2}%
1212 }%
1213 \fi
1214 \fi
1215 \Hy@ReturnEnd
1216 }

```

\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.

```

1217 \def\HyPsd@AppendItalcorr#1{%
1218 \expandafter\HyPsd@@AppendItalcorr\expandafter{/}\#1%
1219 }
1220 \def\HyPsd@@AppendItalcorr#1#2{%
1221 \expandafter\def\expandafter#2\expandafter{#2#1}%
1222 }

```

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).

```

1223 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1224 \global\let\HyPsd@Rest\relax
1225 \ifcat\relax\noexpand#1\relax
1226 \ifx#1\protect
1227 \else
1228 \ifx#1\penalty
1229 \setbox\z@=\hbox{%
1230 \afterassignment\HyPsd@AfterCountRemove
1231 \count@=#2\HyPsd@End
1232 }%
1233 \else
1234 \ifx#1\kern
1235 \setbox\z@=\hbox{%
1236 \afterassignment\HyPsd@AfterDimenRemove
1237 \dimen@=#2\HyPsd@End
1238 }%
1239 \else

```

```

1240         \ifx#1\hskip
1241         \setbox\z@=\hbox{%
1242         \afterassignment\HyPsd@AfterSkipRemove
1243         \skip@=#2\HyPsd@end
1244         }%
1245     \else
1246     \HyPsd@CatcodeWarning{#1}%
1247     \fi
1248 \fi
1249 \fi
1250 \fi
1251 \else
1252     \ifcat#1A% letter
1253     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1254     \HyPsd@String#1%
1255     }%
1256 \else
1257     \ifcat#1 % SPACE
1258     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1259     \HyPsd@String\HyPsd@SPACEOPTI
1260     }%
1261 \else
1262     \ifcat$#1%
1263     \HyPsd@CatcodeWarning{math shift}%
1264 \else
1265     \ifcat&#1%
1266     \HyPsd@CatcodeWarning{alignment tab}%
1267 \else
1268     \ifcat^#1%
1269     \HyPsd@CatcodeWarning{superscript}%
1270 \else
1271     \ifcat_#1%
1272     \HyPsd@CatcodeWarning{subscript}%
1273 \else
1274     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1275     \HyPsd@String#1%
1276     }%
1277     \fi
1278 \fi
1279 \fi
1280 \fi
1281 \fi
1282 \fi
1283 \fi
1284 \ifx\HyPsd@Rest\relax
1285     \ifx\scrollmode#2\scrollmode
1286     \else
1287     \Hy@ReturnAfterFiFiEnd{%
1288     \HyPsd@CheckCatcodes#2\HyPsd@end
1289     }%
1290 \fi
1291 \else
1292     \ifx\HyPsd@Rest\@empty
1293     \else
1294     \Hy@ReturnAfterFiFiEnd{%
1295     \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@end
1296     }%

```

```

1297 \fi
1298 \fi
1299 \Hy@ReturnEnd
1300 }

```

Remove counts, dimens, skips.

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

```

1301 \def\HyPsd@AfterCountRemove#1\HyPsd@end{%
1302 \gdef\HyPsd@Rest{#1}%
1303 }

```

`\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.

```

1304 \def\HyPsd@AfterDimenRemove#1\HyPsd@end{%
1305 \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1306 \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1307 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1308 \else
1309 \ifdim\dimen@=\z@
1310 \else
1311 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1312 \fi
1313 \gdef\HyPsd@Rest{#1}%
1314 \fi
1315 }

```

`\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).

```

1316 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1317 \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1318 \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1319 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1320 \else
1321 \ifdim\skip@=\z@
1322 \else
1323 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1324 \fi
1325 \gdef\HyPsd@Rest{#1}%
1326 \fi
1327 }

```

Catcode warnings.

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

```

1328 \def\HyPsd@CatcodeWarning#1{%
1329 \HyPsd@Warning{%
1330 Token not allowed in a PDF string (%
1331 \ifHy@unicode
1332 Unicode%
1333 \else
1334 PDFDocEncoding%
1335 \fi
1336 ),%

```

```

1337 \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1338 }%
1339 }
1340 \beginingroup
1341 \catcode'\|=0 %
1342 \catcode'\|=12 %
1343 \gdef\HyPsd@RemoveCmdPrefix#1{%
1344 \expandafter\HyPsd@@RemoveCmdPrefix
1345 \string#1\@empty\<>-|@empty|@empty
1346 }%
1347 \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1348 \endgroup

```

\HyPsd@RemoveSpaceWarning

```

1349 \def\HyPsd@RemoveSpaceWarning#1{%
1350 \HyPsd@Warning{%
1351 Token not allowed in a PDFDocEncoded string:%
1352 \MessageBreak #1\MessageBreak
1353 removed%
1354 }%
1355 }

```

\HyPsd@ReplaceSpaceWarning

```

1356 \def\HyPsd@ReplaceSpaceWarning#1{%
1357 \HyPsd@Warning{%
1358 Token not allowed in a PDFDocEncoded string:%
1359 \MessageBreak #1\MessageBreak
1360 replaced by space%
1361 }%
1362 }

```

6.6.5 Check for wrong glyphs

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

```

1363 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1364 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1365 \HyPsd@String#1%
1366 }%
1367 \ifx\|#2\%
1368 \else
1369 \Hy@ReturnAfterFi{%
1370 \HyPsd@GlyphProcessWarning#2\@empty
1371 }%
1372 \fi
1373 }
1374 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1375 \HyPsd@Warning{%
1376 Glyph not defined in %
1377 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1378 removing '\@backslashchar#1'%
1379 }%
1380 \HyPsd@GlyphProcess#2\@empty
1381 }

```

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`.

```
1382 \def\HyPsd@spaceopti#1{ % first space
1383   \ifx\HyPsd@spaceopti#1%
1384     \040%
1385   \else
1386     #1%
1387   \fi
1388 }%
```

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.

```
1389 \def\HyPsd@Subst#1#2#3{%
1390   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1391     \fi
1392     ##1%
1393     \ifx\scrollmode##2\scrollmode
1394     \else
1395       #2%
1396       \HyPsd@@ReplaceFi##2\END
1397     \fi
1398   }%
1399   \xdef#3{%
1400     \iftrue
1401       \expandafter\HyPsd@@ReplaceFi#3#1\END
1402     \fi
1403   }%
1404 }
```

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

```
1405 \def\HyPsd@StringSubst#1{%
1406   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1407 }
```

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.

```
1408 \def\HyPsd@doxspace#1{%
1409   \ifx#1\relax\else
1410     \ifx#1.\else
1411       \ifx#1:\else
1412         \ifx#1,\else
1413           \ifx#1;\else
1414             \ifx#1!\else
1415               \ifx#1?\else
```

```

1416         \ifx#1/\else
1417         \ifx#1-\else
1418         \ifx#1'\else
1419         \HyPsd@SPACEOPTI
1420         \fi
1421         \fi
1422         \fi
1423         \fi
1424         \fi
1425         \fi
1426         \fi
1427         \fi
1428         \fi
1429         \fi
1430         #1%
1431     }%

```

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.

```

1432 \begingroup
1433   \catcode'\|=0 %
1434   \catcode'\|=12 %

```

\HyPsd@ConvertToUnicode

```

1435 |gdef|HyPsd@ConvertToUnicode#1{%
1436   |xdef#1{%
1437     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1438   }%
1439   |ifx#1|@empty
1440   |else
1441     |xdef#1{%
1442       \376\377%
1443       #1%
1444     }%
1445   |fi
1446 }%

```

\HyPsd@DoConvert

```

1447 |gdef|HyPsd@DoConvert#1{%
1448   |ifx#1|@empty
1449   |else
1450     |Hy@ReturnAfterFi{%
1451       |ifx#1\|%
1452       \|%
1453       |expandafter|HyPsd@DoEscape
1454     |else
1455       \000#1%
1456       |expandafter|HyPsd@DoConvert
1457     |fi
1458   }%
1459   |fi
1460 }%

```

`\HyPsd@DoEscape`

```

1461 |gdef|HyPsd@DoEscape#1{%
1462   |ifx#19%
1463   |expandafter|HyPsd@GetTwoBytes
1464   |else
1465   |Hy@ReturnAfterFi{%
1466     |ifx#18%
1467       00%
1468     |expandafter|HyPsd@GetTwoBytes
1469     |else
1470       #1%
1471     |expandafter|HyPsd@GetOneByte
1472   |fi
1473   }%
1474 |fi
1475 }%

```

`\HyPsd@GetTwoBytes`

```

1476 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1477   #1\#2#3#4%
1478   |HyPsd@DoConvert
1479   }%

```

`\HyPsd@GetOneByte`

```

1480 |gdef|HyPsd@GetOneByte#1#2{%
1481   #1#2%
1482   |HyPsd@DoConvert
1483   }%
1484 |endgroup

```

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

```

1485 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1486   \xdef#4{#4#1#2}%
1487   \HyPsd@@ConvertToUnicode#3\END#4%
1488 }

```

6.6.9 Support for UTF-8 input encoding

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

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

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

```

1489 \begingroup\expandafter\expandafter\expandafter\endgroup
1490 \expandafter\ifx\csname numexpr\endcsname\relax
1491   \let\HyPsd@UTFviii\relax
1492 \else
1493   \begingroup
1494     \lccode'\~='^^f4\relax
1495   \lowercase{\endgroup

```

```

1496 \def\HyPsd@UTFviii{%
1497   \let\UTFviii@two@octets\HyPsd@UTFviii@two
1498   \let\UTFviii@three@octets\HyPsd@UTFviii@three
1499   \let\UTFviii@four@octets\HyPsd@UTFviii@four
1500   \ifx~\HyPsd@UTFviii@ccxliv@undef
1501     \let~\HyPsd@UTFviii@ccxliv@def
1502   \fi
1503   \let\unichar\HyPsd@unichar
1504 }%
1505 }%
1506 \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
1507 \edef\HyPsd@UTFviii@ccxliv@def{\noexpand\UTFviii@four@octets\string~^f4}%

```

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.

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

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

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

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

$$(5)$$

```

1508 \def\HyPsd@UTFviii@two#1#2{%
1509   \expandafter\HyPsd@UTFviii@two
1510   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1511   \number'#1\expandafter|%
1512   \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|%
1513   \number'#2 \@nil
1514 }%
1515 \def\HyPsd@UTFviii@two#1|#2|#3|#4\@nil{%
1516   \expandafter\8%
1517   \number\numexpr #1-48\expandafter\relax
1518   \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1519   \number\numexpr #3-8*%
1520   \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1521   \number\numexpr #4-8*#3\relax
1522 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

1523 \def\HyPsd@UTFviii@three#1#2#3{%
1524   \expandafter\HyPsd@UTFviii@three
1525   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1526   \number'#1\expandafter|%
1527   \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter|%

```

```

1528     \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|%
1529     \number'#2\expandafter|%
1530     \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|%
1531     \number'#3 \@nil
1532 }%
1533 \def\HyPsd@UTFviii@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1534     \expandafter\9%
1535     \number\dimexpr #1-56\expandafter\relax
1536     \number\dimexpr 2*(#2-4*#1)+#3\expandafter\relax
1537     \number\dimexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1538     \csname\number\dimexpr #5-4*#4\relax\expandafter\endcsname
1539     \number\dimexpr #6-16\expandafter\relax
1540     \number\dimexpr #7-8*#6\relax
1541 }%

```

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

```

```

1542 \def\HyPsd@UTFviii@four#1#2{%
1543     \expandafter\HyPsd@UTFviii@four\number
1544     \numexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
1545     \expandafter|\number
1546     \numexpr'#2-16*\dimexpr.0625\dimexpr'#2sp|%
1547 }%
1548 \def\HyPsd@UTFviii@four#1|#2|#3{%
1549     \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1550     \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1551     \ifodd#2 %
1552         \number\dimexpr(#2-1)/2\relax
1553     \else
1554         \number\dimexpr#2/2\relax
1555     \fi
1556     \number\dimexpr\ifodd#2 4+\fi
1557         \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
1558     \933%
1559     \expandafter\HyPsd@UTFviii@four\number
1560     \numexpr'#3-16*\dimexpr.0625\dimexpr'#3sp|%
1561 }%
1562 \def\HyPsd@UTFviii@four#1|#2{%
1563     \number\dimexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1564     \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1565     \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
1566     \number\dimexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
1567 }%

```

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

```

1568 \def\HyPsd@unichar#1{%
1569     \ifHy@unicode
1570         \ifnum#1>"10FFFF %
1571             \HyPsd@UnicodeReplacementCharacter % illegal
1572         \else
1573             \ifnum#1>"FFFF %

```

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

```
1574      \expandafter\HyPsd@unichar\expandafter{%
1575      \number\numexpr 55296+%
1576      \dimexpr.0009765625\dimexpr\number#1sp-\p@
1577      \relax\relax\relax
1578      }%
```

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

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

```
1628 \fi
```

7 Support of other packages

7.1 Class memoir

```
1629 \@ifclassloaded{memoir}{%
1630   \AtEndOfPackage{\RequirePackage{memhfixc}}%
1631 }{}
```

7.2 Package subfigure

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

```
1632 \@ifpackageloaded{subfigure}{%
1633   \@ifundefined{sub@label}{%
1634     \Hy@hypertexnamesfalse
1635   }{%
1636     \renewcommand*{\sub@label}[1]{%
1637       \@bsphack
1638       \subfig@oldlabel{#1}%
1639       \if@filesw
1640         \begingroup
1641           \edef\@currentlabstr{%
1642             \expandafter\strip@prefix\meaning\@currentlabelname
1643           }%
1644           \protected@write\@auxout{}{%
1645             \string\newlabel{sub@#1}{%
1646               {\@nameuse{\@thesub\@cstype}}%
1647               {\thepage}%
1648               {%
1649                 \expandafter\strip@period\@currentlabstr
1650                 \relax.\relax\@@%
1651               }%
1652               {\@currentHref}%
1653               {}%
1654             }%
1655           }%
1656         \endgroup
1657       \fi
1658       \@esphack
1659     }%
1660     \@ifpackagelater{subfigure}{2002/03/26}{%
1661       \providecommand*\toclevel@subfigure{1}%
1662       \providecommand*\toclevel@subtable{1}%
1663     }%
1664   }%
1665 }{}
```

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:

```
1666 \@ifundefined{XR@addURL}{%
1667 }{}
```

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.

```

1668 \def\XR@addURL#1{\XR@dURL#1{}{}{}\\}%
1669 \def\XR@dURL#1#2#3#4#5\{%
1670   {#1}{#2}%
1671   \if!#4!%
1672   \else
1673     {#3}{#4}{\XR@URL}%
1674   \fi
1675 }%
1676 }

1677 \def\Hy@true{true}
1678 \def\Hy@false{false}

```

Providing dummy definitions.

```

1679 \let\literalps@out@gobble
1680 \newcommand\pdfbookmark[3] [] {}
1681 \let\Acrobatmenu@gobble
1682 \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

```

1683 \let\HyperRaiseLinkHook\@empty
1684 \def\HyperRaiseLinkDefault{\baselineskip}

```

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

```

1685 \def\Hy@raisedlink#1{%
1686   \ifvmode
1687     #1%
1688   \else
1689     \penalty\@M
1690     \smash{%
1691       \begingroup
1692         \let\HyperRaiseLinkLength\@tempdima
1693         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1694         \HyperRaiseLinkHook
1695       \expandafter\endgroup
1696       \expandafter\raise\the\HyperRaiseLinkLength\hbox{#1}%
1697     }%
1698   \fi
1699 }

```

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

```

1700 \def\Hy@SaveLastskip{%
1701   \let\Hy@RestoreLastskip\relax
1702   \ifvmode

```

```

1703 \ifdim\lastskip=\z@
1704 \let\Hy@RestoreLastskip\nobreak
1705 \else
1706 \begingroup
1707 \skip@=-\lastskip
1708 \edef\x{%
1709 \endgroup
1710 \def\noexpand\Hy@RestoreLastskip{%
1711 \noexpand\ifvmode
1712 \noexpand\nobreak
1713 \vskip\the\skip@
1714 \vskip\the\lastskip\relax
1715 \noexpand\fi
1716 }%
1717 }%
1718 \x
1719 \fi
1720 \else
1721 \ifhmode
1722 \ifdim\lastskip=\z@
1723 \let\Hy@RestoreLastskip\nobreak
1724 \else
1725 \begingroup
1726 \skip@=-\lastskip
1727 \edef\x{%
1728 \endgroup
1729 \def\noexpand\Hy@RestoreLastskip{%
1730 \noexpand\ifhmode
1731 \noexpand\nobreak
1732 \hskip\the\skip@
1733 \hskip\the\lastskip\relax
1734 \noexpand\fi
1735 }%
1736 }%
1737 \x
1738 \fi
1739 \fi
1740 \fi
1741 }%

```

9 Options

9.1 Help macros

\Hy@boolkey

```

1742 \def\Hy@boolkey{\@dblarg\Hy@boolkey}
1743 \def\Hy@boolkey[#1]#2#3{%
1744 \lowercase{\def\Hy@tempa{#3}}%
1745 \ifx\Hy@tempa\@empty
1746 \let\Hy@tempa\Hy@true
1747 \fi
1748 \ifx\Hy@tempa\Hy@true
1749 \else
1750 \ifx\Hy@tempa\Hy@false
1751 \else
1752 \let\Hy@tempa\relax

```

```

1753   \fi
1754 \fi
1755 \ifx\Hy@tempa\relax
1756   \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1757 \else
1758   \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1759   \csname Hy@#2\Hy@tempa\endcsname
1760 \fi
1761 }

```

\Hy@WarnOptionValue

```

1762 \def\Hy@WarnOptionValue#1#2#3{%
1763   \Hy@Warning{%
1764     Unexpected value ‘#1’\MessageBreak
1765     of option ‘#2’ instead of\MessageBreak
1766     #3%
1767   }%
1768 }

```

\Hy@DisableOption

```

1769 \def\Hy@DisableOption#1{%
1770   \@ifundefined{KV@Hyp@#1@default}{%
1771     \define@key{Hyp}{#1}%
1772   }{%
1773     \define@key{Hyp}{#1}[]%
1774   }%
1775   {\Hy@WarnOptionDisabled{#1}}%
1776 }

```

\Hy@WarnOptionDisabled

```

1777 \def\Hy@WarnOptionDisabled#1{%
1778   \Hy@Warning{%
1779     Option ‘#1’ has already been used,\MessageBreak
1780     setting the option has no effect%
1781   }%
1782 }

```

\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.

```

1783 \def\Hy@CheckOptionValue#1#2#3{%
1784   \begingroup
1785   \edef\x{#1}%
1786   \@onelevel@sanitize\x
1787   \let\y=y%
1788   \def\do##1##2{%
1789     \def\z{##1}%
1790     \@onelevel@sanitize\z
1791     \ifx\x\z
1792       \let\y=n%
1793       \let\do\@gobbletwo
1794     \fi
1795   }%
1796   #3%
1797   \ifx\y y%
1798     \def\do##1##2{%
1799       * ‘##1’%
1800     \ifx\\##2\\\else\space(##2)\fi

```

```

1801         \MessageBreak
1802     }%
1803     \Hy@Warning{%
1804         Values of option '#2':\MessageBreak
1805         #3%
1806         * An empty value disables the option.\MessageBreak
1807         Unknown value '\x'%
1808     }%
1809     \fi
1810 \endgroup
1811 }

\Hy@DefNameKey #1: option name
#2: \do list with known values, first argument of \do is value, second argument is a
comment.
1812 \def\Hy@DefNameKey#1{%
1813     \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
1814 }

\Hy@@DefNameKey #1: macro for value storage
#2: option name
#3: \do list with known values.
1815 \def\Hy@@DefNameKey#1#2#3{%
1816     \define@key{Hyp}{#2}{%
1817         \edef#1{##1}%
1818         \ifx#1\@empty
1819             \else
1820                 \Hy@CheckOptionValue{##1}{#2}{#3}%
1821             \fi
1822     }%
1823     \let#1\@empty
1824 }

\Hy@UseNameKey
1825 \def\Hy@UseNameKey#1#2{%
1826     \ifx#2\@empty
1827     \else
1828         /#1/#2%
1829     \fi
1830 }

```

9.2 Defining the options

```

1831 \define@key{Hyp}{implicit}[true]{%
1832     \Hy@boolkey{implicit}{#1}%
1833 }
1834 \define@key{Hyp}{draft}[true]{%
1835     \Hy@boolkey{draft}{#1}%
1836 }
1837 \define@key{Hyp}{final}[true]{%
1838     \Hy@boolkey{final}{#1}%
1839 }
1840 \let\KV@Hyp@nolinks\KV@Hyp@draft
1841 \define@key{Hyp}{a4paper}[true]{%
1842     \def\special@paper{210mm,297mm}%
1843     \def\Hy@pageheight{842}%

```

```

1844 }
1845 \define@key{Hyp}{a5paper}[true]{%
1846   \def\special@paper{148mm,210mm}%
1847   \def\Hy@pageheight{595}%
1848 }
1849 \define@key{Hyp}{b5paper}[true]{%
1850   \def\special@paper{176mm,250mm}%
1851   \def\Hy@pageheight{709}%
1852 }
1853 \define@key{Hyp}{letterpaper}[true]{%
1854   \def\special@paper{8.5in,11in}%
1855   \def\Hy@pageheight{792}%
1856 }
1857 \define@key{Hyp}{legalpaper}[true]{%
1858   \def\special@paper{8.5in,14in}%
1859   \def\Hy@pageheight{1008}%
1860 }
1861 \define@key{Hyp}{executivepaper}[true]{%
1862   \def\special@paper{7.25in,10.5in}%
1863   \def\Hy@pageheight{720}%
1864 }
1865 \define@key{Hyp}{setpagesize}[true]{%
1866   \Hy@boolkey{setpagesize}{#1}%
1867 }
1868 \define@key{Hyp}{debug}[true]{%
1869   \Hy@boolkey[debug]{verbose}{#1}%
1870 }
1871 \define@key{Hyp}{linktopage}[true]{%
1872   \Hy@boolkey{linktopage}{#1}%
1873 }
1874 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1875 \def\XR@ext{dvi}
1876 \define@key{Hyp}{verbose}[true]{%
1877   \Hy@boolkey{verbose}{#1}%
1878 }
1879 \define@key{Hyp}{typexml}[true]{%
1880   \Hy@boolkey{typexml}{#1}%
1881 }

```

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.

```

1882 \define@key{Hyp}{raiselinks}[true]{%
1883   \Hy@boolkey{raiselinks}{#1}%
1884 }

```

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

```

1885 \define@key{Hyp}{breaklinks}[true]{%
1886   \Hy@boolkey{breaklinks}{#1}%
1887 }

```

Determines whether an automatic anchor is put on each page

```

1888 \define@key{Hyp}{pageanchor}[true]{%
1889   \Hy@boolkey{pageanchor}{#1}%
1890 }

```

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.

```

1891 \define@key{Hyp}{plainpages}[true]{%

```

```

1892 \Hy@boolkey{plainpages}{#1}%
1893 }

```

Are the names for anchors made as per the HyperTeX system, or do they simply use what L^AT_EX provides?

```

1894 \define@key{Hyp}{naturalnames}[true]{%
1895   \Hy@boolkey{naturalnames}{#1}%
1896 }

```

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

```

1897 \define@key{Hyp}{hypertexnames}[true]{%
1898   \Hy@boolkey{hypertexnames}{#1}%
1899 }

```

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

```

1900 \define@key{Hyp}{nesting}[true]{%
1901   \Hy@boolkey{nesting}{#1}%
1902 }

1903 \define@key{Hyp}{unicode}[true]{%
1904   \Hy@boolkey{unicode}{#1}%
1905   \ifHy@unicode
1906     \def\HyPsd@pdfencoding{unicode}%
1907   \else
1908     \def\HyPsd@pdfencoding{pdfdoc}%
1909   \fi
1910   \HyPsd@LoadUnicode
1911 }

1912 \def\HyPsd@LoadUnicode{%
1913   \@ifundefined{T@PU}{\input{puenc.def}}{}%
1914   \DeclareFontFamily{PU}{pdf}{}%
1915   \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
1916   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
1917   \global\let\HyPsd@LoadUnicode\relax
1918 }

1919 \AtBeginDocument{%
1920   \ifx\HyPsd@LoadUnicode\relax
1921   \else
1922     \def\HyPsd@LoadUnicode{%
1923       \PackageError{hyperref}{%
1924         Unicode support for bookmarks is not available.\MessageBreak
1925         Activate unicode support by using one of the options\MessageBreak
1926         'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
1927         in the preamble%
1928       }{@ehc
1929         \global\let\HyPsd@LoadUnicode\relax
1930         \global\Hy@unicodedefalse
1931         \global\let\Hy@unicodetrue\Hy@unicodedefalse
1932       }%
1933     \fi
1934 }

1935 \define@key{Hyp}{pdfencoding}{%
1936   \edef\HyPsd@temp{#1}%
1937   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
1938     \let\HyPsd@pdfencoding\HyPsd@temp
1939     \Hy@unicodedefalse
1940   \else
1941     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
1942       \z@

```

```

1943         \else
1944             \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
1945                 \z@
1946             \else
1947                 \@ne
1948             \fi
1949         \fi
1950     \let\HyPsd@pdfencoding\HyPsd@temp
1951     \hypersetup{unicode}%
1952     \ifHy@unicode
1953         \def\HyPsd@pdfencoding{#1}%
1954         \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
1955             \HyPsd@LoadStringEncoding
1956         \fi
1957     \else
1958         \Hy@Warning{Cannot switch to unicode bookmarks}%
1959         \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
1960     \fi
1961 \else
1962     \@onelevel@sanitize\HyPsd@temp
1963     \Hy@Warning{%
1964         Values of option 'pdfencoding':\MessageBreak
1965         'pdfdoc', 'unicode', 'auto'.\MessageBreak
1966         Ignoring unknown value '\HyPsd@temp'%
1967     }%
1968 \fi
1969 \fi
1970 }
1971 \def\HyPsd@pdfencoding@auto{auto}
1972 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
1973 \def\HyPsd@pdfencoding@unicode{unicode}
1974 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
1975 \def\HyPsd@LoadStringEncoding{%
1976     \RequirePackage{stringenc}[2007/06/14]%
1977     \let\HyPsd@LoadStringEncoding\relax
1978 }
1979 \AtBeginDocument{%
1980     \@ifpackageloaded{stringenc}{%
1981         \let\HyPsd@LoadStringEncoding\relax
1982     }{%
1983         \def\HyPsd@LoadStringEncoding{%
1984             \Hy@WarningNoLine{%
1985                 Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak
1986                 in the preamble or load the package there%
1987             }%
1988         }%
1989     }%
1990 }
1991 \newif\ifHy@setpdfversion
1992 \define@key{Hyp}{pdfversion}{%
1993     \@ifundefined{Hy@pdfversion@#1}{%
1994         \PackageWarning{hyperref}{%
1995             Unsupported PDF version '#1'.\MessageBreak
1996             Valid values: 1.2 until 1.7%
1997         }%
1998     }{%
1999         \Hy@setpdfversiontrue

```

```

2000 \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
2001 }%
2002 }
2003 \@namedef{Hy@pdfversion@1.2}{2}%
2004 \@namedef{Hy@pdfversion@1.3}{3}%
2005 \@namedef{Hy@pdfversion@1.4}{4}%
2006 \@namedef{Hy@pdfversion@1.5}{5}%
2007 \@namedef{Hy@pdfversion@1.6}{6}%
2008 \@namedef{Hy@pdfversion@1.7}{7}%
2009 \def\Hy@pdfversion{2}

```

10 Options for different drivers

```

2010 \define@key{Hyp}{hyperref}[true]{%
2011 \define@key{Hyp}{tex4ht}[true]{%
2012 \def\XR@ext{html}%
2013 \Hy@texhttrue
2014 \def\Hy@raisedlink{}%
2015 \setkeys{Hyp}{colorlinks=true}%
2016 \def\BeforeTeXIVht{\usepackage{color}}%
2017 \def\Hy@driver{htex4ht}%
2018 \def\MaybeStopEarly{%
2019 \typeout{Hyperref stopped early}%
2020 \AfterBeginDocument{%
2021 \PDF@FinishDoc
2022 \gdef\PDF@FinishDoc{}%
2023 }%
2024 \endinput
2025 }%
2026 }
2027 \define@key{Hyp}{pdftex}[true]{%
2028 \def\Hy@driver{hpdftex}%
2029 \def\XR@ext{pdf}%
2030 \PassOptionsToPackage{pdftex}{color}%
2031 \Hy@breaklinkstrue
2032 }
2033 \define@key{Hyp}{dvipdf}[true]{%
2034 \Hy@WarningNoLine{%
2035 Option 'dvipdf' is deprecated.\MessageBreak
2036 See the user manual for available driver options%
2037 }%
2038 }
2039 \define@key{Hyp}{nativepdf}[true]{%
2040 \def\Hy@driver{hdvips}%
2041 \def\Hy@raisedlink{}%
2042 \def\XR@ext{pdf}%
2043 }
2044 \define@key{Hyp}{dvipdfm}[true]{%
2045 \def\Hy@driver{hdvipdfm}%
2046 \def\XR@ext{pdf}%
2047 \Hy@breaklinkstrue
2048 }
2049 \define@key{Hyp}{dvipdfmx}[true]{%
2050 \def\Hy@driver{hdvipdfm}%
2051 \def\XR@ext{pdf}%
2052 \Hy@breaklinkstrue
2053 }

```

```

2054 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2055   \expandafter\ifx\csname if#1\expandafter\endcsname
2056     \csname iftrue\endcsname
2057     \chardef\SpecialDvipdfmxOutlineOpen\@ne
2058   \else
2059     \chardef\SpecialDvipdfmxOutlineOpen\z@
2060   \fi
2061 }
2062 \define@key{Hyp}{xetex}[true]{%
2063   \def\Hy@driver{hdvipdfm}%
2064   \def\XR@ext{pdf}%
2065   \Hy@breaklinkstrue
2066 }
2067 \define@key{Hyp}{pdfmark}[true]{%
2068   \def\Hy@driver{hdvips}%
2069   \def\Hy@raisedlink{}%
2070   \def\XR@ext{pdf}%
2071 }
2072 \define@key{Hyp}{dvips}[true]{%
2073   \def\Hy@driver{hdvips}%
2074   \def\Hy@raisedlink{}%
2075   \def\XR@ext{pdf}%
2076 }
2077 \define@key{Hyp}{hypertex}[true]{%
2078   \def\Hy@driver{hypertex}%
2079 }
2080 \let\Hy@MaybeStopNow\relax
2081 \define@key{Hyp}{vtex}[true]{%
2082   \begingroup\expandafter\expandafter\expandafter\endgroup
2083   \expandafter\ifx\csname OpMode\endcsname\relax
2084     \@latex@error{Non-VTeX processor}{}%
2085     \global\let\Hy@MaybeStopNow\endinput
2086     \endinput
2087   \else
2088     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2089     \def\XR@ext{pdf}%
2090     \def\Hy@driver{hvtex}%
2091   \else
2092     \ifnum\OpMode=10\relax
2093     \def\XR@ext{htm}%
2094     \def\Hy@driver{hvtexhtm}%
2095     \def\MaybeStopEarly{%
2096       \typeout{Hyperref stopped early}%
2097       \AfterBeginDocument{%
2098         \PDF@FinishDoc
2099         \gdef\PDF@FinishDoc{}%
2100       }%
2101     \endinput
2102   }%
2103   \else
2104     \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2105     \global\let\Hy@MaybeStopNow\endinput
2106     \endinput
2107   \fi
2108 \fi
2109 \fi
2110 }

```

```

2111 \define@key{Hyp}{vtexpdfmark}[true]{%
2112   \begingroup\expandafter\expandafter\expandafter\endgroup
2113   \expandafter\ifx\csname OpMode\endcsname\relax
2114     \@latex@error{Non-VTeX processor}{}%
2115     \let\Hy@MaybeStopNow\endinput
2116   \endinput
2117 \else
2118   \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2119     \def\XR@ext{pdf}%
2120     \def\Hy@driver{hvtexmrk}%
2121     \def\Hy@raisedlink{}%
2122   \else
2123     \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2124     \let\Hy@MaybeStopNow\endinput
2125   \endinput
2126 \fi
2127 \fi
2128 }
2129 \define@key{Hyp}{dviwindo}[true]{%
2130   \def\Hy@driver{hdviwind}%
2131   \setkeys{Hyp}{colorlinks}%
2132   \PassOptionsToPackage{dviwindo}{color}%
2133 }
2134 \define@key{Hyp}{dvipsone}[true]{%
2135   \def\XR@ext{pdf}%
2136   \def\Hy@driver{hdvipson}%
2137   \def\Hy@raisedlink{}%
2138 }
2139 \define@key{Hyp}{textures}[true]{%
2140   \def\XR@ext{pdf}%
2141   \def\Hy@driver{htexture}%
2142 }
2143 \define@key{Hyp}{latex2html}[true]{%
2144   \AtBeginDocument{\@latextohtmlX}%
2145 }

No more special treatment for ps2pdf. Let it sink or swim.
2146 \define@key{Hyp}{ps2pdf}[true]{%
2147   \def\Hy@driver{hdvips}%
2148   \def\Hy@raisedlink{}%
2149   \providecommand*\@pdfborder{0 0 1}%
2150 }

```

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.

```

2151 \define@key{Hyp}{hyperfigures}[true]{%
2152   \Hy@boolkey[hyperfigures]{figures}{#1}%
2153 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

2154 \define@key{Hyp}{hyperfootnotes}[true]{%
2155   \Hy@boolkey{hyperfootnotes}{#1}%
2156 }

```

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

```

2157 \def\back@none{none}

```

```

2158 \def\back@section{section}
2159 \def\back@page{page}
2160 \def\back@slide{slide}
2161 \define@key{Hyp}{backref}[section]{%
2162   \lowercase{\def\Hy@tempa{#1}}%
2163   \ifx\Hy@tempa\@empty
2164     \let\Hy@tempa\back@section
2165   \fi
2166   \ifx\Hy@tempa\Hy@false
2167     \let\Hy@tempa\back@none
2168   \fi
2169   \ifx\Hy@tempa\back@slide
2170     \let\Hy@tempa\back@section
2171   \fi
2172   \ifx\Hy@tempa\back@page
2173     \PassOptionsToPackage{hyperpageref}{backref}%
2174     \Hy@backreftrue
2175   \else
2176     \ifx\Hy@tempa\back@section
2177       \PassOptionsToPackage{hyperref}{backref}%
2178       \Hy@backreftrue
2179     \else
2180       \ifx\Hy@tempa\back@none
2181         \Hy@backreffalse
2182       \else
2183         \Hy@WarnOptionValue{#1}{backref}{%
2184           'section', 'slide', 'page', 'none', \MessageBreak
2185           or 'false'}%
2186       \fi
2187     \fi
2188   \fi
2189 }
2190 \define@key{Hyp}{pagebackref}[true]{%
2191   \lowercase{\def\Hy@tempa{#1}}%
2192   \ifx\Hy@tempa\@empty
2193     \let\Hy@tempa\Hy@true
2194   \fi
2195   \ifx\Hy@tempa\Hy@true
2196     \PassOptionsToPackage{hyperpageref}{backref}%
2197     \Hy@backreftrue
2198   \else
2199     \ifx\Hy@tempa\Hy@false
2200       \Hy@backreffalse
2201     \else
2202       \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
2203     \fi
2204   \fi
2205 }

```

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

```

2206 \define@key{Hyp}{hyperindex}[true]{%
2207   \Hy@boolkey{hyperindex}{#1}%
2208 }

```

Configuration of encap char.

```

2209 \define@key{Hyp}{encap}[|]{%
2210   \def\HyInd@EncapChar{#1}%

```

2211 }

12 Language options

The `\autoref` feature depends on the language.

```
2212 \def\HyLang@afrikaans{%
2213   \def\equationautorefname{Vergelyking}%
2214   \def\footnoteautorefname{Voetnota}%
2215   \def\itemautorefname{Item}%
2216   \def\figureautorefname{Figuur}%
2217   \def\tableautorefname{Tabel}%
2218   \def\partautorefname{Deel}%
2219   \def\appendixautorefname{Bylae}%
2220   \def\chapterautorefname{Hoofstuk}%
2221   \def\sectionautorefname{Afdeling}%
2222   \def\subsectionautorefname{Subafdeling}%
2223   \def\subsubsectionautorefname{Subsubafdeling}%
2224   \def\paragraphautorefname{Paragraaf}%
2225   \def\subparagraphautorefname{Subparagraaf}%
2226   \def\FancyVerbLineautorefname{Lyn}%
2227   \def\theoremautorefname{Teorema}%
2228   \def\pageautorefname{Bladsy}%
2229 }
2230 \def\HyLang@english{%
2231   \def\equationautorefname{Equation}%
2232   \def\footnoteautorefname{footnote}%
2233   \def\itemautorefname{item}%
2234   \def\figureautorefname{Figure}%
2235   \def\tableautorefname{Table}%
2236   \def\partautorefname{Part}%
2237   \def\appendixautorefname{Appendix}%
2238   \def\chapterautorefname{chapter}%
2239   \def\sectionautorefname{section}%
2240   \def\subsectionautorefname{subsection}%
2241   \def\subsubsectionautorefname{subsubsection}%
2242   \def\paragraphautorefname{paragraph}%
2243   \def\subparagraphautorefname{subparagraph}%
2244   \def\FancyVerbLineautorefname{line}%
2245   \def\theoremautorefname{Theorem}%
2246   \def\pageautorefname{page}%
2247 }
2248 \def\HyLang@french{%
2249   \def\equationautorefname{'Equation}%
2250   \def\footnoteautorefname{note}%
2251   \def\itemautorefname{item}%
2252   \def\figureautorefname{Figure}%
2253   \def\tableautorefname{Tableau}%
2254   \def\partautorefname{Partie}%
2255   \def\appendixautorefname{Appendice}%
2256   \def\chapterautorefname{chapitre}%
2257   \def\sectionautorefname{section}%
2258   \def\subsectionautorefname{sous-section}%
2259   \def\subsubsectionautorefname{sous-sous-section}%
2260   \def\paragraphautorefname{paragraphe}%
2261   \def\subparagraphautorefname{sous-paragraphe}%
2262   \def\FancyVerbLineautorefname{ligne}%
```

```

2263 \def\theoremautorefname{Th\'eor\'eme}%
2264 \def\pageautorefname{page}%
2265 }
2266 \def\HyLang@german{%
2267 \def\equationautorefname{Gleichung}%
2268 \def\footnoteautorefname{Fu\ss note}%
2269 \def\itemautorefname{Punkt}%
2270 \def\figureautorefname{Abbildung}%
2271 \def\tableautorefname{Tabelle}%
2272 \def\partautorefname{Teil}%
2273 \def\appendixautorefname{Anhang}%
2274 \def\chapterautorefname{Kapitel}%
2275 \def\sectionautorefname{Abschnitt}%
2276 \def\subsectionautorefname{Unterabschnitt}%
2277 \def\subsubsectionautorefname{Unterunterabschnitt}%
2278 \def\paragraphautorefname{Absatz}%
2279 \def\subparagraphautorefname{Unterabsatz}%
2280 \def\FancyVerbLineautorefname{Zeile}%
2281 \def\theoremautorefname{Theorem}%
2282 \def\pageautorefname{Seite}%
2283 }
2284 \def\HyLang@italian{%
2285 \def\equationautorefname{Equazione}%
2286 \def\footnoteautorefname{nota}%
2287 \def\itemautorefname{punto}%
2288 \def\figureautorefname{Figura}%
2289 \def\tableautorefname{Tabella}%
2290 \def\partautorefname{Parte}%
2291 \def\appendixautorefname{Appendice}%
2292 \def\chapterautorefname{Capitolo}%
2293 \def\sectionautorefname{sezione}%
2294 \def\subsectionautorefname{sottosezione}%
2295 \def\subsubsectionautorefname{sottosottosezione}%
2296 \def\paragraphautorefname{paragrafo}%
2297 \def\subparagraphautorefname{sottoparagrafo}%
2298 \def\FancyVerbLineautorefname{linea}%
2299 \def\theoremautorefname{Teorema}%
2300 \def\pageautorefname{Pag.\@}%
2301 }
2302 \def\HyLang@magyar{%
2303 \def\equationautorefname{Egyenlet}%
2304 \def\footnoteautorefname{l\'abjegyzet}%
2305 \def\itemautorefname{Elem}%
2306 \def\figureautorefname{\'Abra}%
2307 \def\tableautorefname{T\'abl\'azat}%
2308 \def\partautorefname{R\'esz}%
2309 \def\appendixautorefname{F\'uggel\'ek}%
2310 \def\chapterautorefname{fejezet}%
2311 \def\sectionautorefname{szakasz}%
2312 \def\subsectionautorefname{alszakasz}%
2313 \def\subsubsectionautorefname{alalszakasz}%
2314 \def\paragraphautorefname{bekezd\'es}%
2315 \def\subparagraphautorefname{albekezd\'es}%
2316 \def\FancyVerbLineautorefname{sor}%
2317 \def\theoremautorefname{T\'etel}%
2318 \def\pageautorefname{oldal}%
2319 }

```


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.

```
2352 \def\itemautorefname{\cyr\cyrp.}%
2353 % \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.

```
2354 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
2355 \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.

```
2356 \def\partautorefname{\cyr\cyrch.}%
2357 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
2358 \def\sectionautorefname{\cyr\cyrr\cyra\cyrz\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.

```
2359 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
2360 % \def\appendixautorefname{%
2361 % \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrz\cyre\cyrn\cyri\cyre
2362 % }%
```

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.

```
2363 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
2364 \def\subsubsectionautorefname{\cyr\cyrr\cyra\cyrz\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.

```
2365 \def\paragraphautorefname{\cyr\cyrp.}%
2366 \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.

```
2367 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
2368 % \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.

```
2369 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%
```

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

```
2370 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
2371 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
2372 % \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 ...

```
2373 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
2374 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
```

```
2375 % \def\Accttheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
2376 \def\pageautorefname{\cyr\cyrs.}%
```

```
2377 }
```

```
2378 \def\HyLang@spanish{%
```

```
2379 \def\equationautorefname{Ecuaci\'on}%
```

```
2380 \def\footnoteautorefname{Nota a pie de p\'agina}%
```

```
2381 \def\itemautorefname{Elemento}%
```

```
2382 \def\figureautorefname{Figura}%
```

```
2383 \def\tableautorefname{Tabla}%
```

```
2384 \def\partautorefname{Parte}%
```

```
2385 \def\appendixautorefname{Ap\'endice}%
```

```
2386 \def\chapterautorefname{Cap\'itulo}%
```

```
2387 \def\sectionautorefname{Secci\'on}%
```

```
2388 \def\subsectionautorefname{Subsecci\'on}%
```

```
2389 \def\subsubsectionautorefname{Subsubsecci\'on}%
```

```
2390 \def\paragraphautorefname{P\'arrafo}%
```

```
2391 \def\subparagraphautorefname{Subp\'arrafo}%
```

```
2392 \def\FancyVerbLineautorefname{L\'inea}%
```

```
2393 \def\theoremautorefname{Teorema}%
```

```
2394 \def\pageautorefname{P\'agina}%
```

```
2395 }
```

```
2396 \def\HyLang@vietnamese{%
```

```
2397 \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr\'inh}%
```

```
2398 \def\footnoteautorefname{Ch\'u th\'ich}%
```

```
2399 \def\itemautorefname{m\du{c}}%
```

```
2400 \def\figureautorefname{H\'inh}%
```

```
2401 \def\tableautorefname{B\h{a}ng}%
```

```
2402 \def\partautorefname{Ph\'acircumflex{}n}%
```

```
2403 \def\appendixautorefname{Ph\du{} l\du{c}}%
```

```
2404 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
```

```
2405 \def\sectionautorefname{m\du{c}}%
```

```
2406 \def\subsectionautorefname{m\du{c}}%
```

```
2407 \def\subsubsectionautorefname{m\du{c}}%
```

```
2408 \def\paragraphautorefname{\dj{}o\du{a}n}%
```

```
2409 \def\subparagraphautorefname{\dj{}o\du{a}n}%
```

```
2410 \def\FancyVerbLineautorefname{d\'ong}%
```

```
2411 \def\theoremautorefname{DJ\du{nh} l\'y}%
```

```
2412 \def\pageautorefname{Trang}%
```

```
2413 }
```

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

```
2414 \def\HyLang@addto#1#2{%
```

```
2415 #2%
```

```
2416 \@temptokena{#2}%
```

```
2417 \ifx#1\relax
```

```
2418 \let#1\@empty
```

```
2419 \fi
```

```
2420 \ifx#1\undefined
```

```

2421 \edef#1{\the\@temptokena}%
2422 \else
2423 \toks@\expandafter{#1}%
2424 \edef#1{\the\toks@\the\@temptokena}%
2425 \fi
2426 \@temptokena{}\toks@\@temptokena
2427 }

2428 \def\HyLang@DeclareLang#1#2#3{%
2429 \begingroup
2430 \edef\x##1##2{%
2431 \noexpand\ifx##2\relax
2432 \errmessage{No definitions for language #2' found!}%
2433 \noexpand\fi
2434 \endgroup
2435 \noexpand\define@key{Hyp}{#1}[]{%
2436 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
2437 #3%
2438 }%
2439 }%
2440 \expandafter\x\csname extras#1\expandafter\endcsname
2441 \csname HyLang@#2\endcsname
2442 }

2443 \HyLang@DeclareLang{english}{english}{}
2444 \HyLang@DeclareLang{UKenglish}{english}{}
2445 \HyLang@DeclareLang{british}{english}{}
2446 \HyLang@DeclareLang{USenglish}{english}{}
2447 \HyLang@DeclareLang{american}{english}{}
2448 \HyLang@DeclareLang{german}{german}{}
2449 \HyLang@DeclareLang{austrian}{german}{}
2450 \HyLang@DeclareLang{ngerman}{german}{}
2451 \HyLang@DeclareLang{naustrian}{german}{}
2452 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
2453 \HyLang@DeclareLang{brazil}{portuges}{}
2454 \HyLang@DeclareLang{brazilian}{portuges}{}
2455 \HyLang@DeclareLang{portuguese}{portuges}{}
2456 \HyLang@DeclareLang{spanish}{spanish}{}
2457 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
2458 \HyLang@DeclareLang{french}{french}{}
2459 \HyLang@DeclareLang{frenchb}{french}{}
2460 \HyLang@DeclareLang{francais}{french}{}
2461 \HyLang@DeclareLang{acadian}{french}{}
2462 \HyLang@DeclareLang{canadien}{french}{}
2463 \HyLang@DeclareLang{italian}{italian}{}
2464 \HyLang@DeclareLang{magyar}{magyar}{}
2465 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

2466 \define@key{Hyp}{vietnamese}[]{}%
2467 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
2468 \AtEndOfPackage{%
2469 \ifundefined{T@PU}{}{}%
2470 \input{pvnenc.def}%
2471 }%
2472 }%
2473 }

2474 \define@key{Hyp}{vietnam}[]{}%
2475 \HyLang@addto\extravietnam\HyLang@vietnamese

```

```

2476 \AtEndOfPackage{%
2477   \ifundefined{T@PU}{-}{%
2478     \input{puvncnc.def}%
2479   }%
2480 }%
2481 }

```

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

```

2482 \define@key{Hyp}{arabic}[]{%
2483   \AtEndOfPackage{%
2484     \ifundefined{T@PU}{-}{%
2485       \input{puarenc.def}%
2486     }%
2487   }%
2488 }

```

13 Options to change appearance of links

Colouring links at the L^AT_EX level is useful for debugging, perhaps.

```

2489 \define@key{Hyp}{colorlinks}[true]{%
2490   \Hy@boolkey{colorlinks}{#1}%
2491   \ifHy@colorlinks
2492     \def\pdfborder{0 0 0}%
2493     \let\pdfborderstyle\@empty
2494   \fi
2495 }
2496 \define@key{Hyp}{frenchlinks}[true]{%
2497   \Hy@boolkey{frenchlinks}{#1}%
2498 }

```

14 Bookmarking

```

2499 \define@key{Hyp}{bookmarks}[true]{%
2500   \Hy@boolkey{bookmarks}{#1}%
2501 }
2502 \define@key{Hyp}{bookmarksopen}[true]{%
2503   \Hy@boolkey{bookmarksopen}{#1}%
2504 }

```

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.

```

2505 \let\Hy@bookmarksdepth\c@tocdepth
2506 \define@key{Hyp}{bookmarksdepth}[]{%
2507   \begingroup
2508     \edef\x{#1}%
2509     \ifx\x\empty
2510       \global\let\Hy@bookmarksdepth\c@tocdepth

```

```

2511 \else
2512 \@ifundefined{toclevel@x}{%
2513 \@onelevel@sanitize\x
2514 \edef\y{\expandafter\@car\x\@nil}%
2515 \ifcase 0\expandafter\ifx\y-1\fi
2516 \expandafter\ifnum\expandafter'\y>47 %
2517 \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
2518 \Hy@Warning{Unknown document division name (\x)}%
2519 \else
2520 \setbox\z@=\hbox{%
2521 \count@=\x
2522 \xdef\Hy@bookmarksdepth{\the\count@}%
2523 }%
2524 \fi
2525 }{%
2526 \setbox\z@=\hbox{%
2527 \count@=\csname toclevel@x\endcsname
2528 \xdef\Hy@bookmarksdepth{\the\count@}%
2529 }%
2530 }%
2531 \fi
2532 \endgroup
2533 }

```

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

```

2534 \define@key{Hyp}{bookmarksopenlevel}{%
2535 \def\@bookmarksopenlevel{#1}%
2536 }
2537 \def\@bookmarksopenlevel{\maxdimen}
2538 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
2539 \define@key{Hyp}{bookmarkstype}{%
2540 \def\Hy@bookmarkstype{#1}%
2541 }
2542 \def\Hy@bookmarkstype{toc}

```

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

```

2543 \define@key{Hyp}{bookmarksnumbered}[true]{%
2544 \Hy@boolkey{bookmarksnumbered}{#1}%
2545 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2546 \define@key{Hyp}{CJKbookmarks}[true]{%
2547 \Hy@boolkey{CJKbookmarks}{#1}%
2548 }

2549 \def\Hy@temp#1{%
2550 \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
2551 }

2552 \def\Hy@@temp#1#2#3{%
2553 \define@key{Hyp}{#2color}{%
2554 \HyColor@HyperrefColor{##1}#1%
2555 }%
2556 \def#1{#3}%
2557 }

2558 \Hy@temp{link}{red}
2559 \Hy@temp{anchor}{black}
2560 \Hy@temp{cite}{green}
2561 \Hy@temp{file}{cyan}

```

```

2562 \Hy@temp{url}{magenta}
2563 \Hy@temp{menu}{red}
2564 \Hy@temp{run}{\@filecolor}
2565 \define@key{Hyp}{pagecolor}{%
2566   \Hy@WarningPageColor
2567 }
2568 \def\Hy@WarningPageColor{%
2569   \Hy@WarningNoLine{Option 'pagecolor' is not available anymore}%
2570   \global\let\Hy@WarningPageColor\relax
2571 }

2572 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2573 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2574 \let\@baseurl\empty
2575 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2576 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2577 \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.

```

2578 \let\@pdfpagetransition\relax
2579 \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.

```

2580 \let\@pdfpageduration\relax
2581 \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.

```

2582 \newif\ifHy@useHidKey
2583 \Hy@useHidKeyfalse
2584 \define@key{Hyp}{pdfpagehidden}[true]{%
2585   \Hy@boolkey{pdfpagehidden}{#1}%
2586   \ifHy@pdfpagehidden
2587     \global\Hy@useHidKeytrue
2588   \fi
2589 }

```

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).

```

2590 \def\Hy@ColorList{cite,file,link,menu,run,url}
2591 \@for\Hy@temp:=\Hy@ColorList\do{%
2592   \edef\Hy@temp{%
2593     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2594       \noexpand\Hy@Color@HyperrefBorderColor

```

```

2595         {##1}%
2596         \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
2597         {hyperref}%
2598         {\Hy@temp bordercolor}%
2599     }%
2600 }%
2601 \Hy@temp
2602 }
2603 \define@key{Hyp}{pagebordercolor}{%
2604     \Hy@WarningPageBorderColor
2605 }
2606 \def\Hy@WarningPageBorderColor{%
2607     \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
2608     \global\let\Hy@WarningPageBorderColor\relax
2609 }

2610 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2611 \Hy@DefNameKey{pdfhighlight}{%
2612     \do{/I}{Invert}%
2613     \do{/N}{None}%
2614     \do{/O}{Outline}%
2615     \do{/P}{Push}%
2616 }
2617 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2618 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2619 \def\Hy@setpdfborder{%
2620     \ifx\@pdfborder\@empty
2621     \else
2622         /Border[\@pdfborder]%
2623     \fi
2624     \ifx\@pdfborderstyle\@empty
2625     \else
2626         /BS<<\@pdfborderstyle>>%
2627     \fi
2628 }
2629 \Hy@DefNameKey{pdfpagemode}{%
2630     \do{UseNone}{}%
2631     \do{UseOutlines}{}%
2632     \do{UseThumbs}{}%
2633     \do{FullScreen}{}%
2634     \do{UseOC}{PDF 1.5}%
2635     \do{UseAttachments}{PDF 1.6}%
2636 }
2637 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2638     \do{UseNone}{}%
2639     \do{UseOutlines}{}%
2640     \do{UseThumbs}{}%
2641     \do{FullScreen}{}%
2642     \do{UseOC}{PDF 1.5}%
2643     \do{UseAttachments}{PDF 1.6}%
2644 }
2645 \Hy@DefNameKey{pdfdirection}{%
2646     \do{L2R}{Left to right}%
2647     \do{R2L}{Right to left}%
2648 }
2649 \Hy@DefNameKey{pdfviewarea}{%
2650     \do{MediaBox}{}%
2651     \do{CropBox}{}%

```

```

2652 \do{BleedBox}{}%
2653 \do{TrimBox}{}%
2654 \do{ArtBox}{}%
2655 }
2656 \Hy@DefNameKey{pdfviewclip}{%
2657 \do{MediaBox}{}%
2658 \do{CropBox}{}%
2659 \do{BleedBox}{}%
2660 \do{TrimBox}{}%
2661 \do{ArtBox}{}%
2662 }
2663 \Hy@DefNameKey{pdfprintarea}{%
2664 \do{MediaBox}{}%
2665 \do{CropBox}{}%
2666 \do{BleedBox}{}%
2667 \do{TrimBox}{}%
2668 \do{ArtBox}{}%
2669 }
2670 \Hy@DefNameKey{pdfprintclip}{%
2671 \do{MediaBox}{}%
2672 \do{CropBox}{}%
2673 \do{BleedBox}{}%
2674 \do{TrimBox}{}%
2675 \do{ArtBox}{}%
2676 }
2677 \Hy@DefNameKey{pdfprintscaling}{%
2678 \do{AppDefault}{}%
2679 \do{None}{}%
2680 }
2681 \Hy@DefNameKey{pdfduplex}{%
2682 \do{Simplex}{}%
2683 \do{DuplexFlipShortEdge}{}%
2684 \do{DuplexFlipLongEdge}{}%
2685 }
2686 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
2687 \do{true}{}%
2688 \do{false}{}%
2689 }
2690 \define@key{Hyp}{pdfprintpagerange}{%
2691 \def\@pdfprintpagerange{#1}%
2692 }
2693 \Hy@DefNameKey{pdfnumcopies}{%
2694 \do{2}{two copies}%
2695 \do{3}{three copies}%
2696 \do{4}{four copies}%
2697 \do{5}{five copies}%
2698 }
2699 \define@key{Hyp}{pdfusetitle}[true]{%
2700 \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2701 }
2702 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2703 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2704 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2705 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2706 \define@key{Hyp}{pdfcreationdate}{%
2707 \begingroup
2708 \Hy@unicodedefalse

```

```

2709 \pdfstringdef\@pdfcreationdate{#1}%
2710 \endgroup
2711 }
2712 \define@key{Hyp}{pdfmoddate}{%
2713 \beginingroup
2714 \Hy@unicodefalse
2715 \pdfstringdef\@pdfmoddate{#1}%
2716 \endgroup
2717 }
2718 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2719 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2720 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
2721 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2722 \let\setpdflinkmargin\@gobble
2723 \def\calculate@pdfview#1 #2\{%
2724 \def\@pdfview{#1}%
2725 \ifx\#2\%
2726 \def\@pdfviewparams{ -32768}%
2727 \else
2728 \def\@pdfviewparams{ #2}%
2729 \fi
2730 }
2731 \beginingroup\expandafter\expandafter\expandafter\endgroup
2732 \expandafter\ifx\csname numexpr\endcsname\relax
2733 \def\Hy@number#1{%
2734 \expandafter\@firstofone\expandafter{\number#1}%
2735 }%
2736 \else
2737 \def\Hy@number#1{%
2738 \the\numexpr#1\relax
2739 }%
2740 \fi
2741 \define@key{Hyp}{pdfstartpage}{%
2742 \ifx\#1\%
2743 \def\@pdfstartpage{}%
2744 \else
2745 \edef\@pdfstartpage{\Hy@number{#1}}%
2746 \fi
2747 }%
2748 \define@key{Hyp}{pdfstartview}{%
2749 \ifx\#1\%
2750 \def\@pdfstartview{}%
2751 \else
2752 \hypercalcbpdef\@pdfstartview{ /#1 }%
2753 \fi
2754 }
2755 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
2756 \define@key{Hyp}{pdftoolbar}[true]{%
2757 \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2758 }
2759 \define@key{Hyp}{pdfmenubar}[true]{%
2760 \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2761 }
2762 \define@key{Hyp}{pdfwindowui}[true]{%
2763 \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2764 }
2765 \define@key{Hyp}{pdffitwindow}[true]{%

```

```

2766 \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2767 }
2768 \define@key{Hyp}{pdfcenterwindow}[true]{%
2769 \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2770 }
2771 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2772 \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2773 }
2774 \define@key{Hyp}{pdfnewwindow}[true]{%
2775 \def\Hy@temp{#1}%
2776 \ifx\Hy@temp\empty
2777 \Hy@newwindowsetfalse
2778 \else
2779 \Hy@newwindowsettrue
2780 \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2781 \fi
2782 }
2783 \def\Hy@SetNewWindow{%
2784 \ifHy@newwindowset
2785 /NewWindow %
2786 \ifHy@newwindow true\else false\fi
2787 \fi
2788 }
2789 \Hy@DefNameKey{pdfpagelayout}{%
2790 \do{SinglePage}{}%
2791 \do{OneColumn}{}%
2792 \do{TwoColumnLeft}{}%
2793 \do{TwoColumnRight}{}%
2794 \do{TwoPageLeft}{PDF 1.5}%
2795 \do{TwoPageRight}{PDF 1.5}%
2796 }
2797 \define@key{Hyp}{pdflang}{%
2798 \def\@pdflang{#1}%
2799 }
2800 \define@key{Hyp}{pdfpagelabels}[true]{%
2801 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2802 }
2803 \define@key{Hyp}{pdfescapeform}[true]{%
2804 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2805 }

```

Default values:

```

2806 \def\@linkbordercolor{1 0 0}
2807 \def\@urlbordercolor{0 1 1}
2808 \def\@menubordercolor{1 0 0}
2809 \def\@filebordercolor{0 .5 .5}
2810 \def\@runbordercolor{0 .7 .7}
2811 \def\@citebordercolor{0 1 0}
2812 \def\@pdfhighlight{/I}
2813 \def\@pdftitle{}
2814 \def\@pdfauthor{}
2815 \let\@pdfproducer\relax
2816 \def\@pdfcreator{LaTeX with hyperref package}
2817 \def\@pdfcreationdate{}
2818 \def\@pdfmoddate{}
2819 \def\@pdfsubject{}
2820 \def\@pdfkeywords{}
2821 \def\@pdfpagescrop{}

```

```

2822 \def\@pdfstartview{ /Fit }
2823 \def\@pdfstartpage{1}
2824 \def\@pdfprintpagerange{}
2825 \def\@pdflang{}
2826 \let\PDF@SetupDoc\@empty
2827 \let\PDF@FinishDoc\@empty
2828 \let\phantomsection\@empty
2829 \let\special@paper\@empty
2830 \@ifundefined{stockwidth}{%
2831   \ifdim\paperwidth>\z@
2832     \ifdim\paperheight>\z@
2833       \edef\special@paper{\the\paperwidth,\the\paperheight}%
2834     \fi
2835   \fi
2836 }{%
2837   \ifdim\stockwidth>\z@
2838     \ifdim\stockheight>\z@
2839       \edef\special@paper{\the\stockwidth,\the\stockheight}%
2840     \fi
2841   \fi
2842 }
2843 \begingroup
2844   \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
2845   \dimen@=\x\relax
2846   \ifdim\dimen@>\z@
2847   \else
2848     \dimen@=11in\relax
2849     \Hy@WarningNoLine{%
2850       Height of page (\expandafter\string\x) %
2851       is invalid (\the\x),\MessageBreak
2852       using 11in%
2853     }%
2854   \fi
2855   \dimen@=0.99626401\dimen@
2856   \xdef\Hy@pageheight{\strip@pt\dimen@}%
2857 \endgroup
2858 \def\HyInd@EncapChar{\|}
2859 \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.

```

2860 \let\hyper@normalise\ExecuteOptions
2861 \let\ExecuteOptions\hypersetup
2862 \Hy@RestoreCatcodes
2863 \InputIfFileExists{hyperref.cfg}{-}{-}
2864 \Hy@SetCatcodes
2865 \let\ExecuteOptions\hyper@normalise
2866 \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`.

```

2867 \RequirePackage{kvoptions}[2006/08/17]

```

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

```

2868 \@ifpackageloaded{tex4ht}{%

```

```

2869 \@ifpackagewith{hyperref}{tex4ht}{%
2870   \PassOptionsToPackage{tex4ht}{hyperref}%
2871 }%
2872 {}

```

```

2873 \let\ReadBookmarks\relax
2874 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2875 \AtBeginDocument{%
2876   \ifHy@draft
2877     \let\hyper@@anchor\@gobble
2878     \gdef\hyper@link#1#2#3{#3}%
2879     \let\hyper@anchorstart\@gobble
2880     \let\hyper@anchorend\@empty
2881     \let\hyper@linkstart\@gobbletwo
2882     \let\hyper@linkend\@empty
2883     \def\hyper@linkurl#1#2{#1}%
2884     \def\hyper@linkfile#1#2#3{#1}%
2885     \def\hyper@link@{#1}#2#3{#3}%
2886     \def\Acrobatmenu#1#2{#2}%
2887     \let\PDF@SetupDoc\@empty
2888     \let\PDF@FinishDoc\@empty
2889     \let\@fifthoffive\@secondoftwo
2890     \let\@secondoffive\@secondoftwo
2891     \let\ReadBookmarks\relax
2892     \let\WriteBookmarks\relax
2893     \Hy@WarningNoLine{ draft mode on}%
2894   \fi
2895   \Hy@DisableOption{draft}%
2896   \Hy@DisableOption{nolinks}%
2897   \Hy@DisableOption{final}%
2898 }
2899 \Hy@DisableOption{pdfversion}%

```

15.1 Patch for babel's \texttilde

Babel does not define \texttilde in NFSS2 manner, so the NFSS2 definitions of PD1 or PU encoding is not compatible. To fix this, \texttilde is defined in babel manner.

```

2900 \Hy@nextfalse
2901 \@ifundefined{spanish@sh@"@sel}{\Hy@nexttrue}
2902 \@ifundefined{galician@sh@"@sel}{\Hy@nexttrue}
2903 \@ifundefined{estonian@sh@"@sel}{\Hy@nexttrue}
2904 \ifHy@next
2905   \let\texttilde\~%
2906 \fi
2907 \ifHy@figures
2908   \Hy@Info{Hyper figures ON}%
2909 \else
2910   \Hy@Info{Hyper figures OFF}%
2911 \fi
2912 \ifHy@nesting
2913   \Hy@Info{Link nesting ON}%
2914 \else
2915   \Hy@Info{Link nesting OFF}%
2916 \fi
2917 \ifHy@hyperindex

```

```

2918 \Hy@Info{Hyper index ON}%
2919 \else
2920 \Hy@Info{Hyper index OFF}%
2921 \fi
2922 \ifHy@plainpages
2923 \Hy@Info{Plain pages ON}%
2924 \else
2925 \Hy@Info{Plain pages OFF}%
2926 \fi
2927 \ifHy@backref
2928 \Hy@Info{Backreferencing ON}%
2929 \else
2930 \Hy@Info{Backreferencing OFF}%
2931 \fi
2932 \ifHy@typexml
2933 \AtEndOfPackage{%
2934 \RequirePackage{color}%
2935 \RequirePackage{nameref}%
2936 }%
2937 \fi
2938 \Hy@DisableOption{typexml}
2939 \ifHy@implicit
2940 \typeout{Implicit mode ON; LaTeX internals redefined}%
2941 \else
2942 \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
2943 \def\MaybeStopEarly{%
2944 \typeout{Hyperref stopped early}%
2945 \AfterBeginDocument{%
2946 \PDF@FinishDoc
2947 \gdef\PDF@FinishDoc{}}%
2948 }%
2949 \endinput
2950 }%
2951 \AtBeginDocument{%
2952 \let\autoref\ref
2953 \let\autopageref\pageref
2954 \ifx\@pdfpagemode\@empty
2955 \gdef\@pdfpagemode{UseNone}%
2956 \fi
2957 \global\Hy@backreffalse
2958 }%
2959 \AtEndOfPackage{%
2960 \global\let\ReadBookmarks\relax
2961 \global\let\WriteBookmarks\relax
2962 }%
2963 \fi
2964 \Hy@DisableOption{implicit}

```

15.1.1 Driver loading

```

2965 \AtEndOfPackage{%
2966 \@ifpackageloaded{tex4ht}{%
2967 \def\Hy@driver{htex4ht}%
2968 \Hy@texhttrue
2969 }{}%
2970 \ifx\Hy@driver\@empty
2971 \providecommand*{\Hy@defaultdriver}{hypertex}%

```

```

2972 \begingroup\expandafter\expandafter\expandafter\endgroup
2973 \expandafter\ifx\csname pdfoutput\endcsname\relax
2974 \begingroup\expandafter\expandafter\expandafter\endgroup
2975 \expandafter\ifx\csname OpMode\endcsname\relax
2976 \begingroup\expandafter\expandafter\expandafter\endgroup
2977 \expandafter\ifx\csname XeTeXversion\endcsname\relax
2978 \let\Hy@driver\Hy@defaultdriver
2979 \else
2980 \def\Hy@driver{hdvipdfm}%
2981 \fi
2982 \else
2983 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2984 \def\Hy@driver{hvtex}%
2985 \def\XR@ext{pdf}%
2986 \else
2987 \ifnum\OpMode=10\relax
2988 \def\XR@ext{htm}%
2989 \def\Hy@driver{hvtexhtm}%
2990 \def\MaybeStopEarly{%
2991 \typeout{Hyperref stopped early}%
2992 \AfterBeginDocument{%
2993 \PDF@FinishDoc
2994 \gdef\PDF@FinishDoc{}}%
2995 }%
2996 \endinput
2997 }%
2998 \else
2999 \let\Hy@driver\Hy@defaultdriver
3000 \fi
3001 \fi
3002 \fi
3003 \else
3004 \ifnum\pdfoutput<1 %
3005 \let\Hy@driver\Hy@defaultdriver
3006 \else
3007 \def\Hy@driver{hpdftex}%
3008 \def\XR@ext{pdf}%
3009 \PassOptionsToPackage{pdftex}{color}%
3010 \Hy@breaklinkstrue
3011 \fi
3012 \fi
3013 \ifx\Hy@driver\Hy@defaultdriver
3014 \def\Hy@temp{hdvips}%
3015 \ifx\Hy@temp\Hy@driver
3016 \def\Hy@raisedlink{}%
3017 \def\XR@ext{pdf}%
3018 \fi
3019 \def\Hy@temp{hdvipdfm}%
3020 \ifx\Hy@temp\Hy@driver
3021 \def\XR@ext{pdf}%
3022 \Hy@breaklinkstrue
3023 \fi
3024 \def\Hy@temp{hdviwind}%
3025 \ifx\Hy@temp\Hy@driver
3026 \setkeys{Hyp}{colorlinks}%
3027 \PassOptionsToPackage{dviwindo}{color}%
3028 \fi

```

```

3029 \def\Hy@temp{hdvipson}%
3030 \ifx\Hy@temp\Hy@driver
3031 \def\XR@ext{pdf}%
3032 \def\Hy@raisedlink{}%
3033 \fi
3034 \def\Hy@temp{textures}%
3035 \ifx\Hy@temp\Hy@driver
3036 \def\XR@ext{pdf}%
3037 \fi
3038 \fi
3039 \typeout{*hyperref using default driver \Hy@driver*}%
3040 \else
3041 \typeout{*hyperref using driver \Hy@driver*}%
3042 \fi
3043 \input{\Hy@driver.def}%
3044 \let\@unprocessedoptions\relax
3045 \Hy@RestoreCatcodes
3046 }
3047 \newif\ifHy@DvipdfmxOutlineOpen
3048 \begingroup\expandafter\expandafter\expandafter\endgroup
3049 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
3050 \else
3051 \ifnum\SpecialDvipdfmxOutlineOpen>\z@
3052 \Hy@DvipdfmxOutlineOpentru
3053 \fi
3054 \fi
3055 \Hy@DisableOption{tex4ht}
3056 \Hy@DisableOption{pdftex}
3057 \Hy@DisableOption{dvipdf}
3058 \Hy@DisableOption{nativepdf}
3059 \Hy@DisableOption{dvipdfm}
3060 \Hy@DisableOption{dvipdfmx}
3061 \Hy@DisableOption{dvipdfmx-outline-open}
3062 \Hy@DisableOption{pdfmark}
3063 \Hy@DisableOption{dvips}
3064 \Hy@DisableOption{hypertex}
3065 \Hy@DisableOption{vtex}
3066 \Hy@DisableOption{vtexpdfmark}
3067 \Hy@DisableOption{dviwindo}
3068 \Hy@DisableOption{dvipsone}
3069 \Hy@DisableOption{textures}
3070 \Hy@DisableOption{latex2html}
3071 \Hy@DisableOption{ps2pdf}
3072 \Hy@DisableOption{xetex}

```

15.1.2 Bookmarks

```

3073 \def\WriteBookmarks{0}
3074 \def\@bookmarkopenstatus#1{%
3075 \ifHy@bookmarksopen

```

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

```

3076 \ifnum#1<\expandafter\@firstofone\expandafter
3077 \{\number\@bookmarkopenlevel\} % explicit space
3078 \else
3079 -%
3080 \fi
3081 \else

```

```

3082   -%
3083   \fi
3084 }
3085 \ifHy@bookmarks
3086   \Hy@Info{Bookmarks ON}%
3087   \ifx\@pdfpagemode\@empty
3088     \def\@pdfpagemode{UseOutlines}%
3089   \fi
3090 \else
3091   \def\@bookmarkopenstatus#1{%
3092     \Hy@Info{Bookmarks OFF}%
3093     \AtEndOfPackage{%
3094       \global\let\ReadBookmarks\relax
3095       \global\let\WriteBookmarks\relax
3096     }%
3097     \ifx\@pdfpagemode\@empty
3098       \def\@pdfpagemode{UseNone}%
3099     \fi
3100 \fi
3101 \Hy@DisableOption{bookmarks}

```

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

```

3102 \AtBeginDocument{%
3103   \ifHy@colorlinks
3104     \ifHy@typexml
3105     \else
3106       \RequirePackage{color}%
3107     \fi
3108     \def\Hy@colorlink#1{%
3109       \begingroup
3110         \HyColor@UseColor#1%
3111       }%
3112     \def\Hy@endcolorlink{\endgroup}%
3113     \Hy@Info{Link coloring ON}%
3114   \else
3115     \ifHy@frenchlinks
3116       \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
3117       \def\Hy@endcolorlink{\endgroup}%
3118       \Hy@Info{French linking ON}%
3119     \else

```

for grouping consistency:

```

3120       \def\Hy@colorlink#1{\begingroup}%
3121       \def\Hy@endcolorlink{\endgroup}%
3122       \Hy@Info{Link coloring OFF}%
3123     \fi
3124   \fi
3125   \Hy@DisableOption{colorlinks}%
3126   \Hy@DisableOption{frenchlinks}%
3127   \ifHy@texht
3128     \long\def\@firstoffive#1#2#3#4#5{#1}%
3129     \long\def\@secondoffive#1#2#3#4#5{#2}%
3130     \long\def\@thirdoffive#1#2#3#4#5{#3}%
3131     \long\def\@fourthoffive#1#2#3#4#5{#4}%
3132     \long\def\@fifthoffive#1#2#3#4#5{#5}%
3133     \providecommand*\@safe@activetrue{}%
3134     \providecommand*\@safe@activesfalse{}%
3135     \def\T@ref#1{%

```

```

3136 \Hy@safe@activetrue
3137 \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
3138 \Hy@safe@activesfalse
3139 }%
3140 \def\T@pageref#1{%
3141 \Hy@safe@activetrue
3142 \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
3143 \Hy@safe@activesfalse
3144 }%
3145 \else
3146 \ifHy@typexml\else\RequirePackage{nameref}\fi
3147 \fi
3148 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
3149 \DeclareRobustCommand\pageref{%
3150 \@ifstar\@pagerefstar\T@pageref
3151 }%
3152 }
3153 \AfterBeginDocument{%
3154 \ifHy@texht
3155 \else
3156 \ReadBookmarks
3157 \fi
3158 }
3159 \ifHy@backref
3160 \RequirePackage{backref}%
3161 \else
3162 \let\Hy@backout\@gobble
3163 \fi
3164 \Hy@DisableOption{backref}
3165 \Hy@DisableOption{pagebackref}
3166 \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.

```

3167 \begingroup
3168 \endlinechar=-1 %
3169 \catcode'\^^A=14 %
3170 \catcode'\^^M\active
3171 \catcode'\%\active
3172 \catcode'\#\active
3173 \catcode'\_\active
3174 \catcode'\$\active
3175 \gdef\hyper@normalise{^^A
3176 \begingroup
3177 \catcode'\^^M\active
3178 \def^^M{ }^^A
3179 \catcode'\%\active
3180 \let%\@percentchar
3181 \let%\@percentchar
3182 \catcode'\#\active

```

```

3183 \def#{\hyper@hash}^^A
3184 \def\#{\hyper@hash}^^A
3185 \@makeother\&^^A
3186 \edef\textunderscore{\string_}^^A
3187 \let_\textunderscore
3188 \catcode'\_ \active
3189 \let_\textunderscore
3190 \let~\hyper@tilde
3191 \let~\hyper@tilde
3192 \let\textasciitilde\hyper@tilde
3193 \let\\\@backslashchar
3194 \edef$\string$}^^A
3195 \Hy@safe@activetrue
3196 \hyper@n@rmalise
3197 }^^A
3198 \catcode'\#=6 ^^A
3199 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
3200 \gdef\hyper@n@rmalise#1#2{^^A
3201 \def\Hy@tempa{#2}^^A
3202 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
3203 \Hy@ReturnAfterElseFi{^^A
3204 \hyper@@normalise{#1}^^A
3205 }^^A
3206 \else
3207 \Hy@ReturnAfterFi{^^A
3208 \hyper@@normalise{#1}{#2}^^A
3209 }^^A
3210 \fi
3211 }^^A
3212 \gdef\hyper@@normalise#1#2{^^A
3213 \edef\Hy@tempa{^^A
3214 \endgroup
3215 \noexpand#1{\Hy@RemovePercentCr#2%\^^M\@nil}^^A
3216 }^^A
3217 \Hy@tempa
3218 }^^A
3219 \gdef\Hy@RemovePercentCr#1%\^^M#2\@nil{^^A
3220 #1^^A
3221 \ifx\limits#2\limits
3222 \else
3223 \Hy@ReturnAfterFi{^^A
3224 \Hy@RemovePercentCr #2\@nil
3225 }^^A
3226 \fi
3227 }^^A
3228 \endgroup
3229 \providecommand*\hyper@chars{%
3230 \let\#\hyper@hash
3231 \let%\@percentchar
3232 \Hy@safe@activetrue
3233 }

3234 \def\hyperlink#1#2{%
3235 \hyper@@link{#1}{#2}%
3236 }

3237 \DeclareRobustCommand*\href{%
3238 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
3239 }

```

```

3240 \def\Hy@href#{%
3241   \hyper@normalise\href@
3242 }
3243 \begingroup
3244   \catcode'\$=6 %
3245   \catcode'\#=12 %
3246   \gdef\href$1{\expandafter\href@split$1##\}%
3247   \gdef\href@split$1#$2#$3\{\%
3248     \hyper@@link{$1}{$2}%
3249   }%
3250 \endgroup

```

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

```

3251 \RequirePackage{url}
3252 \let\HyOrg@url\url
3253 \def\Hurl{\begingroup \Url}
3254 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
3255 \def\nolinkurl@#1{\Hurl{#1}}
3256 \DeclareRobustCommand*\url{\hyper@normalise:url@}
3257 \def:url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}
3258 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
3259 \providecommand\hyper@image[2]{#2}
3260 \def\hypertarget#1#2{%
3261   \ifHy@nesting
3262     \hyper@@anchor{#1}{#2}%
3263   \else
3264     \hyper@@anchor{#1}{\relax}#2%
3265   \fi
3266 }

```

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

```

3267 \DeclareRobustCommand*\hyperref{%
3268   \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref
3269 }
3270 \def\Hy@babelnormalise#1[#2]{%
3271   \begingroup
3272     \Hy@safe@activestrue
3273     \edef\Hy@tempa{%
3274       \endgroup
3275       \noexpand#1[#2]}%
3276   }%
3277   \Hy@tempa
3278 }
3279 \def\@hyperref{\hyper@normalise\@hyperref}
3280 \def\@hyperref#1#2#3{%
3281   \edef\ref@one{\ifx\#2\\\else#2.\fi#3}%
3282   \expandafter\tryhyper@link\ref@one\{#1}%
3283 }
3284 \def\tryhyper@link#1\#2{%
3285   \hyper@@link{#2}{#1}%
3286 }

```

```

3287 \def\hyperdef{\@ifnextchar[{\label@hyperdef}{\@hyperdef}}
3288 \def\@hyperdef#1#2#3{%, category, name, text
3289   \ifHy@nesting
3290     \hyper@@anchor{#1.#2}{#3}%
3291   \else
3292     \hyper@@anchor{#1.#2}{\relax}#3%
3293   \fi
3294 }

```

We also have a need to give a L^AT_EX *label* to a hyper reference, to ease the pain of referring to it later.

```

3295 \def\label@hyperref[#1]{%
3296   \expandafter\label@\@hyperref\cename r@#1\endcename{#1}%
3297 }%
3298 \def\label@\@hyperref#1#2#3{%
3299   \ifx#1\relax
3300     \protect\G@refundefinedtrue
3301     \@latex@warning{%
3302       Hyper reference ‘#2’ on page \thepage \space undefined%
3303     }%
3304     \hyper@@link{}{??}{#3}%
3305   \else
3306     \hyper@@link{\expandafter\@fifthoffive#1}%
3307       {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
3308   \fi
3309 }
3310 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
3311                                     % anchor text
3312   \@bsphack
3313   \if@filesw
3314     \protected@write\@auxout{%
3315       {\string\newlabel{#1}{#2}{#3}{#4}}%
3316     \fi
3317   \@esphack
3318   \ifHy@nesting
3319     \hyper@@anchor{#2.#3}{#4}%
3320   \else
3321     \hyper@@anchor{#2.#3}{\relax}#4%
3322   \fi
3323 }

```

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.

```

3324 \def\hyper@@link{\let\Hy@reserved@a\relax
3325   \@ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
3326 }
3327 \def\hyper@link@[#1]#2#3#4{%
3328   \begingroup
3329     \protected@edef\Hy@tempa{#2}%
3330     \Hy@safe@activestrue
3331     \edef\x{#3}%
3332     \ifx\Hy@tempa\@empty

```

```

3333     \toks0{\hyper@link{#1}}%
3334     \else
3335     \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
3336     \fi
3337     \toks2{#4}%
3338     \edef\Hy@tempa{\the\toks2}%
3339     \edef\x{\endgroup
3340       \ifx\Hy@tempa\@empty
3341         \noexpand\Hy@Warning{Suppressing empty link}%
3342       \else
3343         \the\toks0 \x{\the\toks2}%
3344       \fi
3345     }%
3346     \x
3347 }

```

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.

```

3348 \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.

```

3349 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
3350 }

```

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

```

3351 \def\@pdftempwordfile{file}%
3352 \def\@pdftempwordrun{run}%
3353 \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:

```

3354 \ifx\{#6\}%
3355 \expandafter\@hyper@linkfile file:#7\{#3}{#2}%
3356 \else
3357 \ifx\{#4\}%
3358 \expandafter\@hyper@linkfile file:#7\{#3}{#2}%
3359 \else

```

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

```

3360 \def\@pdftempa{#4}%
3361 \ifx\@pdftempa\@pdftempwordfile
3362 \expandafter\@hyper@linkfile#7\{#3}{#2}%
3363 \else

```

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

```

3364         \ifx\@pdftempa\@pdftempwordrun
3365         \expandafter\@hyper@launch#7\{\#3}\#2}%
3366         \else

```

otherwise its a URL

```

3367         \hyper@linkurl{\#3}\#7\ifx\#2\\\else\hyper@hash#2\fi}%
3368         \fi
3369     \fi
3370 \fi
3371 \fi
3372 }

```

By default, turn run: into file:

```

3373 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
3374     \hyper@linkurl{\#2}\#3}%
3375     \Hy@linkfileprefix
3376     #1%
3377     \ifx\#3\%
3378     \else
3379     \hyper@hash
3380     #3%
3381     \fi
3382 }%
3383 }

```

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

```

3384 \def\@hyper@linkfile file:#1\#2#3{%
3385     %file url,link string, name
3386     \filename@parse{\#1}%
3387     \ifx\filename@ext\relax
3388     \edef\filename@ext{\XR@ext}%
3389     \fi
3390     \def\use@file{\filename@area\filename@base.\filename@ext}%
3391     \ifx\filename@ext\XR@ext
3392     \hyper@linkfile{\#2}\use@file{\#3}%
3393     \else
3394     \ifx\@baseurl\@empty
3395     \hyper@linkurl{\#2}\#3}%
3396     \Hy@linkfileprefix\use@file\ifx\#3\\\else\hyper@hash#3\fi
3397     }%
3398     \else
3399     \hyper@linkurl{\#2}\use@file\ifx\#3\\\else\hyper@hash#3\fi}%
3400     \fi
3401 \fi
3402 }

```

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.

```

3403 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
3404 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
3405     \ifx\#1\%

```

```

3406 #2\Hy@WarningNoLine{empty link? #1: #2#3}%
3407 \else
3408   \def\anchor@spot{#2#3}%
3409   \let\put@me@back\@empty
3410   \ifx\relax#2\relax
3411   \else
3412     \ifHy@nesting
3413     \else
3414       \ifcat a\noexpand#2\relax
3415       \else
3416         \ifcat 0\noexpand#2 \relax
3417         \else
3418           \typeout{Anchor start is not alphanumeric %
3419             on input line\the\inputlineno%
3420           }%
3421           \let\anchor@spot\@empty
3422           \def\put@me@back{#2#3}%
3423         \fi
3424       \fi
3425     \fi
3426   \fi
3427   \ifHy@activeanchor
3428   \anchor@spot
3429   \else
3430     \hyper@anchor{#1}%
3431   \fi
3432   \expandafter\put@me@back
3433 \fi
3434 \let\anchor@spot\@empty
3435 }

```

18 Compatibility with the *LT_EX2html* 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.

```

3436 \let\htmladdimg\hyperimage
3437 \def\htmladdnormallink#1#2{\href{#2}{#1}}
3438 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
3439 \def\htmlref#1#2{% anchor text, label
3440   \label@hyperref[{#2}]{#1}%
3441 }

```

This is really too much. The *LT_EX2html* 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.

```

3442 \def\@latex2htmlX{%
3443   \let\hhyperref\hyperref
3444   \def\hyperref##1##2##3##4{% anchor text for HTML
3445     % text to print before label in print
3446     % label
3447     % post-label text in print

```

```

3448     ##2\ref{##4}##3%
3449   }%
3450 }

```

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.

```

3451 \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
3452 \def\HyField@NewFlag#1#2{%
3453   \lowercase{\HyField@NewOption{#2}}%
3454   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3455 }

```

```

\HyField@NewFlagOnly
3456 \def\HyField@NewFlagOnly#1#2{%
3457   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3458 }

```

```

\HyField@NewOption #1: option name
3459 \def\HyField@NewOption#1{%
3460   \expandafter\newif\csname ifFld@#1\endcsname
3461   \define@key{Field}{#1}[true]{%
3462     \lowercase{\Field@boolkey{##1}}{#1}%
3463   }%
3464 }

```

```

\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
3465 \def\HyField@NewBitsetFlag#1#2#3#4{%
3466   \begingroup
3467     \count@=#4\relax
3468     \advance\count@\m@ne
3469     \def\x##1{%
3470       \endgroup
3471       \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
3472       \expandafter\ifx\csname HyField@#3@##1\endcsname\relax

```

```

3473     \expandafter\edef\csname HyField@#3@##1\endcsname{%
3474         (\number#4) #2%
3475     }%
3476     \else
3477     \expandafter\edef\csname HyField@#3@##1\endcsname{%
3478         \csname HyField@#3@##1\endcsname
3479         /#2%
3480     }%
3481     \fi
3482 }%
3483 \expandafter\x\expandafter{\the\count}%
3484 }

```

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

```

3485 \def\HyField@UseFlag#1#2{%
3486     \lowercase{\HyField@@UseFlag{#2}}{#1}%
3487 }

```

\HyField@@UseFlag

```

3488 \def\HyField@@UseFlag#1#2{%
3489     \bitsetSetValue{HyField@#2}{%
3490         \csname HyField@#2@#1\endcsname
3491     }{%
3492         \csname ifFld@#1\endcsname 1\else 0\fi
3493     }%
3494 }

```

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

```

3495 \def\HyField@SetFlag#1#2{%
3496     \lowercase{\HyField@@SetFlag{#2}}{#1}%
3497 }

```

\HyField@@SetFlag

```

3498 \def\HyField@@SetFlag#1#2{%
3499     \bitsetSetValue{HyField@#2}{%
3500         \csname HyField@#2@#1\endcsname
3501     }{1}%
3502 }

```

\HyField@PrintFlags

```

3503 \def\HyField@PrintFlags#1#2{%
3504     \ifHy@verbose
3505     \begingroup
3506     \let\Hy@temp\@empty
3507     \let\MessageBreak\relax
3508     \expandafter\@for\expandafter\x\expandafter:\expandafter=%
3509     \bitsetGetSetBitList{HyField@#1}\do{%
3510         \edef\Hy@temp{%
3511             \Hy@temp
3512             \csname HyField@#1@\x\endcsname\MessageBreak
3513         }%
3514     }%
3515     \edef\x{\endgroup
3516         \noexpand\Hy@Info{%
3517             Field flags: %
3518             \expandafter\ifx\@car#1\@nil S\else/\fi

```

```

3519         #1 %
3520         \bitsetGetDec{HyField@#1} %
3521         (Ox\bitsetGetHex{HyField@#1}{32})\MessageBreak
3522     \Hy@temp
3523     for #2%
3524     }%
3525 } \x
3526 \fi
3527 }

```

19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

3528 \HyField@NewFlag{Ff}{ReadOnly}{1}
3529 \HyField@NewFlag{Ff}{Required}{2}
3530 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

3531 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
3532 \HyField@NewFlag{Ff}{Radio}{16}
3533 \HyField@NewFlag{Ff}{Pushbutton}{17}
3534 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

3535 \HyField@NewFlag{Ff}{Multiline}{13}
3536 \HyField@NewFlag{Ff}{Password}{14}
3537 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
3538 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3539 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
3540 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
3541 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

3542 \HyField@NewFlag{Ff}{Combo}{18}
3543 \HyField@NewFlag{Ff}{Edit}{19}
3544 \HyField@NewFlag{Ff}{Sort}{20}
3545 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
3546 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3547 \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.

```

3548 \newif\ifFld@popdown
3549 \define@key{Field}{popdown}[true]{%
3550   \lowercase{\Field@boolkey{#1}}{popdown}%
3551 }

```

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.

```

3552 \HyField@NewFlag{F}{Invisible}{1}
3553 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
3554 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
3555 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
3556 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3

```

```

3557 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
3558 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
3559 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
3560 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

```

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

```

3561 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
3562 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
3563 \HyField@NewFlag{Submit}{GetMethod}{4}
3564 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
3565 \HyField@NewFlagOnly{Submit}{XFDF}{6}
3566 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
3567 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
3568 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
3569 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
3570 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
3571 \HyField@NewFlag{Submit}{ExclFKey}{12}
3572 \HyField@NewFlag{Submit}{EmbedForm}{14}

3573 \define@key{Field}{export}{%
3574   \lowercase{\def\Hy@temp{#1}}%
3575   \@ifundefined{Fld@export@\Hy@temp}{%
3576     \@onelevel@sanitize\Hy@temp
3577     \PackageError{hyperref}{%
3578       Unknown export format '\Hy@temp'.\MessageBreak
3579       Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
3580     }\@ehc
3581   }{%
3582     \let\Fld@export\Hy@temp
3583   }%
3584 }
3585 \def\Fld@export{fdf}
3586 \@namedef{Fld@export@fdf}{0}%
3587 \@namedef{Fld@export@html}{1}%
3588 \@namedef{Fld@export@xfdf}{2}%
3589 \@namedef{Fld@export@pdf}{3}%

```

19.1.2 Set submit flags

\HyField@FlagsSubmit

```

3590 \def\HyField@FlagsSubmit{%
3591   \bitsetReset{HyField@Submit}%
3592   \ifcase\@nameuse{Fld@export@\Fld@export} %
3593     % FDF
3594     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3595     \HyField@UseFlag{Submit}{SubmitCoordinates}%
3596     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
3597     \HyField@UseFlag{Submit}{IncludeAnnotations}%
3598     \HyField@UseFlag{Submit}{CanonicalFormat}%
3599     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
3600     \HyField@UseFlag{Submit}{ExclFKey}%
3601     \HyField@UseFlag{Submit}{EmbedForm}%
3602   \or % HTML
3603     \HyField@SetFlag{Submit}{ExportFormat}%
3604     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3605     \HyField@UseFlag{Submit}{GetMethod}%
3606     \HyField@UseFlag{Submit}{SubmitCoordinates}%
3607     \HyField@UseFlag{Submit}{CanonicalFormat}%

```

```

3608 \or % XFDF
3609 \HyField@SetFlag{Submit}{XFDF}%
3610 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3611 \HyField@UseFlag{Submit}{SubmitCoordinates}%
3612 \HyField@UseFlag{Submit}{CanonicalFormat}%
3613 \or % PDF
3614 \HyField@SetFlag{Submit}{SubmitPDF}%
3615 \HyField@UseFlag{Submit}{GetMethod}%
3616 \fi
3617 \HyField@PrintFlags{Submit}{submit button field}%
3618 \bitsetIsEmpty{HyField@Submit}{%
3619 \def\Fld@submitflags{%
3620 }{%
3621 \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
3622 }%
3623 }

```

19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

3624 \def\HyField@FlagsAnnot#1{%
3625 \bitsetReset{HyField@F}%
3626 \HyField@UseFlag{F}{Invisible}%
3627 \HyField@UseFlag{F}{Hidden}%
3628 \HyField@UseFlag{F}{Print}%
3629 \HyField@UseFlag{F}{NoZoom}%
3630 \HyField@UseFlag{F}{NoRotate}%
3631 \HyField@UseFlag{F}{NoView}%
3632 \HyField@UseFlag{F}{Locked}%
3633 \HyField@UseFlag{F}{ToggleNoView}%
3634 \HyField@UseFlag{F}{LockedContents}%
3635 \HyField@PrintFlags{F}{#1}%
3636 \bitsetIsEmpty{HyField@F}{%
3637 \def\Fld@annotflags{%
3638 }{%
3639 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
3640 }%
3641 }

```

19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

3642 \def\HyField@FlagsPushButton{%
3643 \HyField@FlagsAnnot{push button field}%
3644 \bitsetReset{HyField@Ff}%
3645 \HyField@UseFlag{Ff}{ReadOnly}%
3646 \HyField@UseFlag{Ff}{Required}%
3647 \HyField@UseFlag{Ff}{NoExport}%
3648 \HyField@SetFlag{Ff}{Pushbutton}%
3649 \HyField@PrintFlags{Ff}{push button field}%
3650 \bitsetIsEmpty{HyField@Ff}{%
3651 \def\Fld@flags{%
3652 }{%
3653 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3654 }%
3655 }

```

19.1.5 Check box field

\HyField@FlagsCheckBox

```
3656 \def\HyField@FlagsCheckBox{%
3657   \HyField@FlagsAnnot{check box field}%
3658   \bitsetReset{HyField@Ff}%
3659   \HyField@UseFlag{Ff}{ReadOnly}%
3660   \HyField@UseFlag{Ff}{Required}%
3661   \HyField@UseFlag{Ff}{NoExport}%
3662   \HyField@PrintFlags{Ff}{check box field}%
3663   \bitsetIsEmpty{HyField@Ff}{%
3664     \def\Fld@flags{%
3665     }{%
3666       \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3667     }%
3668 }
```

19.1.6 Radio button field

\HyField@FlagsRadioButton

```
3669 \def\HyField@FlagsRadioButton{%
3670   \HyField@FlagsAnnot{radio button field}%
3671   \bitsetReset{HyField@Ff}%
3672   \HyField@UseFlag{Ff}{ReadOnly}%
3673   \HyField@UseFlag{Ff}{Required}%
3674   \HyField@UseFlag{Ff}{NoExport}%
3675   \HyField@UseFlag{Ff}{NoToggleToOff}%
3676   \HyField@SetFlag{Ff}{Radio}%
3677   \HyField@UseFlag{Ff}{RadiosInUnison}%
3678   \HyField@PrintFlags{Ff}{radio button field}%
3679   \bitsetIsEmpty{HyField@Ff}{%
3680     \def\Fld@flags{%
3681     }{%
3682       \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3683     }%
3684 }
```

19.1.7 Text fields

\HyField@FlagsText

```
3685 \def\HyField@FlagsText{%
3686   \HyField@FlagsAnnot{text field}%
3687   \bitsetReset{HyField@Ff}%
3688   \HyField@UseFlag{Ff}{ReadOnly}%
3689   \HyField@UseFlag{Ff}{Required}%
3690   \HyField@UseFlag{Ff}{NoExport}%
3691   \HyField@UseFlag{Ff}{Multiline}%
3692   \HyField@UseFlag{Ff}{Password}%
3693   \HyField@UseFlag{Ff}{FileSelect}%
3694   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
3695   \HyField@UseFlag{Ff}{DoNotScroll}%
3696   \ifFld@comb
3697     \ifcase0\ifFld@multiline
3698       \else\ifFld@password
3699       \else\ifFld@fileselect
3700       \else 1\fi\fi\fi\relax
```

```

3701     \PackageError{hyperref}{%
3702         Field option 'comb' cannot used together with\MessageBreak
3703         'multiline', 'password', or 'fileselect'%
3704     }\@ehc
3705     \else
3706         \HyField@UseFlag{Ff}{Comb}%
3707     \fi
3708 \fi
3709 \HyField@UseFlag{Ff}{RichText}%
3710 \HyField@PrintFlags{Ff}{text field}%
3711 \bitsetIsEmpty{HyField@Ff}{%
3712     \def\Fld@flags{%
3713 }{%
3714     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3715 }%
3716 }

```

19.1.8 Choice fields

\HyField@FlagsChoice

```

3717 \def\HyField@FlagsChoice{%
3718     \HyField@FlagsAnnot{choice field}%
3719     \bitsetReset{HyField@Ff}%
3720     \HyField@UseFlag{Ff}{ReadOnly}%
3721     \HyField@UseFlag{Ff}{Required}%
3722     \HyField@UseFlag{Ff}{NoExport}%
3723     \HyField@UseFlag{Ff}{Combo}%
3724     \ifFld@combo
3725         \HyField@UseFlag{Ff}{Edit}%
3726     \fi
3727     \HyField@UseFlag{Ff}{Sort}%
3728     \HyField@UseFlag{Ff}{MultiSelect}%
3729     \ifFld@combo
3730         \ifFld@edit
3731             \HyField@UseFlag{Ff}{DoNotSpellCheck}%
3732         \fi
3733     \fi
3734     \HyField@UseFlag{Ff}{CommitOnSelChange}%
3735     \HyField@PrintFlags{Ff}{choice field}%
3736     \bitsetIsEmpty{HyField@Ff}{%
3737         \def\Fld@flags{%
3738 }{%
3739         \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3740     }%
3741 }

```

19.2 Choice field

3742 \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.

```

3743 \def\HyField@PDFChoices#1{%
3744     \begingroup
3745     \gdef\Fld@choices{%
3746         \def\HyTmp@optlist{%

```

```

3747 \let\HyTmp@optitem\relax
3748 \count@=0 %
3749 \kv@parse{#1}{%
3750 \Hy@pdfstringdef\kv@key\kv@key
3751 \ifx\kv@value\relax
3752 \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
3753 \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
3754 \else
3755 \xdef\Fld@choices{\Fld@choices(\kv@key)}%
3756 \fi
3757 \else
3758 \Hy@pdfstringdef\kv@value\kv@value
3759 \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@value)]}%
3760 \fi
3761 \edef\HyTmp@optlist{%
3762 \HyTmp@optlist
3763 \HyTmp@optitem{\the\count@}{\kv@key}0%
3764 }%
3765 \advance\count@ by 1 %
3766 \@gobbletwo
3767 }%
3768 \xdef\Fld@choices{/Opt[\Fld@choices]}%
3769 \ifFld@multiselect
3770 \HyField@@PDFChoices{DV}\Fld@default
3771 \HyField@@PDFChoices{V}\Fld@value
3772 \else
3773 \ifx\Fld@default\relax
3774 \else
3775 \pdfstringdef\Hy@gtemp\Fld@default
3776 \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
3777 \fi
3778 \ifx\Fld@value\relax
3779 \else
3780 \pdfstringdef\Hy@gtemp\Fld@value
3781 \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
3782 \fi
3783 \fi
3784 \endgroup
3785 }

```

\HyField@@PDFChoices

```

3786 \def\HyField@@PDFChoices#1#2{%
3787 \ifx#2\relax
3788 \else
3789 \count@=0 %
3790 \def\HyTmp@optitem##1##2##3{%
3791 \def\HyTmp@key{##2}%
3792 \ifx\HyTmp@key\Hy@gtemp
3793 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
3794 \HyTmp@optlist
3795 \HyTmp@optitem{##1}{##2}1%
3796 }%
3797 \let\HyTmp@found=Y%
3798 \else
3799 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
3800 \HyTmp@optlist
3801 \HyTmp@optitem{##1}{##2}##3%

```

```

3802     }%
3803     \fi
3804 }%
3805 \expandafter\comma@parse\expandafter{#2}{%
3806   \pdfstringdef\Hy@gtmp\comma@entry
3807   \let\HyTmp@found=N %
3808   \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
3809   \HyTmp@optlist
3810   \ifx\HyTmp@found Y%
3811     \advance\count@ by 1 %
3812   \else
3813     \@onelevel@sanitize\comma@entry
3814     \PackageWarning{hyperref}{%
3815       \string\ChoiceBox: Ignoring value '\comma@entry',%
3816       \MessageBreak
3817       it cannot be found in the choices%
3818     }%
3819   \fi
3820   \@gobble
3821 }%
3822 \def\HyTmp@optitem##1##2##3{%
3823   \ifnum##3=1 %
3824     (##2)%
3825   \fi
3826 }%
3827 \ifcase\count@
3828 \or
3829   \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
3830 \else
3831   \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
3832   \ifx#1V%
3833     \def\HyTmp@optitem##1##2##3{%
3834       \ifnum##3=1 %
3835         \@firstofone{ ##1}%
3836       \fi
3837     }%
3838     \edef\HyTmp@optlist{\HyTmp@optlist}%
3839     \xdef\Fld@choices{%
3840       \Fld@choices
3841       /I[\expandafter\@firstofone\HyTmp@optlist]}%
3842   }%
3843   \fi
3844 \fi
3845 \fi
3846 }

```

19.3 Forms

\HyField@SetKeys

```

3847 \def\HyField@SetKeys{%
3848   \setkeys{Field}%
3849 }

3850 \newif\ifFld@checked
3851 \newif\ifFld@disabled
3852 \Fld@checkedfalse
3853 \Fld@disabledfalse

```

```

3854 \newcount\Fld@menulength
3855 \newdimen\Fld@Width
3856 \newdimen\Fld@charsize
3857 \Fld@charsize=10\p@
3858 \def\Fld@maxlen{0}
3859 \def\Fld@align{0}
3860 \def\Fld@color{0 0 0 rg}
3861 \def\Fld@bcolor{1 1 1}
3862 \def\Fld@bordercolor{1 0 0}
3863 \def\Fld@bordersep{1\p@}
3864 \def\Fld@borderwidth{1}
3865 \def\Fld@borderstyle{S}
3866 \def\Fld@cbsymbol{4}
3867 \def\Fld@rotation{0}
3868 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
3869 \def\endForm{\@endForm}
3870 \newif\ifForm@html
3871 \Form@htmlfalse
3872 \def\Form@boolkey#1#2{%
3873   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
3874 }
3875 \define@key{Form}{action}{%
3876   \hyper@normalise\Hy@DefFormAction{#1}%
3877 }
3878 \def\Hy@DefFormAction{\def\Form@action}
3879 \def\enc@html{html}
3880 \define@key{Form}{encoding}{%
3881   \def\Hy@tempa{#1}%
3882   \ifx\Hy@tempa\enc@html
3883     \Form@htmltrue
3884     \def\Fld@export{html}%
3885   \else
3886     \typeout{hyperref: form 'encoding' key set to #1 %
3887     -- unknown type%
3888   }%
3889   \Form@htmlfalse
3890 \fi
3891 }
3892 \define@key{Form}{method}{%
3893   \lowercase{\def\Hy@temp{#1}}%
3894   \@ifundefined{Form@method@\Hy@temp}{%
3895     \@onelevel@sanitize\Hy@temp
3896     \PackageError{hyperref}{%
3897       Unknown method '\Hy@temp'.\MessageBreak
3898       Known values are 'post' and 'get'%
3899     }\@ehc
3900   }{%
3901     \let\Form@method\Hy@temp
3902     \ifcase\@nameuse{Form@method@\Hy@temp} %
3903       \Fld@getmethodfalse
3904     \else
3905       \Fld@getmethodtrue
3906     \fi
3907   }%
3908 }
3909 \def\Form@method{}
3910 \@namedef{Form@method@post}{0}

```

```

3911 \@namedef{Form@method@get}{1}
3912 \def\Field@boolkey#1#2{%
3913   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
3914 }
3915 \newtoks\Field@toks
3916 \Field@toks={ }%
3917 \def\Field@addtoks#1#2{%
3918   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
3919   \@processme
3920 }
3921 \def\Fld@checkequals#1=#2=#3\{%
3922   \def\@currDisplay{#1}%
3923   \ifx\#2\%
3924     \def\@currValue{#1}%
3925   \else
3926     \def\@currValue{#2}%
3927   \fi
3928 }
3929 \define@key{Field}{loc}{%
3930   \def\Fld@loc{#1}%
3931 }
3932 \define@key{Field}{checked}[true]{%
3933   \lowercase{\Field@boolkey{#1}}{checked}%
3934 }
3935 \define@key{Field}{disabled}[true]{%
3936   \lowercase{\Field@boolkey{#1}}{disabled}%
3937 }
3938 \define@key{Field}{accesskey}{%
3939   \Field@addtoks{accesskey}{#1}%
3940 }
3941 \define@key{Field}{tabkey}{%
3942   \Field@addtoks{tabkey}{#1}%
3943 }
3944 \define@key{Field}{name}{%
3945   \def\Fld@name{#1}%
3946 }
3947 \define@key{Field}{width}{%
3948   \def\Fld@width{#1}%
3949   \Field@Width#1\setbox0=\hbox{m}%
3950 }
3951 \define@key{Field}{maxlen}{%
3952   \def\Fld@maxlen{#1}%
3953 }
3954 \define@key{Field}{menulength}{%
3955   \Fld@menulength=#1\relax
3956 }
3957 \define@key{Field}{height}{%
3958   \def\Fld@height{#1}%
3959 }
3960 \define@key{Field}{charsize}{%
3961   \Fld@charsize#1%
3962 }
3963 \define@key{Field}{borderwidth}{%
3964   \def\Fld@borderwidth{#1}%
3965 }
3966 \define@key{Field}{borderstyle}{%
3967   \def\Fld@borderstyle{#1}%

```

```

3968 }
3969 \define@key{Field}{bordersep}{%
3970   \def\Fld@bordersep{#1}%
3971 }
3972 \define@key{Field}{default}{%
3973   \def\Fld@default{#1}%
3974 }
3975 \define@key{Field}{align}{%
3976   \def\Fld@align{#1}%
3977 }
3978 \define@key{Field}{value}{%
3979   \def\Fld@value{#1}%
3980 }
3981 \define@key{Field}{checkboxsymbol}{%
3982   \def\Fld@cbsymbol{#1}%
3983 }
3984 \define@key{Field}{rotation}{%
3985   \def\Fld@rotation{#1}%
3986 }
3987 \define@key{Field}{backgroundcolor}{%
3988   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
3989 }
3990 \define@key{Field}{bordercolor}{%
3991   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
3992 }
3993 \define@key{Field}{color}{%
3994   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
3995 }
3996 \def\Fld@format@code{}
3997 \def\Fld@validate@code{}
3998 \def\Fld@calculate@code{}
3999 \def\Fld@keystroke@code{}
4000 \def\Fld@onfocus@code{}
4001 \def\Fld@onblur@code{}
4002 \def\Fld@onmousedown@code{}
4003 \def\Fld@onmouseup@code{}
4004 \def\Fld@onenter@code{}
4005 \def\Fld@onexit@code{}
4006 \define@key{Field}{keystroke}{%
4007   \def\Fld@keystroke@code{#1}%
4008 }
4009 \define@key{Field}{format}{%
4010   \def\Fld@format@code{#1}%
4011 }
4012 \define@key{Field}{validate}{%
4013   \def\Fld@validate@code{#1}%
4014 }
4015 \define@key{Field}{calculate}{%
4016   \def\Fld@calculate@code{#1}%
4017 }
4018 \define@key{Field}{onfocus}{%
4019   \def\Fld@onfocus@code{#1}%
4020 }
4021 \define@key{Field}{onblur}{%
4022   \def\Fld@onblur@code{#1}%
4023 }

```

```

4024 \define@key{Field}{onenter}{%
4025   \def\Fld@onenter@code{#1}%
4026 }
4027 \define@key{Field}{onexit}{%
4028   \def\Fld@onexit@code{#1}%
4029 }
4030 \define@key{Field}{onselect}{%
4031   \Field@addtoks{onselect}{#1}%
4032 }
4033 \define@key{Field}{onchange}{%
4034   \Field@addtoks{onchange}{#1}%
4035 }
4036 \define@key{Field}{onclick}{%
4037   \def\Fld@onclick{#1}%
4038   \Field@addtoks{onclick}{#1}%
4039 }
4040 \define@key{Field}{ondblclick}{%
4041   \Field@addtoks{ondblclick}{#1}%
4042 }
4043 \define@key{Field}{onmousedown}{%
4044   \Field@addtoks{onmousedown}{#1}%
4045 }
4046 \define@key{Field}{onmouseup}{%
4047   \Field@addtoks{onmouseup}{#1}%
4048 }
4049 \define@key{Field}{onmouseover}{%
4050   \Field@addtoks{onmouseover}{#1}%
4051 }
4052 \define@key{Field}{onmousemove}{%
4053   \Field@addtoks{onmousemove}{#1}%
4054 }
4055 \define@key{Field}{onmouseout}{%
4056   \Field@addtoks{onmouseout}{#1}%
4057 }
4058 \define@key{Field}{onkeypress}{%
4059   \Field@addtoks{onkeypress}{#1}%
4060 }
4061 \define@key{Field}{onkeydown}{%
4062   \Field@addtoks{onkeydown}{#1}%
4063 }
4064 \define@key{Field}{onkeyup}{%
4065   \Field@addtoks{onkeyup}{#1}%
4066 }
4067 %
4068 \DeclareRobustCommand\TextField{%
4069   \@ifnextchar[{\@TextField}{\@TextField[]}%
4070 }
4071 \DeclareRobustCommand\ChoiceMenu{%
4072   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
4073 }
4074 \DeclareRobustCommand\CheckBox{%
4075   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
4076 }
4077 \DeclareRobustCommand\PushButton{%
4078   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
4079 }
4080 \DeclareRobustCommand\Gauge{%

```

```

4081 \@ifnextchar[{\@Gauge}{\@Gauge[]}%
4082 }
4083 \DeclareRobustCommand\Submit{%
4084 \@ifnextchar[{\@Submit}{\@Submit[]}%
4085 }
4086 \DeclareRobustCommand\Reset{%
4087 \@ifnextchar[{\@Reset}{\@Reset[]}%
4088 }
4089 \def\LayoutTextField#1#2{% label, field
4090 #1 #2%
4091 }
4092 \def\LayoutChoiceField#1#2{% label, field
4093 #1 #2%
4094 }
4095 \def\LayoutCheckField#1#2{% label, field
4096 #1 #2%
4097 }
4098 \def\LayoutPushButtonField#1{% button
4099 #1%
4100 }
4101 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4102 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4103 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4104 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4105 \def\MakeButtonField#1{%
4106 \sbox0{%
4107 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
4108 }%
4109 \@tempdima\ht0 %
4110 \advance\@tempdima by \Fld@borderwidth bp %
4111 \advance\@tempdima by \Fld@borderwidth bp %
4112 \ht0\@tempdima
4113 \@tempdima\dp0 %
4114 \advance\@tempdima by \Fld@borderwidth bp %
4115 \advance\@tempdima by \Fld@borderwidth bp %
4116 \dp0\@tempdima
4117 \box0\relax
4118 }
4119 \def\DefaultHeightofSubmit{14pt}
4120 \def\DefaultWidthofSubmit{2cm}
4121 \def\DefaultHeightofReset{14pt}
4122 \def\DefaultWidthofReset{2cm}
4123 \def\DefaultHeightofCheckBox{\baselineskip}
4124 \def\DefaultWidthofCheckBox{\baselineskip}
4125 \def\DefaultHeightofChoiceMenu{\baselineskip}
4126 \def\DefaultWidthofChoiceMenu{\baselineskip}
4127 \def\DefaultHeightofText{\baselineskip}
4128 \def\DefaultHeightofTextMultiline{4\baselineskip}
4129 \def\DefaultWidthofText{3cm}
4130 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
4131 \def\DefaultOptionsofReset{print,name=Reset,noexport}
4132 \def\DefaultOptionsofPushButton{print}
4133 \def\DefaultOptionsofCheckBox{print}
4134 \def\DefaultOptionsofText{print}

Default options for the types of \ChoiceMenu.
4135 \def\DefaultOptionsofListBox{print}
4136 \def\DefaultOptionsofComboBox{print,edit,sort}

```

```

4137 \def\DefaultOptionsofPopdownBox{print}
4138 \def\DefaultOptionsofRadio{print,notoggletooff}

```

20 Setup

```

4139 \ifHy@figures
4140   \Hy@Info{Hyper figures ON}%
4141 \else
4142   \Hy@Info{Hyper figures OFF}%
4143 \fi
4144 \ifHy@nesting
4145   \Hy@Info{Link nesting ON}%
4146 \else
4147   \Hy@Info{Link nesting OFF}%
4148 \fi
4149 \ifHy@hyperindex
4150   \Hy@Info{Hyper index ON}%
4151 \else
4152   \Hy@Info{Hyper index OFF}%
4153 \fi
4154 \ifHy@backref
4155   \Hy@Info{backreferencing ON}%
4156 \else
4157   \Hy@Info{backreferencing OFF}%
4158 \fi
4159 \ifHy@colorlinks
4160   \Hy@Info{Link coloring ON}%
4161 \else
4162   \Hy@Info{Link coloring OFF}%
4163 \fi

```

21 Low-level utility macros

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

```

4164 \edef\hyper@hash{\string#}
4165 \edef\hyper@tilde{\string~}
4166 \edef\hyper@quote{\string"}
4167 \let\@currentHref\@empty
4168 \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.

```

4169 \AfterBeginDocument{%
4170   \Hy@pdfstringtrue
4171   \PDF@SetupDoc
4172   \let\PDF@SetupDoc\@empty
4173   \Hy@DisableOption{pdfpagescrop}%
4174   \Hy@DisableOption{pdfpagemode}%
4175   \Hy@DisableOption{pdfnonfullscreenpagemode}%
4176   \Hy@DisableOption{pdfdirection}%
4177   \Hy@DisableOption{pdfviewarea}%
4178   \Hy@DisableOption{pdfviewclip}%
4179   \Hy@DisableOption{pdfprintarea}%
4180   \Hy@DisableOption{pdfprintclip}%
4181   \Hy@DisableOption{pdfprintscaling}%
4182   \Hy@DisableOption{pdfduplex}%

```

```

4183 \Hy@DisableOption{pdfpicktraybypdfsize}%
4184 \Hy@DisableOption{pdfprintpagerange}%
4185 \Hy@DisableOption{pdfnumcopies}%
4186 \Hy@DisableOption{pdfstartview}%
4187 \Hy@DisableOption{pdfstartpage}%
4188 \Hy@DisableOption{pdftoolbar}%
4189 \Hy@DisableOption{pdfmenubar}%
4190 \Hy@DisableOption{pdfwindowui}%
4191 \Hy@DisableOption{pdffitwindow}%
4192 \Hy@DisableOption{pdfcenterwindow}%
4193 \Hy@DisableOption{pdfdisplaydoctitle}%
4194 \Hy@DisableOption{pdfpagelayout}%
4195 \Hy@DisableOption{pdflang}%
4196 \Hy@DisableOption{baseurl}%
4197 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
4198 \Hy@pdfstringfalse
4199 }

```

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.

```

4200 \def\NoHyper{%
4201   \def\hyper@link@{##1}##2##3##4{##4}%
4202   \def\hyper@@anchor##1{%
4203     \global\let\hyper@livelink\hyper@link
4204     \gdef\hyper@link##1##2##3{##3}%
4205     \def\hyper@anchorstart##1{%
4206       \let\hyper@anchorend\@empty
4207       \def\hyper@linkstart##1##2{%
4208         \let\hyper@linkend\@empty
4209         \def\hyper@linkurl##1##2{##1}%
4210         \def\hyper@linkfile##1##2##3{##1}%
4211         \def\hyper@link@{##1}##2##3{%
4212           \let\Hy@backout\@gobble
4213         }
4214       \def\stop@hyper{%
4215         \def\hyper@link@{##1}##2##3##4{##4}%
4216         \let\Hy@backout\@gobble
4217         \def\hyper@@anchor##1{%
4218           \def\hyper@link##1##2##3{##3}%
4219           \def\hyper@anchorstart##1{%
4220             \let\hyper@anchorend\@empty
4221             \def\hyper@linkstart##1##2{%
4222               \let\hyper@linkend\@empty
4223               \def\hyper@linkurl##1##2{##1}%
4224               \def\hyper@linkfile##1##2##3{##1}%
4225               \def\hyper@link@{##1}##2##3{%
4226                 }
4227             \def\endNoHyper{%
4228               \global\let\hyper@link\hyper@livelink
4229             }
4230           }

```

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:

```
4231 \let\hyper@anchor\@gobble
4232 \def\hyper@link#1#2#3{#3}%
4233 \let\hyper@anchorstart\@gobble
4234 \let\hyper@anchorend\@empty
4235 \let\hyper@linkstart\@gobbletwo
4236 \let\hyper@linkend\@empty
4237 \def\hyper@linkurl#1#2{#1}%
4238 \def\hyper@linkfile#1#2#3{#1}%
4239 \def\hyper@link@{#1}#2#3{#1}%
4240 \let\PDF@SetupDoc\@empty
4241 \let\PDF@FinishDoc\@empty
```

Some top-level commands:

```
4243 \let\Acrobatmenu\@gobble
4244 \let\pdfstringdefDisableCommands\@gobbletwo
4245 \let\texpdfstring\@firstoftwo
4246 \let\pdfbookmark\@undefined
4247 \newcommand\pdfbookmark[3][]{ }
4248 \let\phantomsection\@empty
4249 \let\hypersetup\@gobble
4250 \let\hyperbaseurl\@gobble
4251 \let\href\@gobble
4252 \let\hyperdef\@gobbletwo
4253 \let\hyperlink\@gobble
4254 \let\hypertarget\@gobble
4255 \def\hyperref{%
4256   \ifnextchar\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
4257 }
4258 \long\def\@gobbleopt[#1]{ }
4259 \let\hyperpage\@empty
4260 \let\nohyperref\@empty
```

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}

```
4261 \package
4262 \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.

```
4263 \if@filesw
4264   \ifHy@typexml
4265     \immediate\closeout\@mainaux
4266     \immediate\openout\@mainaux\jobname.aux\relax
```

```

4267 \immediate\write\@auxout{<relaxxml>\relax}%
4268 \fi
4269 \immediate\write\@auxout{%
4270   \string\ifx\string\hyper@anchor\string\@undefined^^J%
4271   \global\let\string\oldcontentsline\string\contentsline^^J%
4272   \gdef\string\contentsline%
4273     \string#1\string#2\string#3\string#4{%
4274     \string\oldcontentsline%
4275     {\string#1}{\string#2}{\string#3}}^^J%
4276   \global\let\string\oldnewlabel\string\newlabel^^J%
4277   \gdef\string\newlabel\string#1\string#2{%
4278     \string\newlabelxx{\string#1}\string#2^^J%
4279   \gdef\string\newlabelxx%
4280     \string#1\string#2\string#3\string#4\string#5\string#6{%
4281     \string\oldnewlabel{\string#1}{\string#2}{\string#3}}^^J%

```

```

4282 \string\AtEndDocument{%
4283 \let\string\contentsline\string\oldcontentsline^^J%
4284 \let\string\newlabel\string\oldnewlabel^^J%

```

```

4285     \string\else^^J%
4286     \global\let\string\hyper@last\relax^^J%
4287     \string\fi^^J%
4288 }%
4289 \fi

```

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.

25 Title strings

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

```

4309 \ifHy@usetitle
4310   \let\HyOrg@title\title
4311   \let\HyOrg@author\author
4312   \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
4313   \def\Hy@scanopttitle[#1]{%
4314     \gdef\Hy@title{#1}%
4315     \HyOrg@title[{#1}]%
4316   }%
4317   \def\Hy@scantitle#1{%
4318     \gdef\Hy@title{#1}%
4319     \HyOrg@title{#1}%
4320   }%
4321   \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
4322   \def\Hy@scanoptauthor[#1]{%
4323     \gdef\Hy@author{#1}%
4324     \HyOrg@author[{#1}]%
4325   }%
4326   \def\Hy@scanauthor#1{%
4327     \gdef\Hy@author{#1}%
4328     \HyOrg@author{#1}%
4329   }%
```

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

```

4330 \begingroup
4331   \def\process@me#1\@nil#2{%
4332     \expandafter\let\expandafter\x\csname @#2\endcsname
4333     \edef\y{\expandafter\strip@prefix\meaning\x}%
4334     \def\c##1##2\@nil{%
4335       \ifx\\##1\\%
4336       \else
4337         \expandafter\gdef\csname Hy@#2\expandafter\endcsname
4338           \expandafter{\x}%
4339       \fi
4340     }%
4341     \expandafter\c\y\relax#1\@nil
4342   }%
4343   \expandafter\process@me\string\@latex@\@nil{title}%
4344   \expandafter\process@me\string\@latex@\@nil{author}%
4345 \endgroup
4346 \fi
4347 \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.

```

4348 \def\Hy@UseMaketitleString#1{%
```

```

4349 \@ifundefined{Hy@#1}{\{%
4350   \begingroup
4351   \let\Hy@saved@hook\pdfstringdefPreHook
4352   \pdfstringdefDisableCommands{%
4353     \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
4354     \let\newline\\%
4355   }%
4356   \expandafter\ifx\csname @pdf#1\endcsname\@empty
4357     \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
4358       \csname Hy@#1\endcsname\@empty
4359     }%
4360   \fi
4361   \global\let\pdfstringdefPreHook\Hy@saved@hook
4362 \endgroup
4363 }%
4364 }
4365 \def\Hy@newline@title#1{ #1}
4366 \def\Hy@newline@author#1{, #1}
4367 \def\Hy@UseMaketitleInfos{%
4368   \Hy@UseMaketitleString{title}%
4369   \Hy@UseMaketitleString{author}%
4370 }

```

26 Page numbers

This stuff is done by Heiko Oberdiek.

27 Every page

```

4371 \RequirePackage{atbegshi}[2007/09/09]
4372 \def\Hy@EveryPageHook{}
4373 \def\Hy@EveryPageBoxHook{}
4374 \def\Hy@FirstPageHook{}
4375 \AtBeginShipout{%
4376   \Hy@EveryPageHook
4377   \ifx\Hy@EveryPageBoxHook\@empty
4378   \else
4379     \setbox\AtBeginShipoutBox=\vbox{%
4380       \offinterlineskip
4381       \Hy@EveryPageBoxHook
4382       \box\AtBeginShipoutBox
4383     }%
4384   \fi
4385 }
4386 \AtBeginShipoutFirst{%
4387   \Hy@FirstPageHook
4388 }
4389 \g@addto@macro\Hy@FirstPageHook{%
4390   \PDF@FinishDoc
4391   \gdef\PDF@FinishDoc{}%
4392 }

```

27.1 PDF /PageLabels

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

```

4393 \ifHy@pagelabels
4394   \begingroup\expandafter\expandafter\expandafter\endgroup
4395   \expandafter\ifx\csname thepage\endcsname\relax
4396     \Hy@pagelabelsfalse
4397     \Hy@WarningNoLine{%
4398       Option 'pdfpagelabels' is turned off\MessageBreak
4399       because \string\thepage\space is undefined%
4400     }%
4401     \csname fi\endcsname
4402     \csname iffalse\expandafter\endcsname
4403   \fi

```

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

```

4404 \def\thispdfpagelabel#1{%
4405   \gdef\HyPL@thisLabel{#1}%
4406 }%
4407 \global\let\HyPL@thisLabel\relax

```

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

```

4408 \def\HyPL@Labels{%

```

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

```

4409 \newcount\Hy@abspage
4410 \Hy@abspage=0 %

```

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

```

4411 \def\HyPL@LastType{init}%
4412 \def\HyPL@LastNumber{0}%
4413 \def\HyPL@LastPrefix{}%

```

Definitions for the PDF names of the L^AT_EX pendants.

```

4414 \def\HyPL@arabic{D}%
4415 \def\HyPL@Roman{R}%
4416 \def\HyPL@roman{r}%
4417 \def\HyPL@Alph{A}%
4418 \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.

```

4419 \def\HyPL@EveryPage{%
4420   \begingroup
4421     \ifx\HyPL@thisLabel\relax
4422       \let\HyPL@page\thepage
4423     \else
4424       \let\HyPL@page\HyPL@thisLabel
4425       \global\let\HyPL@thisLabel\relax
4426     \fi
4427     \let\HyPL@Type\relax
4428     \ifnum\the\c@page>0 %
4429       \expandafter\HyPL@CheckThePage\HyPL@page\@nil
4430     \fi
4431     \let\Hy@temp Y%
4432     \ifx\HyPL@Type\HyPL@LastType
4433     \else
4434       \let\Hy@temp N%
4435     \fi

```

```

4436 \ifx\HyPL@Type\relax
4437 \pdfstringdef\HyPL@Prefix{\HyPL@page}%
4438 \else
4439 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
4440 \fi
4441 \ifx\HyPL@Prefix\HyPL@LastPrefix
4442 \else
4443 \let\Hy@temp N%
4444 \fi
4445 \if Y\Hy@temp
4446 \advance\c@page by -1 %
4447 \ifnum\HyPL@LastNumber=\the\c@page\relax
4448 \else
4449 \let\Hy@temp N%
4450 \fi
4451 \Hy@StepCount\c@page
4452 \fi
4453 \if N\Hy@temp
4454 \ifx\HyPL@Type\relax
4455 \HyPL@storePageLabel{/P(\HyPL@Prefix)}%
4456 \else
4457 \HyPL@storePageLabel{%
4458 \ifx\HyPL@Prefix\@empty
4459 \else
4460 /P(\HyPL@Prefix)%
4461 \fi
4462 /S/\csname HyPL\HyPL@Type\endcsname
4463 \ifnum\the\c@page=1 %
4464 \else
4465 \space/St \the\c@page
4466 \fi
4467 }%
4468 \fi
4469 \fi
4470 \xdef\HyPL@LastNumber{\the\c@page}%
4471 \global\let\HyPL@LastType\HyPL@Type
4472 \global\let\HyPL@LastPrefix\HyPL@Prefix
4473 \endgroup
4474 \Hy@GlobalStepCount\Hy@abspage
4475 }%

```

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

```

4476 \def\HyPL@CheckThePage#1\@nil{%
4477 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
4478 }%

```

`\HyPL@@CheckThePage` The first check is, is `\thepage` is defined such as in L^AT_EX, 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`.

```

4479 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
4480 \def\Hy@tempa{#4}%
4481 \def\Hy@tempb{\csname\endcsname\c@page}%
4482 \ifx\Hy@tempa\Hy@tempb
4483 \expandafter\ifx\csname HyPL#3\endcsname\relax
4484 \else
4485 \def\HyPL@Type{#3}%

```

```

4486     \def\HyPL@Prefix{#2}%
4487     \fi
4488   \else
4489     \begingroup
4490     \let\Hy@next\endgroup
4491     \let\HyPL@found\@undefined
4492     \def\arabic{\HyPL@Format{arabic}}%
4493     \def\Roman{\HyPL@Format{Roman}}%
4494     \def\roman{\HyPL@Format{roman}}%
4495     \def\Alph{\HyPL@Format{Alph}}%
4496     \def\alph{\HyPL@Format{alph}}%
4497     \protected@edef\Hy@temp{#1}%
4498     \ifx\HyPL@found\relax
4499       \toks@{\expandafter{\Hy@temp}}%
4500       \edef\Hy@next{\endgroup
4501         \noexpand\HyPL@@@CheckThePage\the\toks@
4502         \noexpand\HyPL@found\relax\noexpand\@nil
4503       }%
4504     \fi
4505     \Hy@next
4506   \fi
4507 }%

```

\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`.

```

4508 \def\HyPL@Format#1#2{%
4509   \ifx\HyPL@found\@undefined
4510     \expandafter\ifx\csname c@#2\endcsname\c@page
4511       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
4512     \else
4513       \expandafter\noexpand\csname#1\endcsname{#2}%
4514     \fi
4515   \else
4516     \expandafter\noexpand\csname#1\endcsname{#2}%
4517   \fi
4518 }%

```

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

```

4519 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
4520   \def\Hy@tempa{#3}%
4521   \def\Hy@tempb{\HyPL@found\relax}%
4522   \ifx\Hy@tempa\Hy@tempb
4523     \def\HyPL@Type{#2}%
4524     \def\HyPL@Prefix{#1}%
4525   \fi
4526 }%

```

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

```

4527 \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`.

```

4528 \def\HyPL@Useless{0<</S/D>>}%
4529 \@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.

```

4530 \def\HyPL@SetPageLabels{%
4531   \@onelevel@sanitize\HyPL@Labels
4532   \ifx\HyPL@Labels\@empty
4533   \else
4534     \ifx\HyPL@Labels\HyPL@Useless
4535     \else
4536       \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
4537     \fi
4538   \fi
4539 }%

4540 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
4541 \fi

```

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

```

4542 \Hy@DisableOption{pdfpagelabels}
4543 </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`

```

4544 <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.

```

4545 <*vTeX>
4546 \edef\Hy@VTeXversion{%
4547   \ifx\VTeXversion\undefined
4548     \z@
4549   \else
4550     \ifx\VTeXversion\relax
4551     \z@
4552   \else
4553     \VTeXversion
4554   \fi
4555 \fi
4556 }
4557 \begingroup
4558   \ifnum\Hy@VTeXversion<660 %
4559     \gdef\Hy@PutCatalog#1{%
4560       \Hy@WarningNoLine{%
4561         VTeX 6.59g or above required for pdfpagelabels%
4562       }%
4563     }%
4564   \else
4565     \gdef\Hy@PutCatalog#1{%
4566       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
4567     }%
4568     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
4569       \ifx\#2\%

```

```

4570     \else
4571       \immediate\special{!pdfpagelabels #2}%
4572     \fi
4573   }%
4574 \fi
4575 \endgroup
4576 \</vtex>

4577 \<*pdftex | vtex>

```

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

```

4578 \ifHy@pagelabels
4579   \def\HyPL@StorePageLabel#1{%
4580     \toks@ \expandafter{\HyPL@Labels}%
4581     \xdef\HyPL@Labels{%
4582       \the\toks@
4583       \the\Hy@abspage<<#1>>%
4584     }%
4585   }%

```

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.

```

4586   \@ifclassloaded{revtex4}{%
4587     \g@addto@macro\clear@document{\HyPL@SetPageLabels}%
4588   }{%
4589     \AtEndDocument{\clearpage\HyPL@SetPageLabels}%
4590   }%

4591 \fi
4592 \</pdftex | vtex>

```

27.1.2 pdfmarkbase, dvipdfm

`\Hy@PutCatalog`

```

4593 \<dvipdfm>\def\Hy@PutCatalog#1{\@pdfm@mark{docview << #1 >>}}
4594 \<*pdfmarkbase>
4595 \def\Hy@PutCatalog#1{%
4596   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
4597 }
4598 \</pdfmarkbase>

4599 \<*pdfmarkbase | dvipdfm>
4600 \ifHy@pagelabels

```

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

```

4601   \def\HyPL@StorePageLabel#1{%
4602     \if@filesw
4603       \begingroup
4604         \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
4605         \immediate\write\@mainaux{%
4606           \string\HyPL@Entry{\Hy@tempa}%
4607         }%
4608       \endgroup
4609     \fi
4610   }%

```

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.

```

4611 \AfterBeginDocument{%
4612   \if@filesw
4613     \immediate\write\@mainaux{%
4614       \string\providecommand\string*\string\HyPL@Entry[1]{}%
4615     }%
4616   \fi
4617   \ifx\HyPL@Labels\@empty
4618     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
4619   \else
4620     \HyPL@SetPageLabels
4621   \fi
4622   \let\HyPL@Entry\@gobble
4623 }%
```

`\HyPL@Entry`

```

4624 \def\HyPL@Entry#1{%
4625   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
4626     \HyPL@Labels
4627     #1%
4628   }%
4629 }%

4630 \fi
4631 </pdfmarkbase | dvipdfm>
4632 <*package>
4633 \MaybeStopEarly
```

28 Automated L^AT_EX 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^AT_EX 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

```

4634 \def\Hy@CounterExists#1{%
4635   \begingroup\expandafter\expandafter\expandafter\endgroup
4636   \expandafter\ifx\csname c@#1\endcsname\relax
4637     \expandafter\@gobble
4638   \else
4639     \begingroup\expandafter\expandafter\expandafter\endgroup
4640     \expandafter\ifx\csname the#1\endcsname\relax
```

```

4641 \expandafter\expandafter\expandafter\@gobble
4642 \else
4643 \expandafter\expandafter\expandafter\@firstofone
4644 \fi
4645 \fi
4646 }
4647 \Hy@CounterExists{section}{%
4648 \newcommand\theHequation{\theHsection.\arabic{equation}}%
4649 }
4650 \Hy@CounterExists{part}{%
4651 \newcommand\theHpart{\arabic{part}}%
4652 }
4653 \@ifundefined{thechapter}{%
4654 \newcommand\theHsection {\arabic{section}}%
4655 \newcommand\theHfigure {\arabic{figure}}%
4656 \newcommand\theHtable {\arabic{table}}%
4657 }{%
4658 \newcommand\theHchapter {\arabic{chapter}}%
4659 \newcommand\theHfigure {\theHchapter.\arabic{figure}}%
4660 \newcommand\theHtable {\theHchapter.\arabic{table}}%
4661 \newcommand\theHsection {\theHchapter.\arabic{section}}%
4662 }
4663 \newcommand\theHsubsection {\theHsection.\arabic{subsection}}
4664 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
4665 \newcommand\theHparagraph {\theHsubsubsection.\arabic{paragraph}}
4666 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
4667 \newcommand\theHtheorem {\theHsection.\arabic{theorem}}
4668 \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.

```

4669 \let\H@item\item
4670 \newcounter{Item}
4671 \def\theHItem{\arabic{Item}}
4672 \def\item{%
4673 \@hyper@itemfalse
4674 \if@nmbrlist\@hyper@itemtrue\fi
4675 \H@item
4676 }
4677 \newcommand\theHenumi {\theHItem}
4678 \newcommand\theHenumii {\theHItem}
4679 \newcommand\theHenumiii {\theHItem}
4680 \newcommand\theHenumiv {\theHItem}
4681 \newcommand\theHHfootnote {\arabic{Hfootnote}}
4682 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
4683 \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.

```

4684 \let\H@refstepcounter\refstepcounter
4685 \edef\name@of@eq{equation}%
4686 \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.

```

4687 \newif\if@hyper@item
4688 \newif\if@skiphyperref
4689 \@hyper@itemfalse
4690 \@skiphyperreffalse
4691 \def\refstepcounter#1{%
4692   \ifHy@pdfstring
4693   \else
4694     \H@refstepcounter{#1}%
4695     \edef\This@name{#1}%
4696     \ifx\This@name\name@of@slide
4697     \else
4698       \if@skiphyperref
4699       \else
4700         \if@hyper@item
4701         \stepcounter{Item}%
4702         \hyper@refstepcounter{Item}%
4703         \@hyper@itemfalse
4704       \else
4705         \hyper@refstepcounter{#1}%
4706       \fi
4707     \fi
4708   \fi
4709 \fi
4710 }

```

AMST_{EX} 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.

```

4711 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

4712 \def\hyper@refstepcounter#1{%
4713   \edef\This@name{#1}%
4714   \ifx\This@name\name@of@eq
4715     \@ifundefined{theHequation}{%
4716       \make@stripped@name{\theequation}%
4717       \let\theHequation\newname
4718     }{}%
4719   \fi
4720   \@ifundefined{theH#1}{%
4721     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
4722   }{}%
4723   \hyper@makecurrent{#1}%
4724   \ifmeasuring@
4725   \else
4726     \Hy@raisedlink{%
4727       \hyper@anchorstart{\@currentHref}\hyper@anchorend
4728     }%
4729   \fi
4730 }

```

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`.

```

4731 \begingroup\expandafter\expandafter\expandafter\endgroup
4732 \expandafter\ifx\csname chapter\endcsname\relax
4733   \def\Hy@chapterstring{section}%
4734 \else
4735   \def\Hy@chapterstring{chapter}%
4736 \fi
4737 \def\Hy@appendixstring{appendix}
4738 \def\Hy@chapapp{\Hy@chapterstring}
4739 \let\HyOrg@appendix\appendix
4740 \def\appendix{%
4741   \@ifundefined{chapter}%
4742     {\gdef\theHsection{\Alph{section}}}%
4743     {\gdef\theHchapter{\Alph{chapter}}}%
4744   \xdef\Hy@chapapp{\Hy@appendixstring}%
4745   \HyOrg@appendix
4746 }

```

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

```

4747 \def\hyper@makecurrent#1{%
4748   \begingroup
4749     \edef\Hy@param{#1}%
4750     \ifx\Hy@param\Hy@chapterstring
4751       \let\Hy@param\Hy@chapapp
4752     \fi
4753     \ifHy@hypertextnames
4754       \let\@number\@firstofone
4755       \@ifundefined{latin@Alph}{-}{%
4756         \ifx\@Alph\greek@Alph
4757           \def\@Alph{Alph\@arabic}%
4758         \fi
4759       }%
4760     \ifHy@naturalnames
4761       \let\textlatin\@firstofone
4762       \xdef\@currentHlabel{\csname the#1\endcsname}%
4763     \else
4764       \xdef\@currentHlabel{\csname theH#1\endcsname}%
4765     \fi
4766     \xdef\@currentHref{%
4767       \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
4768     }%
4769   \else
4770     \Hy@GlobalStepCount\Hy@linkcounter
4771     \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
4772   \fi
4773 \endgroup
4774 }

4775 \@ifpackageloaded{fancyvrb}{%
4776   \def\FV@StepLineNo{%
4777     \FV@SetLineNo
4778     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
4779     \FV@StepLineNo
4780   }%
4781 }{}

```

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`

```

4782 \AtBeginDocument{%
4783   \@ifclassloaded{revtex4}{%
4784     \namedef{ver@lastpage.sty}{1994/06/25}%
4785   }{}%
4786   \@ifpackageloaded{lastpage}{%
4787     \ifHy@pageanchor
4788     \else
4789       \Hy@WarningNoLine{%
4790         The \string\pageref{LastPage} link doesn't work\MessageBreak
4791         with disabled option 'pageanchor'%
4792       }%
4793     \fi
4794     \def\lastpage@putlabel{%
4795       \addtocounter{page}{-1}%
4796       \if@filesw
4797         \begingroup
4798         \let\@number\@firstofone
4799         \ifHy@pageanchor
4800           \ifHy@hypertexnames
4801             \ifHy@plainpages
4802               \def\Hy@temp{\arabic{page}}%
4803             \else
4804               \Hy@unicodedefalse
4805               \pdfstringdef\Hy@temp{\thepage}%
4806             \fi
4807           \else
4808             \def\Hy@temp{\the\Hy@pagecounter}%
4809           \fi
4810         \fi
4811         \immediate\write\@auxout{%
4812           \string\newlabel
4813           {LastPage}{\the\thepage}{\the\thepage}{\the\thepage}{\the\thepage}{\the\thepage}%
4814           \ifHy@pageanchor page.\Hy@temp\fi}{\the\thepage}%
4815         }%
4816       \endgroup
4817     \fi
4818     \addtocounter{page}{1}%
4819   }%
4820   \@ifclassloaded{revtex4}{%
4821     \begingroup
4822     \toks@\expandafter{\lastpage@putlabel}%
4823     \edef\x{\endgroup
4824       \def\noexpand\lastpage@putlabel{%
4825         \noexpand\stepcounter{page}%
4826         \the\toks@
4827         \noexpand\addtocounter{page}\noexpand\m@ne
4828       }%

```

```

4829     }%
4830     \x
4831   }{}%
4832 }{}%
4833 }
4834 </package>
4835 <*check>
4836 \checkpackage{lastpage}[1994/06/25]
4837 \checkcommand\def\lastpage@putlabel{%
4838   \addtocounter{page}{-1}%
4839   \immediate\write\@auxout{%
4840     \string\newlabel{LastPage}{{}\{thepage}}%
4841   }%
4842   \addtocounter{page}{1}%
4843 }
4844 </check>
4845 <*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.

```

4846 \def\hypergetref#1{\getrefbykeydefault{#1}{}{??}}
4847 \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:

```

4848 \ifpackageloaded{titlesec}{%
4849   \def\ttl@Hy@steplink#1{%
4850     \Hy@GlobalStepCount\Hy@linkcounter
4851     \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
4852     \def\ttl@Hy@saveanchor{%
4853       \Hy@raisedlink{%
4854         \hyper@anchorstart{\@currentHref}\hyper@anchorend
4855       }%
4856     }%
4857   }%
4858   \def\ttl@Hy@refstepcounter#1{%
4859     \let\ttl@b\Hy@raisedlink
4860     \def\Hy@raisedlink##1{%
4861       \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
4862     }%
4863     \refstepcounter{#1}%
4864     \let\Hy@raisedlink\ttl@b
4865   }%
4866 }{}

```

Package titletoc support:

```

4867 \ifpackageloaded{titletoc}{%
4868   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
4869 }{}

```

32 Package varioref support

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

```

4870 \def\Hy@varioref@undefined{{??}{??}{}}{}{}
4871 \ifpackageloaded{varioref}{%
4872   \def\vref@pagenum#1#2{%
4873     \ifundefined{r@#2}{%
4874       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
4875     }{}%
4876     \edef#1{\getpagerefnumber{#2}}%
4877   }%
4878 }{}

```

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

```

4879 \ifpackageloaded{longtable}{%
4880   \begingroup
4881     \def\y{\LT@array}%
4882     \ifundefined{scr@LT@array}{}{\def\y{\scr@LT@array}}%
4883     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
4884       \expandafter\endgroup
4885       \expandafter\def\y[#1]##2{%
4886         \H@refstepcounter{#1}%
4887         \hyper@makecurrent{table}%
4888         \let\Hy@LT@currentHlabel\@currentHlabel
4889         \let\Hy@LT@currentHref\@currentHref
4890         #2\@sharp####4%
4891       }%
4892     }%
4893     \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil

```

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

```

4894   \begingroup
4895     \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
4896     \endgroup
4897     \def\LT@start{%
4898       #1%
4899       \let\@currentHlabel\Hy@LT@currentHlabel
4900       \let\@currentHref\Hy@LT@currentHref
4901       \Hy@raisedlink{%
4902         \hyper@anchorstart{\@currentHref}\hyper@anchorend
4903       }%
4904       \ifvoid\LT@firsthead\copy
4905       #2%
4906     }%
4907   }%
4908   \expandafter\x\LT@start\@nil
4909 }{}

```

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.

```

4910 \let\new@refstepcounter\refstepcounter
4911 \let\H@equation\equation
4912 \let\H@endequation\endequation

4913 \ifpackageloaded{amsmath}{%
4914   \long\def\Hy@temp{%
4915     \incr@eqnum
4916     \mathdisplay@push
4917     \st@rredfalse \global\@eqnswtrue
4918     \mathdisplay{equation}%
4919   }%
4920   \ifx\Hy@temp\equation
4921     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
4922       \csname iftrue\endcsname
4923   \else
4924     \long\def\equation{%
4925       \mathdisplay@push
4926       \st@rredfalse \global\@eqnswtrue
4927       \mathdisplay{equation}%
4928       \incr@eqnum
4929     }%
4930   \fi
4931 \fi
4932 }{%
4933 \def\equation{%
4934   \let\refstepcounter\H@refstepcounter
4935   \H@equation
4936   \@ifundefined{theHequation}{%
4937     \make@stripped@name{\theequation}%
4938     \let\theHequation\newname
4939   }{}%
4940   \hyper@makecurrent{equation}%
4941   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
4942   \let\refstepcounter\new@refstepcounter
4943 }%
4944 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
4945 }

```

My goodness, why can't L^AT_EX 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.

```

4946 \newif\if@eqnstar
4947 \@eqnstarfalse
4948 \let\H@eqnarray\eqnarray
4949 \let\H@endeqnarray\endeqnarray
4950 \def\eqnarray{%
4951   \let\Hy@reserved@a\relax
4952   \def\@currentHref{}%

```

```

4953 \H@eqnarray
4954 \if@eqnstar
4955 \else
4956   \ifx\\ \@currentHref\\%
4957   \else
4958     \ifundefined{theHequation}{%
4959       \make@stripped@name{\theequation}%
4960       \let\theHequation\newname
4961     }{}%
4962     \hyper@makecurrent{equation}%
4963     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
4964   \fi
4965 \fi
4966 }
4967 \def\endeqnarray{%
4968   \H@endeqnarray
4969 }

```

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.

```

4970 \@namedef{eqnarray*}{%
4971   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
4972 }
4973 \@namedef{endeqnarray*}{%
4974   \nonumber\endeqnarray\@eqnstarfalse
4975 }

```

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

```

4976 \@ifundefined{subeqnarray}{}{%
4977   \let\H@subeqnarray\subeqnarray
4978   \let\H@endsubeqnarray\endsubeqnarray
4979   \def\subeqnarray{%
4980     \let\Hy@reserved@a\relax
4981     \H@subeqnarray
4982     \@ifundefined{theHequation}{%
4983       \make@stripped@name{\theequation}%
4984       \let\theHequation\newname
4985     }{}%
4986     \hyper@makecurrent{equation}%
4987     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
4988   }%
4989   \def\endsubeqnarray{%
4990     \H@endsubeqnarray
4991   }%
4992   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
4993 }

```

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

```

4994 \def\make@stripped@name#1{%
4995   \begingroup
4996     \escapechar\m@ne
4997     \global\let\newname\@empty
4998     \protected@edef\Hy@tempa{#1}%
4999     \edef\@tempb{%
5000       \noexpand\@tfor\noexpand\Hy@tempa:=%
5001       \expandafter\strip@prefix\meaning\Hy@tempa
5002     }%
5003     \@tempb\do{%

```

```

5004     \if{\Hy@tempa\else
5005         \if{\Hy@tempa\else
5006             \xdef\newname{\newname\Hy@tempa}%
5007         \fi
5008     \fi
5009 }%
5010 \endgroup
5011 }

Support for amsmath's subequations:
5012 \begingroup\expandafter\expandafter\expandafter\endgroup
5013 \expandafter\ifx\csname subequations\endcsname\relax
5014 \else
5015     \let\HyOrg@subequations\subequations
5016     \def\subequations{%
5017         \stepcounter{equation}%
5018         \protected@edef\theHparentequation{%
5019             \@ifundefined{theHequation}\theequation\theHequation
5020         }%
5021         \addtocounter{equation}{-1}%
5022         \HyOrg@subequations
5023         \def\theHequation{\theHparentequation\alph{equation}}%
5024         \ignorespaces
5025     }%
5026 \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.

```

5027 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{ }
5028 \ifHy@hyperfootnotes
5029     \newcounter{Hfootnote}%
5030     \let\H@@footnotetext\@footnotetext
5031     \let\H@@footnotemark\@footnotemark
5032     \def\@xfootnotenext[#1]{%
5033         \begingroup
5034             \csname c@\@mpfn\endcsname #1\relax
5035             \unrestored@protected@xdef\@thefnmark{\thempfn}%
5036         \endgroup
5037         \ifx\@footnotetext\@mpfootnotetext
5038             \expandafter\H@@mpfootnotetext
5039         \else
5040             \expandafter\H@@footnotetext
5041         \fi
5042     }%
5043     \def\@xfootnotemark[#1]{%
5044         \begingroup
5045             \c@footnote #1\relax
5046             \unrestored@protected@xdef\@thefnmark{\thefootnote}%
5047         \endgroup
5048         \H@@footnotemark
5049     }%

```

```

5050 \let\H@mpfootnotetext\@mpfootnotetext
5051 \long\def\@mpfootnotetext#1{%
5052   \H@mpfootnotetext{%
5053     \ifHy@nesting
5054       \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
5055     \else
5056       \Hy@raisedlink{%
5057         \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5058       }#1%
5059     \fi
5060   }%
5061 }%
5062 \long\def\@footnotetext#1{%
5063   \H@footnotetext{%
5064     \ifHy@nesting
5065       \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
5066     \else
5067       \Hy@raisedlink{%
5068         \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5069       }%
5070       \let\@currentHlabel\Hy@footnote@currentHlabel
5071       \let\@currentHref\Hy@footnote@currentHref
5072       \let\@currentlabelname\@empty
5073       #1%
5074     \fi
5075   }%
5076 }%

```

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.

```

5077 \def\@footnotemark{%
5078   \leavevmode
5079   \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
5080   \stepcounter{Hfootnote}%
5081   \global\let\Hy@saved@currentHlabel\@currentHlabel
5082   \global\let\Hy@saved@currentHref\@currentHref
5083   \hyper@makecurrent{Hfootnote}%
5084   \global\let\Hy@footnote@currentHlabel\@currentHlabel
5085   \global\let\Hy@footnote@currentHref\@currentHref
5086   \global\let\@currentHlabel\Hy@saved@currentHlabel
5087   \global\let\@currentHref\Hy@saved@currentHref
5088   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
5089   \@makefnmark
5090   \hyper@linkend
5091   \ifhmode\spacefactor\x@sf\fi
5092   \relax
5093 }%

```

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

```

5094 \@ifpackageloaded{longtable}{%
5095   \CheckCommand*\LT@p@ftntext}[1]{%
5096     \edef\@tempa{%
5097       \the\LT@p@ftn

```

```

5098     \noexpand\footnotetext[\the\c@footnote]%
5099   }%
5100   \global\LT@p@ftn\expandafter{\@tempa{#1}}%
5101 }%
5102 \long\def\LT@p@ftntext#1{%
5103   \edef\@tempa{%
5104     \the\LT@p@ftn
5105     \begingroup
5106       \noexpand\c@footnote=\the\c@footnote\relax
5107       \noexpand\protected@xdef
5108         \noexpand\@thefnmark{\noexpand\thempfn}%
5109       \noexpand\protected@xdef\noexpand\@thefnmark{%
5110         \noexpand\thempfn
5111       }%
5112       \expandafter\expandafter\expandafter\noexpand
5113         \expandafter\expandafter\expandafter\Hy@LT@footnotetext
5114         \expandafter\expandafter\expandafter{%
5115           \expandafter\Hy@footnote@currentHref\expandafter
5116           }\expandafter{\Hy@footnote@currentHlabel}%
5117     }%
5118     \global\LT@p@ftn\expandafter{%
5119       \@tempa{#1}%
5120     }\endgroup
5121   }%
5122 }%
5123 \long\def\Hy@LT@footnotetext#1#2#3{%
5124   \H@@footnotetext{%
5125     \ifHy@nesting
5126       \hyper@@anchor{#1}{#3}%
5127     \else
5128       \Hy@raisedlink{%
5129         \hyper@@anchor{#1}{\relax}%
5130       }%
5131       \def\@currentHlabel{#2}%
5132       \def\@currentHref{#1}%
5133       \let\@currentlabelname\@empty
5134       #3%
5135     \fi
5136   }%
5137 }%
5138 }-}%

```

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

```

5139 \ifpackageloaded{fancyvrb}{%
5140   \def\V@@footnotetext{%
5141     \insert\footins\bgroup
5142     \csname reset@font\endcsname
5143     \footnotesize
5144     \interlinepenalty\interfootnotelinepenalty
5145     \splittopskip\footnotesep
5146     \splitmaxdepth\dp\strutbox
5147     \floatingpenalty \@MM
5148     \hsize\columnwidth
5149     \@parboxrestore
5150     \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
5151     \makefntext{}%
5152     \rule{\z@}{\footnotesep}%
5153     \bgroup

```

```

5154 \aftergroup\V@@@footnotetext
5155 \Hy@raisedlink{%
5156   \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5157 }%
5158 \let\@currentHlabel\Hy@footnote@currentHlabel
5159 \let\@currentHref\Hy@footnote@currentHref
5160 \let\@currentlabelname\@empty
5161 \ignorespaces
5162 }%
5163 }{}%

```

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.

```

5164 \let\HyOrg@maketitle\maketitle
5165 \def\maketitle{%
5166   \let\Hy@saved@footnotemark\@footnotemark
5167   \let\Hy@saved@footnotetext\@footnotetext
5168   \let\@footnotemark\H@@footnotemark
5169   \let\@footnotetext\H@@footnotetext
5170   \@ifnextchar[\Hy@maketitle@optarg{% ]
5171     \HyOrg@maketitle
5172     \Hy@maketitle@end
5173   }%
5174 }%
5175 \def\Hy@maketitle@optarg[#1]{%
5176   \HyOrg@maketitle[#{#1}]%
5177   \Hy@maketitle@end
5178 }%
5179 \def\Hy@maketitle@end{%
5180   \ifx\@footnotemark\H@@footnotemark
5181     \let\@footnotemark\Hy@saved@footnotemark
5182   \fi
5183   \ifx\@footnotetext\H@@footnotetext
5184     \let\@footnotetext\Hy@saved@footnotetext
5185   \fi
5186 }%

```

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

```

5187 \def\realfootnote{%
5188   \@ifnextchar[\@xfootnote{%
5189     \stepcounter{\@mpfn}%
5190     \protected@xdef\@thefnmark{\thempfn}%
5191     \H@@footnotemark\H@@footnotetext
5192   }%
5193 }%
5194 \fi
5195 \Hy@DisableOption{hyperfootnotes}
5196 \</package>
5197 \<*check>
5198 \checklatex
5199 \checkcommand\def\@xfootnotenext[#1]{%
5200   \begingroup
5201     \csname c@\@mpfn\endcsname #1\relax
5202     \unrestored@protected@xdef\@thefnmark{\thempfn}%
5203   \endgroup
5204   \@footnotetext

```

```

5205 }
5206 \checkcommand\def\xfootnotemark[#1]{%
5207   \begingroup
5208     \c@footnote #1\relax
5209     \unrestored@protected@xdef\thefnmark{\thefootnote}%
5210   \endgroup
5211   \@footnotemark
5212 }
5213 \checkcommand\def\@footnotemark{%
5214   \leavevmode
5215   \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
5216   \@makefnmark
5217   \ifhmode\spacefactor\x@sf\fi
5218   \relax
5219 }
5220 \</check>
5221 \<*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.

```

5222 \def\caption{%
5223   \ifx\@captive\@undefined
5224     \@latex@error{\noexpand\caption outside float}\@ehd
5225     \expandafter\@gobble
5226   \else
5227     \H@refstepcounter\@captive
5228     \let\Hy@tempa\@caption
5229     \@ifundefined{float@caption}{%
5230       }{%
5231         \expandafter\ifx\csname @float@c@\@captive\endcsname
5232           \float@caption
5233         \let\Hy@tempa\Hy@float@caption
5234       \fi
5235     }%
5236     \expandafter\@firstofone
5237   \fi
5238   {\@dblarg{\Hy@tempa\@captive}}}%
5239 }
5240 \long\def\@caption#1[#2]#3{%
5241   \expandafter\ifx\csname if@capstart\expandafter\endcsname
5242     \csname iftrue\endcsname
5243     \global\let\@currentHref\hc@currentHref
5244   \else
5245     \hyper@makecurrent{\@captive}%
5246   \fi
5247   \def\@currentlabelname{#2}%
5248   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
5249     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
5250   }%
5251   \begingroup
5252     \@parboxrestore
5253     \if@minipage
5254       \setminipage
5255     \fi

```

```

5256 \normalsize
5257 \expandafter\ifx\csname if@capstart\expandafter\endcsname
5258 \csname iftrue\endcsname
5259 \global\@capstartfalse
5260 \makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
5261 \else
5262 \makecaption{\csname fnum@#1\endcsname}{%
5263 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

5264 \ifHy@nesting
5265 \hyper@@anchor{\@currentHref}{#3}%
5266 \else
5267 \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
5268 \fi
5269 }%
5270 \fi
5271 \par
5272 \endgroup
5273 }

```

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.

```

5274 \let\Hy@float@caption\@caption
5275 \ifpackageloaded{float}{%
5276 \def\Hy@float@caption{%
5277 \ifx\Hy@float@currentHref\@undefined
5278 \hyper@makecurrent{\@cuptype}%
5279 \global\let\Hy@float@currentHref\@currentHref
5280 \else
5281 \let\@currentHref\Hy@float@currentHref
5282 \fi
5283 \float@caption
5284 }%
5285 \let\HyOrg@float@makebox\float@makebox
5286 \renewcommand{\float@makebox}[1]{%
5287 \HyOrg@float@makebox{%
5288 #1\relax
5289 \ifx\Hy@float@currentHref\@undefined
5290 \else
5291 \hyper@@anchor{\Hy@float@currentHref}{\relax}%
5292 \global\let\Hy@float@currentHref\@undefined
5293 \fi
5294 }%
5295 }%
5296 }{}
5297 \</package>
5298 \<*check>
5299 \checklatex[1999/06/01 - 2000/06/01]
5300 \checkcommand\def\caption{%
5301 \ifx\@cuptype\@undefined
5302 \@latex@error{noexpand\caption outside float}\@ehd
5303 \expandafter\@gobble
5304 \else
5305 \refstepcounter\@cuptype
5306 \expandafter\@firstofone
5307 \fi
5308 {\@dblarg{\@caption\@cuptype}}%

```

```

5309 }
5310 \checkcommand\long\def\@caption#1[#2]#3{%
5311   \par
5312   \addcontentsline{\csname ext@#1\endcsname}{#1}%
5313   {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
5314   \begingroup
5315     \@parboxrestore
5316     \if@minipage
5317       \setminipage
5318     \fi
5319     \normalsize
5320     \makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
5321   \endgroup
5322 }
5323 \</check>
5324 \<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, lets make an attempt to get *natbib* right, because thats a powerful, important package. Patrick Daly (daly@linmpi.mpg.de) has provided hooks for us, so all we need to do is activate them.

```

5325 \def\hyper@natlinkstart#1{%
5326   \Hy@backout{#1}%
5327   \hyper@linkstart{cite}{cite.#1}%
5328   \def\hyper@nat@current{#1}%
5329 }
5330 \def\hyper@natlinkend{%
5331   \hyper@linkend
5332 }
5333 \def\hyper@natlinkbreak#1#2{%
5334   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
5335 }
5336 \def\hyper@natanchorstart#1{%
5337   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
5338 }
5339 \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.

```

5340 \ifundefined{NAT@parse}{%
5341   \providecommand*\@extra@binfo{}%
5342   \providecommand*\@extra@b@citeb{}%
5343   \def\bibcite#1#2{%
5344     \@newl@bel{b}{#1\@extra@binfo}{%
5345       \hyper@link{cite}{cite.#1\@extra@b@citeb}{#2}%
5346     }%
5347   }%
5348   \gdef\@extra@binfo{}%

```

Package babel redefines \bibtex with macro \bbl@cite@choice. It needs to be overwritten to avoid the warning “Label(s) may have changed.”.

```

5349 \let\Hy@bibtex\bibtex
5350 \begingroup
5351   \@ifundefined{bbl@cite@choice}{\%
5352     \g@addto@macro\bbl@cite@choice{\%
5353       \let\bibtex\Hy@bibtex
5354     }%
5355   }%
5356 \endgroup

```

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

```

5357 \providecommand*\@BIBLABEL{\@biblabel}%
5358 \def\@bibitem[#1]#2{%
5359   \@skiphyperreftrue
5360   \H@item[%
5361     \ifx\Hy@raisedlink\@empty
5362       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
5363       \@BIBLABEL{#1}%
5364       \hyper@anchorend
5365     \else
5366       \Hy@raisedlink{%
5367         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
5368       }%
5369       \@BIBLABEL{#1}%
5370     \fi
5371     \hfill
5372   ]%
5373   \@skiphyperreffalse
5374   \if@filesw
5375     \begingroup
5376       \let\protect\noexpand
5377       \immediate\write\@auxout{%
5378         \string\bibtex{#2}{#1}%
5379       }%
5380     \endgroup
5381   \fi
5382   \ignorespaces
5383 }%

```

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

```

5384 \def\@bibitem#1{%
5385   \@skiphyperreftrue\H@item\@skiphyperreffalse
5386   \Hy@raisedlink{%
5387     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
5388   }%
5389   \if@filesw
5390     \begingroup
5391       \let\protect\noexpand
5392       \immediate\write\@auxout{%
5393         \string\bibtex{#1}{\the\value{\@listctr}}%
5394       }%
5395     \endgroup
5396   \fi
5397   \ignorespaces
5398 }%
5399 }{}

```

```

5400 </package>
5401 <*check>
5402 \checklatex
5403 \checkcommand\def\@lbibitem[#1]#2{%
5404   \item[\@biblabel{#1}\hfill]%
5405   \if@filesw
5406     {%
5407       \let\protect\noexpand
5408       \immediate\write\@auxout{%
5409         \string\bibcite{#2}{#1}%
5410       }%
5411     }%
5412   \fi
5413   \ignorespaces
5414 }
5415 \checkcommand\def\@bibitem#1{%
5416   \item
5417   \if@filesw
5418     \immediate\write\@auxout{%
5419       \string\bibcite{#1}{\the\value{\@listctr}}%
5420     }%
5421   \fi
5422   \ignorespaces
5423 }
5424 </check>
5425 <*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.

```

5426 \@ifclassloaded{revtex}{%
5427   \Hy@Info{*** compatibility with revtex **** }%
5428   \def\revtex@checking#1#2{%
5429     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
5430     \expandafter\def\csname b@#1\endcsname{#2}%
5431     \@SetMaxRnhefLabel{#1}%
5432     \expandafter\let\csname b@#1\endcsname\T@temp
5433   }%

```

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

```

5434 \ifundefined{CITE}{\def\CITE{\@cite}}{}%
5435 \providecommand*{\extra@b@citeb}{}%
5436 \def\CITE[#1]#2{%
5437   \let\@citea\@empty
5438   \leavevmode
5439   \unskip
5440   $^{}%
5441   \scriptstyle
5442   \CITE{%
5443     \@for\@citeb:=#2\do{%
5444       \@citea
5445       \def\@citea{\penalty\@m\ }%
5446       \edef\@citeb{\expandafter\@firstofone\@citeb}%
5447       \if@filesw
5448         \immediate\write\@auxout{\string\citation{\@citeb}}%
5449       \fi
5450       \ifundefined{b@\@citeb\extra@b@citeb}{}%

```

```

5451         \mbox{\reset@font\bfseries ?}%
5452         \G@refundefinedtrue
5453         \@latex@warning{%
5454             Citation ‘\@citeb’ on page \thepage \space undefined%
5455         }%
5456     }{%
5457         {\csname b@\@citeb\@extra@b@citeb\endcsname}%
5458     }%
5459 }%
5460 }{#1}%
5461 }$%
5462 }%

```

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.

```

5463 \def\@citex[#1]#2{%
5464     \let\@citea\@empty
5465     \@cite{%
5466         \@for\@citeb:=#2\do{%
5467             \@citea
5468             \def\@citea{\penalty\@m\ }%
5469             \edef\@citeb{\expandafter\@firstofone\@citeb}%
5470             \if@filesw
5471                 \immediate\write\@auxout{\string\citation{\@citeb}}%
5472             \fi
5473             \@ifundefined{b@\@citeb\@extra@b@citeb}{%
5474                 \mbox{\reset@font\bfseries ?}%
5475                 \G@refundefinedtrue
5476                 \@latex@warning{%
5477                     Citation ‘\@citeb’ on page \thepage \space undefined%
5478                 }%
5479             }{%
5480                 \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
5481             }%
5482         }%
5483     }{#1}%
5484 }%
5485 }{}

```

37.1 Package harvard

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

The redefinitions have to be deferred to \begin{document}, because if harvard.sty is loaded and html.sty is present and detects pdfTEX, then hyperref is already loaded at the begin of harvard.sty, and the \newcommand macros causes error messages.

```

5486 \@ifpackageloaded{harvard}{%
5487     \AtBeginDocument{%
5488         \Hy@Info{*** compatibility with harvard *** }%
5489         \Hy@raiselinksfalse
5490         \def\harvardcite#1#2#3#4{%
5491             \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{\cite.#1}{#2}}%
5492             \global\@namedef{HAR@an@#1}{\hyper@link[cite]{\cite.#1}{#3}}%
5493             \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{\cite.#1}{#4}}%
5494             \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
5495         }%

```

```

5496 \def\HAR@citetoaux#1{%
5497 \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
5498 \ifHy@backref
5499 \ifx\@empty\@currentlabel
5500 \else
5501 \@bsphack
5502 \if@filesw
5503 \protected@write\@auxout{}{%
5504 \string\@writefile{brf}{%
5505 \string\backcite{#1}{%
5506 {\thepage}{\@currentlabel}{\@currentHref}%
5507 }%
5508 }%
5509 }%
5510 \fi
5511 \@esphack
5512 \fi
5513 \fi
5514 }%
5515 \def\harvarditem{%
5516 \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
5517 }%
5518 \def\@harvarditem[#1]#2#3#4#5\par{%
5519 \item[]%
5520 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
5521 \if@filesw
5522 \begingroup
5523 \def\protect##1{\string ##1\space}%
5524 \ifthenelse{\equal{#1}{\null}}%
5525 {\def\next{{#4}{#2}{#2}{#3}}}%
5526 {\def\next{{#4}{#2}{#1}{#3}}}%
5527 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
5528 \endgroup
5529 \fi
5530 \protect\hspace*{-\labelwidth}%
5531 \protect\hspace*{-\labelsep}%
5532 \ignorespaces
5533 #5%
5534 \ifHy@backref
5535 \newblock
5536 \backref{\csname br@#4\endcsname}%
5537 \fi
5538 \par
5539 }%

```

\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:

```

5540 \long\def\HAR@checkcitations#1#2#3#4{%
5541 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
5542 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
5543 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
5544 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
5545 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
5546 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
5547 \else
5548 \@tempswatrue

```

```

5549         \fi
5550     \else
5551         \@tempswatrue
5552     \fi
5553 \else
5554     \@tempswatrue
5555 \fi
5556 }%
5557 }%

5558 }{}

```

37.2 Package chicago

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

```

5559 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

5560 \def\citeN{%
5561     \def\@citesep{-1000}%
5562     \def\@cite##1##2{##1}%
5563     \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
5564     \@citedata@opt
5565 }%

```

`\shortciteN`

```

5566 \def\shortciteN{%
5567     \def\@citesep{-1000}%
5568     \def\@cite##1##2{##1}%
5569     \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
5570     \@citedata@opt
5571 }%

```

`\@citedata@opt`

```

5572 \def\@citedata@opt{%
5573     \let\@cite@opt\@empty
5574     \@ifnextchar [{%
5575         \@tempswatrue
5576         \@citedatax@opt
5577     }{%
5578         \@tempswafalse
5579         \@citedatax[]%
5580     }%
5581 }%

```

`\@citedatax@opt`

```

5582 \def\@citedatax@opt[#1]{%
5583     \def\@cite@opt{, #1}%
5584     \@citedatax[{#1}]%
5585 }%

5586 }{}

```

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.

```
5587 \def\Hy@EveryPageAnchor{%
5588   \Hy@DistillerDestFix
5589   \ifHy@pageanchor
5590     \ifHy@hypertextnames
5591       \ifHy@plainpages
5592         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
5593       \else
5594         \begingroup
5595           \let\@number\@firstofone
5596           \Hy@unicodedefalse
5597           \pdfstringdef\@theH@page{\thepage}%
5598         \endgroup
5599         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@theH@page}}%
5600       \fi
5601     \else
5602       \Hy@GlobalStepCount\Hy@pagecounter
5603       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}%
5604     \fi
5605     \vbox to 0pt{%
5606       \kern\voffset
5607       \kern\topmargin
5608       \kern-1bp\relax
5609       \hbox to 0pt{%
5610         \kern\hoffset
5611         \kern\ifodd\value{page}%
5612           \oddsidemargin
5613         \else
5614           \evensidemargin
5615         \fi
5616         \kern-1bp\relax
5617         \Hy@TempPageAnchor
5618         \hss
5619       }%
5620     \vss
5621   }%
5622 \fi
5623 }
5624 \g@addto@macro\Hy@EveryPageBoxHook{%
5625   \Hy@EveryPageAnchor
5626 }
```

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.

```
5627 \begingroup\expandafter\expandafter\expandafter\endgroup
```

```

5628 \expandafter\ifx\csname chapter\endcsname\relax
5629 \def\toclevel@part{0}%
5630 \else
5631 \def\toclevel@part{-1}%
5632 \fi
5633 \def\toclevel@chapter{0}
5634 \def\toclevel@section{1}
5635 \def\toclevel@subsection{2}
5636 \def\toclevel@subsubsection{3}
5637 \def\toclevel@paragraph{4}
5638 \def\toclevel@subparagraph{5}
5639 \def\toclevel@figure{0}
5640 \def\toclevel@table{0}
5641 \@ifpackageloaded{listings}{%
5642 \providecommand*\theHlstlisting{\thelstlisting}%
5643 \providecommand*\toclevel@lstlisting{0}%
5644 }{}
5645 \@ifpackageloaded{listing}{%
5646 \providecommand*\theHlisting{\thelisting}%
5647 \providecommand*\toclevel@listing{0}%
5648 }{}
5649 \def\addcontentsline#1#2#3{% toc extension, type, tag
5650 \begingroup
5651 \let\label@gobble
5652 \let\textlatin@firstofone
5653 \ifx\@currentHref\@empty
5654 \Hy@Warning{%
5655 No destination for bookmark of \string\addcontentsline,%
5656 \MessageBreak destination is added%
5657 }%
5658 \phantomsection
5659 \fi
5660 \expandafter\ifx\csname toclevel@#2\endcsname\relax
5661 \begingroup
5662 \def\Hy@tempa{#1}%
5663 \ifx\Hy@tempa\Hy@bookmarkstype
5664 \Hy@WarningNoLine{%
5665 bookmark level for unknown #2 defaults to 0%
5666 }%
5667 \else
5668 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
5669 \fi
5670 \endgroup
5671 \expandafter\gdef\csname toclevel@#2\endcsname{0}%
5672 \fi
5673 \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
5674 \Hy@writebookmark{\csname the#2\endcsname}%
5675 {#3}%
5676 {\@currentHref}%
5677 {\Hy@toclevel}%
5678 {#1}%
5679 \ifHy@verbose
5680 \def\Hy@tempa{#3}%
5681 \@onelevel@sanitize\Hy@tempa
5682 \typeout{pdfTeX: bookmark at \the\inputlineno: %
5683 {\csname the#2\endcsname}%
5684 {\Hy@tempa}%

```

```

5685         {\@currentHref}%
5686         {\Hy@toclevel}%
5687         {#1}%
5688     }%
5689     \fi
5690     \addtocontents{#1}{%
5691         \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
5692     }%
5693     \endgroup
5694 }
5695 \def\contentsline#1#2#3#4{%
5696     \ifx\#4\%
5697         \csname l@#1\endcsname{#2}{#3}%
5698     \else
5699         \ifHy@linktocpage
5700             \csname l@#1\endcsname{#2}{%
5701                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
5702             }%
5703         \else
5704             \csname l@#1\endcsname{%
5705                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
5706             }{#3}%
5707         \fi
5708     \fi
5709 }
5710 </package>
5711 <*check>
5712 \checklatex
5713 \checkcommand\def\addcontentsline#1#2#3{%
5714     \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
5715 }
5716 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
5717 </check>
5718 <*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.

```

5719 \let\H@definecounter\@definecounter
5720 \def\@definecounter#1{%
5721     \H@definecounter{#1}%
5722     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
5723 }

```

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.

```

5724 \let\H@newctr\@newctr
5725 \def\@newctr#1[#2]{%
5726     \H@newctr#1[#2]%
5727     \expandafter\def\csname theH#1\endcsname{%
5728         \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
5729     }%
5730 }

```

41 AMSL^AT_EX 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.

```
5731 \let\Hmake@df@tag@@\make@df@tag@@
5732 \def\make@df@tag@@#1{%
5733   \Hmake@df@tag@@{#1}%
5734   \Hy@GlobalStepCount\Hy@linkcounter
5735   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5736   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5737 }
5738 \let\Hmake@df@tag@@@\make@df@tag@@@
5739 \def\make@df@tag@@@#1{%
5740   \Hmake@df@tag@@@{#1}%
5741   \Hy@GlobalStepCount\Hy@linkcounter
5742   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5743   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5744 }
```

Only play with `\seteqlebal` if we are using pdf_{tex}. Other drivers cause problems; requested by Michael Downes (AMS).

```
5745 \ifpackagewith{hyperref}{pdftex}{%
5746   \let\Hseteqlabel\@seteqlabel
5747   \def\@seteqlabel#1{%
5748     \Hseteqlabel{#1}%
5749     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5750     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5751   }%
5752 }{}
```

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.

```
5753 \let\HyOrg@addtoreset\@addtoreset
5754 \def\@addtoreset#1#2{%
5755   \HyOrg@addtoreset{#1}{#2}%
5756   \expandafter\xdef\csname theH#1\endcsname{%
5757     \expandafter\noexpand
5758     \csname the\@ifundefined{theH#2}{}H#2\endcsname
5759     .\noexpand\the\noexpand\value{#1}%
5760   }%
5761 }
```

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

```

5762 </package>
5763 <*check>
5764 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
5765 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
5766   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
5767     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
5768       \@addtoreset{#2}{#3}%
5769       \@xp\xdef\csname the#2\endcsname{%
5770         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
5771       }%
5772     }%
5773   }%
5774 }%
5775 </check>
5776 <*package>
5777 \@ifpackageloaded{amsmath}{%
5778   \@ifpackagelater{amsmath}{1999/12/14}{%
5779     \renewcommand*{\numberwithin}[3][\arabic]{%
5780       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
5781         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
5782           \HyOrg@addtoreset{#2}{#3}%
5783           \@xp\xdef\csname the#2\endcsname{%
5784             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
5785           }%
5786           \@xp\xdef\csname theH#2\endcsname{%
5787             \@xp\@nx
5788             \csname the\@ifundefined{theH#3}{H#3}\endcsname
5789             .\@nx#1{#2}%
5790           }%
5791         }%
5792       }%
5793     }%
5794   }{%
5795     \Hy@WarningNoLine{%
5796       \string\numberwithin\space of package 'amsmath' %
5797       only fixed\MessageBreak
5798       for version 2000/06/06 v2.12 or newer%
5799     }%
5800   }%
5801 }{}

```

42 Included figures

Simply intercept the low level graphics package macro.

```

5802 \ifHy@figures
5803   \let\Hy@Gin@setfile\Gin@setfile
5804   \def\Gin@setfile#1#2#3{%
5805     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
5806   }%
5807 \fi
5808 \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.

```

5809 \ifHy@hyperindex
5810   \def\HyInd@ParenLeft{ }%
5811   \def\HyInd@ParenRight{ }%
5812   \Hy@nextfalse
5813   \ifpackageloaded{multind}{\Hy@nexttrue}{}%
5814   \ifpackageloaded{index}{\Hy@nexttrue}{}%
5815   \begingroup
5816     \lccode'\|=\expandafter'\HyInd@EncapChar\relax
5817   \lowercase{\endgroup
5818     \ifHy@next
5819       \let\HyInd@org@wrindex\@wrindex
5820       \def\@wrindex#1#2{\HyInd@wrindex{#1}#2||\}%
5821       \def\HyInd@wrindex#1#2|#3|#4\{\%
5822         \ifx\|#3\%
5823           \HyInd@org@wrindex{#1}{#2|hyperpage}%
5824         \else
5825           \def\Hy@temp@A{#3}%
5826           \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
5827             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
5828             \relax
5829           \HyInd@org@wrindex{#1}{#2|#3}%
5830         \else
5831           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
5832         \fi
5833       \fi
5834     }%
5835   \else
5836     \def\@wrindex#1{\@wrindex#1||\}%
5837     \def\@wrindex#1|#2|#3\{\%
5838       \if@filesw
5839         \ifx\|#2\%
5840           \protected@write\@indexfile{\%
5841             \string\indexentry{#1|hyperpage}{\thepage}%
5842           }%
5843         \else
5844           \def\Hy@temp@A{#2}%
5845           \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
5846             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
5847             \relax
5848           \protected@write\@indexfile{\%
5849             \string\indexentry{#1|#2}{\thepage}%
5850           }%
5851         \else
5852           \protected@write\@indexfile{\%
5853             \string\indexentry{#1|#2hyperpage}{\thepage}%

```

```

5854         }%
5855         \fi
5856     \fi
5857 \fi
5858 \endgroup
5859 \esphack
5860 }%
5861 \fi
5862 }%
5863 \fi
5864 \Hy@DisableOption{hyperindex}
5865 \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.

```

5866 \def\hyperpage#1{\@hyperpage#1----\}
5867 \def\@hyperpage#1--#2--#3\{%
5868   \ifx\#2\%
5869     \@commahyperpage{#1}%
5870   \else
5871     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
5872   \fi
5873 }
5874 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
5875 \def\@commahyperpage#1, #2,#3\{%
5876   \ifx\#2\%
5877     \HyInd@pagelink{#1}%
5878   \else
5879     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
5880   \fi
5881 }

```

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

```

5882 \def\HyInd@pagelink#1{%
5883   \begingroup
5884     \toks@={}%
5885     \HyInd@removespaces#1 \@nil
5886   \endgroup
5887 }
5888 \def\HyInd@removespaces#1 #2\@nil{%
5889   \toks@=\expandafter{\the\toks@#1}%
5890   \ifx\#2\%
5891     \edef\x{\the\toks@}%
5892     \ifx\x\empty
5893     \else
5894       \hyperlink{page.\the\toks@}{\the\toks@}%
5895     \fi
5896   \else
5897     \Hy@ReturnAfterFi{%
5898       \HyInd@removespaces#2\@nil
5899     }%
5900   \fi
5901 }

```

44 Compatibility with foiltex

```

5902 \@ifclassloaded{foils}{%
5903   \providecommand*\ext@table{lot}%
5904   \providecommand*\ext@figure{lof}%
5905 }{}

```

45 Compatibility with seminar slide package

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

```

5906 \@ifclassloaded{seminar}{%
5907   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}}%
5908 }{%
5909   \Hy@seminarslidesfalse
5910 }
5911 \@ifpackageloaded{slidesec}{%
5912   \newcommand\theHslidesection {\arabic{slidesection}}%
5913   \newcommand\theHslidesubsection{%
5914     \theHslidesection.\arabic{slidesubsection}%
5915   }%
5916   \def\slide@heading[#1]#2{%
5917     \H@refstepcounter{slidesection}%
5918     \@addtoreset{slidesubsection}{slidesection}%
5919     \addtocontents{los}{%
5920       \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
5921       {\@SCTR}{slideheading.\theslidesection}%
5922     }%
5923     \def\Hy@tempa{#2}%
5924     \ifx\Hy@tempa\@empty
5925     \else
5926       {%
5927         \edef\@currentlabel{%
5928           \csname p@slidesection\endcsname\theslidesection
5929         }%
5930         \makeslideheading{#2}%
5931       }%
5932     \fi
5933     \gdef\theslideheading{#1}%
5934     \gdef\theslidesubheading{%
5935       \ifHy@bookmarksnumbered
5936         \def\Hy@slidetitle{\theslidesection\space #1}%
5937       \else
5938         \def\Hy@slidetitle{#1}%
5939       \fi
5940       \ifHy@hypertextnames
5941         \ifHy@naturalnames
5942           \hyper@@anchor{slideheading.\theslidesection}{\relax}%
5943           \Hy@writebookmark
5944             {\theslidesection}%
5945             {\Hy@slidetitle}%
5946             {slideheading.\theslidesection}%
5947             {1}%
5948             {toc}%
5949         \else
5950           \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
5951           \Hy@writebookmark
5952             {\theslidesection}%
5953             {\Hy@slidetitle}%

```

```

5954         {slideheading.\theHslidesection}%
5955         {1}%
5956         {toc}%
5957     \fi
5958 \else
5959     \Hy@GlobalStepCount\Hy@linkcounter
5960     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
5961     \Hy@writebookmark
5962         {\theslidesection}%
5963         {\Hy@slidetitle}%
5964         {slideheading.\the\Hy@linkcounter}%
5965         {1}%
5966         {toc}%
5967 \fi
5968 }%
5969 \def\slide@subheading[#1]#2{%
5970     \H@refstepcounter{slidesubsection}%
5971     \addtocontents{los}{%
5972         \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
5973         {\@SCTR}{slideheading.\theslidesubsection}%
5974     }%
5975     \def\Hy@tempa{#2}%
5976     \ifx\Hy@tempa\@empty
5977     \else
5978         {%
5979             \edef\@currentlabel{%
5980                 \csname p@slidesubsection\endcsname\theslidesubsection
5981             }%
5982             \makeslidesubheading{#2}%
5983         }%
5984     \fi
5985     \gdef\theslidesubheading{#1}%
5986     \ifHy@bookmarksnumbered
5987         \def\Hy@slidetitle{\theslidesubsection\space #1}%
5988     \else
5989         \def\Hy@slidetitle{#1}%
5990     \fi
5991     \ifHy@hypertextnames
5992     \ifHy@naturalnames
5993         \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
5994         \Hy@writebookmark
5995             {\theslidesubsection}%
5996             {\Hy@slidetitle}%
5997             {slideheading.\theslidesubsection}%
5998             {2}%
5999             {toc}%
6000     \else
6001         \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
6002         \Hy@writebookmark
6003             {\theslidesubsection}%
6004             {\Hy@slidetitle}%
6005             {slideheading.\theHslidesubsection}%
6006             {2}%
6007             {toc}%
6008     \fi
6009 \else
6010     \Hy@GlobalStepCount\Hy@linkcounter

```

```

6011     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
6012     \Hy@writebookmark
6013         {\theslidesubsection}%
6014         {\Hy@slidetitle}%
6015         {slideheading.\the\Hy@linkcounter}%
6016         {1}%
6017         {toc}%
6018     \fi
6019 }%
6020 \providecommand*\listslidenamelist{List of Slides}%
6021 \def\listofslides{%
6022     \section*{%
6023         \listslidenamelist
6024         \@mkboth{%
6025             \expandafter\MakeUppercase\listslidenamelist
6026         }{%
6027             \expandafter\MakeUppercase\listslidenamelist
6028         }%
6029     }%
6030     \def\l@slide##1##2##3##4{%
6031         \slide@undottedcline{%
6032             \slidenumberline{##3}{\hyperlink{##4}{##2}}%
6033         }{%
6034         }%
6035         \let\l@subslide\l@slide
6036         \@starttlos
6037     }%
6038     \def\slide@contents{%
6039         \def\l@slide##1##2##3##4{%
6040             \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
6041         }%
6042         \let\l@subslide\@gobblefour
6043         \@starttlos
6044     }%
6045     \def\Slide@contents{%
6046         \def\l@slide##1##2##3##4{%
6047             \ifcase\lslide@flag
6048                 \message{##1 ** \the\c@slidesection}%
6049                 \ifnum##1>\c@slidesection
6050                     \def\lslide@flag{1}%
6051                     {%
6052                         \large
6053                         \slide@ccline{%
6054                             \slidenumberline{\$ \Rightarrow \bullet}%
6055                             {\hyperlink{##4}{##2}}%
6056                         }{##3}%
6057                     }%
6058                 \else
6059                     {%
6060                         \large
6061                         \slide@ccline{%
6062                             \slidenumberline{\$ \surd\; \bullet}%
6063                             {\hyperlink{##4}{##2}}%
6064                         }{##3}%
6065                     }%
6066                 \fi
6067             \or

```

```

6068     \def\lslide@flag{2}%
6069     {%
6070         \large
6071         \slide@cline{%
6072             \slidenumberline{$\bullet$}%
6073             {\hyperlink{##4}{##2}}%
6074         }{##3}%
6075     }%
6076     \or
6077     {%
6078         \large
6079         \slide@cline{%
6080             \slidenumberline{$\bullet$}%
6081             {\hyperlink{##4}{##2}}%
6082         }{##3}%
6083     }%
6084     \fi
6085 }%
6086 \def\l@subslide##1##2##3##4{%
6087     \ifnum\lslide@flag=1 %
6088         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
6089     \fi
6090 }%
6091 \def\lslide@flag{0}%
6092 \@startlos
6093 }%
6094 }{}

```

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.)

```

6095 \ifHy@texht
6096     \expandafter\endinput
6097 \fi
6098 \let\real@setref\@setref
6099 \def\@setref#1#2#3{% csname, extract group, refname
6100     \ifx#1\relax
6101         \protect\G@refundefinedtrue
6102         \nfss@text{\reset@font\bfseries ??}%
6103         \@latex@warning{%
6104             Reference ‘#3’ on page \thepage \space undefined%
6105         }%
6106     \else
6107         \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
6108     \fi
6109 }

```

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

```

6110 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
6111     \begingroup
6112     \toks0={\hyper@@link{#5}{#4}}%
6113     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
6114     \edef\x{\endgroup
6115         \the\toks0 {\the\toks1 }%
6116     }%
6117     \x
6118 }

```

```

6119 \def\@pagesetref#1#2#3{% csname, extract macro, ref
6120   \ifx#1\relax
6121     \protect\G@refundefinedtrue
6122     \nfss@text{\reset@font\bfseries ??}%
6123     \latex@warning{%
6124       Reference ‘#3’ on page \thepage \space undefined%
6125     }%
6126   \else
6127     \protect\hyper@@link
6128     {\expandafter\@fifthoffive#1}%
6129     {page.\expandafter\@secondoffive#1}%
6130     {\expandafter\@secondoffive#1}%
6131   \fi
6132 }

6133 </package>
6134 <*check>
6135 \checklatex
6136 \checkcommand\def\@setref#1#2#3{%
6137   \ifx#1\relax
6138     \protect\G@refundefinedtrue
6139     \nfss@text{\reset@font\bfseries ??}%
6140     \latex@warning{%
6141       Reference ‘#3’ on page \thepage\space undefined%
6142     }%
6143   \else
6144     \expandafter#2#1\null
6145   \fi
6146 }
6147 </check>
6148 <*package>

```

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

```

6149 \def\HyRef@StarSetRef#1{%
6150   \begingroup
6151   \Hy@safe@activestrue
6152   \edef\x{#1}%
6153   \@onelevel@sanitize\x
6154   \edef\x{\endgroup
6155     \noexpand\HyRef@@StarSetRef
6156     \expandafter\noexpand\csname r@\x\endcsname{\x}%
6157   }%
6158   \x
6159 }
6160 \def\HyRef@@StarSetRef#1#2#3{%
6161   \ifx#1\@undefined
6162     \let#1\relax
6163   \fi
6164   \real@setref#1#3{#2}%
6165 }
6166 \def\@refstar#1{%
6167   \HyRef@StarSetRef{#1}\@firstoffive
6168 }
6169 \def\@pagerefstar#1{%
6170   \HyRef@StarSetRef{#1}\@secondoffive
6171 }
6172 \AtBeginDocument{%

```

```

6173 \@ifpackageloaded{varioref}{%
6174   \def\@Refstar#1{%
6175     \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
6176   }%
6177   \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
6178     \MakeUppercase#1%
6179   }%
6180   \DeclareRobustCommand*\Ref}{%
6181     \@ifstar\@Refstar\HyRef@Ref
6182   }%
6183   \def\HyRef@Ref#1{%
6184     \hyperref[#{1}]{\Ref*{#1}}%
6185   }%
6186   \def\Vr@f#1{%
6187     \leavevmode\unskip\vref@space
6188     \hyperref[#{1}]{%
6189       \Ref*{#1}%
6190       \let\vref@space\nobreakspace
6191       \@vpageref[\unskip]{#1}%
6192     }%
6193   }%
6194   \def\vr@f#1{%
6195     \leavevmode\unskip\vref@space
6196     \begingroup
6197       \let\T@pageref\@pagerefstar
6198       \hyperref[#{1}]{%
6199         \ref*{#1}%
6200         \vpageref[\unskip]{#1}%
6201       }%
6202     \endgroup
6203   }%
6204 }{}%
6205 }
6206 \DeclareRobustCommand*\autopageref}{%
6207   \@ifstar{%
6208     \HyRef@autopagerefname\pageref*%
6209   }\HyRef@autopageref
6210 }
6211 \def\HyRef@autopageref#1{%
6212   \hyperref[#{1}]{\HyRef@autopagerefname\pageref*{#1}}%
6213 }
6214 \def\HyRef@autopagerefname{%
6215   \@ifundefined{pageautorefname}{%
6216     \@ifundefined{pagename}{%
6217       \Hy@Warning{No autoref name for ‘page’}%
6218     }{%
6219       \pagename\nobreakspace
6220     }%
6221   }{%
6222     \pageautorefname\nobreakspace
6223   }%
6224 }
6225 \DeclareRobustCommand*\autoref}{%
6226   \@ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}%
6227 }
6228 \def\HyRef@autoref#1#2{%
6229   \begingroup

```

```

6230 \Hy@safe@activetrue
6231 \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
6232 \endgroup
6233 }
6234 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
6235 \HyRef@ShowKeysRef{#2}%
6236 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
6237 \edef\HyRef@thisref{%
6238 \expandafter\@fourthoffive#1\@empty\@empty\@empty
6239 }%
6240 \expandafter\HyRef@testreftype\HyRef@thisref.\.%
6241 \Hy@safe@activesfalse
6242 #3{%
6243 \expandafter\@fifthoffive#1\@empty\@empty\@empty
6244 }{%
6245 \expandafter\@fourthoffive#1\@empty\@empty\@empty
6246 }{%
6247 \HyRef@currentHtag
6248 \expandafter\@firstoffive#1\@empty\@empty\@empty
6249 \null
6250 }%
6251 \else
6252 \protect\G@refundefinedtrue
6253 \nfss@text{\reset@font\bfseries ??}%
6254 \@latex@warning{%
6255 Reference ‘#2’ on page \thepage\space undefined%
6256 }%
6257 \fi
6258 }
6259 \def\HyRef@testreftype#1.#2\{%
6260 \@ifundefined{#1autorefname}{%
6261 \@ifundefined{#1name}{%
6262 \HyRef@StripStar#1\*\@nil{#1}%
6263 \@ifundefined{\HyRef@name autorefname}{%
6264 \@ifundefined{\HyRef@name name}{%
6265 \def\HyRef@currentHtag{%
6266 \Hy@Warning{No autoref name for ‘#1’}%
6267 }{%
6268 \edef\HyRef@currentHtag{%
6269 \expandafter\noexpand\csname\HyRef@name name\endcsname
6270 \noexpand~%
6271 }%
6272 }%
6273 }{%
6274 \edef\HyRef@currentHtag{%
6275 \expandafter\noexpand\csname\HyRef@name autorefname\endcsname
6276 \noexpand~%
6277 }%
6278 }%
6279 }{%
6280 \edef\HyRef@currentHtag{%
6281 \expandafter\noexpand\csname#1name\endcsname
6282 \noexpand~%
6283 }%
6284 }%
6285 }{%
6286 \edef\HyRef@currentHtag{%

```

```

6287 \expandafter\noexpand\csname#1autorefname\endcsname
6288 \noexpand~%
6289 }%
6290 }%
6291 }
6292 \def\HyRef@StripStar#1*\#2\@nil#3{%
6293 \def\HyRef@name{#2}%
6294 \ifx\HyRef@name\HyRef@CaseStar
6295 \def\HyRef@name{#1}%
6296 \else
6297 \def\HyRef@name{#3}%
6298 \fi
6299 }
6300 \def\HyRef@CaseStar{*\\}
6301 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

6302 \let\HyRef@ShowKeysRef\@gobble
6303 \def\HyRef@ShowKeysInit{%
6304 \begingroup\expandafter\expandafter\expandafter\endgroup
6305 \expandafter\ifx\csname SK@@label\endcsname\relax
6306 \else
6307 \ifx\SK@ref\@empty
6308 \else
6309 \def\HyRef@ShowKeysRef{%
6310 \SK@\SK@@ref
6311 }%
6312 \fi
6313 \fi
6314 }
6315 \@ifpackageloaded{showkeys}{%
6316 \HyRef@ShowKeysInit
6317 }{%
6318 \AtBeginDocument{%
6319 \@ifpackageloaded{showkeys}{%
6320 \HyRef@ShowKeysInit
6321 }{%
6322 }%
6323 }

```

Defaults for the names that \autoref uses.

```

6324 \providecommand*\AMSautorefname{\equationautorefname}
6325 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
6326 \providecommand*\Itemautorefname{\itemautorefname}
6327 \providecommand*\itemautorefname{item}
6328 \providecommand*\equationautorefname{Equation}
6329 \providecommand*\footnoteautorefname{footnote}
6330 \providecommand*\itemautorefname{item}
6331 \providecommand*\figureautorefname{Figure}
6332 \providecommand*\tableautorefname{Table}
6333 \providecommand*\partautorefname{Part}
6334 \providecommand*\appendixautorefname{Appendix}
6335 \providecommand*\chapterautorefname{chapter}
6336 \providecommand*\sectionautorefname{section}
6337 \providecommand*\subsectionautorefname{subsection}
6338 \providecommand*\subsubsectionautorefname{subsubsection}

```

```

6339 \providecommand*\paragraphautorefname{paragraph}
6340 \providecommand*\subparagraphautorefname{subparagraph}
6341 \providecommand*\FancyVerbLineautorefname{line}
6342 \providecommand*\theoremautorefname{Theorem}
6343 \providecommand*\pageautorefname{page}
6344 \end{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_TE_X offers `\pdfescapestring`.

```

6345 <*pdfTeX | dvipdfm | vTeX | pdfmarkbase | dviwindo>
6346 \RequirePackage{pdfTeXcmds}[2007/11/11]
6347 \begingroup\expandafter\expandafter\expandafter\endgroup
6348 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
6349   \begingroup
6350     \catcode'\|=0 %
6351     \@makeother\| %
6352     |@firstofone{|endgroup
6353     |def|Hy@pstringdef#1#2{%
6354       |begingroup
6355         |edef~{|string~}%
6356         |xdef|Hy@gtemp{#2}%
6357       |endgroup
6358       |let#1|Hy@gtemp
6359       |@onelevel@sanitize#1%
6360       |edef#1{|expandafter|Hy@ExchangeBackslash#1|@nil}%
6361       |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
6362       |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
6363     }%
6364     |def|Hy@ExchangeBackslash#1\#2|@nil{%
6365       #1%
6366       |ifx|\#2|\%
6367       |else
6368         \| %
6369         |Hy@ReturnAfterFi{%
6370           |Hy@ExchangeBackslash#2|@nil
6371         }%
6372       |fi
6373     }%
6374   }%
6375 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
6376   #1%
6377   \ifx\#2\%
6378   \else
6379     \@backslashchar(%
6380     \Hy@ReturnAfterFi{%
6381       \Hy@ExchangeLeftParenthesis#2\@nil
6382     }%

```

```

6383 \fi
6384 }%
6385 \def\Hy@ExchangeRightParenthesis#1#2\@nil{%
6386 #1%
6387 \ifx\#2\%
6388 \else
6389 \@backslashchar)%
6390 \Hy@ReturnAfterFi{%
6391 \Hy@ExchangeRightParenthesis#2\@nil
6392 }%
6393 \fi
6394 }%
6395 \else
6396 \def\Hy@pstringdef#1#2{%
6397 \begingroup
6398 \edef~{\string~}%
6399 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
6400 \endgroup
6401 \let#1\Hy@gtemp
6402 }%
6403 \fi
6404 </pdfTeX | dvipdfm | vtex | pdfmarkbase | dviwindo>

```

46.2 pdfTeX

```

6405 <*pdfTeX>

```

This driver is for Han The Thanh's T_EX 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_EX 1.10a, 2003-01-16: `\pdfoptionpdfminorversion`
- pdfT_EX 1.30, 2005-08-081: `\pdfminorversion`

```

6406 \let\Hy@pdfminorversion\relax
6407 \begingroup\expandafter\expandafter\expandafter\endgroup
6408 \expandafter\ifx\csname pdfminorversion\endcsname\relax
6409 \begingroup\expandafter\expandafter\expandafter\endgroup
6410 \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
6411 \else
6412 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
6413 \fi
6414 \else
6415 \def\Hy@pdfminorversion{\pdfminorversion}%
6416 \fi
6417 \@ifundefined{Hy@pdfminorversion}{%
6418 \PackageInfo{hyperref}{%
6419 PDF version is not set, because pdfTeX is too old (<1.10a)%
6420 }%
6421 }{%
6422 \ifHy@setpdfversion
6423 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
6424 \else
6425 \Hy@pdfminorversion=\Hy@pdfversion\relax
6426 \fi
6427 \PackageInfo{hyperref}{%
6428 \expandafter\string\Hy@pdfminorversion

```

```

6429      :=\number\Hy@pdfversion\space
6430    }%
6431  \fi
6432  \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
6433  \Hy@DisableOption{pdfversion}%
6434 }

```

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

```

6435 \def\setpdflinkmargin#1{\pdflinkmargin#1}
6436 \ifx\pdfstartlink\undefined% less than version 14
6437   \let\pdfstartlink\pdfannotlink
6438   \let\pdflinkmargin\@tempdima
6439   \let\pdfxform\pdfform
6440   \let\pdflastxform\pdflastform
6441   \let\pdfrefxform\pdfrefform
6442 \else
6443   \pdflinkmargin1pt %
6444 \fi

```

First set up the default linking

```

6445 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

6446 \def\new@pdflink#1{%
6447   \ifHy@verbose
6448     \typeout{pdftex: define anchor at line \the\inputlineno: #1}%
6449   \fi
6450   \Hy@SaveLastskip
6451   \Hy@pstringdef\Hy@pstringDest{#1}%
6452   \Hy@DestName\Hy@pstringDest\@pdfview
6453   \Hy@RestoreLastskip
6454 }
6455 \let\pdf@endanchor\@empty

```

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

```

6456 \def\Hy@DestName#1#2{%
6457   \pdfdest name{#1}#2\relax
6458 }

```

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.

```

6459 \providecommand*\@pdfborder{0 0 1}
6460 \providecommand*\@pdfborderstyle{}
6461 \def\Hy@undefinedname{UNDEFINED}
6462 \def\find@pdflink#1#2{%
6463   \leavevmode
6464   \protected@edef\Hy@testname{#2}%
6465   \ifx\Hy@testname\@empty
6466     \let\Hy@testname\Hy@undefinedname
6467   \else
6468     \Hy@pstringdef\Hy@testname\Hy@testname
6469   \fi
6470   \Hy@StartlinkName{%
6471     \Hy@setpdfborder
6472     \ifx\@pdfhighlight\@empty

```

```

6473     \else
6474         /H\@pdfhighlight
6475     \fi
6476     \ifx\CurrentBorderColor\relax
6477     \else
6478         /C[\CurrentBorderColor]%
6479     \fi
6480 } \Hy@testname
6481 \expandafter\Hy@colorlink\csname @#1color\endcsname
6482 }
6483 \def\Hy@StartlinkName#1#2{%
6484     \pdfstartlink attr{#1}goto name{#2}\relax
6485 }
6486 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
6487 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
6488 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
6489 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
6490 \def\hyper@linkstart#1#2{%
6491     \ifundefined{@#1bordercolor}{%
6492         \let\CurrentBorderColor\relax
6493     }{%
6494         \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6495     }%
6496     \find@pdflink{#1}{#2}%
6497 }
6498 \def\hyper@linkend{\close@pdflink}
6499 \def\hyper@link#1#2#3{%
6500     \ifundefined{@#1bordercolor}{%
6501         \let\CurrentBorderColor\relax
6502     }{%
6503         \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6504     }%
6505     \find@pdflink{#1}{#2}#3\close@pdflink
6506 }
6507 \let\CurrentBorderColor\@linkbordercolor
6508 \def\hyper@linkurl#1#2{%
6509     \begingroup
6510         \Hy@pstringdef\Hy@pstringURI{#2}%
6511         \hyper@chars
6512         \leavevmode
6513         \pdfstartlink
6514             attr{%
6515                 \Hy@setpdfborder
6516                 \ifx\@pdfhighlight\@empty
6517                     \else
6518                         /H\@pdfhighlight
6519                     \fi
6520                 \ifx\@urlbordercolor\relax
6521                     \else
6522                         /C[\@urlbordercolor]%
6523                     \fi
6524                 }%
6525             user{%
6526                 /Subtype/Link%
6527                 /A<<%
6528                 /Type/Action%
6529                 /S/URI%

```

```

6530      /URI(\Hy@pstringURI)%
6531      >>%
6532    }%
6533    \relax
6534    \Hy@colorlink\@urlcolor#1%
6535    \close@pdflink
6536  \endgroup
6537 }
6538 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
6539  \begingroup
6540    \Hy@pstringdef\Hy@pstringF{#2}%
6541    \Hy@pstringdef\Hy@pstringD{#3}%
6542    \leavevmode
6543    \pdfstartlink
6544    attr{%
6545      \Hy@setpdfborder
6546      \ifx\@pdfhighlight\@empty
6547      \else
6548        /H\@pdfhighlight
6549      \fi
6550      \ifx\@filebordercolor\relax
6551      \else
6552        /C[\@filebordercolor]%
6553      \fi
6554    }%
6555    user {%
6556      /Subtype/Link%
6557      /A<<%
6558      /F(\Hy@pstringF)%
6559      /S/GoToR%
6560      \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}

```

```

6561      \ifx\#3\%
6562      /D[0 \pdfstartview]%
6563    \else
6564      /D(\Hy@pstringD)%
6565    \fi
6566    >>%
6567  }%
6568  \relax
6569  \Hy@colorlink\@filecolor#1%
6570  \close@pdflink
6571 \endgroup
6572 }
6573 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
6574  \begingroup
6575    \Hy@pstringdef\Hy@pstringF{#1}%

```

```

6576 \Hy@pstringdef\Hy@pstringP{#3}%
6577 \leavevmode
6578 \pdfstartlink
6579 attr{%
6580   \Hy@setpdfborder
6581   \ifx\@pdfhighlight\@empty
6582   \else
6583     /H\@pdfhighlight
6584   \fi
6585   \ifx\@runbordercolor\relax
6586   \else
6587     /C[\@runbordercolor]%
6588   \fi
6589 }%
6590 user {%
6591   /Subtype/Link%
6592   /A<<%
6593     /F(\Hy@pstringF)%
6594     /S/Launch%
6595     \Hy@SetNewWindow
6596     \ifx\#3\%
6597     \else
6598       /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
6599     \fi
6600   >>%
6601 }%
6602 \relax
6603 \Hy@colorlink\@runcolor#2%
6604 \close@pdflink
6605 \endgroup
6606 }

```

\@pdfproducer

```

6607 \ifx\@pdfproducer\relax
6608 \begin{group}\expandafter\expandafter\expandafter\endgroup
6609 \expandafter\ifx\csname luatexversion\endcsname\relax
6610   \def\@pdfproducer{pdfTeX}%
6611   \ifx\@eTeXversion\@undefined
6612   \else
6613     \ifx\@eTeXversion\relax
6614     \else
6615       \ifnum\@eTeXversion>0 %
6616       \def\@pdfproducer{pdfTeX}%
6617     \fi
6618   \fi
6619 \fi
6620 \ifx\pdfTeXversion\@undefined
6621 \else
6622   \ifnum\pdfTeXversion<100 %
6623   \edef\@pdfproducer{%
6624     \@pdfproducer
6625     \the\pdfTeXversion.\pdfTeXrevision
6626   }%
6627 \else
6628   \ifnum\pdfTeXversion<130 %
6629   \edef\@pdfproducer{%
6630     \@pdfproducer-

```

```

6631         \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
6632         \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
6633         \pdfTeXrevision
6634     }%
6635 \else
6636     \ifnum\pdfTeXversion<140 %
6637     \else
6638         \def\@pdfproducer{pdfTeX}%
6639     \fi
6640     \edef\@pdfproducer{%
6641         \@pdfproducer-%
6642         \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
6643         \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
6644         \pdfTeXrevision
6645     }%
6646 \fi
6647 \fi
6648 \fi
6649 \else
6650     \begingroup
6651         \count@=\luatexversion
6652         \divide\count@ by 100 %
6653         \edef\x{\the\count@}%
6654         \count@=-\x\relax
6655         \multiply\count@ by 100 %
6656         \advance\count@ by \luatexversion
6657         \edef\x{\endgroup
6658             \def\noexpand\@pdfproducer{%
6659                 LuaTeX-\x.\the\count@.\luatexrevision
6660             }%
6661         }%
6662     \x
6663 \fi
6664 \fi

```

\PDF@SetupDox

```

6665 \def\PDF@SetupDoc{%
6666     \ifx\@pdfpagescrop\@empty
6667     \else
6668         \edef\process@me{%
6669             \pdfpagesattr={%
6670                 /CropBox[\@pdfpagescrop]%
6671                 \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
6672                 \else
6673                     ^^J\the\pdfpagesattr
6674                 \fi
6675             }%
6676         }%
6677         \process@me
6678     \fi
6679     \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6680     \pdfcatalog{%
6681         /PageMode/\@pdfpagemode
6682         \ifx\@baseurl\@empty
6683         \else
6684             /URI<</Base(\Hy@pstringB)>>%
6685         \fi

```

```

6686 }%
6687 \ifx\@pdfstartpage\@empty
6688 \else
6689 \ifx\@pdfstartview\@empty
6690 \else
6691 openaction goto page\@pdfstartpage{\@pdfstartview}%
6692 \fi
6693 \fi
6694 \edef\Hy@temp{%
6695 \ifHy@toolbar\else /HideToolbar true\fi
6696 \ifHy@menubar\else /HideMenubar true\fi
6697 \ifHy>windowui\else /HideWindowUI true\fi
6698 \ifHy@fitwindow /FitWindow true\fi
6699 \ifHy@centerwindow /CenterWindow true\fi
6700 \ifHy@displaydoctitle /DisplayDocTitle true\fi
6701 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
6702 \Hy@UseNameKey{Direction}\@pdfdirection
6703 \Hy@UseNameKey{ViewArea}\@pdfviewarea
6704 \Hy@UseNameKey{ViewClip}\@pdfviewclip
6705 \Hy@UseNameKey{PrintArea}\@pdfprintarea
6706 \Hy@UseNameKey{PrintClip}\@pdfprintclip
6707 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6708 \Hy@UseNameKey{Duplex}\@pdfduplex
6709 \ifx\@pdfpicktraybypdfsize\@empty
6710 \else
6711 /PickTrayByPDFSize \@pdfpicktraybypdfsize
6712 \fi
6713 \ifx\@pdfprintpagerange\@empty
6714 \else
6715 /PrintPageRange[\@pdfprintpagerange]%
6716 \fi
6717 \ifx\@pdfnumcopies\@empty
6718 \else
6719 /NumCopies \@pdfnumcopies
6720 \fi
6721 }%
6722 \pdfcatalog{%
6723 \ifx\Hy@temp\@empty
6724 \else
6725 /ViewerPreferences<<\Hy@temp>>%
6726 \fi
6727 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
6728 \ifx\@pdflang\@empty
6729 \else
6730 /Lang(\@pdflang)%
6731 \fi
6732 }%
6733 }

```

\PDF@FinishDoc

```

6734 \def\PDF@FinishDoc{%
6735 \Hy@UseMaketitleInfos
6736 \pdfinfo{%
6737 /Author(\@pdfauthor)%
6738 /Title(\@pdftitle)%
6739 /Subject(\@pdfsubject)%
6740 /Creator(\@pdfcreator)%

```

```

6741 \ifx\@pdfcreationdate\@empty
6742 \else
6743 /CreationDate(\@pdfcreationdate)%
6744 \fi
6745 \ifx\@pdfmoddate\@empty
6746 \else
6747 /ModDate(\@pdfmoddate)%
6748 \fi
6749 \ifx\@pdfproducer\relax
6750 \else
6751 /Producer(\@pdfproducer)%
6752 \fi
6753 /Keywords(\@pdfkeywords)%
6754 }%
6755 \Hy@DisableOption{pdfauthor}%
6756 \Hy@DisableOption{pdftitle}%
6757 \Hy@DisableOption{pdfsubject}%
6758 \Hy@DisableOption{pdfcreator}%
6759 \Hy@DisableOption{pdfcreationdate}%
6760 \Hy@DisableOption{pdfmoddate}%
6761 \Hy@DisableOption{pdfproducer}%
6762 \Hy@DisableOption{pdfkeywords}%
6763 }

```

`\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`.

```

6764 \def\hyper@pagetransition{%
6765 \ifx\@pdfpagetransition\relax
6766 \else
6767 \expandafter\Hy@RemoveTransPageAttr
6768 \the\pdfpageattr^^J/Trans{>>\END
6769 \ifx\@pdfpagetransition\@empty
6770 \else
6771 \edef\@processme{%
6772 \global\pdfpageattr{%
6773 \the\pdfpageattr
6774 ^^J/Trans << /S /\@pdfpagetransition\space >>%
6775 }%
6776 }%
6777 \@processme
6778 \fi
6779 \fi
6780 }

```

`\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.

```

6781 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
6782 \ifx\#2\%
6783 \global\pdfpageattr{#1}%
6784 \else
6785 \Hy@RemoveTransPageAttr#1#4\END
6786 \fi
6787 }

```

`\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`.

```

6788 \def\hyper@pageduration{%
6789   \ifx\@pdfpageduration\relax
6790   \else
6791     \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
6792     \ifx\@pdfpageduration\@empty
6793     \else
6794       \edef\@processme{%
6795         \global\pdfpageattr{%
6796           \the\pdfpageattr
6797             ^^J/Dur \@pdfpageduration\space
6798         }%
6799       }%
6800       \@processme
6801     \fi
6802   \fi
6803 }

```

`\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.

```

6804 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
6805   \ifx\#2\%
6806     \global\pdfpageattr{#1}%
6807   \else
6808     \Hy@RemoveDurPageAttr#1#4\END
6809   \fi
6810 }

```

`\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).

```

6811 \def\hyper@pagehidden{%
6812   \ifHy@useHidKey
6813     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
6814     \ifHy@pdfpagehidden
6815     \edef\@processme{%
6816       \global\pdfpageattr{%
6817         \the\pdfpageattr
6818           ^^J/Hid true % SPACE
6819       }%
6820     }%
6821     \@processme
6822   \fi
6823 \fi
6824 }

```

`\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.

```

6825 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
6826   \ifx\#2\%

```

```

6827 \global\pdfpageattr{#1}%
6828 \else
6829 \Hy@RemoveHidPageAttr#1#4\END
6830 \fi
6831 }

```

```

6832 \g@addto@macro\Hy@EveryPageHook{%
6833 \hyper@pagetransition
6834 \hyper@pageduration
6835 \hyper@pagehidden
6836 }

```

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.

```

6837 \pdfoutput=1
6838 \pdfcompresslevel=9
6839 \AtBeginDocument{%
6840 \ifHy@setpagesize
6841 \expandafter\@firstofone
6842 \else
6843 \expandafter\@gobble
6844 \fi
6845 {%
6846 \@ifclassloaded{seminar}{%
6847 \setlength{\pdfhorigin}{1truein}%
6848 \setlength{\pdfvorigin}{1truein}%
6849 \ifportrait
6850 \ifdim\paperwidth=\z@
6851 \else
6852 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
6853 \fi
6854 \ifdim\paperheight=\z@
6855 \else
6856 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
6857 \fi
6858 \else
6859 \ifdim\paperheight=\z@
6860 \else
6861 \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
6862 \fi
6863 \ifdim\paperwidth=\z@
6864 \else
6865 \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
6866 \fi
6867 \fi
6868 }{%
6869 \@ifundefined{stockwidth}{%
6870 \ifdim\paperwidth=\z@
6871 \else
6872 \setlength{\pdfpagewidth}{\paperwidth}%
6873 \fi
6874 \ifdim\paperheight=\z@
6875 \else
6876 \setlength{\pdfpageheight}{\paperheight}%
6877 \fi
6878 }{%
6879 \ifdim\stockwidth=\z@
6880 \else

```

```

6881         \setlength{\pdfpagewidth}{\stockwidth}%
6882     \fi
6883     \ifdim\stockheight=\z@
6884     \else
6885         \setlength{\pdfpageheight}{\stockheight}%
6886     \fi
6887 }%
6888 }%
6889 }%
6890 \Hy@DisableOption{setpagesize}%
6891 }
6892 \def\Acrobatmenu#1#2{%
6893     \leavevmode
6894     \pdfstartlink
6895     attr{%
6896         \Hy@setpdfborder
6897         \ifx\@pdfhighlight\@empty
6898         \else
6899             /H\@pdfhighlight
6900         \fi
6901         \ifx\@menubordercolor\relax
6902         \else
6903             /C[\@menubordercolor]%
6904         \fi
6905     }%
6906     user{%
6907         /Subtype/Link%
6908         /A<<%
6909             /S/Named/N/#1%
6910         >>%
6911     }%
6912     \relax
6913     \Hy@colorlink\@menucolor#2\close@pdflink
6914 }
6915 </pdfTeX>
6916 <*hypertex>

```

46.3 hypertex

The HyperTeX specification (this is borrowed from an article by Arthur Smith) says that conformant viewers/translators must recognize the following set of `\special` commands:

href: `html:`

name: `html:`

end: `html:`

image: `html:`

base_name: `html:<base href = "href_string">`

The *href*, *name* and *end* commands are used to do the basic hypertext operations of establishing links between sections of documents. The *image* command is intended (as with current html viewers) to place an image of arbitrary graphical format on the page in the current location. The *base_name* command is be used to communicate to the *dvi*

viewer the full (URL) location of the current document so that files specified by relative URL's may be retrieved correctly.

The *href* and *name* commands must be paired with an *end* command later in the T_EX file — the T_EX 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.

```

6917 \def\PDF@FinishDoc{}
6918 \def\PDF@SetupDoc{%
6919   \ifx\@baseurl\@empty
6920   \else
6921     \special{html:<base href="\@baseurl">}%
6922   \fi
6923 }
6924 \def\hyper@anchor#1{%
6925   \Hy@SaveLastskip
6926   \begingroup
6927     \let\protect=\string
6928     \hyper@chars
6929     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
6930   \endgroup
6931   \Hy@activeanchortrue
6932   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6933   \special{html:</a>}%
6934   \Hy@activeanchorfalse
6935   \Hy@RestoreLastskip
6936 }
6937 \def\hyper@anchorstart#1{%
6938   \Hy@SaveLastskip
6939   \begingroup
6940     \hyper@chars
6941     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
6942   \endgroup
6943   \Hy@activeanchortrue
6944 }
6945 \def\hyper@anchorend{%
6946   \special{html:</a>}%
6947   \Hy@activeanchorfalse
6948   \Hy@RestoreLastskip
6949 }
6950 \def\@urltype{url}
6951 \def\hyper@linkstart#1#2{%
6952   \expandafter\Hy@colorlink\csname @#1color\endcsname
6953   \def\Hy@tempa{#1}%
6954   \ifx\Hy@tempa\@urltype
6955     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
6956   \else
6957     \begingroup
6958       \hyper@chars
6959       \special{html:<a href=\hyper@quote\##2\hyper@quote>}%

```

```

6960 \endgroup
6961 \fi
6962 }
6963 \def\hyper@linkend{%
6964 \special{html:</a>}}%
6965 \Hy@endcolorlink
6966 }
6967 \def\hyper@linkfile#1#2#3{%
6968 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
6969 }
6970 \def\hyper@linkurl#1#2{%

```

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

```

6971 \leavevmode
6972 \ifHy@raiselinks
6973 \setbox\@tempboxa=\color@hbox #1\color@endbox
6974 \@linkdim\dp\@tempboxa
6975 \lower\@linkdim\hbox{%
6976 \hyper@chars
6977 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
6978 }%
6979 \Hy@colorlink\@urlcolor#1%
6980 \@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).

```

6981 \advance\@linkdim by -6.5\p@
6982 \raise\@linkdim\hbox{\special{html:</a>}}%
6983 \Hy@endcolorlink
6984 \else
6985 \begingroup
6986 \hyper@chars
6987 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
6988 \Hy@colorlink\@urlcolor#1%
6989 \special{html:</a>}}%
6990 \Hy@endcolorlink
6991 \endgroup
6992 \fi
6993 }
6994 \def\hyper@link#1#2#3{%
6995 \hyper@linkurl{#3}{\##2}%
6996 }
6997 \def\hyper@image#1#2{%
6998 \begingroup
6999 \hyper@chars
7000 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
7001 \endgroup
7002 }
7003 </hypertex>
7004 <*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.

```
7005 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
7006 \def\hyper@anchor#1{%
7007   \Hy@SaveLastskip
7008   \begingroup
7009     \let\protect=\string
7010     \special{mark: #1}%
7011   \endgroup
7012   \Hy@activeanchortrue
7013   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7014   \Hy@activeanchorfalse
7015   \Hy@RestoreLastskip
7016 }
7017 \def\hyper@anchorstart#1{%
7018   \Hy@SaveLastskip
7019   \special{mark: #1}%
7020   \Hy@activeanchortrue
7021 }
7022 \def\hyper@anchorend{%
7023   \Hy@activeanchorfalse
7024   \Hy@RestoreLastskip
7025 }
7026 \def\hyper@linkstart#1#2{%
7027   \expandafter\Hy@colorlink\csname @#1color\endcsname
7028   \special{button: %
7029     10000000 %
7030     \number\baselineskip\space
7031     #2%
7032   }%
7033 }
7034 \def\hyper@linkend{%
7035   \Hy@endcolorlink
7036 }
7037 \def\hyper@link#1#2#3{%
7038   \setbox\@tempboxa=\color@hbox #3\color@endbox
7039   \leavevmode
7040   \ifHy@raiselinks
7041     \@linkdim\dp\@tempboxa
7042     \lower\@linkdim\hbox{%
7043       \special{button: %
7044         \number\wd\@tempboxa\space
7045         \number\ht\@tempboxa\space
7046         #2%
7047       }%
7048     \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
7049     \Hy@endcolorlink
```

```

7050 }%
7051 \@linkdim\ht\@tempboxa
7052 \advance\@linkdim by -6.5\p@
7053 \raise\@linkdim\hbox{}%
7054 \else
7055 \special{button: %
7056 \number\wd\@tempboxa\space
7057 \number\ht\@tempboxa\space
7058 #2%
7059 }%
7060 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
7061 \Hy@endcolorlink
7062 \fi
7063 }
7064 \def\hyper@linkurl#1#2{%
7065 \begingroup
7066 \hyper@chars
7067 \leavevmode
7068 \setbox\@tempboxa=\color@hbox #1\color@endbox
7069 \ifHy@raiselinks
7070 \@linkdim\dp\@tempboxa
7071 \lower\@linkdim\hbox{%
7072 \special{button: %
7073 \number\wd\@tempboxa\space
7074 \number\ht\@tempboxa\space
7075 launch: \wwwbrowser\space
7076 #2%
7077 }%
7078 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7079 }%
7080 \@linkdim\ht\@tempboxa
7081 \advance\@linkdim by -6.5\p@
7082 \raise\@linkdim\hbox{}%
7083 \else
7084 \special{button: %
7085 \number\wd\@tempboxa\space
7086 \number\ht\@tempboxa\space
7087 launch: \wwwbrowser\space
7088 #2%
7089 }%
7090 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7091 \fi
7092 \endgroup
7093 }
7094 \def\hyper@linkfile#1#2#3{%
7095 \begingroup
7096 \hyper@chars
7097 \leavevmode
7098 \setbox\@tempboxa=\color@hbox #1\color@endbox
7099 \ifHy@raiselinks
7100 \@linkdim\dp\@tempboxa
7101 \lower\@linkdim\hbox{%
7102 \special{button: %
7103 \number\wd\@tempboxa\space
7104 \number\ht\@tempboxa\space
7105 #3,%
7106 file: #2%

```

```

7107         }%
7108         \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7109     }%
7110     \@linkdim\ht\@tempboxa
7111     \advance\@linkdim by -6.5\p@
7112     \raise\@linkdim\hbox{}%
7113 \else
7114     \special{button: %
7115         \number\wd\@tempboxa\space
7116         \number\ht\@tempboxa\space
7117         #3,%
7118         file: #2%
7119     }%
7120     \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7121 \fi
7122 \endgroup
7123 }
7124 \ifx\@pdfproducer\relax
7125 \def\@pdfproducer{dviwindo + Distiller}%
7126 \fi
7127 \def\PDF@FinishDoc{%
7128 \Hy@UseMaketitleInfos
7129 \special{PDF: Keywords \@pdfkeywords}%
7130 \special{PDF: Title \@pdftitle}%
7131 \special{PDF: Creator \@pdfcreator}%
7132 \ifx\@pdfcreationdate\@empty
7133 \else
7134     \special{PDF: CreationDate \@pdfcreationdate}%
7135 \fi
7136 \ifx\@pdfmoddate\@empty
7137 \else
7138     \special{PDF: ModDate \@pdfmoddate}%
7139 \fi
7140 \special{PDF: Author \@pdfauthor}%
7141 \ifx\@pdfproducer\relax
7142 \else
7143     \special{PDF: Producer \@pdfproducer}%
7144 \fi
7145 \special{PDF: Subject \@pdfsubject}%
7146 \Hy@DisableOption{pdfauthor}%
7147 \Hy@DisableOption{pdftitle}%
7148 \Hy@DisableOption{pdfsubject}%
7149 \Hy@DisableOption{pdfcreator}%
7150 \Hy@DisableOption{pdfcreationdate}%
7151 \Hy@DisableOption{pdfmoddate}%
7152 \Hy@DisableOption{pdfproducer}%
7153 \Hy@DisableOption{pdfkeywords}%
7154 }
7155 \def\PDF@SetupDoc{%
7156 \ifx\@baseurl\@empty
7157 \else
7158     \special{PDF: Base \@baseurl}%
7159 \fi
7160 \ifx\@pdfpagescrop\@empty\else
7161     \special{PDF: BBox \@pdfpagescrop}%
7162 \fi
7163 \def\Hy@temp{}%

```

```

7164 \ifx\@pdfstartpage\@empty
7165 \else
7166 \ifx\@pdfstartview\@empty
7167 \else
7168 \edef\Hy@temp{%
7169 ,Page=\@pdfstartpage
7170 ,View=\@pdfstartview
7171 }%
7172 \fi
7173 \fi
7174 \edef\Hy@temp{%
7175 \noexpand\pdfmark{%
7176 pdfmark=/DOCVIEW,%
7177 PageMode=/\@pdfpagemode
7178 \Hy@temp
7179 }%
7180 }%
7181 \Hy@temp
7182 \ifx\@pdfpagescrop\@empty
7183 \else
7184 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7185 \fi
7186 \edef\Hy@temp{%
7187 \ifHy@toolbar\else /HideToolbar true\fi
7188 \ifHy@menubar\else /HideMenubar true\fi
7189 \ifHy>windowui\else /HideWindowUI true\fi
7190 \ifHy@fitwindow /FitWindow true\fi
7191 \ifHy@centerwindow /CenterWindow true\fi
7192 \ifHy@displaydoctitle /DisplayDocTitle true\fi
7193 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7194 \Hy@UseNameKey{Direction}\@pdfdirection
7195 \Hy@UseNameKey{ViewArea}\@pdfviewarea
7196 \Hy@UseNameKey{ViewClip}\@pdfviewclip
7197 \Hy@UseNameKey{PrintArea}\@pdfprintarea
7198 \Hy@UseNameKey{PrintClip}\@pdfprintclip
7199 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7200 \Hy@UseNameKey{Duplex}\@pdfduplex
7201 \ifx\@pdfpicktraybypdfsize\@empty
7202 \else
7203 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7204 \fi
7205 \ifx\@pdfprintpagerange\@empty
7206 \else
7207 /PrintPageRange[\@pdfprintpagerange]%
7208 \fi
7209 \ifx\@pdfnumcopies\@empty
7210 \else
7211 /NumCopies \@pdfnumcopies
7212 \fi
7213 }%
7214 \pdfmark{pdfmark=/PUT,%
7215 Raw={%
7216 \string{Catalog\string}<<%
7217 \ifx\Hy@temp\@empty
7218 \else
7219 /ViewerPreferences<<\Hy@temp>>%
7220 \fi

```

```

7221      \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7222      \ifx\@pdflang\@empty
7223      \else
7224      /Lang(\@pdflang)%
7225      \fi
7226      >>%
7227  }%
7228 }%
7229 }
7230 </dviwindo>
7231 <*dvi pdfm>

```

46.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

7232 \newsavebox{\pdfm@box}
7233 \def\@pdfm@mark#1{\special{pdf:#1}}
7234 \def\@pdfm@dest#1{%
7235   \Hy@SaveLastskip
7236   \beginingroup
7237   \Hy@pstringdef\Hy@pstringDest{#1}%
7238   \def\x{XYZ}%
7239   \ifx\x\@pdfview
7240     \def\x{XYZ @xpos @ypos null}%
7241   \else
7242     \def\x{FitH}%
7243     \ifx\x\@pdfview
7244       \def\x{FitH @ypos}%
7245     \else
7246       \def\x{FitBH}%
7247       \ifx\x\@pdfview
7248         \def\x{FitBH @ypos}%
7249       \else
7250         \def\x{FitV}%
7251         \ifx\x\@pdfview
7252           \def\x{FitV @xpos}%
7253         \else
7254           \def\x{FitBV}%
7255           \ifx\x\@pdfview
7256             \def\x{FitBV @xpos}%
7257           \else
7258             \def\x{Fit}%
7259             \ifx\x\@pdfview
7260               \let\x\@pdfview
7261             \else
7262               \def\x{FitB}%
7263               \ifx\x\@pdfview
7264                 \let\x\@pdfview
7265               \else
7266                 \def\x{FitR}%
7267                 \ifx\x\@pdfview
7268                   \Hy@Warning{'pdfview=FitR' is not supported}%
7269                   \def\x{XYZ @xpos @ypos null}%
7270                 \else
7271                   \onelevel@sanitize\@pdfview
7272                   \Hy@Warning{Unknown value '\@pdfview' for pdfview}%
7273                   \def\x{XYZ @xpos @ypos null}%

```

```

7274             \fi
7275         \fi
7276     \fi
7277 \fi
7278 \fi
7279 \fi
7280 \fi
7281 \fi
7282 \pdfmark{dest (\Hy@pstringDest) [@thispage /\x]]}%
7283 \endgroup
7284 \Hy@RestoreLastskip
7285 }
7286 \providecommand*\pdfview{XYZ}
7287 \providecommand*\pdfborder{0 0 1}
7288 \providecommand*\pdfborderstyle{}
7289 \def\hyper@anchor#1{%
7290     \pdfmark{dest{#1}}%
7291 }
7292 \def\hyper@anchorstart#1{%
7293     \Hy@activeanchortrue
7294     \pdfmark{dest{#1}}%
7295 }
7296 \def\hyper@anchorend{%
7297     \Hy@activeanchorfalse
7298 }
7299 \def\Hy@undefinedname{UNDEFINED}
7300 \def\hyper@linkstart#1#2{%
7301     \protected@edef\Hy@testname{#2}%
7302     \ifx\Hy@testname\empty
7303         \let\Hy@testname\Hy@undefinedname
7304     \else
7305         \Hy@pstringdef\Hy@testname\Hy@testname
7306     \fi
7307     \pdfmark{%
7308         bann<<%
7309             /Type/Annot%
7310             /Subtype/Link%
7311             \Hy@setpdfborder
7312             \expandafter\ifx\csname @#1bordercolor\endcsname\relax
7313             \else
7314                 /C[\csname @#1bordercolor\endcsname]%
7315             \fi
7316             /A<<%
7317             /S/GoTo%
7318             /D(\Hy@testname)%
7319             >>%
7320         >>%
7321     }%
7322     \expandafter\Hy@colorlink\csname @#1color\endcsname
7323 }
7324 \def\hyper@linkend{%
7325     \Hy@endcolorlink
7326     \pdfmark{eann}%
7327 }
7328 \def\hyper@link#1#2#3{%
7329     \hyper@linkstart{#1}{#2}#3\hyper@linkend
7330 }

```

```

7331 \def\hyper@linkfile#1#2#3{%
7332   \Hy@pstringdef\Hy@pstringF{#2}%
7333   \Hy@pstringdef\Hy@pstringD{#3}%
7334   \leavevmode
7335   \@pdfm@mark{%
7336     bann<<%
7337     /Type/Annot%
7338     /Subtype/Link%
7339     \Hy@setpdfborder
7340     \ifx\@filebordercolor\relax
7341     \else
7342       /C[\@filebordercolor]%
7343     \fi
7344     /A<<%
7345     /S/GoToR%
7346     /F(\Hy@pstringF)%
7347     /D\ifx\@#3\@0 \@pdfstartview\else(\Hy@pstringD)\fi
7348     \Hy@SetNewWindow
7349     >>%
7350     >>%
7351   }%
7352   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7353   \@pdfm@mark{eann}%
7354 }
7355 \def\@hyper@launch run:#1\@#2#3{% filename, anchor text linkname
7356   \Hy@pstringdef\Hy@pstringF{#1}%
7357   \Hy@pstringdef\Hy@pstringP{#3}%
7358   \leavevmode
7359   \@pdfm@mark{%
7360     bann<<%
7361     /Type/Annot%
7362     /Subtype/Link%
7363     \Hy@setpdfborder
7364     \ifx\@runbordercolor\relax
7365     \else
7366       /C[\@runbordercolor]%
7367     \fi
7368     /A<<%
7369     /S/Launch%
7370     /F(\Hy@pstringF)%
7371     \Hy@SetNewWindow
7372     \ifx\@#3\@%
7373     \else
7374       /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
7375     \fi
7376     >>%
7377     >>%
7378   }%
7379   \Hy@colorlink\@runcolor#2\Hy@endcolorlink
7380   \@pdfm@mark{eann}%
7381 }
7382 \def\hyper@linkurl#1#2{%
7383   \Hy@pstringdef\Hy@pstringURI{#2}%
7384   \leavevmode
7385   \@pdfm@mark{%
7386     bann<<%
7387     /Type/Annot%

```

```

7388     /Subtype/Link%
7389     \Hy@setpdfborder
7390     \ifx\@urlbordercolor\relax
7391     \else
7392         /C[\@urlbordercolor]%
7393     \fi
7394     /A<<%
7395     /S/URI%
7396     /URI(\Hy@pstringURI)%
7397     >>%
7398     >>%
7399 }%
7400 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7401 \@pdfm@mark{eann}%
7402 }
7403 \def\Acrobatmenu#1#2{%
7404     \leavevmode
7405     \@pdfm@mark{%
7406         bann<<%
7407         /Type/Annot%
7408         /Subtype/Link%
7409         /A<<%
7410         /S/Named%
7411         /N/#1%
7412         >>%
7413         \Hy@setpdfborder
7414         \ifx\@menubordercolor\relax
7415         \relax
7416         /C[\@menubordercolor]%
7417     \fi
7418     >>%
7419 }%
7420 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
7421 \@pdfm@mark{eann}%
7422 }
7423 \ifx\@pdfproducer\relax
7424 \def\@pdfproducer{dvipdfm}%

```

Detect XeTeX. However, but xdvipdfmx will overwrite it in the final PDF file.

```

7425 \begingroup\expandafter\expandafter\expandafter\endgroup
7426 \expandafter\ifx\csname XeTeXversion\endcsname\relax
7427 \else
7428     \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
7429 \fi
7430 \fi
7431 \def\PDF@FinishDoc{%
7432     \Hy@UseMaketitleInfos
7433     \@pdfm@mark{%
7434         docinfo<<%
7435         /Title(\@pdftitle)%
7436         /Subject(\@pdfsubject)%
7437         /Creator(\@pdfcreator)%
7438         \ifx\@pdfcreationdate\@empty
7439         \else
7440             /CreationDate(\@pdfcreationdate)%
7441         \fi
7442         \ifx\@pdfmoddate\@empty
7443         \else

```

```

7444         /ModDate(\@pdfmoddate)%
7445     \fi
7446     /Author(\@pdfauthor)%
7447     \ifx\@pdfproducer\relax
7448     \else
7449         /Producer(\@pdfproducer)%
7450     \fi
7451     /Keywords(\@pdfkeywords)%
7452     >>%
7453 }%
7454 \Hy@DisableOption{pdfauthor}%
7455 \Hy@DisableOption{pdftitle}%
7456 \Hy@DisableOption{pdfsubject}%
7457 \Hy@DisableOption{pdfcreator}%
7458 \Hy@DisableOption{pdfcreationdate}%
7459 \Hy@DisableOption{pdfmoddate}%
7460 \Hy@DisableOption{pdfproducer}%
7461 \Hy@DisableOption{pdfkeywords}%
7462 }

7463 \def\PDF@SetupDoc{%
7464     \edef\Hy@temp{%
7465         \ifHy@toolbar\else /HideToolbar true\fi
7466         \ifHy@menubar\else /HideMenubar true\fi
7467         \ifHy@windowui\else /HideWindowUI true\fi
7468         \ifHy@fitwindow /FitWindow true\fi
7469         \ifHy@centerwindow /CenterWindow true\fi
7470         \ifHy@displaydoctitle /DisplayDocTitle true\fi
7471         \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7472         \Hy@UseNameKey{Direction}\@pdfdirection
7473         \Hy@UseNameKey{ViewArea}\@pdfviewarea
7474         \Hy@UseNameKey{ViewClip}\@pdfviewclip
7475         \Hy@UseNameKey{PrintArea}\@pdfprintarea
7476         \Hy@UseNameKey{PrintClip}\@pdfprintclip
7477         \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7478         \Hy@UseNameKey{Duplex}\@pdfduplex
7479         \ifx\@pdfpicktraybypdfsize\@empty
7480         \else
7481             /PickTrayByPDFSize \@pdfpicktraybypdfsize
7482         \fi
7483         \ifx\@pdfprintpagerange\@empty
7484         \else
7485             /PrintPageRange[\@pdfprintpagerange]%
7486         \fi
7487         \ifx\@pdfnumcopies\@empty
7488         \else
7489             /NumCopies \@pdfnumcopies
7490         \fi
7491     }%
7492     \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7493     \@pdfm@mark{%
7494         docview<<%
7495         \ifx\@pdfstartpage\@empty
7496         \else
7497             \ifx\@pdfstartview\@empty
7498             \else
7499                 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
7500             \fi

```

```

7501 \fi
7502 \ifx\@baseurl\@empty
7503 \else
7504   /URI<</Base(\Hy@pstringB)>>%
7505 \fi
7506 /PageMode/\@pdfpagemode
7507 \ifx\Hy@temp\@empty
7508 \else
7509   /ViewerPreferences<<\Hy@temp>>%
7510 \fi
7511 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7512 \ifx\@pdflang\@empty
7513 \else
7514   /Lang(\@pdflang)%
7515 \fi
7516 >>%
7517 }%
7518 \ifx\@pdfpagescrop\@empty
7519 \else
7520   \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
7521 \fi
7522 }
7523 </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.

```

7524 <*vtexhtml>
7525 \RequirePackage{vtexhtml}
7526 \newif\if@Localurl
7527 \def\PDF@FinishDoc{}
7528 \def\PDF@SetupDoc{%
7529   \ifx\@baseurl\@empty
7530   \else
7531     \special{!direct <base href="\@baseurl">}%
7532   \fi
7533 }
7534 \def\@urltype{url}
7535 \def\hyper@link#1#2#3{%
7536   \leavevmode
7537   \special{!direct <a href=\hyper@quote\hyper@hash#2\hyper@quote>}%
7538   #3%
7539   \special{!direct </a>}%
7540 }
7541 \def\hyper@linkurl#1#2{%
7542   \begingroup
7543     \hyper@chars
7544     \leavevmode
7545     \MathBSuppress=1\relax
7546     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
7547     #1%
7548     \MathBSuppress=0\relax
7549     \special{!direct </a>}%
7550   \endgroup
7551 }
7552 \def\hyper@linkfile#1#2#3{%

```

```

7553 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
7554 }
7555 \def\hyper@linkstart#1#2{%
7556 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
7557 \@Localurltrue
7558 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
7559 \else
7560 \@Localurlfalse
7561 \begingroup
7562 \hyper@chars
7563 \special{!aref #2}%
7564 \endgroup
7565 \fi
7566 }
7567 \def\hyper@linkend{%
7568 \if@Localurl
7569 \special{!endaref}%
7570 \else
7571 \special{!direct </a>}%
7572 \fi
7573 }
7574 \def\hyper@anchorstart#1{%
7575 \Hy@SaveLastskip
7576 \begingroup
7577 \hyper@chars
7578 \special{!aname #1}%
7579 \special{!direct <a name=\hyper@quote#1\hyper@quote>}%
7580 \endgroup
7581 \Hy@activeanchortrue
7582 }
7583 \def\hyper@anchorend{%
7584 \special{!direct </a>}%
7585 \Hy@activeanchorfalse
7586 \Hy@RestoreLastskip
7587 }
7588 \def\hyper@anchor#1{%
7589 \Hy@SaveLastskip
7590 \begingroup
7591 \let\protect=\string
7592 \hyper@chars
7593 \leavevmode
7594 \special{!aname #1}%
7595 \special{!direct <a name=\hyper@quote #1\hyper@quote>}%
7596 \endgroup
7597 \Hy@activeanchortrue
7598 \bgroup\anchor@spot\egroup
7599 \special{!direct </a>}%
7600 \Hy@activeanchorfalse
7601 \Hy@RestoreLastskip
7602 }
7603 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
7604 \def\@endForm{}
7605 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7606 \typeout{Sorry, TeXpider does not yet support FORM gauges}%
7607 }
7608 \def\@TextField[#1]#2{% parameters, label
7609 \typeout{Sorry, TeXpider does not yet support FORM text fields}%

```

```

7610 }
7611 \def\@CheckBox[#1]#2{% parameters, label
7612 \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
7613 }
7614 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7615 \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
7616 }
7617 \def\@PushButton[#1]#2{% parameters, label
7618 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
7619 }
7620 \def\@Reset[#1]#2{%
7621 \typeout{Sorry, TeXpider does not yet support FORMs}%
7622 }
7623 \def\@Submit[#1]#2{%
7624 \typeout{Sorry, TeXpider does not yet support FORMs}%
7625 }
7626 \</vtexhtml>
7627 \<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.

```

7628 \ifx\mediaheight\@undefined
7629 \else
7630 \ifx\mediaheight\relax
7631 \else
7632 \ifHy@setpagesize
7633 \providecommand*\VTeXInitMediaSize{%
7634 \ifundefined{stockwidth}{%
7635 \ifdim\paperheight>0pt %
7636 \setlength\mediaheight\paperheight
7637 \fi
7638 \ifdim\paperheight>0pt %
7639 \setlength\mediawidth\paperwidth
7640 \fi
7641 }{%
7642 \ifdim\stockheight>0pt %
7643 \setlength\mediaheight\stockheight
7644 \fi
7645 \ifdim\stockwidth>0pt %
7646 \setlength\mediawidth\stockwidth
7647 \fi
7648 }%
7649 }%
7650 \AtBeginDocument{\VTeXInitMediaSize}%
7651 \fi
7652 \Hy@DisableOption{setpagesize}%
7653 \fi
7654 \fi

```

Older versions of VTeX require xyz in lower case.

```

7655 \providecommand*\@pdfview{xyz}
7656 \providecommand*\@pdfborder{0 0 1}
7657 \providecommand*\@pdfborderstyle{}
7658 \let\CurrentBorderColor\@linkbordercolor
7659 \def\hyper@anchor#1{%
7660 \Hy@SaveLastskip
7661 \beginingroup

```

```

7662 \let\protect=\string
7663 \hyper@chars
7664 \special{!aname #1;\@pdfview}%
7665 \endgroup
7666 \Hy@activeanchortrue
7667 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7668 \Hy@activeanchorfalse
7669 \Hy@RestoreLastskip
7670 }
7671 \def\hyper@anchorstart#1{%
7672 \Hy@SaveLastskip
7673 \begingroup
7674 \hyper@chars
7675 \special{!aname #1;\@pdfview}%
7676 \endgroup
7677 \Hy@activeanchortrue
7678 }
7679 \def\hyper@anchorend{%
7680 \Hy@activeanchorfalse
7681 \Hy@RestoreLastskip
7682 }
7683 \def\@urltype{url}
7684 \def\Hy@undefinedname{UNDEFINED}
7685 \def\hyper@linkstart#1#2{%
7686 \Hy@pstringdef\Hy@pstringURI{#2}%
7687 \expandafter\Hy@colorlink\csname @#1color\endcsname
7688 \@ifundefined{#@#1bordercolor}{%
7689 \let\CurrentBorderColor\relax
7690 }{%
7691 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
7692 }%
7693 \def\Hy@tempa{#1}%
7694 \ifx\Hy@tempa\@urltype
7695 \special{!%
7696 \aef <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
7697 a=<%
7698 \Hy@setpdfborder
7699 \ifx\CurrentBorderColor\relax
7700 \else
7701 /C [\CurrentBorderColor]%
7702 \fi
7703 >%
7704 }%
7705 \else
7706 \protected@edef\Hy@testname{#2}%
7707 \ifx\Hy@testname\@empty
7708 \let\Hy@testname\Hy@undefinedname
7709 \fi
7710 \special{!%
7711 \aef \Hy@testname;%
7712 a=<%
7713 \Hy@setpdfborder
7714 \ifx\CurrentBorderColor\relax
7715 \else
7716 /C [\CurrentBorderColor]%
7717 \fi
7718 >%

```

```

7719 }%
7720 \fi
7721 }
7722 \def\hyper@linkend{%
7723 \special{!endaref}%
7724 \Hy@endcolorlink
7725 }
7726 \def\hyper@linkfile#1#2#3{%
7727 \leavevmode
7728 \special{!%
7729   aref <%
7730   \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
7731   f=#2>#3;%
7732   a=<%
7733     \Hy@setpdfborder
7734     \ifx\@filebordercolor\relax
7735     \else
7736       /C [\@filebordercolor]%
7737     \fi
7738   >%
7739 }%
7740 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7741 \special{!endaref}%
7742 }
7743 \def\hyper@linkurl#1#2{%
7744 \begingroup
7745 \Hy@pstringdef\Hy@pstringURI{#2}%
7746 \hyper@chars
7747 \leavevmode
7748 \special{!%
7749   aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
7750   a=<%
7751     \Hy@setpdfborder
7752     \ifx\@urlbordercolor\relax
7753     \else
7754       /C [\@urlbordercolor]%
7755     \fi
7756   >%
7757 }%
7758 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7759 \special{!endaref}%
7760 \endgroup
7761 }
7762 \def\hyper@link#1#2#3{%
7763 \@ifundefined{#1bordercolor}{%
7764 \let\CurrentBorderColor\relax
7765 }{%
7766 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
7767 }%
7768 \leavevmode
7769 \protected@edef\Hy@testname{#2}%
7770 \ifx\Hy@testname\@empty
7771 \let\Hy@testname\Hy@undefinedname
7772 \fi
7773 \special{!%
7774   aref \Hy@testname;%
7775   a=<%

```

```

7776 \Hy@setpdfborder
7777 \ifx\CurrentBorderColor\relax
7778 \else
7779 /C [\CurrentBorderColor]%
7780 \fi
7781 >%
7782 }%
7783 \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
7784 \special{!endaref}%
7785 }
7786 \def\hyper@image#1#2{%
7787 \hyper@linkurl{#2}{#1}%
7788 }
7789 \def\@hyper@launch run:#1\#2#3{%
7790 \Hy@pstringdef\Hy@pstringF{#1}%
7791 \Hy@pstringdef\Hy@pstringP{#3}%
7792 \leavevmode
7793 \special{!aref %
7794 <u=%
7795 /Type/Action%
7796 /S/Launch%
7797 /F(\Hy@pstringF)%
7798 \Hy@SetNewWindow
7799 \ifx\#3\else /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>\fi%
7800 >;%
7801 a=<%
7802 \Hy@setpdfborder
7803 \ifx\@runbordercolor\relax
7804 \else
7805 /C[\@runbordercolor]%
7806 \fi
7807 >%
7808 }%
7809 \Hy@colorlink\@runcolor#2\Hy@endcolorlink
7810 \special{!endaref}%
7811 }
7812 \def\Acrobatmenu#1#2{%
7813 \leavevmode
7814 \special{!%
7815 aref <u=/S /Named /N /#1>;%
7816 a=<%
7817 \Hy@setpdfborder
7818 \ifx\@menubordercolor\relax
7819 \else
7820 /C[\@menubordercolor]%
7821 \fi
7822 >%
7823 }%
7824 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
7825 \special{!endaref}%
7826 }

```

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

The code below makes sense for \TeX 7.02 or later.

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

```

7827 \ifnum\Hy@VTeXversion<702 %
7828 \else
7829 \def\hyper@pagetransition{%

```

```

7830 \ifx\@pdfpagetransition\relax
7831 \else
7832 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

7833 \else
7834 \hvtex@parse@trans\@pdfpagetransition
7835 \fi
7836 \fi
7837 }%

```

I have to write an “honest” parser to convert raw PDF code into VT_EX \special.
(AVK)

Syntax of VT_EX \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:

```

7838 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
7839 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
7840 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
7841 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
7842 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
7843 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
7844 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

7845 \def\hvtex@par@dimension{/Dm}%
7846 \def\hvtex@par@direction{/Di}%
7847 \def\hvtex@par@duration{/D}%
7848 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

7849 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}%

```

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

```

7850 \def\hvtex@gettoken@#1 #2\@nil{%
7851 \edef\hvtex@token{#1}%
7852 \edef\hvtex@buffer{#2}%
7853 }%
7854 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

7855 \let\hvtex@trans@code\@empty
7856 \let\hvtex@param@dimension\@empty

```

```

7857 \let\hvtex@param@direction\@empty
7858 \let\hvtex@param@duration\@empty
7859 \let\hvtex@param@motion\@empty
7860 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

7861 \hvtex@gettoken
7862 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

7863 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

7864 \else
7865 \hvtex@gettoken
7866 \fi
7867 \fi
7868 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

7869 \hvtex@trans@params
7870 }%

```

Reentrant macro to parse optional parameters.

```

7871 \def\hvtex@trans@params{%
7872 \ifx\hvtex@buffer\@empty
7873 \else
7874 \hvtex@gettoken
7875 \let\hvtex@trans@par\hvtex@token
7876 \ifx\hvtex@buffer\@empty
7877 \else
7878 \hvtex@gettoken
7879 \ifx\hvtex@trans@par\hvtex@par@duration

```

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

```

7880 \let\hvtex@param@duration\hvtex@token
7881 \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

7882 \expandafter\edef\expandafter\hvtex@param@motion
7883 \expandafter{\expandafter\@gobble\hvtex@token}%
7884 \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

7885 \expandafter\edef\expandafter\hvtex@param@dimension
7886 \expandafter{\expandafter\@gobble\hvtex@token}%
7887 \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).

```

7888 \let\hvtex@param@direction\hvtex@token
7889 \fi\fi\fi\fi
7890 \fi
7891 \fi
7892 \ifx\hvtex@buffer\@empty
7893 \let\next\hvtex@produce@trans
7894 \else
7895 \let\next\hvtex@trans@params
7896 \fi
7897 \next
7898 }%

```

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

```

7899 \def\hvtex@produce@trans{%
7900   \let\vtex@trans@special\@empty
7901   \if S\hvtex@trans@code
7902     \edef\vtex@trans@special{\hvtex@trans@code
7903       \hvtex@param@dimension\hvtex@param@motion}%
7904   \else\if B\hvtex@trans@code
7905     \edef\vtex@trans@special{%
7906       \hvtex@trans@code\hvtex@param@dimension
7907     }%
7908   \else\if X\hvtex@trans@code
7909     \edef\vtex@trans@special{%
7910       \hvtex@trans@code\hvtex@param@motion
7911     }%
7912   \else\if W\hvtex@trans@code
7913     \edef\vtex@trans@special{%
7914       \hvtex@trans@code\hvtex@param@direction
7915     }%
7916   \else\if D\hvtex@trans@code
7917     \let\vtex@trans@special\hvtex@trans@code
7918   \else\if R\hvtex@trans@code
7919     \let\vtex@trans@special\hvtex@trans@code
7920   \else\if G\hvtex@trans@code
7921     \edef\vtex@trans@special{%
7922       \hvtex@trans@code\hvtex@param@direction
7923     }%
7924   \fi\fi\fi\fi\fi\fi
7925   \ifx\vtex@trans@special\@empty
7926   \else
7927     \ifx\hvtex@param@duration\@empty
7928     \else
7929       \setlength{\dimen@}{\hvtex@param@duration\p}%

```

I'm not guilty of possible overflow.

```

7930   \multiply\dimen@\@m
7931   \edef\vtex@trans@special{%
7932     \vtex@trans@special,\strip@pt\dimen@
7933   }%
7934   \fi

```

And all the mess is just for this.

```

7935   \special{!trans \vtex@trans@special}%
7936   \fi
7937 }%
7938 \def\hyper@pageduration{%
7939   \ifx\@pdfpageduration\relax
7940   \else
7941     \ifx\@pdfpageduration\@empty
7942       \special{!duration-}%
7943     \else
7944       \special{!duration \@pdfpageduration}%
7945     \fi
7946   \fi
7947 }%
7948 \def\hyper@pagehidden{%
7949   \ifHy@useHidKey

```

```

7950     \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
7951   \fi
7952 }%
7953 \g@addto@macro\Hy@EveryPageBoxHook{%
7954   \hyper@pagetransition
7955   \hyper@pageduration
7956   \hyper@pagehidden
7957 }%
7958 \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

```

7959 \ifx\@pdfproducer\relax
7960   \def\@pdfproducer{VTeX}%
7961   \ifnum\Hy@VTeXversion>\z@
7962     \count@\VTeXversion
7963     \divide\count@ 100 %
7964     \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
7965     \multiply\count@ -100 %
7966     \advance\count@\VTeXversion
7967     \edef\@pdfproducer{%
7968       \@pdfproducer
7969       .\ifnum\count@<10 0\fi\the\count@
7970       \ifx\VTeXOS\@undefined\else
7971         \ifnum\VTeXOS>0 %
7972           \ifnum\VTeXOS<6 %
7973             \space(%
7974             \ifcase\VTeXOS
7975               \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
7976             \fi
7977             )%
7978           \fi
7979         \fi
7980       \fi
7981       ,\space
7982       \ifnum\OpMode=\@ne PDF\else PS\fi
7983       \space backend%
7984       \ifx\gexmode\@undefined\else
7985         \ifnum\gexmode>\z@\space with GeX\fi
7986       \fi
7987     }%
7988   \fi
7989 \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).

```

7990 \def\PDF@SetupDoc{%
7991   \ifx\@pdfpagescrop\@empty
7992   \else
7993     \special{!pdfinfo b=<\@pdfpagescrop>}%
7994   \fi
7995   \ifx\@pdfstartpage\@empty
7996   \else
7997     \ifx\@pdfstartview\@empty
7998     \else
7999       \special{!onopen Page\@pdfstartpage}%
8000     \fi
8001   \fi
8002   \special{!pdfinfo p=</\@pdfpagemode>}%
8003   \ifx\@baseurl\@empty
8004   \else
8005     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
8006   \fi
8007   \special{!pdfinfo v=<<<%
8008     \ifHy@toolbar\else /HideToolbar true\fi
8009     \ifHy@menubar\else /HideMenubar true\fi
8010     \ifHy@windowui\else /HideWindowUI true\fi
8011     \ifHy@fitwindow /FitWindow true\fi
8012     \ifHy@centerwindow /CenterWindow true\fi
8013     \ifHy@displaydoctitle /DisplayDocTitle true\fi
8014     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8015     \Hy@UseNameKey{Direction}\@pdfdirection
8016     \Hy@UseNameKey{ViewArea}\@pdfviewarea
8017     \Hy@UseNameKey{ViewClip}\@pdfviewclip
8018     \Hy@UseNameKey{PrintArea}\@pdfprintarea
8019     \Hy@UseNameKey{PrintClip}\@pdfprintclip
8020     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8021     \Hy@UseNameKey{Duplex}\@pdfduplex
8022     \ifx\@pdfpicktraybypdfsize\@empty
8023     \else
8024       /PickTrayByPDFSize \@pdfpicktraybypdfsize
8025     \fi
8026     \ifx\@pdfprintpagerange\@empty
8027     \else
8028       /PrintPageRange[\@pdfprintpagerange]%
8029     \fi
8030     \ifx\@pdfnumcopies\@empty
8031     \else
8032       /NumCopies \@pdfnumcopies

```

```

8033 \fi
8034 >>>}%
8035 \ifx\@pdfpagelayout\@empty
8036 \else
8037 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
8038 \fi
8039 }%
8040 \def\PDF@FinishDoc{%
8041 \Hy@UseMaketitleInfos
8042 \special{!pdfinfo a=<\@pdfauthor>}%
8043 \special{!pdfinfo t=<\@pdftitle>}%
8044 \special{!pdfinfo s=<\@pdfsubject>}%
8045 \special{!pdfinfo c=<\@pdfcreator>}%
8046 \ifx\@pdfproducer\relax
8047 \else
8048 \special{!pdfinfo r=<\@pdfproducer>}%
8049 \fi
8050 \special{!pdfinfo k=<\@pdfkeywords>}%
8051 \Hy@DisableOption{pdfauthor}%
8052 \Hy@DisableOption{pdftitle}%
8053 \Hy@DisableOption{pdfsubject}%
8054 \Hy@DisableOption{pdfcreator}%
8055 \Hy@DisableOption{pdfcreationdate}%
8056 \Hy@DisableOption{pdfmoddate}%
8057 \Hy@DisableOption{pdfproducer}%
8058 \Hy@DisableOption{pdfkeywords}%
8059 }
8060 </vtx>

```

46.7 Fix for Adobe bug number 466320

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

```

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

```

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

```

8061 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
8062 <package>\providecommand*\Hy@DistillerDestFix{}
8063 <*pdfmark | dviwindo>
8064 \def\Hy@DistillerDestFix{%
8065 \begingroup
8066 \let\x\literalps@out

```

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

```

8067 \ifnum \@ifundefined{OpMode}{0}{}%
8068 \ifundefined{gexmode}{0}{%
8069 \ifnum\gexmode>0 \OpMode\else 0\fi
8070 }}>1 %
8071 \def\x##1{%
8072 \immediate\special{!=##1}%
8073 }%
8074 \fi

```

```

8075 \x{%
8076 /product where{%
8077 pop %
8078 product(Distiller)search{%
8079 pop pop pop %
8080 version(.)search{%
8081 exch pop exch pop%
8082 (3011)eq{%
8083 gsave %
8084 newpath 0 0 moveto closepath clip%
8085 /Courier findfont 10 scalefont setfont %
8086 72 72 moveto(.)show %
8087 grestore%
8088 }if%
8089 }{pop}ifelse%
8090 }{pop}ifelse%
8091 }if%
8092 }%
8093 \endgroup
8094 }
8095 </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

```

```

8096 <*pdfmark | dvipdf>
8097 \def\hyper@anchor#1{%
8098 \Hy@SaveLastskip
8099 \begingroup
8100 \pdfmark[\anchor@spot]{%
8101 pdfmark=/DEST,%
8102 linktype=anchor,%
8103 View=/\@pdfview \@pdfviewparams,%
8104 DestAnchor={#1}%
8105 }%
8106 \endgroup
8107 \Hy@RestoreLastskip
8108 }
8109 <*dvipdf>
8110 \def\hyper@anchorstart#1{\Hy@activeanchortrue}
8111 \def\hyper@anchorend{\Hy@activeanchorfalse}
8112 \def\hyper@linkstart#1#2{%
8113 \expandafter\Hy@colorlink\csname @#1color\endcsname
8114 \xdef\hyper@currentanchor{#2}%
8115 }

```

```

8116 \def\hyper@linkend{%
8117   \Hy@endcolorlink
8118 }
8119 </dvipdf>
8120 <*pdfmark>
8121 \@ifundefined{hyper@anchorstart}{\endinput}
8122 \def\hyper@anchorstart#1{%
8123   \Hy@SaveLastskip
8124   \literalps@out{H.S}%
8125   \xdef\hyper@currentanchor{#1}%
8126   \Hy@activeanchortrue
8127 }
8128 \def\hyper@anchorend{%
8129   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
8130   \pdfmark{%
8131     pdfmark=/DEST,%
8132     linktype=anchor,%
8133     View=/\@pdfview \@pdfviewparams,%
8134     DestAnchor=\hyper@currentanchor,%
8135   }%
8136   \Hy@activeanchorfalse
8137   \Hy@RestoreLastskip
8138 }
8139 \def\hyper@linkstart#1#2{%
8140   \ifHy@breaklinks
8141   \else
8142     \leavevmode\hbox\bgroup
8143     \fi
8144     \expandafter\Hy@colorlink\csname @#1color\endcsname
8145     \literalps@out{H.S}%
8146     \xdef\hyper@currentanchor{#2}%
8147     \gdef\hyper@currentlinktype{#1}%
8148 }
8149 \def\hyper@linkend{%
8150   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
8151   \@ifundefined{@\hyper@currentlinktype bordercolor}{%
8152     \let\Hy@tempcolor\relax
8153   }{%
8154     \edef\Hy@tempcolor{%
8155       \csname @\hyper@currentlinktype bordercolor\endcsname
8156     }%
8157   }%
8158   \pdfmark{%
8159     pdfmark=/ANN,%
8160     linktype=link,%
8161     Subtype=/Link,%
8162     Dest=\hyper@currentanchor,%
8163     AcroHighlight=\@pdfhighlight,%
8164     Border=\@pdfborder,%
8165     BorderStyle=\@pdfborderstyle,%
8166     Color=\Hy@tempcolor,%
8167     Raw=H.B%
8168   }%
8169   \Hy@endcolorlink
8170   \ifHy@breaklinks
8171   \else
8172     \egroup

```

```

8173 \fi
8174 }

8175 < *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.

```

8176 \begingroup
8177 \catcode'P=12 %
8178 \catcode'T=12 %
8179 \lowercase{\endgroup
8180 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
8181 }
8182 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
8183 < /pdfmark>

```

\hyper@pagetransition

```

8184 \def\hyper@pagetransition{%
8185 \ifx\@pdfpagetransition\relax
8186 \else
8187 \ifx\@pdfpagetransition\@empty
8188 % 1. Does an old entry have to be deleted?
8189 % 2. If 1=yes, how to delete?
8190 \else
8191 \pdfmark{%
8192 pdfmark=/PUT,%
8193 Raw={%
8194 \string{ThisPage\string}%
8195 <</Trans << /S /\@pdfpagetransition\space >> >>%
8196 }%
8197 }%
8198 \fi
8199 \fi
8200 }

```

\hyper@pageduration

```

8201 \def\hyper@pageduration{%
8202 \ifx\@pdfpageduration\relax
8203 \else
8204 \ifx\@pdfpageduration\@empty
8205 % 1. Does an old entry have to be deleted?
8206 % 2. If 1=yes, how to delete?
8207 \else
8208 \pdfmark{%
8209 pdfmark=/PUT,%
8210 Raw={%
8211 \string{ThisPage\string}%
8212 <</Dur \@pdfpageduration>>%
8213 }%
8214 }%
8215 \fi
8216 \fi
8217 }

```

\hyper@pagehidden

```

8218 \def\hyper@pagehidden{%

```

```

8219 \ifHy@useHidKey
8220 \pdfmark{%
8221 pdfmark=/PUT,%
8222 Raw={%
8223 \string{ThisPage\string}%
8224 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
8225 }%
8226 }%
8227 \fi
8228 }

8229 \g@addto@macro\Hy@EveryPageBoxHook{%
8230 \hyper@pagetransition
8231 \hyper@pageduration
8232 \hyper@pagehidden
8233 }

8234 </pdfmark>
8235 \def\hyper@image#1#2{%
8236 \hyper@linkurl{#2}{#1}%
8237 }
8238 \def\Hy@undefinedname{UNDEFINED}
8239 \def\hyper@link#1#2#3{%
8240 \ifundefined{@#1bordercolor}{%
8241 \let\Hy@tempcolor\relax
8242 }{%
8243 \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
8244 }%
8245 \begingroup
8246 \protected@edef\Hy@testname{#2}%
8247 \ifx\Hy@testname\@empty
8248 \let\Hy@testname\Hy@undefinedname
8249 \fi
8250 <*dvipdf>
8251 \pdfmark[{#3}]{%
8252 pdfmark=/LNK,%
8253 },%
8254 linktype={#1},%
8255 AcroHighlight=\@pdfhighlight,%
8256 Border=\@pdfborder,%
8257 BorderStyle=\@pdfborderstyle,%
8258 Color=\Hy@tempcolor,%
8259 Dest=\Hy@testname
8260 }%
8261 </dvipdf>
8262 <*pdfmarkbase>
8263 \pdfmark[{#3}]{%
8264 Color=\Hy@tempcolor,%
8265 linktype={#1},%
8266 AcroHighlight=\@pdfhighlight,%
8267 Border=\@pdfborder,%
8268 BorderStyle=\@pdfborderstyle,%
8269 pdfmark=/ANN,%
8270 Subtype=/Link,%
8271 Dest=\Hy@testname
8272 }%
8273 </pdfmarkbase>
8274 \endgroup
8275 }

```

```

8276 \newtoks\pdf@docset
8277 \def\PDF@FinishDoc{%
8278   \Hy@UseMaketitleInfos
8279   \let\Hy@temp\@empty
8280   \ifx\@pdfcreationdate\@empty
8281   \else
8282     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
8283   \fi
8284   \ifx\@pdfmoddate\@empty
8285   \else
8286     \expandafter\def\expandafter\Hy@temp\expandafter{%
8287       \Hy@temp
8288       ModDate=\@pdfmoddate,%
8289     }%
8290   \fi
8291   \ifx\@pdfproducer\relax
8292   \else
8293     \expandafter\def\expandafter\Hy@temp\expandafter{%
8294       \Hy@temp
8295       Producer=\@pdfproducer,%
8296     }%
8297   \fi
8298   \expandafter
8299   \pdfmark\expandafter{%
8300     \Hy@temp
8301     pdfmark=/DOCINFO,%
8302     Title=\@pdftitle,%
8303     Subject=\@pdfsubject,%
8304     Creator=\@pdfcreator,%
8305     Author=\@pdfauthor,%
8306     Keywords=\@pdfkeywords
8307   }%
8308   \Hy@DisableOption{pdfauthor}%
8309   \Hy@DisableOption{pdftitle}%
8310   \Hy@DisableOption{pdfsubject}%
8311   \Hy@DisableOption{pdfcreator}%
8312   \Hy@DisableOption{pdfcreationdate}%
8313   \Hy@DisableOption{pdfmoddate}%
8314   \Hy@DisableOption{pdfproducer}%
8315   \Hy@DisableOption{pdfkeywords}%
8316 }
8317 \def\PDF@SetupDoc{%
8318   \def\Hy@temp{}%
8319   \ifx\@pdfstartpage\@empty
8320   \else
8321     \ifx\@pdfstartview\@empty
8322     \else
8323       \edef\Hy@temp{%
8324         ,Page=\@pdfstartpage
8325         ,View=\@pdfstartview
8326       }%
8327     \fi
8328   \fi
8329   \edef\Hy@temp{%
8330     \noexpand\pdfmark{%
8331       pdfmark=/DOCVIEW,%
8332       PageMode=/\@pdfpagemode

```

```

8333     \Hy@temp
8334   }%
8335 }%
8336 \Hy@temp
8337 \ifx\@pdfpagescrop\@empty
8338 \else
8339   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
8340 \fi
8341 \edef\Hy@temp{%
8342   \ifHy@toolbar\else /HideToolbar true\fi
8343   \ifHy@menubar\else /HideMenubar true\fi
8344   \ifHy>windowui\else /HideWindowUI true\fi
8345   \ifHy@fitwindow /FitWindow true\fi
8346   \ifHy@centerwindow /CenterWindow true\fi
8347   \ifHy@displaydoctitle /DisplayDocTitle true\fi
8348   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8349   \Hy@UseNameKey{Direction}\@pdfdirection
8350   \Hy@UseNameKey{ViewArea}\@pdfviewarea
8351   \Hy@UseNameKey{ViewClip}\@pdfviewclip
8352   \Hy@UseNameKey{PrintArea}\@pdfprintarea
8353   \Hy@UseNameKey{PrintClip}\@pdfprintclip
8354   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8355   \Hy@UseNameKey{Duplex}\@pdfduplex
8356   \ifx\@pdfpicktraybypdfsize\@empty
8357   \else
8358     /PickTrayByPDFSize \@pdfpicktraybypdfsize
8359   \fi
8360   \ifx\@pdfprintpagerange\@empty
8361   \else
8362     /PrintPageRange[\@pdfprintpagerange]%
8363   \fi
8364   \ifx\@pdfnumcopies\@empty
8365   \else
8366     /NumCopies \@pdfnumcopies
8367   \fi
8368 }%
8369 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8370 \pdfmark{%
8371   pdfmark=/PUT,%
8372   Raw={%
8373     \string{Catalog\string}<<%
8374     \ifx\Hy@temp\@empty
8375     \else
8376       /ViewerPreferences<<\Hy@temp>>%
8377     \fi
8378     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8379     \ifx\@pdflang\@empty
8380     \else
8381       /Lang(\@pdflang)%
8382     \fi
8383     \ifx\@baseurl\@empty
8384     \else
8385       /URI<</Base(\Hy@pstringB)>>%
8386     \fi
8387   >>%
8388 }%
8389 }%

```

```

8390 }
8391 </pdfmark | dvipdf>
8392 <*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.

```

8393 \newif\ifHy@pdfmarkerror
8394 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
8395 \def\pdfmark@[#1]#2{%
8396   \Hy@pdfmarkerrorfalse
8397   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
8398   \@processme
8399   \let\pdf@type\relax
8400   \setkeys{PDF}{#2}%
8401   \ifHy@pdfmarkerror
8402   \else
8403     \ifx\pdf@type\relax
8404       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
8405       \ifx\#1\%
8406       \else
8407         \pdf@rect{#1}%
8408       \fi
8409     \else
8410       \ifx\#1\%
8411 <*pdfmarkbase>
8412       \literalps@out{%
8413         [\the\pdf@toks\space\pdf@type\space pdfmark%
8414       }%
8415 </pdfmarkbase>
8416 <dvipdf> \literalps@out{/ANN >>}%
8417     \else
8418       \@ifundefined{@\pdf@linktype color}{%
8419         \Hy@colorlink\@linkcolor
8420       }{%
8421         \expandafter\Hy@colorlink
8422           \csname @\pdf@linktype color\endcsname
8423       }%
8424       \pdf@rect{#1}%
8425 <*pdfmarkbase>
8426       \literalps@out{%
8427         [\the\pdf@toks\space\pdf@type\space pdfmark%
8428       }%
8429 </pdfmarkbase>
8430 <dvipdf> \literalps@out{/ANN >>}%
8431       \Hy@endcolorlink
8432     \fi
8433   \fi
8434 \fi
8435 }

```

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}

8436 \newsavebox{\pdf@box}
8437 \providecommand*\Hy@setouterhbox{\sbox}
8438 \providecommand*\Hy@breaklinksunhbox{\unhbox}
8439 \def\Hy@DEST{/DEST}
8440 \def\pdf@rect#1{%
8441   \dviptf \literalps@out{/ANN \pdf@type\space\the\pdf@toks\space <<#1%
8442   \leavevmode
8443   \ifHy@breaklinks
8444     \Hy@setouterhbox\pdf@box{#1}%
8445   \else
8446     \sbox\pdf@box{#1}%
8447   \fi
8448   \dimen@ht\pdf@box
8449   \ifdim\dp\pdf@box=\z@
8450     \literalps@out{H.S}%
8451   \else
8452     \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
8453   \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...).

```
8454 \ifHy@breaklinks
8455   \expandafter\Hy@breaklinksunhbox
8456 \else
8457   \expandafter\box
8458 \fi
8459 \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

8460 \ifdim\dimen@=\z@
8461   \literalps@out{H.R}%
8462 \else
8463   \raise\dimen@\hbox{\literalps@out{H.R}}%
8464 \fi
8465 \ifx\pdf@type\Hy@DEST
8466 \else
8467   \pdf@addtoksx{H.B}%
8468 \fi
8469 }
```

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.

```
8470 \newtoks\pdf@toks
8471 \newtoks\pdf@defaulttoks
8472 \pdf@defaulttoks={}
8473 \def\pdf@addtoks#1#2{%
8474   \edef\@processme{\pdf@toks{\the\pdf@toks\space /#2 #1}}%
8475   \@processme
```

```

8476 }
8477 \def\pdf@addtoksx#1{%
8478   \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
8479   \@processme
8480 }
8481 \def\PDFdefaults#1{%
8482   \pdf@defaulttoks={#1}%
8483 }

```

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

```

8484 % what is the type of pdfmark?
8485 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
8486 % what is the link type?
8487 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
8488 \def\pdf@linktype{link}
8489 % parameter is a stream of PDF
8490 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
8491 % parameter is a name
8492 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
8493 % parameter is a array
8494 \define@key{PDF}{Border}{%
8495   \edef\Hy@temp{#1}%
8496   \ifx\Hy@temp\@empty
8497   \else
8498     \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
8499   \fi
8500 }
8501 \let\Hy@BorderArrayPatch\@empty
8502 % parameter is a dictionary
8503 \define@key{PDF}{BorderStyle}{%
8504   \edef\Hy@temp{#1}%
8505   \ifx\Hy@temp\@empty
8506   \else
8507     \pdf@addtoks{<<#1>>}{BS}%
8508   \fi
8509 }
8510 % parameter is a array
8511 \define@key{PDF}{Color}{%
8512   \ifx\relax#1\relax
8513   \else
8514     \pdf@addtoks{[#1]}{Color}% hash-ok
8515   \fi
8516 }
8517 % parameter is a string
8518 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
8519 % parameter is a integer
8520 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
8521 % parameter is a array
8522 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
8523 % parameter is a string
8524 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
8525 % parameter is a string or file
8526 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
8527 % parameter is a destination
8528 \define@key{PDF}{Dest}{%
8529   \Hy@pstringdef\Hy@pstringDest{#1}%
8530   \ifx\Hy@pstringDest\@empty
8531     \Hy@pdfmarkerrortrue

```

```

8532 \Hy@Warning{Destination with empty name ignored}%
8533 \else
8534 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
8535 \fi
8536 }
8537 \define@key{PDF}{DestAnchor}{%
8538 \Hy@pstringdef\Hy@pstringDest{#1}%
8539 \ifx\Hy@pstringDest\@empty
8540 \Hy@pdfmarkerrortrue
8541 \Hy@Warning{Destination with empty name ignored}%
8542 \else
8543 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
8544 \fi
8545 }
8546 % parameter is a string
8547 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
8548 % parameter is a string
8549 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
8550 % parameter is a int
8551 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
8552 % parameter is a name
8553 \define@key{PDF}{AcroHighlight}{%
8554 \begingroup
8555 \edef\x{#1}%
8556 \expandafter\endgroup\ifx\x\@empty
8557 \else
8558 \pdf@addtoks{#1}{H}%
8559 \fi
8560 }
8561 % parameter is a string
8562 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
8563 % parameter is a string
8564 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
8565 % parameter is a string
8566 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
8567 % parameter is a string
8568 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
8569 % parameter is a Boolean
8570 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
8571 % parameter is a integer or name
8572 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
8573 % parameter is a name
8574 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
8575 % parameter is a string
8576 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
8577 % parameter is a array
8578 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
8579 % parameter is a integer
8580 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
8581 % parameter is a name
8582 \pdfmarkbase\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
8583 \dvipdf\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{}}
8584 % parameter is a string
8585 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
8586 % parameter is a string
8587 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
8588 % parameter is a string

```

```

8589 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
8590 % parameter is an array
8591 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
8592 % parameter is a string
8593 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

8594 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
8595 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
8596 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
8597 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
8598 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
8599 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
8600 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
8601 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
8602 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
8603 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
8604 </pdfmarkbase | dvipdf>
8605 <*pdfmark | dvipdf>
8606 \def\Acrobatmenu#1#2{%
8607   \pdfmark[#{#2}] {%
8608     linktype=menu,%
8609     pdfmark=/ANN,%
8610     AcroHighlight=@pdfhighlight,%
8611     Border=@pdfborder,%
8612     BorderStyle=@pdfborderstyle,%
8613     Action={<< /Subtype /Named /N /#1 >>},%
8614     Subtype=/Link%
8615   }%
8616 }

```

And now for some useful examples:

```

8617 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
8618 \def\PDFNextPage@[#1]#2{%
8619   \pdfmark[#{#2}] {%
8620     #1,%
8621     Border=@pdfborder,%
8622     BorderStyle=@pdfborderstyle,%
8623     Color=.2 .1 .5,%
8624     pdfmark=/ANN,%
8625     Subtype=/Link,%
8626     Page=/Next%
8627   }%
8628 }
8629 \def\PDFPreviousPage{%
8630   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
8631 }
8632 \def\PDFPreviousPage@[#1]#2{%
8633   \pdfmark[#{#2}] {%
8634     #1,%
8635     Border=@pdfborder,%
8636     BorderStyle=@pdfborderstyle,%
8637     Color=.4 .4 .1,%
8638     pdfmark=/ANN,%
8639     Subtype=/Link,%
8640     Page=/Prev%
8641   }%
8642 }

```

```

8643 \def\PDFOpen#1{%
8644   \pdfmark{#1,pdfmark=/DOCVIEW}%
8645 }

```

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

```

8646 \def\hyper@linkurl#1#2{%
8647   \begingroup
8648     \Hy@pstringdef\Hy@pstringURI{#2}%
8649     \hyper@chars
8650     \leavevmode
8651   \pdfmarkbase
8652   \pdfmark[{#1}]{%
8653     pdfmark=/ANN,%
8654     linktype=url,%
8655     AcroHighlight=\@pdfhighlight,%
8656     Border=\@pdfborder,%
8657     BorderStyle=\@pdfborderstyle,%
8658     Color=\@urlbordercolor,%
8659     Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
8660     Subtype=/Link%
8661   }%
8662 \pdfmarkbase
8663 \dvipdf
8664   \pdfmark[{#1}]{%
8665     pdfmark=/LNK,%
8666     linktype=url,%
8667     AcroHighlight=\@pdfhighlight,%
8668     Border=\@pdfborder,%
8669     BorderStyle=\@pdfborderstyle,%
8670     Color=\@urlbordercolor,%
8671     Action={URI /URI <\Hy@hstringURI>}%
8672   }%
8673 \dvipdf
8674 \endgroup
8675 }
8676 \def\hyper@linkfile#1#2#3{%
8677   \begingroup
8678     \Hy@pstringdef\Hy@pstringF{#2}%
8679     \Hy@pstringdef\Hy@pstringD{#3}%
8680     \leavevmode
8681   \pdfmark
8682   \pdfmark[{#1}]{%
8683     pdfmark=/ANN,%
8684     Subtype=/Link,%
8685     AcroHighlight=\@pdfhighlight,%
8686     Border=\@pdfborder,%
8687     BorderStyle=\@pdfborderstyle,%
8688     linktype=file,%
8689     Color=\@filebordercolor,%
8690     Action={%
8691       <<%
8692         /S/GoToR%
8693         \Hy@SetNewWindow
8694         /F(\Hy@pstringF)%
8695         /D\ifx\#3\[\[O \@pdfstartview]\else(\Hy@pstringD)cvn\fi
8696       >>%
8697     }%
8698   }%

```

```

8699 </pdfmark>
8700 <*dvipdf>
8701   \pdfmark[{#1}]{%
8702     pdfmark=/LNK,%
8703     linktype=file,%
8704     AcroHighlight=\@pdfhighlight,%
8705     Border=\@pdfborder,%
8706     BorderStyle=\@pdfborderstyle,%
8707     Color=\@filebordercolor,%
8708     Action={%
8709       <<%
8710         /S/GoToR%
8711         \Hy@SetNewWindow
8712         /F(\Hy@pstringF)%
8713         /D\ifx\#3\[/O \@pdfstartview]\else(\Hy@pstringD)cvn\fi
8714       >>%
8715     }%
8716   }%
8717 </dvipdf>
8718   \endgroup
8719 }
8720 \def\@hyper@launch run:#1\#2#3{%
8721   \begingroup
8722     \Hy@pstringdef\Hy@pstringF{#1}%
8723     \Hy@pstringdef\Hy@pstringP{#3}%
8724     \leavevmode
8725 <*pdfmark>
8726   \pdfmark[{#2}]{%
8727     pdfmark=/ANN,%
8728     Subtype=/Link,%
8729     AcroHighlight=\@pdfhighlight,%
8730     Border=\@pdfborder,%
8731     BorderStyle=\@pdfborderstyle,%
8732     linktype=run,%
8733     Color=\@runbordercolor,%
8734     Action={%
8735       <<%
8736         /S/Launch%
8737         \Hy@SetNewWindow
8738         /F(\Hy@pstringF)%
8739         \ifx\#3\%
8740         \else
8741           /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8742         \fi
8743       >>%
8744     }%
8745   }%
8746 </pdfmark>
8747 <*dvipdf>
8748   \pdfmark[{#2}]{%
8749     pdfmark=/LNK,%
8750     linktype=file,%
8751     AcroHighlight=\@pdfhighlight,%
8752     Border=\@pdfborder,%
8753     BorderStyle=\@pdfborderstyle,%
8754     Color=\@filebordercolor,%
8755     Action={%

```

```

8756      <<%
8757      /S/GoToR%
8758      \Hy@SetNewWindow
8759      /F(\Hy@pstringF)%
8760      \ifx\|#3\%
8761      \else
8762      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8763      \fi
8764      >>%
8765      }%
8766      }%
8767 </dvipdf>
8768 \endgroup
8769 }
8770 </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.

```

8771 <*dvips>
8772 \input{pdfmark.def}%
8773 \ifx\@pdfproducer\relax
8774   \def\@pdfproducer{dvips + Distiller}%
8775 \fi
8776 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
8777 \def\headerps@out#1{\special{! #1}}%
8778 \providecommand*\@pdfborder{0 0 1}
8779 \providecommand*\@pdfborderstyle{}
8780 \providecommand*\@pdfview{XYZ}
8781 \providecommand*\@pdfviewparams{ H.V}
8782 \def\Hy@BorderArrayPatch{BorderArrayPatch}
8783 \AtBeginShipoutFirst{%
8784   \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.

```

8785 /DvipsToPDF{72.27 mul Resolution div} def%
8786 /PDFToDvips{72.27 div Resolution mul} def%
8787 /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.

```

8788 /BorderArrayPatch{%
8789   [exch{%
8790     dup dup type/integertype eq exch type/realtype eq or%
8791     {BPToDvips}if%
8792   }forall]%
8793 }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.

```

8794 /HyperBorder {1 PDFToDvips} def%
8795 /H.V {pdf@hoff pdf@voff null} def%
8796 /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

```

8797 /H.S {%
8798   currentpoint %
8799   HyperBorder add /pdf@lly exch def %
8800   dup DvipsToPDF 72 add /pdf@hoff exch def %
8801   HyperBorder sub /pdf@llx exch def%
8802 } def%
```

The calculation of upper left y is done without raising the point in \TeX , by simply adding on the current `\baselineskip` to the current y . This is usually too much, so we remove a notional 2 points.

We have to see what the current `baselineskip` is, and convert it to the dvips coordinate system.

Argument: `baselineskip` in pt. The x and y coordinates of the current point, minus the `baselineskip`

```

8803 /H.L {%
8804   2 sub dup%
8805   /HyperBasePt exch def %
8806   PDFToDvips /HyperBaseDvips exch def %
8807   currentpoint %
8808   HyperBaseDvips sub /pdf@ury exch def%
8809   /pdf@urx exch def%
8810 } def%
8811 /H.A {%
8812   H.L %
8813 % |pdf@voff| = the distance from the top of the page to a point
8814 % |\baselineskip| above the current point in PDF coordinates
8815   currentpoint exch pop %
8816   vsize 72 sub exch DvipsToPDF %
8817   HyperBasePt sub % baseline skip
8818   sub /pdf@voff exch def%
8819 } def%
8820 /H.R {%
8821   currentpoint %
8822   HyperBorder sub /pdf@ury exch def %
8823   HyperBorder add /pdf@urx exch def %
8824 % |pdf@voff| = the distance from the top of the page to the current point, in
8825 % PDF coordinates
8826   currentpoint exch pop vsize 72 sub %
8827   exch DvipsToPDF sub /pdf@voff exch def%
8828 } def %
```

```

8829    systemdict /pdfmark known%
8830    {%
8831        userdict /?pdfmark systemdict /exec get put%
8832    }{%
8833        userdict /?pdfmark systemdict /pop get put %
8834        userdict /pdfmark systemdict /cleartomark get put%
8835    }%
8836    ifelse%
8837 }%
8838 }
8839 \AfterBeginDocument{%
8840     \ifx\special@paper\@empty\else
8841         \ifHy@setpagesize
8842             \special{papersize=\special@paper}%
8843         \fi
8844         \Hy@DisableOption{setpagesize}%
8845     \fi
8846 }
8847 </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.

```

8848 <*vtexpdfmark>
8849 \input{pdfmark.def}%
8850 \ifx\@pdfproducer\relax
8851     \ifnum\OpMode=\@one
8852         \def\@pdfproducer{VTeX}%
8853     \else
8854         \def\@pdfproducer{VTeX + Distiller}%
8855     \fi
8856 \fi
8857 \def\literalps@out#1{\special{pS:#1}}%
8858 \def\headerps@out#1{\immediate\special{pS:#1}}%
8859 \providecommand*\@pdfborder{0 0 1}
8860 \providecommand*\@pdfborderstyle{}
8861 \providecommand*\@pdfview{XYZ}
8862 \providecommand*\@pdfviewparams{ H.V}
8863 \AtBeginShipoutFirst{%
8864     \headerps@out{%
8865         /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.

```

8866     /HyperBorder {1} def%
8867     /H.V {pdf@hoff pdf@voff null} def%
8868     /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: $\text{pdf@lly} = Y_c - \text{HyperBorder}$, $\text{pdf@hoff} = X_c + 72$, $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

8869     /H.S {%
8870         currentpoint %

```

```

8871     HyperBorder sub%
8872     /pdf@lly exch def %
8873     dup 72 add /pdf@hoff exch def %
8874     HyperBorder sub%
8875     /pdf@llx exch def%
8876   } def%

```

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

```

8877   /H.L {%
8878     2 sub%
8879     /HyperBasePt exch def %
8880     currentpoint %
8881     HyperBasePt add HyperBorder add%
8882     /pdf@ury exch def %
8883     HyperBorder add%
8884     /pdf@urx exch def%
8885   } def%
8886   /H.A {%
8887     H.L %
8888     currentpoint exch pop %
8889     vsize 72 sub exch %
8890     HyperBasePt add add%
8891     /pdf@voff exch def%
8892   } def%

```

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

```

8893   /H.R {%
8894     currentpoint %
8895     HyperBorder add%
8896     /pdf@ury exch def %
8897     HyperBorder add%
8898     /pdf@urx exch def %
8899     currentpoint exch pop vsize 72 sub add%
8900     /pdf@voff exch def%
8901   } def %
8902   systemdict /pdfmark known%
8903   {%
8904     userdict /?pdfmark systemdict /exec get put%
8905   }{%
8906     userdict /?pdfmark systemdict /pop get put %
8907     userdict /pdfmark systemdict /cleartomark get put%
8908   }%
8909   ifelse%
8910 }%
8911 }
8912 </vtxpdfmark>

```

46.11 Textures

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

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

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

```
8913 <*textures>
8914 \begingroup
8915   \obeylines %
8916   \gdef\Hy@ps@CR{\noexpand
8917   }%
8918 \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`.

```
8919 \def\literalps@out#1{%
8920   \special{postscript 0 0 transform}%
8921   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
8922 }%
8923 %
```

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.

```
8924 \def\headerps@out#1{%
8925   \special{%
8926     prepostscript TeXdict begin\Hy@ps@CR
8927     #1\Hy@ps@CR
8928     end%
8929   }%
8930 }%
8931 %
```

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.

```
8932 \AtBeginShipoutFirst{%
8933   \headerps@out{%
8934     /betterpdfmark {%
8935       systemdict begin %
8936       dup /BP eq%
8937       {cleartomark gsave nulldevice []}%
8938       {dup /EP eq%
8939        {cleartomark cleartomark grestore}%
8940        {cleartomark}}%
8941       ifelse%
8942     }ifelse %
8943   end%
8944 }def\Hy@ps@CR
8945 __pdfmark__ not{/pdfmark /betterpdfmark load def}if %
8946 systemdict /pdfmark known%
8947 {%
8948   userdict /?pdfmark systemdict /load get put%
8949 }{%
8950   userdict /?pdfmark systemdict /pop get put%
```

```

8951    }%
8952    ifelse%
8953    }% end of \headerps@out
8954}% end of \AtBeginShipoutFirst
8955 %
8956 \input{pdfmark.def}%
8957 %
8958 \ifx\@pdfproducer\relax
8959   \def\@pdfproducer{Textures + Distiller}%
8960 \fi
8961 \providecommand*\@pdfborder{0 0 1}
8962 \providecommand*\@pdfborderstyle{}
8963 \providecommand*\@pdfview{XYZ}
8964 \providecommand*\@pdfviewparams{ H.V}
8965 %

```

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 .

```

8966 \headerps@out{%

```

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

```

8967 /vsize {\Hy@pageheight} def%
8968 /DvipsToPDF {} def%
8969 /PDFToDvips {} def%
8970 /BPToDvips {} def%
8971 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
8972 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
8973 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
8974 /H.S {%
8975   currentpoint %
8976   HyperBorder add /pdf@lly exch def %
8977   dup DvipsToPDF 72 add /pdf@hoff exch def %
8978   HyperBorder sub /pdf@llx exch def%
8979 } def\Hy@ps@CR
8980 /H.L {%
8981   2 sub %
8982   PDFToDvips /HyperBase exch def %
8983   currentpoint %
8984   HyperBase sub /pdf@ury exch def%
8985   /pdf@urx exch def%
8986 } def\Hy@ps@CR
8987 /H.A {%
8988   H.L %
8989   currentpoint exch pop %
8990   vsize 72 sub exch DvipsToPDF %
8991   HyperBase sub % baseline skip
8992   sub /pdf@voff exch def%
8993 } def\Hy@ps@CR
8994 /H.R {%
8995   currentpoint %
8996   HyperBorder sub /pdf@ury exch def %
8997   HyperBorder add /pdf@urx exch def %
8998   currentpoint exch pop vsize 72 sub %
8999   exch DvipsToPDF sub /pdf@voff exch def%
9000 } def\Hy@ps@CR

```

```

9001 }
9002 \AfterBeginDocument{%
9003   \ifHy@colorlinks
9004     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
9005   \fi
9006 }

```

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.

```

9007 \expandafter\let\expandafter\keepPDF@SetupDoc
9008   \csname PDF@SetupDoc\endcsname
9009 \def\PDF@SetupDoc{%
9010   \ifx\@baseurl\@empty
9011   \else
9012     \special{html:<base href="\@baseurl">}%
9013   \fi
9014   \keepPDF@SetupDoc
9015 }
9016 \def\hyper@anchor#1{%
9017   \Hy@SaveLastskip
9018   \begingroup
9019     \let\protect=\string
9020     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
9021   \endgroup
9022   \Hy@activeanchortrue
9023   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9024   \special{html:</a>}%
9025   \Hy@activeanchorfalse
9026   \Hy@RestoreLastskip
9027 }
9028 \def\hyper@anchorstart#1{%
9029   \Hy@SaveLastskip
9030   \begingroup
9031     \hyper@chars
9032     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
9033   \endgroup
9034   \Hy@activeanchortrue
9035 }
9036 \def\hyper@anchorend{%
9037   \special{html:</a>}%
9038   \Hy@activeanchorfalse
9039   \Hy@RestoreLastskip
9040 }
9041 \def\@urltype{url}
9042 \def\hyper@linkstart#1#2{%
9043   \expandafter\Hy@colorlink\csname @#1color\endcsname
9044   \def\Hy@tempa{#1}%
9045   \ifx\Hy@tempa\@urltype
9046     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9047   \else
9048     \begingroup
9049       \hyper@chars
9050       \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
9051     \endgroup
9052   \fi
9053 }
9054 \def\hyper@linkend{%

```

```

9055 \special{html:</a>}}%
9056 \Hy@endcolorlink
9057 }
9058 \def\hyper@linkfile#1#2#3{%
9059 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9060 }
9061 \def\hyper@linkurl#1#2{%
9062 \leavevmode
9063 \ifHy@raiselinks
9064 \setbox\@tempboxa=\color@hbox #1\color@endbox
9065 \@linkdim\dp\@tempboxa
9066 \lower\@linkdim\hbox{%
9067 \hyper@chars
9068 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9069 }%
9070 \Hy@colorlink\@urlcolor#1%
9071 \@linkdim\ht\@tempboxa
9072 \advance\@linkdim by -6.5\p@
9073 \raise\@linkdim\hbox{\special{html:</a>}}%
9074 \Hy@endcolorlink
9075 \else
9076 \begingroup
9077 \hyper@chars
9078 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9079 \Hy@colorlink\@urlcolor#1%
9080 \special{html:</a>}}%
9081 \Hy@endcolorlink
9082 \endgroup
9083 \fi
9084 }
9085 \def\hyper@link#1#2#3{%
9086 \hyper@linkurl{#3}{\##2}%
9087 }
9088 \def\hyper@image#1#2{%
9089 \begingroup
9090 \hyper@chars
9091 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
9092 \endgroup
9093 }
9094 </textures>

```

46.12 dvipsone

```

9095 % \subsection{dvipsone driver}
9096 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
9097 % |\special| commands.
9098 <*dvipsone>
9099 \providecommand*\@pdfborder{0 0 1}
9100 \providecommand*\@pdfborderstyle{}
9101 \input{pdfmark.def}%
9102 \ifx\@pdfproducer\relax
9103 \def\@pdfproducer{dvipsone + Distiller}%
9104 \fi
9105 \def\literalps@out#1{\special{ps:#1}}%
9106 \def\headerps@out#1{\special{! #1}}%
9107 \def\PDF@FinishDoc{%
9108 \Hy@UseMaketitleInfos

```

```

9109 \special{PDF: Keywords \@pdfkeywords}%
9110 \special{PDF: Title \@pdftitle}%
9111 \special{PDF: Creator \@pdfcreator}%
9112 \ifx\@pdfcreationdate\@empty
9113 \else
9114   \special{PDF: CreationDate \@pdfcreationdate}%
9115 \fi
9116 \ifx\@pdfmoddate\@empty
9117 \else
9118   \special{PDF: ModDate \@pdfmoddate}%
9119 \fi
9120 \special{PDF: Author \@pdfauthor}%
9121 \ifx\@pdfproducer\relax
9122 \else
9123   \special{PDF: Producer \@pdfproducer}%
9124 \fi
9125 \special{PDF: Subject \@pdfsubject}%
9126 \Hy@DisableOption{pdfauthor}%
9127 \Hy@DisableOption{pdftitle}%
9128 \Hy@DisableOption{pdfsubject}%
9129 \Hy@DisableOption{pdfcreator}%
9130 \Hy@DisableOption{pdfcreationdate}%
9131 \Hy@DisableOption{pdfmoddate}%
9132 \Hy@DisableOption{pdfproducer}%
9133 \Hy@DisableOption{pdfkeywords}%
9134 }
9135 \def\PDF@SetupDoc{%
9136   \def\Hy@temp{%
9137     \ifx\@pdfstartpage\@empty
9138     \else
9139       \ifx\@pdfstartview\@empty
9140       \else
9141         \edef\Hy@temp{%
9142           ,Page=\@pdfstartpage
9143           ,View=\@pdfstartview
9144         }%
9145       \fi
9146     \fi
9147     \edef\Hy@temp{%
9148       \noexpand\pdfmark{%
9149         pdfmark=/DOCVIEW,%
9150         PageMode=/\@pdfpagemode
9151       }\Hy@temp
9152     }%
9153   }%
9154   \Hy@temp
9155   \ifx\@pdfpagescrop\@empty
9156   \else
9157     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9158   \fi
9159   \edef\Hy@temp{%
9160     \ifHy@toolbar\else /HideToolbar true\fi
9161     \ifHy@menubar\else /HideMenubar true\fi
9162     \ifHy>windowui\else /HideWindowUI true\fi
9163     \ifHy@fitwindow /FitWindow true\fi
9164     \ifHy@centerwindow /CenterWindow true\fi
9165     \ifHy@displaydoctitle /DisplayDocTitle true\fi

```

```

9166 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9167 \Hy@UseNameKey{Direction}\@pdfdirection
9168 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9169 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9170 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9171 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9172 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9173 \Hy@UseNameKey{Duplex}\@pdfduplex
9174 \ifx\@pdfpicktraybypdfsize\@empty
9175 \else
9176 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9177 \fi
9178 \ifx\@pdfprintpagerange\@empty
9179 \else
9180 /PrintPageRange[\@pdfprintpagerange]%
9181 \fi
9182 \ifx\@pdfnumcopies\@empty
9183 \else
9184 /NumCopies \@pdfnumcopies
9185 \fi
9186 }%
9187 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9188 \pdfmark{%
9189 pdfmark=/PUT,%
9190 Raw={%
9191 \string{Catalog\string}<<%
9192 \ifx\Hy@temp\@empty
9193 \else
9194 /ViewerPreferences<<\Hy@temp>>%
9195 \fi
9196 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9197 \ifx\@pdflang\@empty
9198 \else
9199 /Lang(\@pdflang)%
9200 \fi
9201 \ifx\@baseurl\@empty
9202 \else
9203 /URI<</Base(\Hy@pstringB)>>%
9204 \fi
9205 >>%
9206 }%
9207 }%
9208 }
9209 \providecommand*\@pdfview{XYZ}
9210 \providecommand*\@pdfviewparams{ %
9211 gsave revscl currentpoint grestore %
9212 72 add exch pop null exch null%
9213 }
9214 \def\Hy@BorderArrayPatch{BorderArrayPatch}

```

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

```
9215 \special{headertext=}
```

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

```

9216 /DvipsToPDF { 65781 div } def%
9217 /PDFToDvips { 65781 mul } def%
9218 /BPToDvips{65781 mul}def%
9219 /HyperBorder { 1 PDFToDvips } def%
9220 /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.

```

9221 /BorderArrayPatch{%
9222   [exch{%
9223     dup dup type/integertype eq exch type/realtype eq or%
9224     {BPToDvips}if%
9225   }forall]%
9226 }def%
9227 /H.S {%
9228   currentpoint %
9229   HyperBorder add /pdf@lly exch def %
9230   dup DvipsToPDF 72 add /pdf@hoff exch def %
9231   HyperBorder sub /pdf@llx exch def%
9232 } def%
9233 /H.L {%
9234   2 sub %
9235   PDFToDvips /HyperBase exch def %
9236   currentpoint %
9237   HyperBase sub /pdf@ury exch def%
9238   /pdf@urx exch def%
9239 } def%
9240 /H.A {%
9241   H.L %
9242   currentpoint exch pop %
9243   HyperBase sub % baseline skip
9244   DvipsToPDF /pdf@voff exch def%
9245 } def%
9246 /H.R {%
9247   currentpoint %
9248   HyperBorder sub /pdf@ury exch def %
9249   HyperBorder add /pdf@urx exch def %
9250   currentpoint exch pop DvipsToPDF /pdf@voff exch def%
9251 } def %
9252 systemdict%
9253 /pdfmark known%
9254 {%
9255   userdict /?pdfmark /exec load put%
9256 }{%
9257   userdict /?pdfmark /pop load put %
9258   userdict /pdfmark systemdict /cleartomark get put%
9259 }%
9260 ifelse%
9261 }
9262 </dvipsone>
9263 <*dvipdf>
9264 \def\literalps@out#1{\special{pdf: #1}}%
9265 \providecommand*\@pdfborder{0 0 1}
9266 \providecommand*\@pdfborderstyle{}
9267 </dvipdf>

```

46.13 TeX4ht

```

9268 <*tex4ht>
9269 \@ifpackageloaded{tex4ht}{%
9270   \typeout{hyperref tex4ht: tex4ht already loaded}%
9271 }{%
9272   \RequirePackage[hx4ht]{tex4ht}%
9273 }
9274 \hyperlinkfileprefix{}
9275 \def\PDF@FinishDoc{}
9276 \def\PDF@SetupDoc{%
9277   \ifx\@baseurl\@empty
9278   \else
9279     \special{t4ht=<base href="\@baseurl">}%
9280   \fi
9281 }
9282 \def\hyper@anchor#1{%
9283   \Hy@SaveLastskip
9284   \begingroup
9285     \let\protect=\string
9286     \special{t4ht=<a name=\hyper@quote #1\hyper@quote>}%
9287   \endgroup
9288   \Hy@Activeanchortrue
9289   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9290   \special{t4ht=</a>}%
9291   \Hy@Activeanchorfalse
9292   \Hy@RestoreLastskip
9293 }
9294 \def\hyper@anchorstart#1{%
9295   \Hy@SaveLastskip
9296   \begingroup
9297     \hyper@chars\special{t4ht=<a name=\hyper@quote#1\hyper@quote>}%
9298   \endgroup
9299   \Hy@Activeanchortrue
9300 }
9301 \def\hyper@anchorend{%
9302   \special{t4ht=</a>}%
9303   \Hy@Activeanchorfalse
9304   \Hy@RestoreLastskip
9305 }
9306 \def\@urltype{url}
9307 \def\hyper@linkstart#1#2{%
9308   \expandafter\Hy@colorlink\csname @#1color\endcsname
9309   \def\Hy@tempa{#1}%
9310   \ifx\Hy@tempa\@urltype
9311     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
9312   \else
9313     \begingroup
9314       \hyper@chars
9315       \special{t4ht=<a href=\hyper@quote\##2\hyper@quote>}%
9316     \endgroup
9317   \fi
9318 }
9319 \def\hyper@linkend{%
9320   \special{t4ht=</a>}%
9321   \Hy@endcolorlink
9322 }
9323 \def\hyper@linkfile#1#2#3{%
9324   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%

```

```

9325 }
9326 \def\hyper@linkurl#1#2{%
9327   \leavevmode
9328   \ifHy@raiselinks
9329     \setbox\@tempboxa=\color@hbox #1\color@endbox
9330     \@linkdim\dp\@tempboxa
9331     \lower\@linkdim\hbox{%
9332       \begingroup
9333         \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
9334     \endgroup
9335   }%
9336   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9337   \@linkdim\ht\@tempboxa
9338   \advance\@linkdim by -6.5\p@
9339   \raise\@linkdim\hbox{\special{t4ht=</a>}}%
9340 \else
9341   \begingroup
9342   \hyper@chars
9343   \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
9344   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9345   \special{t4ht=</a>}}%
9346 \endgroup
9347 \fi
9348 }
9349 \def\hyper@link#1#2#3{%
9350   \hyper@linkurl{#3}{\##2}%
9351 }
9352 \def\hyper@image#1#2{%
9353   \begingroup
9354   \hyper@chars
9355   \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}}%
9356 \endgroup
9357 }
9358 \let\autoref\ref
9359 \ifx \rEfLiNK \UnDef
9360   \def\rEfLiNK #1#2{#2}%
9361 \fi
9362 \def\backref#1{}
9363 </tex4ht>
9364 <*tex4htcfg>
9365 \IfFileExists{\jobname.cfg}{\endinput}{}
9366 \Preamble{html}
9367   \begin{document}%
9368 \EndPreamble
9369 \def\TeX{TeX}
9370 \def\OMEGA{\Omega}
9371 \def\LaTeX{LaTeX}
9372 \def\LaTeXe{\LaTeX2e}
9373 \def\eTeX{e-TeX}
9374 \def\MF{Metafont}
9375 \def\MP{Metapost}
9376 </tex4htcfg>

```

47 Driver-specific form support

47.1 pdfmarks

```

9377 <*pdfmark>

```

```

9378 \long\def \@Form[#1]{%
9379 \AtBeginShipoutFirst{%
9380 \headerps@out{%
9381 [%
9382 \_objdef{pdfDocEncoding}%
9383 /type/dict%
9384 /OBJ pdfmark%
9385 [%
9386 {pdfDocEncoding}%
9387 <<%
9388 /Type/Encoding%
9389 /Differences[%
9390 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
9391 /tilde %
9392 39/quotesingle %
9393 96/grave %
9394 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
9395 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
9396 /quotedblbase/quotedblleft/quotedblright/quoteleft%
9397 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
9398 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
9399 164/currency %
9400 166/brokenbar %
9401 168/dieresis/copyright/ordfeminine %
9402 172/logicalnot/.notdef/registered/macron/degree/plusminus%
9403 /twosuperior/threesuperior/acute/mu %
9404 183/periodcentered/cedilla/onesuperior/ordmasculine %
9405 188/onequarter/onehalf/threequarters %
9406 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
9407 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
9408 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
9409 /Ocircumflex/Otilde/Odieresis/multiply/Slash/Ugrave%
9410 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
9411 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
9412 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
9413 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
9414 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
9415 /ucircumflex/udieresis/yacute/thorn/ydieresis%
9416 ]%
9417 >>%
9418 /PUT pdfmark%
9419 [%
9420 \_objdef{ZaDb}%
9421 /type/dict%
9422 /OBJ pdfmark%
9423 [%
9424 {ZaDb}%
9425 <<%
9426 /Type/Font%
9427 /Subtype/Type1%
9428 /Name/ZaDb%
9429 /BaseFont/ZapfDingbats%
9430 >>%
9431 /PUT pdfmark%
9432 [%
9433 \_objdef{Helv}%
9434 /type/dict%

```

```

9435 /OBJ pdfmark%
9436 [%
9437   {Helv}%
9438   <<%
9439     /Type/Font%
9440     /Subtype/Type1%
9441     /Name/Helv%
9442     /BaseFont/Helvetica%
9443     /Encoding{pdfDocEncoding}%
9444   >>%
9445 /PUT pdfmark%
9446 [%
9447   /_objdef{aform}%
9448   /type/dict%
9449 /OBJ pdfmark%
9450 [%
9451   /_objdef{afields}%
9452   /type/array%
9453 /OBJ pdfmark%
9454 {%
9455   [%
9456     /BBox[0 0 100 100]%
9457     /_objdef{Check}%
9458   /BP pdfmark %
9459   1 0 0 setrgbcolor%
9460   /ZapfDingbats 80 selectfont %
9461   20 20 moveto%
9462   (4)show%
9463   [/EP pdfmark%
9464   [%
9465     /BBox[0 0 100 100]%
9466     /_objdef{Cross}%
9467   /BP pdfmark %
9468   1 0 0 setrgbcolor%
9469   /ZapfDingbats 80 selectfont %
9470   20 20 moveto%
9471   (8)show%
9472   [/EP pdfmark%
9473   [%
9474     /BBox[0 0 250 100]%
9475     /_objdef{Submit}%
9476   /BP pdfmark %
9477   0.6 setgray %
9478   0 0 250 100 rectfill %
9479   1 setgray %
9480   2 2 moveto %
9481   2 98 lineto %
9482   248 98 lineto %
9483   246 96 lineto %
9484   4 96 lineto %
9485   4 4 lineto %
9486   fill %
9487   0.34 setgray %
9488   248 98 moveto %
9489   248 2 lineto %
9490   2 2 lineto %
9491   4 4 lineto %

```

```

9492 246 4 lineto %
9493 246 96 lineto %
9494 fill%
9495 /Helvetica 76 selectfont %
9496 0 setgray %
9497 8 22.5 moveto%
9498 (Submit)show%
9499 [/EP pdfmark%
9500 [%
9501   /BBox[0 0 250 100]%
9502   /_objdef{SubmitP}%
9503 /BP pdfmark %
9504 0.6 setgray %
9505 0 0 250 100 rectfill %
9506 0.34 setgray %
9507 2 2 moveto %
9508 2 98 lineto %
9509 248 98 lineto %
9510 246 96 lineto %
9511 4 96 lineto %
9512 4 4 lineto %
9513 fill %
9514 1 setgray %
9515 248 98 moveto %
9516 248 2 lineto %
9517 2 2 lineto %
9518 4 4 lineto %
9519 246 4 lineto %
9520 246 96 lineto %
9521 fill%
9522 /Helvetica 76 selectfont %
9523 0 setgray %
9524 10 20.5 moveto%
9525 (Submit)show%
9526 [/EP pdfmark%
9527 } ?pdfmark%
9528 [%
9529 {aform}%
9530 <<%
9531   /Fields{afields}%
9532   /DR<<%
9533     /Font<<%
9534       /ZaDb{ZaDb}%
9535       /Helv{Helv}%
9536     >>%
9537   >>%
9538   /DA(/Helv 10 Tf 0 g)%
9539   /CO{corder}%
9540   /NeedAppearances true%
9541 >>%
9542 /PUT pdfmark%
9543 [%
9544 {Catalog}%
9545 <<%
9546   /AcroForm{aform}%
9547 >>%
9548 /PUT pdfmark%

```

```

9549 [%
9550   /_objdef{corder}%
9551   /type/array%
9552 /OBJ pdfmark% dps
9553 }}%
9554   \setkeys{Form}{#1}%
9555 }
9556 \def\@endForm{}
9557 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9558   \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
9559 }
9560 \def\@TextField[#1]#2{% parameters, label
9561   \def\Fld@name{#2}%
9562   \def\Fld@default{}%
9563   \let\Fld@value\@empty
9564   \def\Fld@width{\DefaultWidthofText}%
9565   \def\Fld@height{%
9566     \ifFld@multiline
9567       \DefaultHeightofTextMultiline
9568     \else
9569       \DefaultHeightofText
9570     \fi
9571   }%
9572   \begingroup
9573     \Field@toks={ }%
9574     \expandafter\HyField@SetKeys\expandafter{%
9575       \DefaultOptionsofText,#1%
9576     }%
9577     \HyField@FlagsText
9578     \ifFld@hidden\def\Fld@width{1sp}\fi
9579     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
9580     \LayoutTextField{#2}{%
9581       \Hy@escapeform\PDFForm@Text
9582       \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
9583         pdfmark=/ANN,Raw={\PDFForm@Text}%
9584       }%
9585     }%
9586   \endgroup
9587 }
9588 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9589   \def\Fld@name{#2}%
9590   \let\Fld@default\relax
9591   \let\Fld@value\relax
9592   \def\Fld@width{\DefaultWidthofChoiceMenu}%
9593   \def\Fld@height{\DefaultHeightofChoiceMenu}%
9594   \begingroup
9595     \Fld@menulength=0 %
9596     \@tempdima\z@
9597     \@for\@curropt:=#3\do{%
9598       \expandafter\Fld@checkequals\@curropt==\%
9599       \Hy@StepCount\Fld@menulength
9600       \settowidth{\@tempdimb}{\@currDisplay}%
9601       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
9602     }%
9603     \advance\@tempdima by 15\p@
9604     \Field@toks={ }%
9605   \begingroup

```

```

9606     \HyField@SetKeys{#1}%
9607 \edef\x{\endgroup
9608     \noexpand\expandafter
9609     \noexpand\HyField@SetKeys
9610     \noexpand\expandafter{%
9611     \expandafter\noexpand\csname DefaultOptionsof%
9612     \ifFld@radio
9613     Radio%
9614     \else
9615     \ifFld@combo
9616     \ifFld@popdown
9617     PopdownBox%
9618     \else
9619     ComboBox%
9620     \fi
9621     \else
9622     ListBox%
9623     \fi
9624     \fi
9625     \endcsname
9626     }%
9627 } \x
9628 \HyField@SetKeys{#1}%
9629 \ifFld@hidden\def\Fld@width{1sp}\fi
9630 \ifx\Fld@value\relax
9631     \let\Fld@value\Fld@default
9632 \fi
9633 \LayoutChoiceField{#2}{%
9634     \ifFld@radio
9635     \HyField@FlagsRadioButton
9636     \@@Radio{#3}%
9637     \else
9638     \begingroup
9639     \HyField@FlagsChoice
9640     \ifdim\Fld@width<\@tempdima
9641     \ifdim\@tempdima<1cm\@tempdima1cm\fi
9642     \edef\Fld@width{\the\@tempdima}%
9643     \fi
9644     \ifFld@combo
9645     \else
9646     \@tempdima=\the\Fld@menulength\Fld@charsize
9647     \advance\@tempdima by \Fld@borderwidth bp %
9648     \advance\@tempdima by \Fld@borderwidth bp %
9649     \edef\Fld@height{\the\@tempdima}%
9650     \fi
9651     \@@ListBox{#3}%
9652     \endgroup
9653     \fi
9654     }%
9655 \endgroup
9656 }
9657 \def\@@Radio#1{%
9658     \Fld@listcount=0 %
9659     \for\@curropt:=#1\do{%
9660         \expandafter\Fld@checkequals\@curropt==\%
9661         \Hy@StepCount\Fld@listcount
9662         \currDisplay\space

```

```

9663 \Hy@escapeform\PDFForm@Radio
9664 \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
9665 pdfmark=/ANN,%
9666 Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
9667 } % deliberate space between radio buttons
9668 }%
9669 }
9670 \newcount\Fld@listcount
9671 \def\@@Listbox#1{%
9672 \HyField@PDFChoices{#1}%
9673 \Hy@escapeform\PDFForm@List
9674 \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
9675 pdfmark=/ANN,Raw={\PDFForm@List}%
9676 }%
9677 }
9678 \def\@PushButton[#1]#2{% parameters, label
9679 \def\Fld@name{#2}%
9680 \begingroup
9681 \Field@toks={ }%
9682 \expandafter\HyField@SetKeys\expandafter{%
9683 \DefaultOptionsofPushButton,#1%
9684 }%
9685 \HyField@FlagsPushButton
9686 \ifFld@hidden\def\Fld@width{1sp}\fi
9687 \LayoutPushButtonField{%
9688 \Hy@escapeform\PDFForm@Push
9689 \pdfmark[\MakeButtonField{#2}]{%
9690 pdfmark=/ANN,Raw={\PDFForm@Push}%
9691 }%
9692 }%
9693 \endgroup
9694 }
9695 \def\@Submit[#1]#2{%
9696 \Field@toks={ }%
9697 \def\Fld@width{\DefaultWidthofSubmit}%
9698 \def\Fld@height{\DefaultHeightofSubmit}%
9699 \begingroup
9700 \expandafter\HyField@SetKeys\expandafter{%
9701 \DefaultOptionsofSubmit,#1%
9702 }%
9703 \HyField@FlagsPushButton
9704 \HyField@FlagsSubmit
9705 \ifFld@hidden\def\Fld@width{1sp}\fi
9706 \Hy@escapeform\PDFForm@Submit
9707 \pdfmark[\MakeButtonField{#2}]{%
9708 pdfmark=/ANN,%
9709 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
9710 }%
9711 \endgroup
9712 }
9713 \def\@Reset[#1]#2{%
9714 \Field@toks={ }%
9715 \def\Fld@width{\DefaultWidthofReset}%
9716 \def\Fld@height{\DefaultHeightofReset}%
9717 \begingroup
9718 \expandafter\HyField@SetKeys\expandafter{%
9719 \DefaultOptionsofReset,#1%

```

```

9720 }%
9721 \HyField@FlagsPushButton
9722 \ifFld@hidden\def\Fld@width{1sp}\fi
9723 \Hy@escapeform\PDFForm@Reset
9724 \pdfmark[\MakeButtonField{#2}]{%
9725     pdfmark=/ANN,Raw={\PDFForm@Reset}%
9726 }%
9727 \endgroup
9728 }
9729 \def\@CheckBox[#1]#2{% parameters, label
9730 \def\Fld@name{#2}%
9731 \def\Fld@default{0}%
9732 \begingroup
9733 \def\Fld@width{\DefaultWidthofCheckBox}%
9734 \def\Fld@height{\DefaultHeightofCheckBox}%
9735 \Field@toks={ }%
9736 \expandafter\HyField@SetKeys\expandafter{%
9737     \DefaultOptionsofCheckBox,#1%
9738 }%
9739 \HyField@FlagsCheckBox
9740 \ifFld@hidden\def\Fld@width{1sp}\fi
9741 \LayoutCheckField{#2}{%
9742     \Hy@escapeform\PDFForm@Check
9743     \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
9744         pdfmark=/ANN,Raw={\PDFForm@Check}%
9745     }%
9746 }%
9747 \endgroup
9748 }
9749 \pdfmark

```

47.2 dvipdf

```

9750 \dvipdf
9751 \def\@Form[#1]{\typeout{Sorry, I do not support FORMs}}
9752 \def\@endForm{}
9753 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9754 \typeout{Sorry, dvipdf does not support FORM gauges}%
9755 }
9756 \def\@TextField[#1]#2{% parameters, label
9757 \typeout{Sorry, dvipdf does not support FORM text fields}%
9758 }
9759 \def\@CheckBox[#1]#2{% parameters, label
9760 \typeout{Sorry, dvipdf does not support FORM checkboxes}%
9761 }
9762 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9763 \typeout{Sorry, dvipdf does not support FORM choice menus}%
9764 }
9765 \def\@PushButton[#1]#2{% parameters, label
9766 \typeout{Sorry, dvipdf does not support FORM pushbuttons}%
9767 }
9768 \def\@Reset[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
9769 \def\@Submit[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
9770 \dvipdf

```

47.3 HyperTeX

```

9771 \hypertex
9772 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}

```

```

9773 \def\@endForm{}
9774 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9775   \typeout{Sorry, HyperTeX does not support FORM gauges}%
9776 }
9777 \def\@TextField[#1]#2{% parameters, label
9778   \typeout{Sorry, HyperTeX does not support FORM text fields}%
9779 }
9780 \def\@CheckBox[#1]#2{% parameters, label
9781   \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
9782 }
9783 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9784   \typeout{Sorry, HyperTeX does not support FORM choice menus}%
9785 }
9786 \def\@PushButton[#1]#2{% parameters, label
9787   \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
9788 }
9789 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
9790 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
9791 \</hypertext>

```

47.4 TeX4ht

```

9792 \<tex4ht>
9793 \def\@Form[#1]{%
9794   \setkeys{Form}{#1}%
9795   \HCode{<form action="\Form@action" method="\Form@method">}%
9796 }
9797 \def\@endForm{\HCode{</form>}}
9798 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9799   \typeout{Sorry, TeX4ht does not support gauges}%
9800 }
9801 \def\@TextField[#1]#2{% parameters, label
9802   \let\Hy@reserved@a\@empty
9803   \def\Fld@name{#2}%
9804   \def\Fld@default{}%
9805   \bgroup
9806     \Field@toks={ }%
9807     \setkeys{Field}{#1}%
9808     \HCode{<label for="\Fld@name">#2</label>}%
9809     \ifFld@password
9810       \@@PasswordField
9811     \else
9812       \@@TextField
9813     \fi
9814   \egroup
9815 }
9816 \def\@@PasswordField{%
9817   \HCode{%
9818     <input type="password" %
9819       id="\Fld@name" %
9820       name="\Fld@name" %
9821       \ifFld@hidden type="hidden" \fi
9822       value="\Fld@default" %
9823       \the\Field@toks
9824     >%
9825   }%
9826 }
9827 \def\@@TextField{%

```

```

9828 \ifFld@multiline
9829   \HCode{<textarea %
9830     \ifFld@readonly readonly \fi
9831     id="\Fld@name" %
9832     name="\Fld@name" %
9833     \ifFld@hidden type="hidden" \fi
9834     \the\Field@toks>%
9835   }%
9836   \Fld@default
9837   \HCode{</textarea>}%
9838 \else
9839   \HCode{<input type="textbox" %
9840     \ifFld@readonly readonly \fi
9841     id="\Fld@name" %
9842     name="\Fld@name" %
9843     \ifFld@hidden type="hidden" \fi
9844     value="\Fld@default" %
9845     \the\Field@toks>%
9846   }%
9847 \fi
9848 }
9849 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9850   \def\Fld@name{#2}%
9851   \def\Fld@default{}%
9852   \let\Hy@reserved@a\relax
9853   \begingroup
9854     \expandafter\Fld@findlength#3\\%
9855     \Field@toks={ }%
9856     \setkeys{Field}{#1}%
9857     #2%
9858     \ifFld@radio
9859       \expandafter\@@Radio#3\\%
9860     \else
9861       \expandafter\@@Menu#3\\%
9862     \fi
9863   \endgroup
9864 }
9865 \def\Fld@findlength#1\\{%
9866   \Fld@menulength=0 %
9867   \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
9868 }
9869 \def\@@Menu#1\\{%
9870   \HCode{<select size="\the\Fld@menulength" %
9871     name="\Fld@name" %
9872     \the\Field@toks>%
9873   }%
9874   \@for\@curropt:=#1\do{%
9875     \expandafter\Fld@checkequals\@curropt==\\%
9876     \HCode{<option %
9877       \ifx\@curropt\Fld@default selected \fi
9878       value="\@currValue">\@currDisplay</option>%
9879     }%
9880   }%
9881   \HCode{</select>}%
9882 }
9883 \def\@@Radio#1\\{%
9884   \@for\@curropt:=#1\do{%

```

```

9885 \expandafter\Fld@checkedequals\@curropt==\\%
9886 \HCode{<input type="radio" %
9887 \ifx\@curropt\Fld@default checked \fi
9888 name="\Fld@name" %
9889 value="\@currValue" %
9890 \the\Field@toks>%
9891 }%
9892 \@currDisplay
9893 }%
9894 }
9895 \def\@PushButton[#1]#2{% parameters, label
9896 \def\Fld@name{#2}%
9897 \bgroup
9898 \Field@toks={ }%
9899 \setkeys{Field}{#1}%
9900 \HCode{<input type="button" %
9901 name="\Fld@name" %
9902 value="#2" %
9903 \the\Field@toks>%
9904 }%
9905 \HCode{</button>}%
9906 \egroup
9907 }
9908 \def\@Submit[#1]#2{%
9909 \HCode{<button type="submit">#2</button>}%
9910 }
9911 \def\@Reset[#1]#2{%
9912 \HCode{<button type="reset">#2</button>}%
9913 }
9914 \def\@CheckBox[#1]#2{% parameters, label
9915 \let\Hy@reserved@a\@empty
9916 \def\Fld@name{#2}%
9917 \def\Fld@default{0}%
9918 \bgroup
9919 \Field@toks={ }%
9920 \setkeys{Field}{#1}%
9921 \HCode{<input type="checkbox" %
9922 \ifFld@checked checked \fi
9923 \ifFld@disabled disabled \fi
9924 \ifFld@readonly readonly \fi
9925 name="\Fld@name" %
9926 \ifFld@hidden type="hidden" \fi
9927 value="\Fld@default" %
9928 \the\Field@toks>%
9929 #2%
9930 }%
9931 \egroup
9932 }
9933 </tex4ht>

```

47.5 pdfTeX

```

9934 <*pdftex>
9935 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9936 \typeout{Sorry, pdftex does not support FORM gauges}%
9937 }
9938 \def\MakeFieldObject#1#2{\sbox0{#1}%
9939 \immediate\pdfxform0 %

```

```

9940 \expandafter\edef\csname #2Object\endcsname{%
9941     \the\pdflastxform\space 0 R%
9942 }%
9943 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
9944 }%
9945 \def\@Form[#1]{%
9946     \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
9947     \setkeys{Form}{#1}%
9948     \ifnum\pdftexversion>13 %
9949         \pdfrefobj\OBJ@pdfdocencoding
9950         \pdfrefobj\OBJ@ZaDb
9951         \pdfrefobj\OBJ@Helv
9952         \pdfrefobj\OBJ@acroform
9953     \fi
9954     \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
9955     \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

9956     \beginngroup
9957     \fontfamily{pzd}%
9958     \fontencoding{U}%
9959     \fontseries{m}%
9960     \fontshape{n}%
9961     \selectfont
9962     \char123 %
9963     \endgroup
9964 }{Ding}%
9965 \MakeFieldObject{%
9966     \fbox{\textcolor{yellow}{\textsf{Submit}}}%
9967 }{Submit}%
9968 \MakeFieldObject{%
9969     \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
9970 }{SubmitP}%
9971 }
9972 \def\@endForm{}
9973 \def\@TextField[#1]#2{% parameters, label
9974     \def\Fld@name{#2}%
9975     \def\Fld@default{}%
9976     \let\Fld@value\@empty
9977     \def\Fld@width{\DefaultWidthofText}%
9978     \def\Fld@height{%
9979         \ifFld@multiline
9980             \DefaultHeightofTextMultiline
9981         \else
9982             \DefaultHeightofText
9983         \fi
9984     }%
9985     \beginngroup
9986     \Field@toks={ }%
9987     \expandafter\HyField@SetKeys\expandafter{%
9988         \DefaultOptionsofText,#1%
9989     }%
9990     \PDFForm@Name
9991     \HyField@FlagsText
9992     \ifFld@hidden\def\Fld@width{1sp}\fi
9993     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
9994     \LayoutTextField{#2}{%
9995         \Hy@escapeform\PDFForm@Text

```

```

9996      \pdfstartlink user {\PDFForm@Text}\relax
9997      \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
9998    }%
9999  \endgroup
10000}
10001 \def \@ChoiceMenu[#1]#2#3{% parameters, label, choices
10002   \def \Fld@name{#2}%
10003   \let \Fld@default\relax
10004   \let \Fld@value\relax
10005   \def \Fld@width{\DefaultWidthofChoiceMenu}%
10006   \def \Fld@height{\DefaultHeightofChoiceMenu}%
10007   \begingroup
10008     \Fld@menulength=0 %
10009     \@tempdima\z@
10010     \@for \@curropt:=#3\do{%
10011       \expandafter \Fld@checkequals \@curropt==\%
10012       \Hy@StepCount \Fld@menulength
10013       \settowidth{\@tempdimb}{\@currDisplay}%
10014       \ifdim \@tempdimb>\@tempdima \@tempdima\@tempdimb\fi
10015     }%
10016     \advance \@tempdima by 15\p@
10017     \Field@toks={ }%
10018     \begingroup
10019       \HyField@SetKeys{#1}%
10020     \edef\x{\endgroup
10021       \noexpand\expandafter
10022       \noexpand\HyField@SetKeys
10023       \noexpand\expandafter{%
10024         \expandafter\noexpand\cname DefaultOptionsof%
10025         \ifFld@radio
10026           Radio%
10027         \else
10028           \ifFld@combo
10029             \ifFld@popdown
10030               PopdownBox%
10031             \else
10032               ComboBox%
10033             \fi
10034           \else
10035             ListBox%
10036           \fi
10037         \fi
10038       \endcsname
10039     }%
10040   }\x
10041   \HyField@SetKeys{#1}%
10042   \PDFForm@Name
10043   \ifFld@hidden\def \Fld@width{1sp}\fi
10044   \ifx \Fld@value\relax
10045     \let \Fld@value \Fld@default
10046   \fi
10047   \LayoutChoiceField{#2}{%
10048     \ifFld@radio
10049       \HyField@FlagsRadioButton
10050       \@@Radio{#3}%
10051     \else
10052       \begingroup

```

```

10053         \HyField@FlagsChoice
10054         \ifdim\Fld@width<\@tempdima
10055             \ifdim\@tempdima<1cm\@tempdima1cm\fi
10056             \edef\Fld@width{\the\@tempdima}%
10057         \fi
10058         \ifFld@combo
10059         \else
10060             \@tempdima=\the\Fld@menulength\Fld@charsize
10061             \advance\@tempdima by \Fld@borderwidth bp %
10062             \advance\@tempdima by \Fld@borderwidth bp %
10063             \edef\Fld@height{\the\@tempdima}%
10064         \fi
10065         \@@ListBox{#3}%
10066     \endgroup
10067 \fi
10068 }%
10069 \endgroup
10070 }
10071 \def\@@Radio#1{%
10072     \Fld@listcount=0 %
10073     \for\@curropt:=#1\do{%
10074         \expandafter\Fld@checkequals\@curropt==\\%
10075         \Hy@StepCount\Fld@listcount
10076         \currDisplay\space
10077         \leavevmode
10078         \Hy@escapeform\PDFForm@Radio
10079         \pdfstartlink user {%
10080             \PDFForm@Radio
10081             /AP<<%
10082             /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.

```

10083             /\@currValue\space \DingObject
10084             >>%
10085             >>%
10086         }%
10087         \relax
10088         \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
10089         \space % deliberate space between radio buttons
10090     }%
10091 }
10092 \newcount\Fld@listcount
10093 \def\@@ListBox#1{%
10094     \HyField@PDFChoices{#1}%
10095     \leavevmode
10096     \Hy@escapeform\PDFForm@List
10097     \pdfstartlink user {\PDFForm@List}\relax
10098     \MakeChoiceField{\Fld@width}{\Fld@height}%
10099     \pdfendlink
10100 }
10101 \def\@PushButton[#1]#2{% parameters, label
10102     \def\Fld@name{#2}%
10103     \begingroup
10104         \Field@toks={ }%
10105         \expandafter\HyField@SetKeys\expandafter{%
10106             \DefaultOptionsofPushButton,#1%

```

```

10107     }%
10108     \PDFForm@Name
10109     \HyField@FlagsPushButton
10110     \ifFld@hidden\def\Fld@width{1sp}\fi
10111     \LayoutPushButtonField{%
10112         \leavevmode
10113         \Hy@escapeform\PDFForm@Push
10114         \pdfstartlink user {\PDFForm@Push}\relax
10115         \MakeButtonField{#2}%
10116         \pdfendlink
10117     }%
10118 \endgroup
10119 }
10120 \def\@Submit[#1]#2{%
10121     \Field@toks={ }%
10122     \def\Fld@width{\DefaultWidthofSubmit}%
10123     \def\Fld@height{\DefaultHeightofSubmit}%
10124     \begingroup
10125         \expandafter\HyField@SetKeys\expandafter{%
10126             \DefaultOptionsofSubmit,#1%
10127         }%
10128         \HyField@FlagsPushButton
10129         \HyField@FlagsSubmit
10130         \ifFld@hidden\def\Fld@width{1sp}\fi
10131         \leavevmode
10132         \Hy@escapeform\PDFForm@Submit
10133         \pdfstartlink user {%
10134             \PDFForm@Submit
10135             /AP<</N \SubmitObject/D \SubmitPObject>>%
10136         }%
10137         \relax
10138         \MakeButtonField{#2}%
10139         \pdfendlink
10140 \endgroup
10141 }
10142 \def\@Reset[#1]#2{%
10143     \Field@toks={ }%
10144     \def\Fld@width{\DefaultWidthofReset}%
10145     \def\Fld@height{\DefaultHeightofReset}%
10146     \begingroup
10147         \expandafter\HyField@SetKeys\expandafter{%
10148             \DefaultOptionsofReset,#1%
10149         }%
10150         \HyField@FlagsPushButton
10151         \ifFld@hidden\def\Fld@width{1sp}\fi
10152         \leavevmode
10153         \Hy@escapeform\PDFForm@Reset
10154         \pdfstartlink user {\PDFForm@Reset}\relax
10155         \MakeButtonField{#2}%
10156         \pdfendlink
10157 \endgroup
10158 }
10159 \def\@CheckBox[#1]#2{% parameters, label
10160     \def\Fld@name{#2}%
10161     \def\Fld@default{0}%
10162     \begingroup
10163         \def\Fld@width{\DefaultWidthofCheckBox}%

```

```

10164 \def\Fld@height{\DefaultHeightofCheckBox}%
10165 \Field@toks={ }%
10166 \expandafter\HyField@SetKeys\expandafter{%
10167 \DefaultOptionsofCheckBox,#1%
10168 }%
10169 \PDFForm@Name
10170 \HyField@FlagsCheckBox
10171 \ifFld@hidden\def\Fld@width{1sp}\fi
10172 \LayoutCheckField{#2}{%
10173 \Hy@escapeform\PDFForm@Check
10174 \pdfstartlink user {\PDFForm@Check}\relax
10175 \MakeCheckField{\Fld@width}{\Fld@height}%
10176 \pdfendlink
10177 }%
10178 \endgroup
10179 }
10180 \pdfobj {%
10181 <<%
10182 /Type/Encoding%
10183 /Differences[%
10184 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
10185 /ring/tilde %
10186 39/quotesingle %
10187 96/grave %
10188 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10189 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
10190 /quotedblbase/quotedblleft/quotedblright/quoteleft%
10191 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
10192 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
10193 164/currency %
10194 166/brokenbar %
10195 168/dieresis/copyright/ordfeminine %
10196 172/logicalnot/.notdef/registered/macron/degree/plusminus%
10197 /twosuperior/threesuperior/acute/mu %
10198 183/periodcentered/cedilla/onesuperior/ordmasculine %
10199 188/onequarter/onehalf/threequarters %
10200 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
10201 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
10202 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
10203 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
10204 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
10205 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
10206 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
10207 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
10208 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
10209 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
10210 ]%
10211 >>%
10212 }
10213 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
10214 \pdfobj{%
10215 <<%
10216 /Type/Font%
10217 /Subtype/Type1%
10218 /Name/ZaDb%
10219 /BaseFont/ZapfDingbats%
10220 >>%

```

```

10221 }
10222 \edef\OBJ@ZaDb{\the\pdflastobj}
10223 \pdfobj{%
10224   <<%
10225     /Type/Font%
10226     /Subtype/Type1%
10227     /Name/Helv%
10228     /BaseFont/Helvetica%
10229     /Encoding \OBJ@pdfdocencoding\space 0 R%
10230   >>%
10231 }
10232 \edef\OBJ@Helv{\the\pdflastobj}
10233 \pdfobj{%
10234   <<%
10235     /Fields []%
10236     /DR<<%
10237       /Font<<%
10238         /ZaDb \OBJ@ZaDb\space 0 R%
10239         /Helv \OBJ@Helv\space 0 R%
10240       >>%
10241     >>%
10242     /DA(/Helv 10 Tf 0 g)%
10243     /NeedAppearances true%
10244   >>%
10245 }
10246 \edef\OBJ@acroform{\the\pdflastobj}
10247 </pdftex>

```

47.6 dvipdfm

D. P. Story adapted the pdf_T_EX forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```

10248 < *dvipdfm >

```

\@Gauge

```

10249 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10250   \typeout{Sorry, dvipdfm does not support FORM gauges}%
10251 }

```

\@Form

```

10252 \def\@Form[#1]{%
10253   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
10254   \setkeys{Form}{#1}%
10255   \@pdfm@mark{obj @afields []}%
10256   \@pdfm@mark{obj @corder []}%
10257   \@pdfm@mark{%
10258     obj @aform <<%
10259       /Fields @afields%
10260       /DR<<%
10261       /Font<<%
10262         /ZaDb @OBJ@ZaDb%
10263         /Helv @OBJ@Helv%
10264       >>%
10265     >>%
10266     /DA(/Helv 10 Tf 0 g)%
10267     /CO @corder%
10268     /NeedAppearances true%

```

```

10269     >>%
10270   }%
10271   \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
10272 }

\@endForm

10273 \def\@endForm{}

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

10274 \def\dvipdfm@setdim{%
10275   height \the\ht\pdfm@box\space
10276   width  \the\wd\pdfm@box\space
10277   depth  \the\dp\pdfm@box\space
10278 }

\HyField@AnnotCount

10279 \newcount\HyField@AnnotCount
10280 \HyField@AnnotCount=\z@

\HyField@AdvanceAnnotCount

10281 \def\HyField@AdvanceAnnotCount{%
10282   \global\advance\HyField@AnnotCount\@ne
10283 }

\HyField@TheAnnotCount

10284 \def\HyField@TheAnnotCount{%
10285   \the\HyField@AnnotCount
10286 }

\@TextField

10287 \def\@TextField[#1]#2{% parameters, label
10288   \def\Fld@name{#2}%
10289   \def\Fld@default{}%
10290   \let\Fld@value\@empty
10291   \def\Fld@width{\DefaultWidthofText}%
10292   \def\Fld@height{%
10293     \ifFld@multiline
10294       \DefaultHeightofTextMultiline
10295     \else
10296       \DefaultHeightofText
10297     \fi
10298   }%
10299   \begingroup
10300     \Fld@toks={ }%
10301     \expandafter\HyField@SetKeys\expandafter{%
10302       \DefaultOptionsofText,#1%
10303     }%
10304     \PDFForm@Name
10305     \HyField@FlagsText
10306     \ifFld@hidden\def\Fld@width{1sp}\fi
10307     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
10308     \setbox\pdfm@box=\hbox{%
10309       \MakeTextField{\Fld@width}{\Fld@height}%
10310     }%
10311     \HyField@AdvanceAnnotCount
10312     \LayoutTextField{#2}{%

```

```

10313 \Hy@escapeform\PDFForm@Text
10314 \@pdfm@mark{%
10315     ann @text\HyField@TheAnnotCount\space
10316     \dvipdfm@setdim << \PDFForm@Text >>%
10317 }%
10318 }%
10319 \unhbox\pdfm@box
10320 \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
10321 % record in @afields array
10322 \endgroup
10323 }

```

\@ChoiceMenu

```

10324 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10325 \def\Fld@name{#2}%
10326 \let\Fld@default\relax
10327 \let\Fld@value\relax
10328 \def\Fld@width{\DefaultWidthofChoiceMenu}%
10329 \def\Fld@height{\DefaultHeightofChoiceMenu}%
10330 \begingroup
10331 \Fld@menulength=0 %
10332 \@tempdima\z@
10333 \@for\@curropt:=#3\do{%
10334 \expandafter\Fld@checkequals\@curropt==\%
10335 \Hy@StepCount\Fld@menulength
10336 \settowidth{\@tempdimb}{\@currDisplay}%
10337 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10338 }%
10339 \advance\@tempdima by 15\p@
10340 \Field@toks={ }%
10341 \begingroup
10342 \HyField@SetKeys{#1}%
10343 \edef\x{\endgroup
10344 \noexpand\expandafter
10345 \noexpand\HyField@SetKeys
10346 \noexpand\expandafter{%
10347 \expandafter\noexpand\cename DefaultOptionsof%
10348 \ifFld@radio
10349 Radio%
10350 \else
10351 \ifFld@combo
10352 \ifFld@popdown
10353 PopdownBox%
10354 \else
10355 ComboBox%
10356 \fi
10357 \else
10358 ListBox%
10359 \fi
10360 \fi
10361 \endcsname
10362 }%
10363 }\x
10364 \HyField@SetKeys{#1}%
10365 \PDFForm@Name
10366 \ifFld@hidden\def\Fld@width{1sp}\fi
10367 \ifx\Fld@value\relax

```

```

10368     \let\Fld@value\Fld@default
10369     \fi
10370     \LayoutChoiceField{#2}{%
10371     \ifFld@radio
10372         \HyField@FlagsRadioButton
10373         \@@Radio{#3}%
10374     \else
10375         \beginngroup
10376         \HyField@FlagsChoice
10377         \ifdim\Fld@width<\@tempdima
10378             \ifdim\@tempdima<1cm\@tempdima1cm\fi
10379             \edef\Fld@width{\the\@tempdima}%
10380         \fi
10381         \ifFld@combo
10382         \else
10383             \@tempdima=\the\Fld@menulength\Fld@charsize
10384             \advance\@tempdima by \Fld@borderwidth bp %
10385             \advance\@tempdima by \Fld@borderwidth bp %
10386             \edef\Fld@height{\the\@tempdima}%
10387         \fi
10388         \@@ListBox{#3}%
10389     \endgroup
10390     \fi
10391     }%
10392 \endgroup
10393 }

```

\@@Radio

```

10394 \def\@@Radio#1{%
10395     \Fld@listcount=0 %
10396     \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
10397     \@for\@curropt:=#1\do{%
10398         \expandafter\Fld@checkequals\@curropt==\%
10399         \Hy@StepCount\Fld@listcount
10400         \@currDisplay\space
10401         \leavevmode
10402         \Hy@escapeform\PDFForm@Radio
10403         \ifnum\Fld@listcount=1 %
10404             \HyField@AdvanceAnnotCount
10405         \fi
10406         \@pdfm@mark{%
10407             ann \ifnum\Fld@listcount=1 @radio\HyField@TheAnnotCount\space\fi
10408             \dvi pdfm@setdim
10409             <<%
10410             \PDFForm@Radio
10411             /AP<</N<</\@currValue /null>>>>%
10412             >>%
10413         }%
10414         \unhcopy\pdfm@box\space% deliberate space between radio buttons
10415         \ifnum\Fld@listcount=1 %
10416             \@pdfm@mark{put @afields @radio\HyField@TheAnnotCount}%
10417         \fi
10418     }%
10419 }

```

\Fld@listcount

```

10420 \newcount\Fld@listcount

```

\@@ListBox

```
10421 \def\@@ListBox#1{%
10422   \HyField@PDFChoices{#1}%
10423   \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
10424   \leavevmode
10425   \Hy@escapeform\PDFForm@List
10426   \HyField@AdvanceAnnotCount
10427   \@pdfm@mark{%
10428     ann @list\HyField@TheAnnotCount\space
10429     \dvipdfm@setdim
10430     <<\PDFForm@List>>%
10431   }%
10432   \unhbox\pdfm@box
10433   \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
10434 }
```

\@PushButton

```
10435 \def\@PushButton[#1]#2{% parameters, label
10436   \def\Fld@name{#2}%
10437   \begingroup
10438     \Field@toks={ }%
10439     \expandafter\HyField@SetKeys\expandafter{%
10440       \DefaultOptionsofPushButton,#1%
10441     }%
10442     \PDFForm@Name
10443     \HyField@FlagsPushButton
10444     \ifFld@hidden\def\Fld@width{1sp}\fi
10445     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10446     \HyField@AdvanceAnnotCount
10447     \LayoutPushButtonField{%
10448       \leavevmode
10449       \Hy@escapeform\PDFForm@Push
10450       \@pdfm@mark{%
10451         ann @push\HyField@TheAnnotCount\space
10452         \dvipdfm@setdim
10453         <<\PDFForm@Push>>%
10454       }%
10455     }%
10456     \unhbox\pdfm@box
10457     \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
10458   \endgroup
10459 }
```

\@Submit

```
10460 \def\@Submit[#1]#2{%
10461   \Field@toks={ }%
10462   \def\Fld@width{\DefaultWidthofSubmit}%
10463   \def\Fld@height{\DefaultHeightofSubmit}%
10464   \begingroup
10465     \expandafter\HyField@SetKeys\expandafter{%
10466       \DefaultOptionsofSubmit,#1%
10467     }%
10468     \HyField@FlagsPushButton
10469     \HyField@FlagsSubmit
10470     \ifFld@hidden\def\Fld@width{1sp}\fi
10471     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10472     \leavevmode
```

```

10473 \Hy@escapeform\PDFForm@Submit
10474 \HyField@AdvanceAnnotCount
10475 \@pdfm@mark{%
10476     ann @submit\HyField@TheAnnotCount\space
10477     \dvipdfm@setdim
10478     <<\PDFForm@Submit>>%
10479 }%
10480 \unhbox\pdfm@box%
10481 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
10482 \endgroup
10483 }

```

\@Reset

```

10484 \def\@Reset[#1]#2{%
10485     \Field@toks={ }%
10486     \def\Fld@width{\DefaultWidthofReset}%
10487     \def\Fld@height{\DefaultHeightofReset}%
10488     \begingroup
10489     \expandafter\HyField@SetKeys\expandafter{%
10490         \DefaultOptionsofReset,#1%
10491     }%
10492     \HyField@FlagsPushButton
10493     \ifFld@hidden\def\Fld@width{1sp}\fi
10494     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10495     \leavevmode
10496     \Hy@escapeform\PDFForm@Reset
10497     \HyField@AdvanceAnnotCount
10498     \@pdfm@mark{%
10499         ann @reset\HyField@TheAnnotCount\space
10500         \dvipdfm@setdim
10501         <<\PDFForm@Reset>>%
10502     }%
10503     \unhbox\pdfm@box
10504     \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
10505     \endgroup
10506 }

```

\@CheckBox

```

10507 \def\@CheckBox[#1]#2{% parameters, label
10508     \def\Fld@name{#2}%
10509     \def\Fld@default{0}%
10510     \begingroup
10511     \def\Fld@width{\DefaultWidthofCheckBox}%
10512     \def\Fld@height{\DefaultHeightofCheckBox}%
10513     \Field@toks={ }%
10514     \expandafter\HyField@SetKeys\expandafter{%
10515         \DefaultOptionsofCheckBox,#1%
10516     }%
10517     \PDFForm@Name
10518     \HyField@FlagsCheckBox
10519     \ifFld@hidden\def\Fld@width{1sp}\fi
10520     \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
10521     \HyField@AdvanceAnnotCount
10522     \LayoutCheckField{#2}{%
10523         \Hy@escapeform\PDFForm@Check
10524         \@pdfm@mark{%
10525             ann @check\HyField@TheAnnotCount\space

```

```

10526         \dviPDFm@setdim
10527         <<\PDFForm@Check>>%
10528     }%
10529     \unhbox\pdfm@box
10530     \pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
10531 }%
10532 \endgroup
10533 }

10534 \pdfm@mark{obj @OBJpdfdocencoding%
10535 <<%
10536     /Type/Encoding%
10537     /Differences[%
10538         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
10539         39/quotesingle %
10540         96/grave %
10541         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10542         /fraction/guilsinglleft/guilsinglright/minus/perthousand%
10543         /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
10544         /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
10545         /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
10546         164/currency %
10547         166/brokenbar %
10548         168/dieresis/copyright/ordfeminine %
10549         172/logicalnot/.notdef/registered/macron/degree/plusminus%
10550         /twosuperior/threesuperior/acute/mu %
10551         183/periodcentered/cedilla/onesuperior/ordmasculine %
10552         188/onequarter/onehalf/threequarters %
10553         192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
10554         /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
10555         /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
10556         /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
10557         /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
10558         /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
10559         /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
10560         /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
10561         /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
10562         /thorn/ydieresis%
10563     ]%
10564 >>%
10565 }

10566 \pdfm@mark{obj @OBJZaDb%
10567 <<%
10568     /Type/Font%
10569     /Subtype/Type1%
10570     /Name/ZaDb%
10571     /BaseFont/ZapfDingbats%
10572 >>%
10573 }

10574 \pdfm@mark{obj @OBJHelv%
10575 <<%
10576     /Type/Font%
10577     /Subtype/Type1%
10578     /Name/Helv%
10579     /BaseFont/Helvetica%
10580     /Encoding @OBJpdfdocencoding%
10581 >>%
10582 }

```

10583 \langle /dvipdfm \rangle

47.7 Common forms part

10584 \langle *pdfform \rangle

\Hy@escapestring

```
10585 \begingroup\expandafter\expandafter\expandafter\endgroup
10586 \expandafter\ifx\csname pdfescapestring\endcsname\relax
10587   \let\Hy@escapestring\@firstofone
10588   \def\Hy@escapeform#1{%
10589     \ifHy@escapeform
10590       \def\Hy@escapestring##1{%
10591         \noexpand\Hy@escapestring{\noexpand##1}%
10592       }%
10593     \edef\Hy@temp{#1}%
10594     \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
10595     \def\Hy@escapestring##1{%
10596       \@ifundefined{Hy@esc@\string##1}{%
10597         ##1%
10598         \ThisShouldNotHappen
10599       }{%
10600         \csname Hy@esc@\string##1\endcsname
10601       }%
10602     }%
10603   \else
10604     \let\Hy@escapestring\@firstofone
10605   \fi
10606 }%
10607 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
10608   \ifx\#3\%
10609     \else
10610       \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
10611       \Hy@ReturnAfterFi{%
10612         \Hy@@escapeform#3\@nil
10613       }%
10614     \fi
10615   }%
10616 \else
10617   \def\Hy@escapeform#1{%
10618     \ifHy@escapeform
10619       \let\Hy@escapestring\pdfescapestring
10620     \else
10621       \let\Hy@escapestring\@firstofone
10622     \fi
10623   }%
10624   \Hy@escapeform{}}%
10625 \fi
```

\PDFForm@Name

```
10626 \def\PDFForm@Name{%
10627   \begingroup
10628     \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
10629       \ifHy@unicode
10630         \Hy@unicodedefalse
10631       \fi
10632     \fi
```

```

10633 \pdfstringdef\Hy@temp\Fld@name
10634 \endgroup
10635 \let\Fld@name\Hy@temp
10636 }

```

\PDFForm@Check

```

10637 \def\PDFForm@Check{%
10638 /Subtype/Widget%
10639 \Fld@annotflags
10640 /T(\Fld@name)%
10641 /FT/Btn%
10642 \Fld@flags
10643 /Q \Fld@align
10644 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
10645 /MK<<%
10646 \ifnum\Fld@rotation=\z@
10647 \else
10648 /R \Fld@rotation
10649 \fi
10650 \ifx\Fld@bordercolor\relax
10651 \else
10652 /BC[\Fld@bordercolor]%
10653 \fi
10654 \ifx\Fld@bcolor\relax
10655 \else
10656 /BG[\Fld@bcolor]%
10657 \fi
10658 /CA(\Hy@escapestring{\Fld@cbsymbol})%
10659 >>%
10660 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
10661 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10662 /H/P%
10663 \ifFld@checked /V/Yes\else /V/Off\fi
10664 }

```

\PDFForm@Push

```

10665 \def\PDFForm@Push{%
10666 /Subtype/Widget%
10667 \Fld@annotflags
10668 /T(\Fld@name)%
10669 /FT/Btn%
10670 \Fld@flags
10671 /H/P%
10672 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10673 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
10674 \ifx\Fld@bordercolor\relax\else 1\fi
10675 \space
10676 \else
10677 /MK<<%
10678 \ifnum\Fld@rotation=\z@
10679 \else
10680 /R \Fld@rotation
10681 \fi
10682 \ifx\Fld@bordercolor\relax
10683 \else
10684 /BC[\Fld@bordercolor]%
10685 \fi

```

```

10686     >>%
10687     \fi
10688     /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick})>>%
10689 }

```

\Fld@additionalactions

```

10690 \def\Fld@@additionalactions{%
K input (keystroke) format
10691 \ifx\Fld@keystroke@code\@empty
10692 \else
10693     /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
10694 \fi
F display format
10695 \ifx\Fld@format@code\@empty
10696 \else
10697     /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
10698 \fi
V validation
10699 \ifx\Fld@validate@code\@empty
10700 \else
10701     /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
10702 \fi
C calculation
10703 \ifx\Fld@calculate@code\@empty
10704 \else
10705     /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
10706 \fi
Fo receiving the input focus
10707 \ifx\Fld@onfocus@code\@empty
10708 \else
10709     /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
10710 \fi
Bl loosing the input focus (blurred)
10711 \ifx\Fld@onblur@code\@empty
10712 \else
10713     /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
10714 \fi
D pressing the mouse button (down)
10715 \ifx\Fld@onmousedown@code\@empty
10716 \else
10717     /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
10718 \fi
U releasing the mouse button (up)
10719 \ifx\Fld@onmouseup@code\@empty
10720 \else
10721     /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
10722 \fi
E cursor enters the annotation's active area.
10723 \ifx\Fld@onenter@code\@empty
10724 \else
10725     /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
10726 \fi

```

X cursor exits the annotation's active area.

```
10727 \ifx\Fld@onexit@code\@empty
10728 \else
10729 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
10730 \fi
10731 }
10732 \def\Fld@additionalactions{%
10733 \if-\Fld@@additionalactions-%
10734 \else
10735 /AA<<\Fld@@additionalactions>>%
10736 \fi
10737 }
```

\PDFForm@List

```
10738 \def\PDFForm@List{%
10739 /Subtype/Widget%
10740 \Fld@annotflags
10741 /T(\Fld@name)%
10742 /FT/Ch%
10743 \Fld@flags
10744 /Q \Fld@align
10745 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10746 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
10747 \ifx\Fld@bordercolor\relax\else 1\fi
10748 \ifx\Fld@bcolor\relax \else 1\fi
10749 \space
10750 \else
10751 /MK<<%
10752 \ifnum\Fld@rotation=\z@
10753 \else
10754 /R \Fld@rotation
10755 \fi
10756 \ifx\Fld@bordercolor\relax
10757 \else
10758 /BC[\Fld@bordercolor]%
10759 \fi
10760 \ifx\Fld@bcolor\relax
10761 \else
10762 /BG[\Fld@bcolor]%
10763 \fi
10764 >>%
10765 \fi
10766 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
10767 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10768 \Fld@choices
10769 \Fld@additionalactions
10770 }
```

\PDFForm@Radio

```
10771 \def\PDFForm@Radio{%
10772 /Subtype/Widget%
10773 \Fld@annotflags
10774 /T(\Fld@name)%
10775 /FT/Btn%
10776 \Fld@flags
10777 /H/P%
10778 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%

```

```

10779 /MK<<%
10780   \ifnum\Fld@rotation=\z@
10781   \else
10782     /R \Fld@rotation
10783   \fi
10784   \ifx\Fld@bordercolor\relax
10785   \else
10786     /BC[\Fld@bordercolor]%
10787   \fi
10788   \ifx\Fld@bcolor\relax
10789   \else
10790     /BG[\Fld@bcolor]%
10791   \fi
10792   /CA(H)%
10793 >>%
10794 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
10795   \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10796 \ifx\@currValue\Fld@default
10797   /V\Fld@default
10798 \else
10799   /V/Off%
10800 \fi
10801 \Fld@additionalactions
10802 }

```

\PDFForm@Text

```

10803 \def\PDFForm@Text{%
10804   /Subtype/Widget%
10805   \Fld@annotflags
10806   /T(\Fld@name)%
10807   /FT/Tx%
10808   \Fld@flags
10809   /Q \Fld@align
10810   /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
10811   \ifcase0\ifnum\Fld@rotation=\z@   \else 1\fi
10812     \ifx\Fld@bordercolor\relax\else 1\fi
10813     \ifx\Fld@bcolor\relax   \else 1\fi
10814     \space
10815   \else
10816     /MK<<%
10817     \ifnum\Fld@rotation=\z@
10818     \else
10819       /R \Fld@rotation
10820     \fi
10821     \ifx\Fld@bordercolor\relax
10822     \else
10823       /BC[\Fld@bordercolor]%
10824     \fi
10825     \ifx\Fld@bcolor\relax
10826     \else
10827       /BG[\Fld@bcolor]%
10828     \fi
10829     >>%
10830   \fi
10831 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
10832   \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10833 /DV(\Hy@escapestring{\Fld@default})%

```

```

10834 /V(\Hy@escapestring{\Fld@value})%
10835 \Fld@additionalactions
10836 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
10837 }

```

\PDFForm@Submit

```

10838 \def\PDFForm@Submit{%
10839 /Subtype/Widget%
10840 \Fld@annotflags
10841 /T(\Fld@name)%
10842 /FT/Btn%
10843 \Fld@flags
10844 /H/P%
10845 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10846 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
10847 \ifx\Fld@bordercolor\relax\else 1\fi
10848 \space
10849 \else
10850 /MK<<%
10851 \ifnum\Fld@rotation=\z@
10852 \else
10853 /R \Fld@rotation
10854 \fi
10855 \ifx\Fld@bordercolor\relax
10856 \else
10857 /BC[\Fld@bordercolor]%
10858 \fi
10859 >>%
10860 \fi
10861 /A<<%
10862 /S/SubmitForm%
10863 /F<<%
10864 /FS/URL%
10865 /F(\Hy@escapestring{\Form@action})%
10866 >>%
10867 \Fld@submitflags
10868 >>%
10869 }

```

\PDFForm@Reset

```

10870 \def\PDFForm@Reset{%
10871 /Subtype/Widget%
10872 \Fld@annotflags
10873 /T(\Fld@name)%
10874 /FT/Btn%
10875 \Fld@flags
10876 /H/P%
10877 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
10878 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
10879 \ifx\Fld@bordercolor\relax\else 1\fi
10880 \space
10881 \else
10882 /MK<<%
10883 \ifnum\Fld@rotation=\z@
10884 \else
10885 /R \Fld@rotation
10886 \fi

```

```

10887      \ifx\Fld@bordercolor\relax
10888      \else
10889      /BC[\Fld@bordercolor]%
10890      \fi
10891 %      /CA (Clear)
10892 %      /AC (Done)
10893      >>%
10894      \fi
10895 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10896 /A<</S/ResetForm>>%
10897 }

10898 </pdfform>
10899 <*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 \LaTeX macros.

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

```

10900 \def\phantomsection{%
10901   \Hy@GlobalStepCount\Hy@linkcounter
10902   \xdef\@currentHref{section*.\the\Hy@linkcounter}%
10903   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
10904 }
10905 </package>

```

48.1 Bookmarks

```
10906 <*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`.

```

10907 \def\Hy@writebookmark#1#2#3#4#5{%
10908   % section number, text, label, level, file
10909   \ifx\WriteBookmarks\relax%
10910   \else
10911     \ifnum#4>\Hy@bookmarksdepth\relax
10912     \else
10913       \@writetorep{#1}{#2}{#3}{#4}{#5}%
10914     \fi
10915   \fi
10916 }
10917 \def\Hy@currentbookmarklevel{0}
10918 \def\Hy@numberline#1{#1 }
10919 \def\@writetorep#1#2#3#4#5{%
10920   \begingroup
10921     \edef\Hy@tempa{#5}%

```

```

10922 \ifx\Hy@tempa\Hy@bookmarkstype
10923 \edef\Hy@level{#4}%
10924 \ifx\Hy@levelcheck Y%
10925 \@tempcnta\Hy@level\relax
10926 \advance\@tempcnta by -1 %
10927 \ifnum\Hy@currentbookmarklevel<\@tempcnta
10928 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
10929 \advance\@tempcnta by 1 %
10930 \Hy@Warning{%
10931 Difference (\the\@tempcnta) between bookmark levels is %
10932 greater \MessageBreak than one, level fixed%
10933 }%
10934 \@tempcnta\Hy@currentbookmarklevel
10935 \advance\@tempcnta by 1 %
10936 \edef\Hy@level{\the\@tempcnta}%
10937 \fi
10938 \else
10939 \global\let\Hy@levelcheck Y%
10940 \fi
10941 \global\let\Hy@currentbookmarklevel\Hy@level
10942 \@tempcnta\Hy@level\relax
10943 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
10944 \advance\@tempcnta by -1 %
10945 \edef\Hy@tempa{#3}%
10946 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
10947 \ifx\Hy@tempa\Hy@tempb
10948 \Hy@Warning{%
10949 The anchor of a bookmark and its parent's must not%
10950 \MessageBreak be the same. Added a new anchor%
10951 }%
10952 \phantomsection
10953 \fi
10954 \ifHy@bookmarksnumbered
10955 \let\numberline\Hy@numberline
10956 \let\partnumberline\Hy@numberline
10957 \let\chapternumberline\Hy@numberline
10958 \else
10959 \let\numberline\@gobble
10960 \let\partnumberline\@gobble
10961 \let\chapternumberline\@gobble
10962 \fi
10963 \pdfstringdef\Hy@tempa{#2}%
10964 \if@filesw
10965 \protected@write\@outlinefile{}{%
10966 \protect\BOOKMARK
10967 [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
10968 {\Hy@tempa}{\Hy@tempb}%
10969 }%
10970 \fi
10971 \fi
10972 \endgroup
10973 }

```

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

```

10974 \newcommand{\currentpdfbookmark}{%
10975 \pdfbookmark[\Hy@currentbookmarklevel]%
10976 }

```

```

10977 \newcommand{\subpdfbookmark}{%
10978   \@tempcnta\Hy@currentbookmarklevel
10979   \Hy@StepCount\@tempcnta
10980   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
10981 }
10982 \newcommand{\belowpdfbookmark}[2]{%
10983   \@tempcnta\Hy@currentbookmarklevel
10984   \Hy@StepCount\@tempcnta
10985   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
10986   \advance\@tempcnta by -1 %
10987   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
10988 }

```

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.

```

10989 \renewcommand\pdfbookmark[3][0]{%
10990   \Hy@writebookmark{}{#2}{#3.#1}{#1}{toc}%
10991   \hyper@anchorstart{#3.#1}\hyper@anchorend
10992 }
10993 \def\BOOKMARK{\@ifnextchar[\@BOOKMARK]{\@@BOOKMARK[1][-]}}
10994 \def\@BOOKMARK[#1]{\@ifnextchar[\@BOOKMARK[#1]]{\@@BOOKMARK[#1][-]}}

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfo` macros.

The VTEX section was written originally by VTEX, but then amended by Denis Girou (denis.girou@idris.fr), then by 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.

```

10995 \<vtex>
10996 \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.

```

10997 \begingroup
10998   \catcode'\'=12 %
10999   \ifnum\Hy@VTeXversion<650 %
11000     \catcode'\=12 %
11001     \gdef\hv@pdf@char#1#2#3{%
11002       \char
11003       \ifcase'#1#2#3 %
11004         "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
11005         \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
11006         \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
11007         \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
11008         \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
11009         \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
11010         \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
11011         \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
11012         \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
11013         \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
11014         \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
11015         \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
11016         \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
11017         \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
11018         \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
11019         \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%

```

```

11020 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
11021 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
11022 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
11023 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
11024 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
11025 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
11026 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
11027 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
11028 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
11029 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
11030 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
11031 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
11032 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
11033 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
11034 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
11035 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
11036 \fi
11037 }%
11038 \else
11039 \gdef\hv@pdf@char{\char'}%
11040 \fi
11041 \endgroup

```

\@@BOOKMARK

```

11042 \def\@@BOOKMARK[#1][#2]#3#4#5{%
11043 \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
11044 \edef\@mycount{\the\@serial@counter}%
11045 \Hy@StepCount\@serial@counter
11046 \edef\@parcount{%
11047 \expandafter\ifx\csname @count@#5\endcsname\relax
11048 0%
11049 \else
11050 \csname @count@#5\endcsname
11051 \fi
11052 }%
11053 \immediate\special{%
11054 !outline #3;p=\@parcount,i=\@mycount,%
11055 s=\ifx#2-c\else o\fi,t=#4%
11056 }%
11057 }%

```

\ReadBookmarks

```

11058 \def\ReadBookmarks{%
11059 \begingroup
11060 \def\0{\hv@pdf@char 0}%
11061 \def\1{\hv@pdf@char 1}%
11062 \def\2{\hv@pdf@char 2}%
11063 \def\3{\hv@pdf@char 3}%
11064 \def\{({}%
11065 \def\)}{)%
11066 \def\do##1{%
11067 \ifnum\the\catcode'##1=\active
11068 \makeother##1%
11069 \fi
11070 }%
11071 \dospecials
11072 \InputIfFileExists{\jobname.out}{\fi}%

```

```

11073 \endgroup
11074 \ifx\WriteBookmarks\relax
11075 \else
11076   \if@filesw
11077     \newwrite\@outlinefile
11078     \immediate\openout\@outlinefile=jobname.out\relax
11079     \ifHy@typexml
11080       \immediate\write\@outlinefile{<relaxxml>\relax}%
11081     \fi
11082   \fi
11083 \fi
11084 }

11085 </vtex>
11086 <*\vtex>
11087 \def\ReadBookmarks{%
11088   \begingroup
11089   \escapechar='\'%
11090   \let\escapechar\@gobble %
11091   \def\@@BOOKMARK[##1][##2]##3##4##5{\calc@bm@number{##5}}%
11092   \InputIfFileExists{jobname.out}{\relax}%
11093   \ifx\WriteBookmarks\relax
11094     \global\let\WriteBookmarks\relax
11095   \fi
11096   \def\@@BOOKMARK[##1][##2]##3##4##5{%
11097     \def\Hy@temp{##4}%
11098 <*pdfTex>
11099     \Hy@pstringdef\Hy@pstringName{##3}%
11100     \Hy@OutlineName{\Hy@pstringName{
11101       ##2\check@bm@number{##3}%
11102     }}%
11103     \expandafter\strip@prefix\meaning\Hy@temp
11104   }%
11105 </pdfTex>
11106 <*pdfmark>
11107     \Hy@pstringdef\Hy@pstringName{##3}%
11108     \pdfmark{%
11109       pdfmark=/OUT,%
11110       Count={##2\check@bm@number{##3}},%
11111       Dest={\Hy@pstringName},%
11112       Title=\expandafter\strip@prefix\meaning\Hy@temp
11113     }%
11114 </pdfmark>
11115 <*dvipdfm>
11116     \Hy@pstringdef\Hy@pstringName{##3}%
11117     \@pdfm@mark{%
11118       outline \ifHy@DvipdfmxOutlineOpen
11119         [%
11120         \ifnum##21>\z@
11121         \else
11122         -%
11123         \fi
11124       ] %
11125     \fi
11126     ##1<<%
11127     /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
11128     /A<<%
11129     /S/GoTo%

```

```

11130          /D(\Hy@pstringName)%
11131      >>%
11132  >>%
11133  }%
11134 </dvipdfm>
11135 }%
11136 {%
11137   \def\WriteBookmarks{0}%
11138   \InputIfFileExists{\jobname.out}{-}{-}%
11139 }%
11140 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
11141 \ifx\WriteBookmarks\relax
11142   \else
11143     \if@files
11144       \newwrite\@outlinefile
11145       \immediate\openout\@outlinefile=\jobname.out\relax
11146       \ifHy@typexml
11147         \immediate\write\@outlinefile{<relaxxml>\relax}%
11148       \fi
11149     \fi
11150   \fi
11151   \endgroup
11152 }
11153 <*pdfTeX>
11154 \def\Hy@OutlineName#1#2#3#4{%
11155   \pdfoutline goto name{#2}count#3{#4}%
11156 }
11157 </pdfTeX>
11158 \def\check@bm@number#1{%
11159   \expandafter\ifx\csname B_#1\endcsname\relax
11160     0%
11161   \else
11162     \csname B_#1\endcsname
11163   \fi
11164 }
11165 \def\calc@bm@number#1{%
11166   \@tempcnta=\check@bm@number{#1}\relax
11167   \advance\@tempcnta by 1 %
11168   \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
11169 }
11170 </!vTeX>

11171 \ifHy@implicit
11172 \else
11173   \expandafter\endinput
11174 \fi

11175 </outlines>
11176 <*outlines | hypertex>

11177 \let\H@old@ssect\@ssect
11178 \def\@ssect#1#2#3#4#5{%
11179   \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
11180   \phantomsection
11181 }
11182 \let\H@old@schapter\@schapter
11183 \def\@schapter#1{%
11184   \H@old@schapter{#1}%
11185   \begingroup

```

```

11186 \let\@mkboth\@gobbletwo
11187 \Hy@GlobalStepCount\Hy@linkcounter
11188 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11189 \Hy@raisedlink{%
11190   \hyper@anchorstart{\@currentHref}\hyper@anchorend
11191 }%
11192 \endgroup
11193 }

```

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:

```

11194 \@ifundefined{chapter}{-}{%
11195   \let\Hy@org@chapter\@chapter
11196   \def\@chapter{%
11197     \def\Hy@next{%
11198       \Hy@GlobalStepCount\Hy@linkcounter
11199       \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11200       \Hy@raisedlink{%
11201         \hyper@anchorstart{\@currentHref}\hyper@anchorend
11202       }%
11203     }%
11204     \ifnum\c@secnumdepth>\m@ne
11205       \@ifundefined{if@mainmatter}%
11206       \iftrue{\csname if@mainmatter\endcsname}%
11207       \let\Hy@next\relax
11208     \fi
11209     \fi
11210     \Hy@next
11211     \Hy@org@chapter
11212   }%
11213 }

11214 \let\H@old@part\@part
11215 \begingroup\expandafter\expandafter\expandafter\endgroup
11216 \expandafter\ifx\csname chapter\endcsname\relax
11217   \let\Hy@secnum@part\z@
11218 \else
11219   \let\Hy@secnum@part\m@ne
11220 \fi
11221 \def\@part{%
11222   \ifnum\Hy@secnum@part>\c@secnumdepth
11223     \phantomsection
11224   \fi
11225   \H@old@part
11226 }

11227 \let\H@old@spart\@spart
11228 \def\@spart#1{%
11229   \H@old@spart{#1}%
11230   \Hy@GlobalStepCount\Hy@linkcounter
11231   \xdef\@currentHref{part*.\the\Hy@linkcounter}%
11232   \Hy@raisedlink{%
11233     \hyper@anchorstart{\@currentHref}\hyper@anchorend
11234   }%
11235 }

11236 \let\H@old@sect\@sect
11237 \def\@sect#1#2#3#4#5#6[#7]#8{%
11238   \ifnum #2>\c@secnumdepth

```

```

11239 \Hy@GlobalStepCount\Hy@linkcounter
11240 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
11241 \fi
11242 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
11243 \ifnum #2>\c@secnumdepth
11244 \Hy@raisedlink{%
11245 \hyper@anchorstart{\@currentHref}\hyper@anchorend
11246 }%
11247 \fi
11248 }

11249 </outlines | hypertex>
11250 <*outlines>

11251 \expandafter\def\csname Parent-4\endcsname{}
11252 \expandafter\def\csname Parent-3\endcsname{}
11253 \expandafter\def\csname Parent-2\endcsname{}
11254 \expandafter\def\csname Parent-1\endcsname{}
11255 \expandafter\def\csname Parent0\endcsname{}
11256 \expandafter\def\csname Parent1\endcsname{}
11257 \expandafter\def\csname Parent2\endcsname{}
11258 \expandafter\def\csname Parent3\endcsname{}
11259 \expandafter\def\csname Parent4\endcsname{}

11260 </outlines>

```

49 Compatibility with koma-script classes

```

11261 <*outlines | hypertex>

```

Hard-wire in an unpleasant over-ride of komascript ‘scrbook’ class for Tobias.Isenberg@gmx.de. With version 6.71b the hack is also applied to ‘scrreprt’ class and is removed for koma-script versions since 2001/01/01, because Markus Kohm supports hyperref in komascript.

```

11262 \def\Hy@tempa{%
11263 \def\@addchap{##1}##2{%
11264 \typeout{##2}%
11265 \if@twoside
11266 \mkboth{##1}{}%
11267 \else
11268 \mkboth{}{##1}%
11269 \fi
11270 \addtocontents{lof}{\protect\addvspace{10\p@}}%
11271 \addtocontents{lot}{\protect\addvspace{10\p@}}%
11272 \Hy@GlobalStepCount\Hy@linkcounter
11273 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11274 \Hy@raisedlink{%
11275 \hyper@anchorstart{\@currentHref}\hyper@anchorend
11276 }%
11277 \if@twocolumn
11278 \topnewpage[\@makeschapterhead{##2}]%
11279 \else
11280 \@makeschapterhead{##2}%
11281 \@afterheading
11282 \fi
11283 \addcontentsline{toc}{chapter}{##1}%
11284 }%
11285 }

11286 \@ifclassloaded{scrbook}{%
11287 \@ifclasslater{scrbook}{2001/01/01}{%

```

```

11288 \let\Hy@tempa\@empty
11289 }{}%
11290 }{%
11291 \@ifclassloaded{scrreprt}{%
11292 \@ifclasslater{scrreprt}{2001/01/01}{%
11293 \let\Hy@tempa\@empty
11294 }{}%
11295 }{%
11296 \let\Hy@tempa\@empty
11297 }%
11298 }%
11299 \Hy@tempa
11300 </outlines | hypertex>

```

50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek oberdiek@ruf.uni-freiburg.de

50.1 PD1 encoding

```

11301 <*pd1enc>
11302 \DeclareFontEncoding{PD1}{}{}

```

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

```

11303 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
11304 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
11305 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
11306 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
11307 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed

```

Accents

```

11308 \DeclareTextAccent{\'}{PD1}{\textgrave}
11309 \DeclareTextAccent{\'}{PD1}{\textacute}
11310 \DeclareTextAccent{\`}{PD1}{\textcircumflex}
11311 \DeclareTextAccent{\~}{PD1}{\texttilde}
11312 \DeclareTextAccent{\"}{PD1}{\textdieresis}
11313 \DeclareTextAccent{\r}{PD1}{\textring}
11314 \DeclareTextAccent{\v}{PD1}{\textcaron}
11315 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
11316 \DeclareTextAccent{\c}{PD1}{\textcedilla}
11317 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textgrave}
11318 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
11319 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textcircumflex}
11320 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
11321 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textdieresis}
11322 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
11323 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}
11324 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
11325 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
11326 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}

```

Accent glyph names

```

11327 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve
11328 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
11329 \DeclareTextCommand{\textcircumflex}{PD1}{\032} % circumflex
11330 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
11331 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
11332 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
11333 \DeclareTextCommand{\textring}{PD1}{\036} % ring

```

```

11334 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde
\040: space
\041: exclam
11335 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042
11336 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign
11337 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar
11338 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent
11339 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand
\047: quotesingle
11340 \DeclareTextCommand{\textparenleft}{PD1}{\string\() % parenleft \050
11341 \DeclareTextCommand{\textparenright}{PD1}{\string\)} % parenright \051
\052: asterisk
\053: plus
\054: comma
\055: hyphen
\056: period
\057: slash
\060... \071: 0...9
\072: colon
\073: semicolon
11342 \DeclareTextCommand{\textless}{PD1}{<} % less \074
\075: equal
11343 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076
\077: question
\100: at
\101... \132: A...Z
\133: bracketleft
11344 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash
\135: bracketright
11345 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum
11346 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
11347 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave
\141... \172: a...z
11348 \DeclareTextCompositeCommand{\.}{PD1}{i}{i} % i
11349 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
11350 \DeclareTextCommand{\textbar}{PD1}{|} % bar
11351 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
11352 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde
No glyph \177 in PDFDocEncoding.
11353 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
11354 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
11355 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl
11356 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis
11357 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
11358 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
11359 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
11360 \DeclareTextCommand{\textfractionmark}{PD1}{\207} % fraction, \207
11361 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft
11362 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
11363 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
11364 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
11365 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
11366 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
11367 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright

```

```

11368 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
11369 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
11370 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
11371 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark
11372 \DeclareTextCommand{\textfi}{PD1}{\223} % fi ?? \223
11373 \DeclareTextCommand{\textfl}{PD1}{\224} % fl ?? \224
11374 \DeclareTextCommand{\L}{PD1}{\225} % Lslash, \225
11375 \DeclareTextCommand{\OE}{PD1}{\226} % OE
11376 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron
11377 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230} % Ydieresis
11378 \DeclareTextCommand{\IJ}{PD1}{\230}
11379 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231} % Zcaron, \231
11380 \DeclareTextCommand{\i}{PD1}{\232} % dotlessi, \232
11381 \DeclareTextCommand{\l}{PD1}{\233} % lslash, \233
11382 \DeclareTextCommand{\oe}{PD1}{\234} % oe
11383 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
11384 \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.

```

11385 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
11386 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown
11387 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
11388 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
11389 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
11390 \DeclareTextCommand{\textyen}{PD1}{\245} % yen
11391 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
11392 \DeclareTextCommand{\textsection}{PD1}{\247} % section
11393 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
11394 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
11395 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
11396 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
11397 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

```

No glyph \255 in PDFDocEncoding.

```

11398 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
11399 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
11400 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
11401 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
11402 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
11403 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
11404 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
11405 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
11406 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
11407 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
11408 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
11409 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior
11410 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine
11411 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright
11412 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter
11413 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf
11414 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters
11415 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown
11416 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300} % Agrave
11417 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301} % Aacute
11418 \DeclareTextCompositeCommand{\`}{PD1}{A}{\302} % Acircumflex
11419 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303} % Atilde
11420 \DeclareTextCompositeCommand{"}{PD1}{A}{\304} % Adieresis
11421 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring

```

11422 \DeclareTextCommand{\AE}{PD1}{\306} % AE
11423 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla
11424 \DeclareTextCompositeCommand{\'}{PD1}{E}{\310} % Egrave
11425 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311} % Eacute
11426 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312} % Ecircumflex
11427 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313} % Edieresis
11428 \DeclareTextCompositeCommand{\'}{PD1}{I}{\314} % Igrave
11429 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315} % Iacute
11430 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316} % Icircumflex
11431 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317} % Idieresis
11432 \DeclareTextCommand{\DH}{PD1}{\320} % Eth
11433 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth
11434 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321} % Ntilde
11435 \DeclareTextCompositeCommand{\'}{PD1}{O}{\322} % Ograve
11436 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323} % Oacute
11437 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324} % Ocircumflex
11438 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325} % Otilde
11439 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326} % Odieresis
11440 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply
11441 \DeclareTextCommand{\O}{PD1}{\330} % Oslash
11442 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331} % Ugrave
11443 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute
11444 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333} % Ucircumflex
11445 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis
11446 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335} % Yacute
11447 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn
11448 \DeclareTextCommand{\ss}{PD1}{\337} % germandbls
11449 \DeclareTextCompositeCommand{\'}{PD1}{a}{\340} % agrave
11450 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute
11451 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342} % acircumflex
11452 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343} % atilde
11453 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344} % adieresis
11454 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring
11455 \DeclareTextCommand{\ae}{PD1}{\346} % ae
11456 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla
11457 \DeclareTextCompositeCommand{\'}{PD1}{e}{\350} % egrave
11458 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute
11459 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352} % ecircumflex
11460 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353} % edieresis
11461 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
11462 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
11463 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
11464 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
11465 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356} % icircumflex
11466 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356} % icircumflex
11467 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
11468 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
11469 \DeclareTextCommand{\dh}{PD1}{\360} % eth
11470 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361} % ntilde
11471 \DeclareTextCompositeCommand{\'}{PD1}{o}{\362} % ograve
11472 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363} % oacute
11473 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364} % ocircumflex
11474 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365} % otilde
11475 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366} % odieresis
11476 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
11477 \DeclareTextCommand{\o}{PD1}{\370} % oslash
11478 \DeclareTextCompositeCommand{\'}{PD1}{u}{\371} % ugrave

```

11479 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372} % uacute
11480 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373} % ucircumflex
11481 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374} % udieresis
11482 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375} % yacute
11483 \DeclareTextCommand{\th}{PD1}{\376} % thorn
11484 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377} % ydieresis
11485 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

11486 \DeclareTextCommand{\SS}{PD1}{SS}
11487 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

11488 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
11489 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
11490 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
11491 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
11492 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
11493 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
11494 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
11495 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

11496 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
11497 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
11498 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
11499 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
11500 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
11501 \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;

```

11502 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
11503 \DeclareTextCompositeCommand{\'}{PD1}{c}{c} % cacute
11504 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
11505 \DeclareTextCompositeCommand{\'}{PD1}{n}{n} % nacute
11506 \DeclareTextCompositeCommand{\'}{PD1}{s}{s} % sacute
11507 \DeclareTextCompositeCommand{\'}{PD1}{z}{z} % zacute
11508 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot
11509 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
11510 \DeclareTextCompositeCommand{\'}{PD1}{C}{C} % Cacute
11511 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
11512 \DeclareTextCompositeCommand{\'}{PD1}{N}{N} % Nacute
11513 \DeclareTextCompositeCommand{\'}{PD1}{S}{S} % Sacute
11514 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z} % Zacute
11515 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot

```

```

11516 </pdlenc>

```

50.2 PU encoding

```

11517 <*puenc>
11518 \DeclareFontEncoding{PU}{-}{-}

```

50.2.1 Basic Latin

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

```

11519 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
11520 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
11521 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
11522 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
11523 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed

```

Accents

```

11524 \DeclareTextAccent{\`}{PU}{\textgrave}
11525 \DeclareTextAccent{\'}{PU}{\textacute}
11526 \DeclareTextAccent{\`}{PU}{\textcircumflex}
11527 \DeclareTextAccent{\~}{PU}{\texttilde}
11528 \DeclareTextAccent{\"}{PU}{\textdieresis}
11529 \DeclareTextAccent{\r}{PU}{\textring}
11530 \DeclareTextAccent{\v}{PU}{\textcaron}
11531 \DeclareTextAccent{\.}{PU}{\textdotaccent}
11532 \DeclareTextAccent{\c}{PU}{\textcedilla}
11533 \DeclareTextAccent{\U}{PU}{\textbreve}
11534 \DeclareTextAccent{\C}{PU}{\textdoublegrave}
11535 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textgrave}
11536 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
11537 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textcircumflex}
11538 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
11539 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textdieresis}
11540 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
11541 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
11542 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
11543 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
11544 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
11545 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}
11546 \DeclareTextCommand{\=}{PU}[1]{\TextSymbolUnavailable{\={#1}}#1}
11547 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
11548 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
11549 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}

```

Accent glyph names

```

11550 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
11551 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
11552 \DeclareTextCommand{\textcircumflex}{PU}{\80\032} % circumflex
11553 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
11554 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
11555 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
11556 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
11557 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
11558 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave

```

\040: space

\041: exclam

```

11559 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
11560 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
11561 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
11562 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
11563 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand

```

\047: quotesingle

```

11564 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft
11565 \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
 11566 \DeclareTextCommand{\textless}{PU}{<} % less \80\074
 \075: equal
 11567 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076
 \077: question
 \100: at
 \101... \132: A...Z
 \133: bracketleft
 11568 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash
 \135: bracketright
 11569 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum
 11570 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore
 11571 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave
 \141... \172: a...z
 11572 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % i
 11573 \DeclareTextCommand{\j}{PU}{j} % jdotless
 11574 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft
 11575 \DeclareTextCommand{\textbar}{PU}{|} % bar
 11576 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright
 11577 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde
 No glyph \177 in PDFDocEncoding.

50.2.2 Latin-1 Supplement

11578 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212
 11579 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223
 11580 \DeclareTextCommand{\textfl}{PU}{fl} % fl ?? \80\224

There are two positions for the glyphs from \80\225 until \80\236. See the test files testbmoe., testbml, testbmse, testbmzc, and testbmyi for details. Problematic are all positions, but especially \OE, \oe, and \i.

11581 \DeclareTextCommand{\OE}{PU}{OE} % OE
 11582 \DeclareTextCommand{\oe}{PU}{oe} % oe

The euro \240 is inserted in version 1.3 of the pdf specification.

11583 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown
 11584 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent
 11585 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling
 11586 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency
 11587 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen
 11588 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar
 11589 \DeclareTextCommand{\textsection}{PU}{\80\247} % section
 11590 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis
 11591 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright
 11592 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine
 11593 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft
 11594 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot

No glyph \255 in PDFDocEncoding.

11595 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered
 11596 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron
 11597 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree
 11598 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus
 11599 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior
 11600 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior

11601 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute
11602 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu
11603 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph
11604 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered
11605 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla
11606 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior
11607 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine
11608 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright
11609 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter
11610 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf
11611 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters
11612 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown
11613 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300} % Agrave
11614 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute
11615 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302} % Acircumflex
11616 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303} % Atilde
11617 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis
11618 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring
11619 \DeclareTextCommand{\AE}{PU}{\80\306} % AE
11620 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla
11621 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310} % Egrave
11622 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311} % Eacute
11623 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312} % Ecircumflex
11624 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis
11625 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314} % Igrave
11626 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315} % Iacute
11627 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316} % Icircumflex
11628 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317} % Idieresis
11629 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth
11630 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321} % Ntilde
11631 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322} % Ograve
11632 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323} % Oacute
11633 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324} % Ocircumflex
11634 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325} % Otilde
11635 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326} % Odieresis
11636 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply
11637 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash
11638 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331} % Ugrave
11639 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332} % Uacute
11640 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333} % Ucircumflex
11641 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334} % Udieresis
11642 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335} % Yacute
11643 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn
11644 \DeclareTextCommand{\ss}{PU}{\80\337} % germandbls
11645 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340} % agrave
11646 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341} % aacute
11647 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342} % acircumflex
11648 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343} % atilde
11649 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344} % adieresis
11650 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
11651 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
11652 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
11653 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350} % egrave
11654 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351} % eacute
11655 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352} % ecircumflex
11656 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353} % edieresis
11657 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave

```

11658 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354} % igrave
11659 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
11660 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
11661 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\356} % icircumflex
11662 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\356} % icircumflex
11663 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
11664 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
11665 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
11666 \DeclareTextCompositeCommand{\`}{PU}{n}{\80\361} % ntilde
11667 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362} % ograve
11668 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363} % oacute
11669 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\364} % ocircumflex
11670 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\365} % otilde
11671 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366} % odieresis
11672 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
11673 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
11674 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371} % ugrave
11675 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372} % uacute
11676 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\373} % ucircumflex
11677 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374} % udieresis
11678 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375} % yacute
11679 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
11680 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377} % ydieresis
11681 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```
11682 \DeclareTextCommand{\SS}{PU}{SS}
```

Aliases (german.sty)

```

11683 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
11684 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
11685 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
11686 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
11687 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
11688 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
11689 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
11690 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

11691 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
11692 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
11693 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
11694 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
11695 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

50.2.3 Latin Extended-A

```

11696 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% Amacron
11697 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% amacron
11698 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% Abreve
11699 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% abreve
11700 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004} % Aogonek
11701 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005} % aogonek
11702 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006} % Cacute
11703 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007} % cacute
11704 \DeclareTextCompositeCommand{\`}{PU}{C}{\81\010} % Ccircumflex
11705 \DeclareTextCompositeCommand{\`}{PU}{c}{\81\011} % ccircumflex
11706 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012} % Cdot
11707 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013} % cdot
11708 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014} % Ccaron

```

```

11709 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015} % ccaron
11710 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016} % Dcaron
11711 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017} % dcaron
11712 \DeclareTextCommand{\DJ}{PU}{\81\020} % Dslash
11713 \DeclareTextCommand{\dj}{PU}{\81\021} % dslash
11714 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022} % Emacron
11715 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023} % emacron
11716 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024} % Ebreve
11717 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025} % ebreve
11718 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026} % Edot
11719 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027} % edot
11720 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030} % Eogonek
11721 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031} % eogonek
11722 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032} % Ecaron
11723 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033} % ecaron
11724 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034} % Gcircumflex
11725 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035} % gcircumflex
11726 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036} % Gbreve
11727 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037} % gbreve
11728 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040} % Gdot
11729 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041} % gdot
11730 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042} % Gcedilla
11731 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043} % gcedilla
11732 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044} % Hcircumflex
11733 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045} % hcircumflex
11734 \DeclareTextCommand{\textHslash}{PU}{\81\046} % Hslash
11735 \DeclareTextCommand{\texthslash}{PU}{\81\047} % hslash
11736 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050} % Itilde
11737 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde
11738 \DeclareTextCompositeCommand{\~}{PU}{\i}{\81\051} % itilde
11739 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052} % Imacron
11740 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053} % imacron
11741 \DeclareTextCompositeCommand{\=}{PU}{\i}{\81\053} % imacron
11742 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054} % Ibreve
11743 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
11744 \DeclareTextCompositeCommand{\u}{PU}{\i}{\81\055} % ibreve
11745 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056} % Iogonek
11746 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
11747 \DeclareTextCompositeCommand{\k}{PU}{\i}{\81\057} % iogonek
11748 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060} % Idot
11749 \DeclareTextCommand{\i}{PU}{\81\061} % idotless
11750 % IJlig
11751 % ijlig
11752 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064} % Jcircumflex
11753 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
11754 \DeclareTextCompositeCommand{\^}{PU}{\j}{\81\065} % jcircumflex
11755 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
11756 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
11757 % kgreen
11758 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
11759 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
11760 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
11761 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
11762 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
11763 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
11764 % L middle dot
11765 % l middle dot

```

```

11766 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
11767 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
11768 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute
11769 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
11770 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
11771 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
11772 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
11773 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
11774 % n apostrophe
11775 \DeclareTextCommand{\NG}{PU}{\81\112} % NG
11776 \DeclareTextCommand{\ng}{PU}{\81\113} % ng
11777 \DeclareTextCompositeCommand{=}{PU}{O}{\81\114} % Omacron
11778 \DeclareTextCompositeCommand{=}{PU}{o}{\81\115} % omacron
11779 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve
11780 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
11781 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
11782 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
11783 \DeclareTextCommand{\OE}{PU}{\81\122} % OE
11784 \DeclareTextCommand{\oe}{PU}{\81\123} % oe
11785 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
11786 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
11787 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
11788 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
11789 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
11790 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
11791 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
11792 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
11793 \DeclareTextCompositeCommand{\`}{PU}{S}{\81\134} % Scircumflex
11794 \DeclareTextCompositeCommand{\`}{PU}{s}{\81\135} % scircumflex
11795 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
11796 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
11797 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
11798 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
11799 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
11800 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
11801 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
11802 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
11803 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
11804 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
11805 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150} % Utilde
11806 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151} % utilde
11807 \DeclareTextCompositeCommand{=}{PU}{U}{\81\152} % Umacron
11808 \DeclareTextCompositeCommand{=}{PU}{u}{\81\153} % umacron
11809 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
11810 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
11811 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring
11812 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
11813 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubbleacute
11814 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubbleacute
11815 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Ugonek
11816 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % ugonek
11817 \DeclareTextCompositeCommand{\`}{PU}{W}{\81\164} % Wcircumflex
11818 \DeclareTextCompositeCommand{\`}{PU}{w}{\81\165} % wcircumflex
11819 \DeclareTextCompositeCommand{\`}{PU}{Y}{\81\166} % Ycircumflex
11820 \DeclareTextCompositeCommand{\`}{PU}{y}{\81\167} % ycircumflex
11821 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170} % Ydieresis
11822 \DeclareTextCommand{\IJ}{PU}{\81\170}

```

```

11823 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
11824 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
11825 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
11826 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
11827 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
11828 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

```

50.2.4 Latin Extended-B

```

11829 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
11830 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
11831 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
11832 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
11833 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
11834 \DeclareTextCompositeCommand{\v}{PU}{\i}{\81\320} % icaron
11835 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
11836 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
11837 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
11838 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
11839 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
11840 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
11841 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
11842 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
11843 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
11844 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
11845 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Oogonek
11846 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

```

50.2.5 Greek

```

11847 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}
11848 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}
11849 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
11850 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
11851 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}
11852 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
11853 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
11854 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
11855 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
11856 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
11857 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}
11858 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
11859 \DeclareTextCommand{\textBeta}{PU}{\83\222}
11860 \DeclareTextCommand{\textGamma}{PU}{\83\223}
11861 \DeclareTextCommand{\textDelta}{PU}{\83\224}
11862 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
11863 \DeclareTextCommand{\textZeta}{PU}{\83\226}
11864 \DeclareTextCommand{\textEta}{PU}{\83\227}
11865 \DeclareTextCommand{\textTheta}{PU}{\83\230}
11866 \DeclareTextCommand{\textIota}{PU}{\83\231}
11867 \DeclareTextCommand{\textKappa}{PU}{\83\232}
11868 \DeclareTextCommand{\textLambda}{PU}{\83\233}
11869 \DeclareTextCommand{\textMu}{PU}{\83\234}
11870 \DeclareTextCommand{\textNu}{PU}{\83\235}
11871 \DeclareTextCommand{\textXi}{PU}{\83\236}
11872 \DeclareTextCommand{\textOmicron}{PU}{\83\237}
11873 \DeclareTextCommand{\textPi}{PU}{\83\240}
11874 \DeclareTextCommand{\textRho}{PU}{\83\241}
11875 \DeclareTextCommand{\textSigma}{PU}{\83\243}

```

```

11876 \DeclareTextCommand{\textTau}{PU}{\83\244}
11877 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}
11878 \DeclareTextCommand{\textPhi}{PU}{\83\246}
11879 \DeclareTextCommand{\textChi}{PU}{\83\247}
11880 \DeclareTextCommand{\textPsi}{PU}{\83\250}
11881 \DeclareTextCommand{\textOmega}{PU}{\83\251}
11882 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}
11883 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}
11884 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}
11885 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}
11886 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}
11887 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}
11888 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}
11889 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}
11890 \DeclareTextCommand{\textalpha}{PU}{\83\261}
11891 \DeclareTextCommand{\textbeta}{PU}{\83\262}
11892 \DeclareTextCommand{\textgamma}{PU}{\83\263}
11893 \DeclareTextCommand{\textdelta}{PU}{\83\264}
11894 \DeclareTextCommand{\textepsilon}{PU}{\83\265}
11895 \DeclareTextCommand{\textzeta}{PU}{\83\266}
11896 \DeclareTextCommand{\texteta}{PU}{\83\267}
11897 \DeclareTextCommand{\texttheta}{PU}{\83\270}
11898 \DeclareTextCommand{\textiota}{PU}{\83\271}
11899 \DeclareTextCommand{\textkappa}{PU}{\83\272}
11900 \DeclareTextCommand{\textlambda}{PU}{\83\273}
11901 \DeclareTextCommand{\textmu}{PU}{\83\274}
11902 \DeclareTextCommand{\textnu}{PU}{\83\275}
11903 \DeclareTextCommand{\textxi}{PU}{\83\276}
11904 \DeclareTextCommand{\textomicron}{PU}{\83\277}
11905 \DeclareTextCommand{\textpi}{PU}{\83\300}
11906 \DeclareTextCommand{\textrho}{PU}{\83\301}
11907 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
11908 \DeclareTextCommand{\textsigma}{PU}{\83\303}
11909 \DeclareTextCommand{\texttau}{PU}{\83\304}
11910 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
11911 \DeclareTextCommand{\textphi}{PU}{\83\306}
11912 \DeclareTextCommand{\textchi}{PU}{\83\307}
11913 \DeclareTextCommand{\textpsi}{PU}{\83\310}
11914 \DeclareTextCommand{\textomega}{PU}{\83\311}
11915 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}
11916 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}
11917 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}
11918 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}
11919 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}
11920 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}
11921 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}
11922 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}
11923 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}
11924 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}
11925 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}
11926 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}
11927 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}
11928 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}
11929 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}
11930 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}
11931 %\DeclareTextCommand{\textvarkappa}{PU}{\83\360}
11932 %\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.

```
11933 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
11934 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}%
11935 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
11936 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% GJE
11937 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
11938 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
11939 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
11940 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI
11941 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
11942 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
11943 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE
11944 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
11945 \DeclareTextCompositeCommand{'}{PU}{\CYRK}{\84\014}% KJE
11946 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
11947 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
11948 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A
11949 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
11950 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
11951 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
11952 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
11953 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
11954 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
11955 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
11956 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I
11957 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
11958 \DeclareTextCompositeCommand{U}{PU}{\CYRI}{\84\031}%
11959 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
11960 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
11961 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM
11962 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN
11963 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O
11964 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE
11965 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER
11966 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES
11967 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE
11968 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U
11969 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF
11970 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA
11971 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE
11972 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE
11973 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA
11974 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA
11975 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN
11976 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU
11977 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN
11978 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E
11979 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU
11980 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA
11981 \DeclareTextCommand{\cyra}{PU}{\84\060}% a
11982 \DeclareTextCommand{\cyrb}{PU}{\84\061}% be
11983 \DeclareTextCommand{\cyrv}{PU}{\84\062}% ve
11984 \DeclareTextCommand{\cyrg}{PU}{\84\063}% ghe
11985 \DeclareTextCommand{\cyrd}{PU}{\84\064}% de
```

11986 \DeclareTextCommand{\cyre}{PU}{\84\065}% ie
11987 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% zhe
11988 \DeclareTextCommand{\cyrz}{PU}{\84\067}% ze
11989 \DeclareTextCommand{\cyri}{PU}{\84\070}% i
11990 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i
11991 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}%
11992 \DeclareTextCommand{\cyrk}{PU}{\84\072}% ka
11993 \DeclareTextCommand{\cyr1}{PU}{\84\073}% el
11994 \DeclareTextCommand{\cyrn}{PU}{\84\074}% em
11995 \DeclareTextCommand{\cyrn}{PU}{\84\075}% en
11996 \DeclareTextCommand{\cyro}{PU}{\84\076}% o
11997 \DeclareTextCommand{\cyrp}{PU}{\84\077}% pe
11998 \DeclareTextCommand{\cyr}{PU}{\84\100}% er
11999 \DeclareTextCommand{\cyr}{PU}{\84\101}% es
12000 \DeclareTextCommand{\cyr}{PU}{\84\102}% te
12001 \DeclareTextCommand{\cyr}{PU}{\84\103}% u
12002 \DeclareTextCommand{\cyr}{PU}{\84\104}% ef
12003 \DeclareTextCommand{\cyr}{PU}{\84\105}% ha
12004 \DeclareTextCommand{\cyr}{PU}{\84\106}% tse
12005 \DeclareTextCommand{\cyr}{PU}{\84\107}% che
12006 \DeclareTextCommand{\cyr}{PU}{\84\110}% sha
12007 \DeclareTextCommand{\cyr}{PU}{\84\111}% shcha
12008 \DeclareTextCommand{\cyr}{PU}{\84\112}% hard sign
12009 \DeclareTextCommand{\cyr}{PU}{\84\113}% yeru
12010 \DeclareTextCommand{\cyr}{PU}{\84\114}% soft sign
12011 \DeclareTextCommand{\cyr}{PU}{\84\115}% e
12012 \DeclareTextCommand{\cyr}{PU}{\84\116}% yu
12013 \DeclareTextCommand{\cyr}{PU}{\84\117}% ya
12014 \DeclareTextCommand{\cyr}{PU}{\84\121}% io
12015 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}%
12016 \DeclareTextCommand{\cyr}{PU}{\84\122}% dje
12017 \DeclareTextCompositeCommand{\'}{PU}{\cyr}{\84\123}% gje
12018 \DeclareTextCommand{\cyr}{PU}{\84\124}% ukrainian ie
12019 \DeclareTextCommand{\cyr}{PU}{\84\125}% dze
12020 \DeclareTextCommand{\cyr}{PU}{\84\126}% byelorussian-ukrainian i
12021 \DeclareTextCommand{\cyr}{PU}{\84\127}% yi
12022 \DeclareTextCommand{\cyr}{PU}{\84\130}% je
12023 \DeclareTextCommand{\cyr}{PU}{\84\131}% lje
12024 \DeclareTextCommand{\cyr}{PU}{\84\132}% nje
12025 \DeclareTextCommand{\cyr}{PU}{\84\133}% tshe
12026 \DeclareTextCompositeCommand{\'}{PU}{\cyr}{\84\134}% kje
12027 \DeclareTextCommand{\cyr}{PU}{\84\136}% short u
12028 \DeclareTextCommand{\cyr}{PU}{\84\137}% dzhe
12029 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA
12030 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega
12031 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT
12032 \DeclareTextCommand{\cyryat}{PU}{\84\143}% yat
12033 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E
12034 \DeclareTextCommand{\cyriote}{PU}{\84\145}% iotified e
12035 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS
12036 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% little yus
12037 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS
12038 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% iotified little yus
12039 \DeclareTextCommand{\CYRYUS}{PU}{\84\152}% big YUS
12040 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% big yus
12041 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS
12042 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% iotified big yus

12043 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI
12044 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% ksi
12045 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI
12046 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi
12047 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA
12048 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita
12049 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA
12050 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa
12051 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave
12052 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave
12053 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK
12054 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk
12055 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA
12056 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega
12057 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo
12058 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo
12059 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT
12060 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot
12061 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA
12062 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa
12063 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign
12064 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO
12065 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION
12066 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA
12067 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA
12068 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn
12069 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn
12070 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke
12071 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke
12072 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook
12073 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook
12074 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender
12075 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender
12076 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender
12077 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender
12078 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender
12079 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% ka descender
12080 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke
12081 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke
12082 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke
12083 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% ka stroke
12084 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA
12085 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka
12086 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender
12087 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender
12088 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE
12089 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe
12090 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook
12091 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook
12092 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA
12093 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha
12094 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender
12095 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% es descender
12096 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender
12097 \DeclareTextCommand{\cyrtddsc}{PU}{\84\255}% te descender
12098 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U
12099 \DeclareTextCommand{\cyry}{PU}{\84\257}% straight u

12100 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke
12101 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% straight u stroke
12102 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender
12103 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% ha descender
12104 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE
12105 \DeclareTextCommand{\cyrтетse}{PU}{\84\265}% ligature te tse
12106 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender
12107 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender
12108 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke
12109 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% che vertical stroke
12110 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA
12111 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha
12112 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhasian CHE
12113 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhasian che
12114 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% abkhasian CHE descender
12115 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhasian che descender
12116 \DeclareTextCommand{\CYRpaločka}{PU}{\84\300}% paločka
12117 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve
12118 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% zhe breve
12119 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook
12120 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% ka hook
12121 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook
12122 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% en hook
12123 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE
12124 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che
12125 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve
12126 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve
12127 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% A diaeresis
12128 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% a diaeresis
12129 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE
12130 \DeclareTextCommand{\cyrae}{PU}{\84\325}% ligature a ie
12131 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve
12132 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve
12133 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA
12134 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% schwa
12135 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis
12136 \DeclareTextCompositeCommand{"}{PU}{\cyrswa}{\84\333}% schwa diaeresis
12137 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% ZHE diaeresis
12138 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% zhe diaeresis
12139 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% ZE diaeresis
12140 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% ze diaeresis
12141 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhasian DZE
12142 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhasian dze
12143 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% I macron
12144 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% i macron
12145 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% I diaeresis
12146 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% i diaeresis
12147 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% O diaeresis
12148 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% o diaeresis
12149 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O
12150 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% barred o
12151 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% barred O diaeresis
12152 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% barred o diaeresis
12153 \DeclareTextCompositeCommand{\=}{PU}{\CYRU}{\84\356}% U macron
12154 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% u macron
12155 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U diaeresis
12156 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% u diaeresis

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12157 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U double acute
12158 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% u double acute
12159 \DeclareTextCompositeCommand{\"}{PU}{\CYRCH}{\84\364}% CHE diaeresis
12160 \DeclareTextCompositeCommand{\"}{PU}{\cyrch}{\84\365}% che diaeresis
12161 \DeclareTextCompositeCommand{\"}{PU}{\CYRERY}{\84\370}% YERU diaeresis
12162 \DeclareTextCompositeCommand{\"}{PU}{\cyrery}{\84\371}% yeru diaeresis

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50.2.7 Symbols

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12163 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash
12164 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash
12165 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030} % quoteleft
12166 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright
12167 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase
12168 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
12169 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
12170 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
12171 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
12172 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
12173 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet
12174 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
12175 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
12176 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
12177 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
12178 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
12179 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
12180 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
12181 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}
12182 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
12183 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
12184 \DeclareTextCommand{\cyrlangle}{PU}{\9043\051}
12185 \DeclareTextCommand{\cyrangle}{PU}{\9043\052}

12186 </puenc>

```

50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

12187 <*puvnenc>

12188 \DeclareTextCommand{\abreve}{PU}{\81\003}
12189 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
12190 \DeclareTextCommand{\dj}{PU}{\81\021}
12191 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
12192 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
12193 \DeclareTextCommand{\ohorn}{PU}{\81\241}
12194 \DeclareTextCommand{\uhorn}{PU}{\81\260}
12195 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
12196 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
12197 \DeclareTextCommand{\DJ}{PU}{\81\020}
12198 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
12199 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
12200 \DeclareTextCommand{\OHORN}{PU}{\81\240}
12201 \DeclareTextCommand{\UHORN}{PU}{\81\257}

12202 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
12203 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
12204 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
12205 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}

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12206 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
12207 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
12208 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
12209 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
12210 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
12211 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
12212 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
12213 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
12214 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
12215 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}
12216 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}
12217 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}
12218 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}
12219 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}
12220 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}
12221 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}
12222 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}
12223 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}
12224 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}
12225 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}
12226 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}
12227 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}
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12322 </puvnenc>

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50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

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12323 <*puarenc>

12324 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LETTER HAMZA
12325 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADD A
12326 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA A
12327 \DeclareTextCommand{\wawhamza}{PU}{\86\044} % 0624;afii57412;ARABIC LETTER WAW WITH HAMZA AE
12328 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HA
12329 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
12330 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF
12331 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH
12332 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA
12333 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH
12334 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH
12335 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM
12336 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH
12337 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH
12338 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL
12339 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL
12340 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH
12341 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN
12342 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN
12343 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN
12344 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD
12345 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD
12346 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH
12347 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH
12348 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN
12349 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN
12350 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEL
12351 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afii57441;ARABIC LETTER FEH
12352 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF
12353 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF
12354 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM
12355 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LETTER MEEM
12356 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON
12357 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH
12358 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afii57448;ARABIC LETTER WAW
12359 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afii57449;ARABIC LETTER ALEF MAKSURA
12360 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afii57450;ARABIC LETTER YEH

12361 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afii57451;ARABIC FATHATAN
12362 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afii57452;ARABIC DAMMATAN
12363 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN
12364 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afii57454;ARABIC FATHA
12365 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afii57455;ARABIC DAMMA
12366 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA
12367 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA
12368 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afii57458;ARABIC SUKUN

Farsi

12369 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afii57506;ARABIC LETTER PEH

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12370 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afii57507;ARABIC LETTER TCHEH
12371 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afii57508;ARABIC LETTER JEH
12372 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afii?????;FARSI LETTER KAF
12373 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF
12374 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afii?????;FARSI LETTER YEH

12375 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
12376 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ

12377 </puarenc>

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51 End of file hyccheck.tex

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12378 <*check>
12379 \typeout{}
12380 \begin{document}
12381 \end{document}
12382 </check>

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