

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 MANUAL** (also available as HTML).

README The **README** file (also available as text file). Here information is collected that is not yet in the manual: new features, package compatibility, limitations, known problems, ...

ChangeLog This file records the version history (also available as text file).

Options This file provides a short option summary.

Bookmark talk, slides Slides for the talk “PDF information and navigation elements with `hyperref`, `pdfTeX` and `thumbpdf`” at Euro \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 L^AT_EX or other packages cannot be overloaded, but have to be redefined by hyperref directly. If these commands change in newer versions, these changes are not noticed by hyperref. With this test file this situation can be checked. It defines the command `\checkcommand` that is more powerful than L^AT_EX's `\CheckCommand`, because it takes `\DeclareRobustCommand` and optional parameters better into account.

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

`\checklatex` Optional argument: release date of L^AT_EX.

```
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{ifpdf}[2006/02/20]
234 \RequirePackage{ifvtex}
235 \RequirePackage{ifxetex}[2006/08/21]
236 \RequirePackage{hycolor}
237 \def\Hy@Warning#1{\PackageWarning{hyperref}{#1}}
238 \def\Hy@WarningNoLine#1{\PackageWarningNoLine{hyperref}{#1}}
239 \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`.

```

240 \@ifundefined{AfterBeginDocument}{%
241   \def\AfterBeginDocument{\AtBeginDocument}%
242 }{}%

```

4.3 Switches

```

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

```

```

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

```

Defaults for the switches are now set.

```

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

```

```

312 \Hy@plainpagesfalse
313 \Hy@raiselinksfalse
314 \Hy@setpagesizetrue
315 \Hy@texhtfalse
316 \Hy@toolbartrue
317 \Hy@typexmlfalse
318 \Hy@unicodetrue
319 \Hy@usetitlefalse
320 \Hy@verbosefalse
321 \Hy@windowuitrue
322 \Hy@displaydoctitlefalse
323 \Hy@pdfafalse

```

5 Common help macros

\Hy@StepCount

```

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

```

\Hy@GlobalStepCount

```

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

326 \newdimen\@linkdim
327 \let\Hy@driver\@empty
328 \let\MaybeStopEarly\relax
329 \newcount\Hy@linkcounter
330 \newcount\Hy@pagecounter
331 \Hy@linkcounter0
332 \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.

```

333 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
334 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

335 \let\Hy@ReturnEnd\@empty
336 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
337 \long\def\Hy@ReturnAfterElseFiFiEnd#1\else#2\Hy@ReturnEnd{\fi\fi#1}

```

5.2 Babel's protection of shorthand characters

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

```

338 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
339 \def\Hy@safe@activesfalse{\csname @safe@activesfalse\endcsname}

```

5.3 Coordinate transformations

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

\hypercalscbp The user macro \hypercalscbp can be used, for example, inside option values:
 pdfstartview={FitBH \hypercalscbp{\paperheight-\topmargin-1in}}

- It cannot be used inside `\usepackage`, because LaTeX expands the options before package `hyperref` is loaded and `\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

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

```

```

374 }%
375 \else
376 \def\hypercalcbp#1{%
377 \strip@pt\dimexpr 0.99626401\dimexpr #1\relax\relax
378 }%
379 \def\hypercalcbpdef{\def}%
380 \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 `ISOLatin1` and is compatible with Unicode with character codes below 256, or in Unicode.

6.2 Definition of `\pdfstringdef`

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

Important: In \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 processed by \TeX , because the tokens have only catcodes 10 until 12.

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

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

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

```
382 \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.

```
383 \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.

```
384 \edef\0{\string\0}%
```

```
385 \edef\1{\string\1}%
```

```
386 \edef\2{\string\2}%
```

```
387 \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.

```
388 \ifHy@unicode
```

```
389 \edef\8{\string\8}%
```

```
390 \edef\9{\string\9}%
```

```
391 \fontencoding{PU}%
```

```
392 \HyPsd@UTFviii
```

```
393 \else
```

```
394 \fontencoding{PD1}%
```

```
395 \fi
```

```
396 \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).

```
397 \@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).

```
398 \let\@inmathwarn\HyPsd@inmathwarn
```

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

```
399 \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.

```
400 \let\{\textbraceleft
401 \let\}\textbraceright
402 \let\\\textbackslash
403 \let\#\textnumbersign
404 \let\$\textdollar
405 \let\%\textpercent
406 \let\&\textampersand
407 % \let\~\textasciitilde
408 \let\_ \textunderscore
409 \let\textparagraph
410 \let\ldots\textellipsis
411 \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.

```
412 \def\{\pdfstringdefWarn\\}%
413 \def\newline{\pdfstringdefWarn\newline}%
```

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

```
414 \def\TeX{\TeX}%
415 \def\LaTeX{La\TeX}%
416 \def\LaTeXe{LaTeX2e}%
417 \def\eTeX{e-\TeX}%
418 \def\SliTeX{Sli\TeX}%
419 \def\MF{Metafont}%
420 \def\MP{Metapost}%
```

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

```

421 \let\emph\@firstofone
422 \let\textnormal\@firstofone
423 \let\textrm\@firstofone
424 \let\textsf\@firstofone
425 \let\texttt\@firstofone
426 \let\textbf\@firstofone
427 \let\textmd\@firstofone
428 \let\textit\@firstofone
429 \let\textsc\@firstofone
430 \let\textsl\@firstofone
431 \let\textup\@firstofone
432 \let\normalfont\@empty
433 \let\rmfamily\@empty
434 \let\sffamily\@empty
435 \let\ttfamily\@empty
436 \let\bfseries\@empty
437 \let\mdseries\@empty
438 \let\itshape\@empty
439 \let\scshape\@empty
440 \let\slshape\@empty
441 \let\upshape\@empty
442 \let\em\@empty
443 \let\rm\@empty
444 \let\Huge\@empty
445 \let\LARGE\@empty
446 \let\Large\@empty
447 \let\footnotesize\@empty
448 \let\huge\@empty
449 \let\large\@empty
450 \let\normalsize\@empty
451 \let\scriptsize\@empty
452 \let\small\@empty
453 \let\tiny\@empty
454 \let\mathversion\@gobble

```

Package color.

```

455 \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).

```

456 \let\textlatin\@firstofone
457 \@ifundefined{language@group}{-}{%
458 \csname HyPsd@babel@language@group\endcsname
459 }%
460 \HyPsd@GreekPatch
461 \let\@safe@activetrue\relax
462 \let\@safe@activesfalse\relax

```

Disable \cyr, used in russianb.ldf.

```

463 \let\cyr\relax

```

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

```

464 \let\es@roman\@Roman

```

Package german.

```

465 \let\glqq\textglqq
466 \let\grqq\textgrqq
467 \let\glq\textglq
468 \let\grq\textgrq
469 \let\flqq\textflqq
470 \let\frqq\textfrqq
471 \let\flq\textflq
472 \let\frq\textfrq

```

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

Package FrenchPro. This package uses:

```

\if@mid@expandable{not fully expandable code}{fully expandable code}

473 \let\if@mid@expandable\@firstoftwo

```

AMS classes.

```

474 \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.

```

475 \let\hspace\HyPsd@hspace

```

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

```

476 \let\label\@gobble
477 \let\index\@gobble
478 \let\glossary\@gobble
479 \let\href\@secondoftwo
480 \let\mkboth\@gobbletwo

```

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

```

481 \let\ref\HyPsd@ref
482 \let\pageref\HyPsd@pageref
483 \let\nameref\HyPsd@nameref
484 \let\autoref\HyPsd@autoref

```

Miscellaneous commands.

```

485 \let\leavevmode\@empty
486 \let\mbox\@empty

```

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

```

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

```

Patch for cjk bookmarks.

```

488 \ifHy@CJKbookmarks
489 \HyPsd@CJKhook
490 \fi

```

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

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

```
491 \Hy@pdfstringtrue
492 \pdfstringdefPreHook
```

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

```
493 \HyPsd@LetUnexpandableSpace\space
494 \HyPsd@LetUnexpandableSpace\ %
495 \HyPsd@LetUnexpandableSpace~%
496 \HyPsd@LetUnexpandableSpace\nobreakspace
```

Package xspace.

```
497 \@ifundefined{@xspace}{%
498 \let\xspace\HyPsd@ITALCORR
499 }{%
500 \let\xspace\HyPsd@XSPACE
501 }%
502 \let\/\HyPsd@ITALCORR
503 \let\bgroup\/%
504 \let\egroup\/%
```

Redefinitions of miscellaneous commands. Hyphenation does not make sense.

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

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

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

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

```
506 \let\@ifnextchar\HyPsd@ifnextchar
507 \let\@ifnextchar\HyPsd@new@ifnextchar
508 \let\@protected@testopt\HyPsd@protected@testopt
```

6.2.2 Expansion

There are several possibilities to expand tokens within \LaTeX :

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

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

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

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

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

```
509    \begingroup
510    \let\GenericError\@gobblefour
511    \let\GenericWarning\@gobbletwo
512    \let\GenericInfo\@gobbletwo
```

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

```
513    \ifx\nofrenchguillemets\@undefined
514    \else
515    \nofrenchguillemets
516    \fi
```

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

```
517    \let\Hy@temp\xdef
518    \let\def\HyPsd@DefCommand
519    \let\gdef\HyPsd@DefCommand
520    \let\edef\HyPsd@DefCommand
521    \let\xdef\HyPsd@DefCommand
522    \let\futurelet\HyPsd@LetCommand
523    \let\let\HyPsd@LetCommand
524    \Hy@temp#1{#2}%
525    \endgroup
```

6.2.3 Postprocessing

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

```
526 \ifx#1\@empty
527 \else
```

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

- T_EX does not accept a space as an undelimited argument, it cancels space tokens while looking for an undelimited argument. Therefore we must protect the spaces now.
- An argument can be a single token or a group of many tokens. And within curly braces tokens aren't found by T_EX's argument scanning process. Third curly braces as grouping characters cannot be expanded further, so they don't vanish by the string expansion above. So these characters with catcode 1 and 2 are removed in the following and replaced by a marker for the xspace support.
- T_EX silently removes the outermost pair of braces of an argument. To prevent this on unwanted places, in the following the character | is appended to the string to make an outer brace to an inner one.

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

```
528 \HyPsd@ProtectSpaces#1%
529 \let\HyPsd@String\@empty
530 \expandafter\HyPsd@RemoveBraces\expandafter{#1}%
531 \global\let#1\HyPsd@String
```

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

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

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

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

```
532 \let\HyPsd@SPACEOPTI\relax
533 {%
534 \let\HyPsd@String\@empty
535 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
536 \global\let#1\HyPsd@String
537 }%
538 \expandafter\HyPsd@RemoveMask\expandafter
539 |\expandafter\@empty#1\HyPsd@End#1%
```

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

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

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

```
540 \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
541 \let\HyPsd@String\@empty
542 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
543 \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.

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

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

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

```
545 \ifHy@unicode
546 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
547 \HyPsd@SPACEOPTI#1%
548 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
549 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
550 {\HyPsd@SPACEOPTI\80\273}#1%
551 \else
552 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
553 \expandafter\HyPsd@Subst\expandafter{%
554 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
555 \string\273}\HyPsd@SPACEOPTI\273}#1%
556 \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.

```
557 \ifHy@unicode
558 \HyPsd@StringSubst{\)}{\80\051}#1%
559 \HyPsd@Subst){\80\051}#1%
560 \let\HyPsd@empty\relax
561 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
562 {\HyPsd@empty\80\051}#1%
563 \else
564 \HyPsd@StringSubst{\)}{\051}#1%
565 \HyPsd@Subst){\051}#1%
566 \let\HyPsd@empty\relax
```

```

567      \HyPsd@StringSubst{\051}{\HyPsd@empty\string\)}#1%
568      \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`.

```

569      \expandafter\HyPsd@Subst\expandafter{\}/\HyPsd@empty#1%
570      \@ifundefined{xspace}{%
571      }{%
572      \let\HyPsd@xspace\relax
573      \expandafter\HyPsd@Subst\expandafter
574      {\HyPsd@XSPACE}\HyPsd@xspace#1%
575      \let\HyPsd@xspace\HyPsd@doxspace
576      }%
577      \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.

```

578 %      \HyPsd@Subst{---}\textemdash#1%
579 %      \HyPsd@Subst{--}\textendash#1%
580 %      \HyPsd@Subst{fi}\textfi#1%
581 %      \HyPsd@Subst{fl}\textfl#1%
582      \HyPsd@Subst{!'}\texttexclamdown#1%
583      \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

584      \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.

```

585      \ifHy@unicode
586      \HyPsd@StringSubst{\textparenleft#1%
587      \HyPsd@Subst{\textparenleft#1%
588      \else
589      \HyPsd@StringSubst{\(\050}#1%
590      \HyPsd@Subst{\050}#1%
591      \HyPsd@StringSubst{\050}{\string\)}#1%

```



```
592 \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.

```
593 \ifHy@unicode
594 \edef\HyPsd@SPACEOPTI{\80\040}%
595 \else
596 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
597 \fi
598 \xdef#1{#1\@empty}%
599 \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.

```
600 \endgroup
601 \begingroup
602 \ifHy@unicode
603 \HyPsd@ConvertToUnicode#1%
```

Try conversion back to PDFDocEncoding.

```
604 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
605 \ifundefined{StringEncodingConvertTest}{%
606 }{%
607 \EdefUnescapeString\HyPsd@temp#1%
608 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
609 {utf16be}{pdfdoc}{%
610 \EdefEscapeString\HyPsd@temp\HyPsd@temp
611 \global\let#1\HyPsd@temp
612 \Hy@unicodedefalse
613 }{}%
614 }%
615 \fi
616 \fi
```

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

```
617 \pdfstringdefPostHook#1%
618 \endgroup
619 }
```

```
\Hy@pdfstringdef
```

```
620 \def\Hy@pdfstringdef#1#2{%
621 \pdfstringdef\Hy@gtemp{#2}%
622 \let#1\Hy@gtemp
623 }
```

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 inter-

preting 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.

```
624 \ifundefined{T@PD1}{\input{pd1enc.def}}{}
625 \DeclareFontFamily{PD1}{pdf}{}
626 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
627 \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.

```
628 \def\HyPsd@InitUnicode{%
629   \ifundefined{T@PU}{\input{puenc.def}}{}%
630   \DeclareFontFamily{PU}{pdf}{}%
631   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
632   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
633   \let\HyPsd@InitUnicode\relax
634 }
```

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.

```
635 \newcommand*{\texorpdfstring}{%
636   \ifHy@pdfstring
637     \expandafter\@secondoftwo
638   \else
639     \expandafter\@firstoftwo
640   \fi
641 }
```

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`.

```
642 \ifundefined{pdfstringdefPreHook}{%
643   \let\pdfstringdefPreHook\empty
644 }{}
645 \ifundefined{pdfstringdefPostHook}{%
646   \let\pdfstringdefPostHook\@gobble
647 }{}
```

`\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`.

```
648 \def\pdfstringdefDisableCommands{%
649   \begingroup
650     \makeatletter
651     \HyPsd@DisableCommands
652 }
```

`\HyPsd@DisableCommands`

```
653 \long\def\HyPsd@DisableCommands#1{%
654   \toks0=\expandafter{\pdfstringdefPreHook}%
655   \toks1={#1}%
656   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
657   \endgroup
658 }
```

`\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`.

```
659 \def\pdfstringdefWarn#1{%
660   \expandafter\noexpand\csname<>-string#1\endcsname
661 }
```

6.5 Help macros for expansion

6.5.1 Babel languages

```
662 \newif\ifHy@next
```

Nothing to do for english.

```
663 \@ifundefined{danish@sh@"@sel}{-}{-}%
664 \def\HyPsd@babel@danish{%
665   \declare@shorthand{danish}{|}{-}%
666   \declare@shorthand{danish}{~}{-}%
667 }%
668 }
669 \@ifundefined{dutch@sh@"@sel}{-}{-}%
670 \def\HyPsd@babel@dutch{%
```

```

671 \declare@shorthand{dutch}{"}{}%
672 \declare@shorthand{dutch}{"}{}%
673 }%
674 }
675 \@ifundefined{finnish@sh@}{@sel}{}%
676 \def\HyPsd@babel@finnish{%
677 \declare@shorthand{finnish}{"}{}%
678 }%
679 }
680 \@ifundefined{french@sh@}{@sel}{}%
681 \def\HyPsd@babel@frenchb{%
682 \def\guill@spacing{}%
683 }%
684 }
685 \@ifundefined{german@sh@}{@sel}{}%
686 \def\HyPsd@babel@german{%
687 \declare@shorthand{german}{f}{f}%
688 \declare@shorthand{german}{"}{}%
689 \declare@shorthand{german}{"}{}%
690 }%
691 }
692 \@ifundefined{macedonian@sh@}{@sel}{}%
693 \def\HyPsd@babel@macedonian{%
694 \declare@shorthand{macedonian}{"}{}%
695 \declare@shorthand{macedonian}{"}{}%
696 }%
697 }{}
698 \@ifundefined{ngerman@sh@}{@sel}{}%
699 \def\HyPsd@babel@ngerman{%
700 \declare@shorthand{ngerman}{"}{}%
701 \declare@shorthand{ngerman}{"}{}%
702 }%
703 }
704 \@ifundefined{portuges@sh@}{@sel}{}%
705 \def\HyPsd@babel@portuges{%
706 \declare@shorthand{portuges}{"}{}%
707 }%
708 }
709 \@ifundefined{russian@sh@}{@sel}{}%
710 \def\HyPsd@babel@russian{%
711 \declare@shorthand{russian}{"}{}%
712 \declare@shorthand{russian}{"}{}%
713 }%
714 }
715 \@ifundefined{slovene@sh@}{@sel}{}%
716 \def\HyPsd@babel@slovene{%
717 \declare@shorthand{slovene}{"}{}%
718 }%
719 }

```

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

```

720 \@ifundefined{spanish@sh@}{@sel}{}%
721 \def\HyPsd@babel@spanish{%
722 \declare@shorthand{spanish}{<<}{\guillemotleft}%
723 \declare@shorthand{spanish}{>>}{\guillemotright}%
724 \declare@shorthand{spanish}{=}{-}%
725 \declare@shorthand{spanish}{"}{}%
726 \declare@shorthand{spanish}{!}{\textexclamdown}%

```

```

727 \declare@shorthand{spanish}{"}{\textquestiondown}%
728 }%
729 }
730 \@ifundefined{swedish@sh@"@sel}{}{%
731 \def\HyPsd@babel@swedish{%
732 \declare@shorthand{swedish}{"}{}%
733 \declare@shorthand{swedish}{"}{-}%
734 }%
735 }
736 \@ifundefined{ukrainian@sh@"@sel}{}{%
737 \def\HyPsd@babel@ukrainian{%
738 \declare@shorthand{ukrainian}{"}{}%
739 \declare@shorthand{ukrainian}{"}{-}%
740 }%
741 }
742 \@ifundefined{usorbian@sh@"@sel}{}{%
743 \def\HyPsd@babel@usorbian{%
744 \declare@shorthand{usorbian}{f}{f}%
745 \declare@shorthand{usorbian}{"}{}%
746 }%
747 }
748 \@ifundefined{greek@sh@\string~@sel}{%
749 \let\HyPsd@GreekPatch\@empty
750 }{%
751 \def\HyPsd@GreekPatch{%
752 \let\greeknumeral\HyPsd@greeknumeral
753 \let\Greeknnumeral\HyPsd@Greeknnumeral
754 }%
755 }
756 \def\HyPsd@greeknumeral#1{%
757 \HyPsd@GreekNum\@firstoftwo{#1}%
758 }
759 \def\HyPsd@Greeknnumeral#1{%
760 \HyPsd@GreekNum\@secondoftwo{#1}%
761 }
762 \def\HyPsd@GreekNum#1#2{%
763 \ifHy@unicode
764 \ifnum#2<\@one
765 \@arabic{#2}%
766 \else
767 \ifnum#2<1000000 %
768 \HyPsd@@GreekNum#1{#2}%
769 \else
770 \@arabic{#2}%
771 \fi
772 \fi
773 \else
774 \@arabic{#2}%
775 \fi
776 }
777 \def\HyPsd@@GreekNum#1#2{%
778 \ifnum#2<\@m
779 \ifnum#2<10 %
780 \expandafter\HyPsd@GreekNumI
781 \expandafter\@gobble\expandafter#1\number#2%
782 \else
783 \ifnum#2<100 %

```

```

784         \expandafter\HyPsd@GreekNumII
785         \expandafter\@gobble\expandafter#1\number#2%
786     \else
787         \expandafter\HyPsd@GreekNumIII
788         \expandafter\@gobble\expandafter#1\number#2%
789     \fi
790 \fi
791 \ifnum#2>\z@
792     \textnumeralsigngreek
793 \fi
794 \else
795     \ifnum#2<\@M
796         \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
797     \else
798         \ifnum#2<100000 %
799             \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
800         \else
801             \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
802         \fi
803     \fi
804 \fi
805 }
806 \def\HyPsd@GreekNumI#1#2#3{%
807     #1{%
808         \ifnum#3>\z@
809             \textnumeralsignlowergreek
810         \fi
811     }%
812     \expandafter#2%
813     \ifcase#3 %
814         {}{}%
815         \or\textalpha\textAlpha
816         \or\textbeta\textBeta
817         \or\textgamma\textGamma
818         \or\textdelta\textDelta
819         \or\textepsilon\textEpsilon
820         \or\textstigmagreek\textStigmagreek
821         \or\textzeta\textZeta
822         \or\texteta\textEta
823         \or\texttheta\textTheta
824     \else
825         {}{}%
826     \fi
827 }
828 \def\HyPsd@GreekNumII#1#2#3#4{%
829     #1{%
830         \ifnum#3>\z@
831             \textnumeralsignlowergreek
832         \fi
833     }%
834     \expandafter#2%
835     \ifcase#3 %
836         {}{}%
837         \or\textiota\textIota
838         \or\textkappa\textKappa
839         \or\textlambda\textLambda
840         \or\textmu\textMu

```

```

841 \or\textnu\textNu
842 \or\textxi\textXi
843 \or\textomicron\textOmicron
844 \or\textpi\textPi
845 \or\textkoppagreek\textKoppagreek
846 \else
847   {}{}%
848 \fi
849 \HyPsd@GreekNumI#1#2#4%
850 }
851 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
852   #1{%
853     \ifnum#3>\z@
854       \textnumeralsignlowergreek
855       \fi
856   }%
857   \expandafter#2%
858   \ifcase#3 %
859     {}{}%
860   \or\textrho\textRho
861   \or\textsigma\textSigma
862   \or\texttau\textTau
863   \or\textupsilon\textUpsilon
864   \or\textphi\textPhi
865   \or\textchi\textChi
866   \or\textpsi\textPsi
867   \or\textomega\textOmega
868   \or\textsampgreek\textSampgreek
869   \else
870     {}{}%
871   \fi
872   \HyPsd@GreekNumII#1#2#4#5%
873 }
874 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
875   \HyPsd@GreekNumI\@firstofone#1#2%
876   \HyPsd@@GreekNum#1{#3#4#5}%
877 }
878 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
879   \HyPsd@GreekNumII\@firstofone#1#2#3%
880   \HyPsd@@GreekNum#1{#4#5#6}%
881 }
882 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
883   \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
884   \HyPsd@@GreekNum#1{#5#6#7}%
885 }

```

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 ($\geq 0x40$).

```

886 \begingroup
887   \catcode"7F=\active
888   \toks@{%
889     \let\CJK@ignorespaces\empty
890     \def\CJK@char#1{\@gobbletwo}%
891     \let\CJK@charx\@gobblefour
892     \let\CJK@punctchar\@gobblefour
893     \def\CJK@punctcharx#1{\@gobblefour}%
894     \catcode"7F=\active
895     \def^^7f#1^^7f#2^^7f{%
896       \string #1\HyPsd@DecimalToOctal{#2}%
897     }%
898     % ... ?
899     \ifHy@unicode
900       \def\Hy@cjkpu{\80}%
901     \else
902       \let\Hy@cjkpu\@empty
903     \fi
904     \HyPsd@CJKActiveChars
905   }%
906   \count@=127 %
907   \@whilenum\count@<255 \do{%
908     \advance\count@ by 1 %
909     \lccode'\~= \count@
910     \lowercase{%
911       \toks@\expandafter{\the\toks@ ~}%
912     }%
913   }%
914   \toks@\expandafter{\the\toks@ !}%
915   \xdef\HyPsd@CJKhook{\the\toks@}%
916 \endgroup

```

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

```

917 \def\HyPsd@CJKActiveChars#1{%
918   \ifx#1!%
919     \let\HyPsd@CJKActiveChars\relax
920   \else
921     \edef#1{\noexpand\Hy@cjkpu\string#1}%
922   \fi
923   \HyPsd@CJKActiveChars
924 }

```

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

```

925 \def\HyPsd@DecimalToOctal#1{%
926   \ifcase #1 %
927     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
928     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
929     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
930     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
931     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
932     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
933     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
934     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
935     \or @\or A\or B\or C\or D\or E\or F\or G%
936     \or H\or I\or J\or K\or L\or M\or N\or O%
937     \or P\or Q\or R\or S\or T\or U\or V\or W%

```



```

938 \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
939 \or \140\or a\or b\or c\or d\or e\or f\or g%
940 \or h\or i\or j\or k\or l\or m\or n\or o%
941 \or p\or q\or r\or s\or t\or u\or v\or w%
942 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
943 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
944 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
945 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
946 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
947 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
948 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
949 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
950 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
951 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
952 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
953 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
954 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
955 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
956 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
957 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
958 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
959 \fi
960 }

```

6.5.3 \@inmathwarn-Patch

\HyPsd@inmathwarn The patch of \@inmathwarn is needed to get rid of the infinite error loop with glyphs of other encodings (see the explanation above). Potentially the patch is dangerous, if the code in ltoutenc.dtx changes. Checked with L^AT_EX 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 (L^AT_EX 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}

```

```

\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}

961 \def\HyPsd@inmathwarn#1#2{%
962   \ifx#2\expandafter
963     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
964       \HyPsd@GLYPHERR
965       \expandafter\@gobble\string#1%
966     >%
967     \expandafter\expandafter\expandafter\HyPsd@EndWithElse
968   \else
969     \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
970   \fi
971 \else
972   \expandafter#2%
973 \fi
974 }
975 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
976 \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
977 \def\HyPsd@add@accent#1#2{%
978   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
979   #2%
980 }%

```

6.5.5 Unexpandable spaces

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

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

These properties are used in \HyPsd@CheckCatcodes.

```

981 \def\HyPsd@LetUnexpandableSpace#1{%
982   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
983 }

```

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

```

984 \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.

```
985 \edef\HyPsd@XSPACE{\string#\string X}
986 \edef\HyPsd@ITALCORR{\string#\string I}
987 \edef\HyPsd@GLYPHERR{\string#\string G}
```

6.5.7 `\hspace` fix

`\HyPsd@hspace`

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

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

```
989 \def\HyPsd@@hspace#1*#2\END{%
990   \ifx\#2\%
991     \HyPsd@hspacetest{#1}%
992   \else
993     \expandafter\HyPsd@hspacetest
994   \fi
995 }
```

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

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

6.5.8 Fix for AMS classes

```
997 \@ifundefined{tocsection}{%
998   \let\HyPsd@AMSclassfix\relax
999 }{%
1000   \def\HyPsd@AMSclassfix{%
1001     \let\tocpart\HyPsd@tocsection
1002     \let\tocchapter\HyPsd@tocsection
1003     \let\tocappendix\HyPsd@tocsection
1004     \let\tocsection\HyPsd@tocsection
1005     \let\tocsubsection\HyPsd@tocsection
1006     \let\tocsubsubsection\HyPsd@tocsection
1007     \let\tocparagraph\HyPsd@tocsection
1008   }%
1009   \def\HyPsd@tocsection#1#2#3{%
1010     \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1011     #3%
1012   }%
1013 }
```

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.

```
1014 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%
```

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

```
1015 \def\HyPsd@@ref#1*#2\END{%
```

```

1016 \ifx\#2\%
1017 \HyPsd@@@ref{#1}%
1018 \else
1019 \expandafter\HyPsd@@@ref
1020 \fi
1021 }%

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

1022 \def\HyPsd@@@ref#1{%
1023 \expandafter\ifx\csname r@#1\endcsname\relax
1024 ??%
1025 \else
1026 \expandafter\expandafter\expandafter
1027 \@car\csname r@#1\endcsname\@nil
1028 \fi
1029 }

\HyPsd@pageref Macro \HyPsd@pageref calls the macro \HyPsd@@pageref for star checking. The same
methods like in \HyPsd@hspace is used.
1030 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*END}

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

1031 \def\HyPsd@@pageref#1*#2END{%
1032 \ifx\#2\%
1033 \HyPsd@@@pageref{#1}%
1034 \else
1035 \expandafter\HyPsd@@@pageref
1036 \fi
1037 }

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

1038 \def\HyPsd@@@pageref#1{%
1039 \expandafter\ifx\csname r@#1\endcsname\relax
1040 ??%
1041 \else
1042 \expandafter\expandafter\expandafter\expandafter
1043 \expandafter\expandafter\expandafter\@car
1044 \expandafter\expandafter\expandafter\@gobble
1045 \csname r@#1\endcsname{}\@nil
1046 \fi
1047 }

\HyPsd@nameref Macro \HyPsd@nameref calls the macro \HyPsd@@nameref for star checking. The same
methods like in \HyPsd@hspace is used.
1048 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*END}

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

1049 \def\HyPsd@@nameref#1*#2END{%
1050 \ifx\#2\%
1051 \HyPsd@@@nameref{#1}%
1052 \else
1053 \expandafter\HyPsd@@@nameref
1054 \fi
1055 }

```

`\HyPsd@@@nameref` `\HyPsd@@@nameref` does the work and extracts the third argument.

```

1056 \def\HyPsd@@@nameref#1{%
1057   \expandafter\ifx\csname r@#1\endcsname\relax
1058     ??%
1059   \else
1060     \expandafter\expandafter\expandafter\expandafter
1061     \expandafter\expandafter\expandafter\@car
1062     \expandafter\expandafter\expandafter\@gobbletwo
1063     \csname r@#1\endcsname\}\}\@nil
1064   \fi
1065 }

```

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

```

1066 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}

```

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

```

1067 \def\HyPsd@@autoref#1*#2\END{%
1068   \ifx\#2\%
1069     \HyPsd@@@autoref{#1}%
1070   \else
1071     \expandafter\HyPsd@@@autoref
1072   \fi
1073 }

```

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

```

1074 \def\HyPsd@@@autoref#1{%
1075   \expandafter\ifx\csname r@#1\endcsname\relax
1076     ??%
1077   \else
1078     \expandafter\expandafter\expandafter\HyPsd@autorefname
1079     \csname r@#1\endcsname\}\}\}\@nil
1080     \expandafter\expandafter\expandafter
1081     \@car\csname r@#1\endcsname\@nil
1082   \fi
1083 }

```

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

```

1084 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1085   \ifx\#4\%
1086   \else
1087     \HyPsd@@autorefname#4.\@nil
1088   \fi
1089 }

```

`\HyPsd@@autorefname`

```

1090 \def\HyPsd@@autorefname#1.#2\@nil{%
1091   \@ifundefined{#1autorefname}\%
1092   \@ifundefined{#1name}\%
1093   }\%
1094   \csname#1name\endcsname\space
1095   }\%
1096   }\%
1097   \csname#1autorefname\endcsname\space
1098   }\%
1099 }

```

6.5.10 Redefining the defining commands

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

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

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

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

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

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

```
\HyPsd@DefCommand
\HyPsd@LetCommand
1100 \begingroup
1101   \def\x#1#2{%
1102     \endgroup
1103     \let#1\def
1104     \def\HyPsd@DefCommand##1##2##{%
1105       #1%
1106       \expandafter\noexpand
1107         \csname\expandafter\@gobble\string##1\@empty\endcsname
1108       \@gobble
1109     }%
1110     \let#2\let
1111     \def\HyPsd@@LetCommand##1{%
1112       \expandafter\ifx\csname##1\expandafter\endcsname
1113         \csname iftrue\endcsname
1114       \pdfstringdefWarn\let
1115       \expandafter\@gobble
1116     \else
1117       \expandafter\ifx\csname##1\expandafter\endcsname
1118         \csname iffalse\endcsname
1119       \pdfstringdefWarn\let
1120       \expandafter\expandafter\expandafter\@gobble
1121     \else
1122       #2%
1123       \expandafter\noexpand
1124       \csname##1\expandafter\expandafter\expandafter\endcsname
```

```

1125      \fi
1126      \fi
1127    }%
1128  }%
1129 \expandafter\x\csname <def>-command\expandafter\endcsname
1130      \csname <let>-command\endcsname
1131 \def\HyPsd@LetCommand#1{%
1132   \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1133   \expandafter\expandafter\expandafter{%
1134     \expandafter\@gobble\string#1\@empty
1135   }%
1136 }

```

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.

```

1137 \def\HyPsd@ifnextchar{%
1138   \pdfstringdefWarn\@ifnextchar
1139   \expandafter\@gobbletwo\@gobble
1140 }

```

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

```

1141 \def\HyPsd@new@ifnextchar{%
1142   \pdfstringdefWarn\new@ifnextchar
1143   \expandafter\@gobbletwo\@gobble
1144 }

```

6.5.12 \@protected@testoptifnextchar

`\HyPsd@protected@testopt` Macros with optional arguments doesn't work properly, because they call `\@ifnextchar` to detect the optional argument (see the explanation of `\HyPsd@ifnextchar`). But a warning, that `\@ifnextchar` doesn't work, doesn't help the user very much. Therefore `\@protected@testopt` is also disabled, because its first argument is the problematic macro with the optional argument and it is called before `\@ifnextchar`.

```

1145 \def\HyPsd@protected@testopt#1{%
1146   \pdfstringdefWarn#1%
1147   \@gobbletwo
1148 }

```

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:

```

1149 \def\HyPsd@Warning#1{%
1150   \begingroup
1151     \def\space{ }%
1152     \Hy@Warning{#1}%
1153   \endgroup
1154 }

```

6.6.2 Protecting spaces

```

1155 \RequirePackage{etexcmds}[2007/09/09]
1156 \ifetex@unexpanded
1157   \expandafter\@secondoftwo
1158 \else
1159   \expandafter\@firstoftwo
1160 \fi
1161 {%

```

`\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`.

```

1162   \def\HyPsd@ProtectSpaces#1{%
1163     \iftrue
1164       \expandafter\HyPsd@@ProtectSpacesFi
1165       \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1166     \fi
1167   }%

```

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

```

1168   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1169     \fi
1170     \ifx\scrollmode#2\scrollmode
1171       \HyPsd@RemoveMask#1\HyPsd@End#3%
1172     \else
1173       \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1174       \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1175     \fi
1176   }%

```

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.

```

1177   \def\HyPsd@RemoveMask#1|\HyPsd@End#2{%
1178     \toks@\expandafter{#1}%
1179     \xdef#2{\the\toks@}%
1180   }%

1181 }{%
1182   \let\HyPsd@fi\fi
1183   \def\HyPsd@ProtectSpaces#1{%
1184     \xdef#1{%
1185       \iftrue
1186         \expandafter\HyPsd@@ProtectSpacesFi
1187         \expandafter|\expandafter\@empty#1| %
1188       \HyPsd@fi
1189     }%
1190     \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1191   }%
1192   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1193     \fi
1194     \etex@unexpanded{#1}%
1195     \ifx\scrollmode#2\scrollmode
1196     \else
1197       \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%

```



```

1198 \HyPsd@fi
1199 }%
1200 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1201 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1202 }%
1203 }

```

6.6.3 Remove grouping braces

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

```

1204 \def\HyPsd@RemoveBraces#1{%
1205 \ifx\scrollmode#1\scrollmode
1206 \else
1207 \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1208 \fi
1209 }

```

`\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`.

```

1210 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1211 \fi
1212 \def\Hy@temp@A{#1#2}%
1213 \def\Hy@temp@B{#3}%
1214 \ifx\Hy@temp@A\Hy@temp@B
1215 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1216 \HyPsd@String#1%
1217 }%
1218 \ifx\scrollmode#2\scrollmode
1219 \else
1220 \Hy@ReturnAfterFiFiEnd{%
1221 \HyPsd@RemoveBraces{#2}%
1222 }%
1223 \fi
1224 \else
1225 \def\Hy@temp@A{#1}%
1226 \HyPsd@AppendItalcorr\HyPsd@String
1227 \ifx\Hy@temp@A\empty
1228 \Hy@ReturnAfterElseFiFiEnd{%
1229 \HyPsd@RemoveBraces{#2}%
1230 }%
1231 \else
1232 \HyPsd@ProtectSpaces\Hy@temp@A
1233 \HyPsd@AppendItalcorr\Hy@temp@A
1234 \Hy@ReturnAfterFiFiEnd{%
1235 \expandafter\HyPsd@RemoveBraces\expandafter
1236 {\Hy@temp@A#2}%
1237 }%
1238 \fi
1239 \fi

```

```

1240 \Hy@ReturnEnd
1241 }

```

\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.

```

1242 \def\HyPsd@AppendItalcorr#1{%
1243   \expandafter\HyPsd@@AppendItalcorr\expandafter{/}#1%
1244 }
1245 \def\HyPsd@@AppendItalcorr#1#2{%
1246   \expandafter\def\expandafter#2\expandafter{#2#1}%
1247 }

```

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).

```

1248 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1249   \global\let\HyPsd@Rest\relax
1250   \ifcat\relax\noexpand#1\relax
1251     \ifx#1\protect
1252     \else
1253       \ifx#1\penalty
1254         \setbox\z@=\hbox{%
1255           \afterassignment\HyPsd@AfterCountRemove
1256           \count@=#2\HyPsd@End
1257         }%
1258       \else
1259         \ifx#1\kern
1260           \setbox\z@=\hbox{%
1261             \afterassignment\HyPsd@AfterDimenRemove
1262             \dimen@=#2\HyPsd@End
1263           }%
1264         \else
1265           \ifx#1\hskip
1266             \setbox\z@=\hbox{%
1267               \afterassignment\HyPsd@AfterSkipRemove
1268               \skip@=#2\HyPsd@End
1269             }%
1270           \else
1271             \HyPsd@CatcodeWarning{#1}%
1272           \fi
1273         \fi
1274       \fi
1275     \fi
1276   \else
1277     \ifcat#1A% letter
1278     \expandafter\def\expandafter\HyPsd@String\expandafter{%

```

```

1279     \HyPsd@String#1%
1280   }%
1281   \else
1282     \ifcat#1 % SPACE
1283       \expandafter\def\expandafter\HyPsd@String\expandafter{%
1284         \HyPsd@String\HyPsd@SPACEOPTI
1285       }%
1286   \else
1287     \ifcat$#1%
1288       \HyPsd@CatcodeWarning{math shift}%
1289   \else
1290     \ifcat&#1%
1291       \HyPsd@CatcodeWarning{alignment tab}%
1292   \else
1293     \ifcat^#1%
1294       \HyPsd@CatcodeWarning{superscript}%
1295   \else
1296     \ifcat_#1%
1297       \HyPsd@CatcodeWarning{subscript}%
1298   \else
1299     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1300       \HyPsd@String#1%
1301     }%
1302   \fi
1303 \fi
1304 \fi
1305 \fi
1306 \fi
1307 \fi
1308 \fi
1309 \ifx\HyPsd@Rest\relax
1310   \ifx\scrollmode#2\scrollmode
1311   \else
1312     \Hy@ReturnAfterFiFiEnd{%
1313       \HyPsd@CheckCatcodes#2\HyPsd@End
1314     }%
1315   \fi
1316 \else
1317   \ifx\HyPsd@Rest\@empty
1318   \else
1319     \Hy@ReturnAfterFiFiEnd{%
1320       \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1321     }%
1322   \fi
1323 \fi
1324 \Hy@ReturnEnd
1325 }

```

Remove counts, dimens, skips.

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

```

1326 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1327   \gdef\HyPsd@Rest{#1}%
1328 }

```

\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.

```

1329 \def\HyPsd@AfterDimenRemove#1\HyPsd@end{%
1330   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1331     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1332     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1333   \else
1334     \ifdim\dimen@=\z@
1335     \else
1336       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1337     \fi
1338     \gdef\HyPsd@Rest{#1}%
1339   \fi
1340 }

```

`\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).

```

1341 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1342   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1343     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1344     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1345   \else
1346     \ifdim\skip@=\z@
1347     \else
1348       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1349     \fi
1350     \gdef\HyPsd@Rest{#1}%
1351   \fi
1352 }

```

Catcode warnings.

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

```

1353 \def\HyPsd@CatcodeWarning#1{%
1354   \HyPsd@Warning{%
1355     Token not allowed in a PDF string (%
1356     \ifHy@unicode
1357       Unicode%
1358     \else
1359       PDFDocEncoding%
1360     \fi
1361     ),%
1362     \MessageBreak removing ‘\HyPsd@RemoveCmdPrefix#1’%
1363   }%
1364 }
1365 \begingroup
1366   \catcode‘\|=0 %
1367   \catcode‘\|=12 %
1368   \gdef\HyPsd@RemoveCmdPrefix#1{%
1369     \expandafter\HyPsd@@RemoveCmdPrefix
1370     \string#1\@empty\<>-|@empty|@empty
1371   }%
1372   \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1373 \endgroup

```

`\HyPsd@RemoveSpaceWarning`

```

1374 \def\HyPsd@RemoveSpaceWarning#1{%
1375   \HyPsd@Warning{%
1376     Token not allowed in a PDFDocEncoded string:%
1377     \MessageBreak #1\MessageBreak
1378     removed%
1379   }%
1380 }

```

\HyPsd@ReplaceSpaceWarning

```

1381 \def\HyPsd@ReplaceSpaceWarning#1{%
1382   \HyPsd@Warning{%
1383     Token not allowed in a PDFDocEncoded string:%
1384     \MessageBreak #1\MessageBreak
1385     replaced by space%
1386   }%
1387 }

```

6.6.5 Check for wrong glyphs

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

```

1388 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1389   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1390     \HyPsd@String#1%
1391   }%
1392   \ifx\#2\%
1393   \else
1394     \Hy@ReturnAfterFi{%
1395       \HyPsd@GlyphProcessWarning#2\@empty
1396     }%
1397   \fi
1398 }
1399 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1400   \HyPsd@Warning{%
1401     Glyph not defined in %
1402     P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1403     removing '@backslashchar#1'%
1404   }%
1405   \HyPsd@GlyphProcess#2\@empty
1406 }

```

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 a protected space \040.

```

1407 \def\HyPsd@spaceopti#1{ % first space
1408   \ifx\HyPsd@spaceopti#1%
1409     \040%
1410   \else
1411     #1%
1412   \fi
1413 }%

```

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.

```

1414 \def\HyPsd@Subst#1#2#3{%
1415   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1416     \fi
1417     ##1%
1418     \ifx\scrollmode##2\scrollmode
1419     \else
1420       #2%
1421     \HyPsd@@ReplaceFi##2\END
1422     \fi
1423   }%
1424   \xdef#3{%
1425     \iftrue
1426       \expandafter\HyPsd@@ReplaceFi#3#1\END
1427     \fi
1428   }%
1429 }
```

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

```

1430 \def\HyPsd@StringSubst#1{%
1431   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1432 }
```

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.

```

1433 \def\HyPsd@doxspace#1{%
1434   \ifx#1\relax\else
1435     \ifx#1.\else
1436       \ifx#1:\else
1437         \ifx#1,\else
1438         \ifx#1;\else
1439         \ifx#1!\else
1440         \ifx#1?\else
1441         \ifx#1/\else
1442         \ifx#1-\else
1443         \ifx#1'\else
1444           \HyPsd@SPACEOPTI
1445         \fi
1446       \fi
1447     \fi
1448   \fi
1449   \fi
1450   \fi
1451   \fi
1452   \fi
1453   \fi
```

```

1454 \fi
1455 #1%
1456 }%

```

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.

```

1457 \beginngroup
1458 \catcode'\|=0 %
1459 \catcode'\|=12 %

```

\HyPsd@ConvertToUnicode

```

1460 |gdef|HyPsd@ConvertToUnicode#1{%
1461   |xdef#1{%
1462     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1463   }%
1464   |ifx#1|@empty
1465   |else
1466     |xdef#1{%
1467       \376\377%
1468       #1%
1469     }%
1470   |fi
1471 }%

```

\HyPsd@DoConvert

```

1472 |gdef|HyPsd@DoConvert#1{%
1473   |ifx#1|@empty
1474   |else
1475     |Hy@ReturnAfterFi{%
1476       |ifx#1\%%
1477       \%%
1478       |expandafter|HyPsd@DoEscape
1479     |else
1480       \000#1%
1481       |expandafter|HyPsd@DoConvert
1482     |fi
1483   }%
1484   |fi
1485 }%

```

\HyPsd@DoEscape

```

1486 |gdef|HyPsd@DoEscape#1{%
1487   |ifx#19%
1488   |expandafter|HyPsd@GetTwoBytes
1489   |else
1490     |Hy@ReturnAfterFi{%
1491       |ifx#18%
1492       00%
1493       |expandafter|HyPsd@GetTwoBytes
1494     |else
1495       #1%
1496       |expandafter|HyPsd@GetOneByte
1497     |fi

```

```

1498     }%
1499     |fi
1500 }%

```

`\HyPsd@GetTwoBytes`

```

1501 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1502     #1\#2#3#4%
1503     |HyPsd@DoConvert
1504 }%

```

`\HyPsd@GetOneByte`

```

1505 |gdef|HyPsd@GetOneByte#1#2{%
1506     #1#2%
1507     |HyPsd@DoConvert
1508 }%
1509 |endgroup

```

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

```

1510 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1511     \xdef#4{#4#1#2}%
1512     \HyPsd@@ConvertToUnicode#3\END#4%
1513 }

```

6.6.9 Support for UTF-8 input encoding

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

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

```

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

```

```

1514 \begingroup\expandafter\expandafter\expandafter\endgroup
1515 \expandafter\ifx\csname numexpr\endcsname\relax
1516     \let\HyPsd@UTFviii\relax
1517 \else
1518     \begingroup
1519     \lccode'\~='^f4\relax
1520     \lowercase{\endgroup
1521     \def\HyPsd@UTFviii{%
1522         \let\UTFviii@two@octets\HyPsd@UTFviii@two
1523         \let\UTFviii@three@octets\HyPsd@UTFviii@three
1524         \let\UTFviii@four@octets\HyPsd@UTFviii@four
1525         \ifx~\HyPsd@UTFviii@ccxliv@undef
1526             \let~\HyPsd@UTFviii@ccxliv@def
1527         \fi
1528         \let\unichar\HyPsd@unichar
1529     }%
1530 }%
1531 \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
1532 \edef\HyPsd@UTFviii@ccxliv@def{%
1533     \noexpand\UTFviii@four@octets\string ~^f4%
1534 }%

```


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.

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

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

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

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

$$(5)$$

```

1535 \def\HyPsd@UTFviii@two#1#2{%
1536   \expandafter\HyPsd@UTFviii@two
1537   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
1538   \number'#1\expandafter|
1539   \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|
1540   \number'#2 \@nil
1541 }%
1542 \def\HyPsd@UTFviii@two#1#2#3#4\@nil{%
1543   \expandafter\8%
1544   \number\numexpr #1-48\expandafter\relax
1545   \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1546   \number\numexpr #3-8*%
1547   \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1548   \number\numexpr #4-8*#3\relax
1549 }%
```

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

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

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

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

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

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

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

$$(12)$$

```

1550 \def\HyPsd@UTFviii@three#1#2#3{%
1551   \expandafter\HyPsd@UTFviii@three
1552   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
1553   \number'#1\expandafter|
1554   \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter|
1555   \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|
1556   \number'#2\expandafter|
1557   \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|
1558   \number'#3 \@nil
1559 }%
1560 \def\HyPsd@UTFviii@three#1#2#3#4#5#6#7\@nil{%
1561   \expandafter\9%
1562   \number\numexpr #1-56\expandafter\relax
1563   \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1564   \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1565   \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1566   \number\numexpr #6-16\expandafter\relax
1567   \number\numexpr #7-8*#6\relax
1568 }%
```

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
```

```
1569 \def\HyPsd@UTFviii@four#1#2{%
1570   \expandafter\HyPsd@UTFviii@four\number
1571   \numexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
1572   \expandafter|\number
1573   \numexpr'#2-16*\dimexpr.0625\dimexpr'#2sp|%
1574 }%
1575 \def\HyPsd@@UTFviii@four#1|#2|#3{%
1576   \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1577   \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1578   \ifodd#2 %
1579     \number\dimexpr(#2-1)/2\relax
1580   \else
1581     \number\dimexpr#2/2\relax
1582   \fi
1583   \number\dimexpr\ifodd#2 4+\fi
1584   \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
1585   \933%
1586   \expandafter\HyPsd@@@UTFviii@four\number
1587   \numexpr'#3-16*\dimexpr.0625\dimexpr'#3sp|%
1588 }%
1589 \def\HyPsd@@@UTFviii@four#1|#2{%
1590   \number\dimexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1591   \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1592   \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
1593   \number\dimexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
1594 }%
```

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

```
1595 \def\HyPsd@unichar#1{%
1596   \ifHy@unicode
1597     \ifnum#1>"10FFFF %
1598       \HyPsd@UnicodeReplacementCharacter % illegal
1599     \else
1600       \ifnum#1>"FFFF %
```

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

```
1601   \expandafter\HyPsd@unichar\expandafter{%
1602     \number\dimexpr 55296+%
1603     \dimexpr.0009765625\dimexpr\number#1sp-\p@
1604     \relax\relax\relax
1605   }%
```

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

```
1606   \expandafter\HyPsd@unichar\expandafter{%
1607     \number\dimexpr#1-9216%
1608     -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1609     \relax\relax\relax
1610   }%
1611   \else
1612     \ifnum#1>"7FF %
```

```

1613         \9%
1614         \expandafter\HyPsd@unichar@first@byte\expandafter{%
1615             \number
1616             \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1617         }%
1618     \else
1619         \8%
1620         \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
1621     \fi
1622     \expandafter\HyPsd@unichar@second@byte\expandafter{%
1623         \number
1624         \numexpr#1-256*\number
1625         \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
1626     }%
1627 \fi
1628 \fi
1629 \else
1630     .% unsupported (Unicode -> PDF Doc Encoding)
1631 \fi
1632 }%
1633 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
1634 \def\HyPsd@unichar@first@byte#1{%
1635     \number\dimexpr.015625\dimexpr#1sp\relax\relax
1636     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1637         \number
1638         \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1639         \relax\relax\relax
1640     }%
1641 }%
1642 \def\HyPsd@unichar@second@byte#1{%
1643     \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
1644     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1645         \number
1646         \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1647         \relax\relax\relax
1648     }%
1649 }%
1650 \def\HyPsd@unichar@octtwo#1{%
1651     \number\dimexpr.125\dimexpr#1sp\relax\relax
1652     \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
1653     \relax\relax\relax
1654 }%
1655 \fi

```

7 Support of other packages

7.1 Class memoir

```

1656 \@ifclassloaded{memoir}{%
1657     \AtEndOfPackage{\RequirePackage{memhfixc}}}%
1658 }{}

```

7.2 Package subfigure

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

```

1659 \@ifpackageloaded{subfigure}{%
1660     \@ifundefined{sub@label}{%

```

```

1661 \Hy@hypertextnamesfalse
1662 }{%
1663 \renewcommand*{\sub@label}[1]{%
1664 \@bsphack
1665 \subfig@oldlabel{#1}%
1666 \if@filesw
1667 \begingroup
1668 \edef\@currentlabstr{%
1669 \expandafter\strip@prefix\meaning\@currentlabelname
1670 }%
1671 \protected@write\@auxout{}{%
1672 \string\newlabel{sub@#1}{%
1673 {\@nameuse{@@thesub\@capter}}%
1674 {\thepage}%
1675 }%
1676 \expandafter\strip@period\@currentlabstr
1677 \relax.\relax\@@%
1678 }%
1679 {\@currentHref}%
1680 {}%
1681 }%
1682 }%
1683 \endgroup
1684 \fi
1685 \@esphack
1686 }%
1687 \@ifpackagelater{subfigure}{2002/03/26}{}%
1688 \providecommand*{\toclevel@subfigure}{1}%
1689 \providecommand*{\toclevel@subtable}{1}%
1690 }%
1691 }%
1692 }{}

```

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:

```
1693 \@ifundefined{XR@addURL}{%
1694 }{%
```

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.

```

1695 \def\XR@addURL#1{\XR@dURL#1{-}{-}{-}{-}}%
1696 \def\XR@dURL#1#2#3#4#5\{%
1697   {#1}{#2}%
1698   \if!#4!%
1699   \else
1700     {#3}{#4}{\XR@URL}%
1701   \fi
1702 }%
1703 }

```

```

1704 \def\Hy@true{true}
1705 \def\Hy@false{false}

```

Providing dummy definitions.

```

1706 \let\literalps@out@\gobble
1707 \newcommand\pdfbookmark[3]{}{}

```

```

1708 \def\Acrobatmenu#1#2{\leavevmode#2}
1709 \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

```

1710 \let\HyperRaiseLinkHook\@empty
1711 \def\HyperRaiseLinkDefault{\baselineskip}

```

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

```

1712 \def\Hy@raisedlink#1{%
1713   \ifvmode
1714     #1%
1715   \else
1716     \penalty\@M
1717     \smash{%
1718       \begingroup
1719         \let\HyperRaiseLinkLength\@tempdima
1720         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1721         \HyperRaiseLinkHook
1722       \expandafter\endgroup
1723       \expandafter\raise\the\HyperRaiseLinkLength\hbox{#1}%
1724     }%
1725   \fi
1726 }

```

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

```

1727 \def\Hy@SaveLastskip{%
1728   \let\Hy@RestoreLastskip\relax
1729   \ifvmode
1730     \ifdim\lastskip=\z@
1731       \let\Hy@RestoreLastskip\nobreak
1732     \else
1733       \begingroup
1734         \skip@=-\lastskip
1735         \edef\x{%
1736           \endgroup
1737           \def\noexpand\Hy@RestoreLastskip{%
1738             \noexpand\ifvmode
1739               \noexpand\nobreak
1740               \vskip\the\skip@
1741               \vskip\the\lastskip\relax
1742             \noexpand\fi
1743           }%
1744         }%

```

```

1745     \x
1746     \fi
1747   \else
1748     \ifhmode
1749       \ifdim\lastskip=\z@
1750         \let\Hy@RestoreLastskip\nobreak
1751       \else
1752         \begingroup
1753           \skip@=-\lastskip
1754           \edef\x{%
1755             \endgroup
1756             \def\noexpand\Hy@RestoreLastskip{%
1757               \noexpand\ifhmode
1758                 \noexpand\nobreak
1759                 \hskip\the\skip@
1760                 \hskip\the\lastskip\relax
1761             \noexpand\fi
1762           }%
1763         }%
1764       \x
1765     \fi
1766   \fi
1767 \fi
1768 }%

```

9 Options

9.1 Help macros

\Hy@boolkey

```

1769 \def\Hy@boolkey{\@dblarg\Hy@boolkey}
1770 \def\Hy@boolkey[#1]#2#3{%
1771   \lowercase{\def\Hy@tempa{#3}}%
1772   \ifx\Hy@tempa\@empty
1773     \let\Hy@tempa\Hy@true
1774   \fi
1775   \ifx\Hy@tempa\Hy@true
1776   \else
1777     \ifx\Hy@tempa\Hy@false
1778     \else
1779       \let\Hy@tempa\relax
1780     \fi
1781   \fi
1782   \ifx\Hy@tempa\relax
1783     \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1784   \else
1785     \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1786     \csname Hy@#2\Hy@tempa\endcsname
1787   \fi
1788 }

```

\Hy@WarnOptionValue

```

1789 \def\Hy@WarnOptionValue#1#2#3{%
1790   \Hy@Warning{%
1791     Unexpected value ‘#1’\MessageBreak
1792     of option ‘#2’ instead of\MessageBreak

```

```

1793     #3%
1794 }%
1795 }

```

`\Hy@DisableOption`

```

1796 \def\Hy@DisableOption#1{%
1797   \@ifundefined{KV@Hyp@#1@default}{%
1798     \define@key{Hyp}{#1}%
1799   }{%
1800     \define@key{Hyp}{#1}[]%
1801   }%
1802   {\Hy@WarnOptionDisabled{#1}}%
1803 }

```

`\Hy@WarnOptionDisabled`

```

1804 \def\Hy@WarnOptionDisabled#1{%
1805   \Hy@Warning{%
1806     Option ‘#1’ has already been used,\MessageBreak
1807     setting the option has no effect%
1808   }%
1809 }

```

`\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.

```

1810 \def\Hy@CheckOptionValue#1#2#3{%
1811   \begingroup
1812     \edef\x{#1}%
1813     \@onelevel@sanitize\x
1814     \let\y=y%
1815     \def\do##1##2{%
1816       \def\z{##1}%
1817       \@onelevel@sanitize\z
1818       \ifx\x\z
1819         \let\y=n%
1820         \let\do\@gobbletwo
1821       \fi
1822     }%
1823     #3%
1824     \ifx\y y%
1825       \def\do##1##2{%
1826         * ‘##1’%
1827         \ifx\\##2\\else\space(##2)\fi
1828         \MessageBreak
1829       }%
1830       \Hy@Warning{%
1831         Values of option ‘#2’:\MessageBreak
1832         #3%
1833         * An empty value disables the option.\MessageBreak
1834         Unknown value ‘\x’%
1835       }%
1836     \fi
1837   \endgroup
1838 }

```

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

```

1839 \def\Hy@DefNameKey#1{%
1840   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
1841 }

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

1842 \def\Hy@@DefNameKey#1#2#3{%
1843   \define@key{Hyp}{#2}{%
1844     \edef#1{##1}%
1845     \ifx#1\@empty
1846     \else
1847       \Hy@CheckOptionValue{##1}{#2}{#3}%
1848     \fi
1849   }%
1850   \let#1\@empty
1851 }

\Hy@UseNameKey

1852 \def\Hy@UseNameKey#1#2{%
1853   \ifx#2\@empty
1854   \else
1855     /#1/#2%
1856   \fi
1857 }

```

9.2 Defining the options

```

1858 \define@key{Hyp}{implicit}[true]{%
1859   \Hy@boolkey{implicit}{#1}%
1860 }
1861 \define@key{Hyp}{draft}[true]{%
1862   \Hy@boolkey{draft}{#1}%
1863 }
1864 \define@key{Hyp}{final}[true]{%
1865   \Hy@boolkey{final}{#1}%
1866 }
1867 \let\KV@Hyp@nolinks\KV@Hyp@draft
1868 \define@key{Hyp}{a4paper}[true]{%
1869   \def\special@paper{210mm,297mm}%
1870   \def\Hy@pageheight{842}%
1871 }
1872 \define@key{Hyp}{a5paper}[true]{%
1873   \def\special@paper{148mm,210mm}%
1874   \def\Hy@pageheight{595}%
1875 }
1876 \define@key{Hyp}{b5paper}[true]{%
1877   \def\special@paper{176mm,250mm}%
1878   \def\Hy@pageheight{709}%
1879 }
1880 \define@key{Hyp}{letterpaper}[true]{%
1881   \def\special@paper{8.5in,11in}%
1882   \def\Hy@pageheight{792}%
1883 }
1884 \define@key{Hyp}{legalpaper}[true]{%
1885   \def\special@paper{8.5in,14in}%
1886   \def\Hy@pageheight{1008}%

```



```

1887 }
1888 \define@key{Hyp}{executivepaper}[true]{%
1889   \def\special@paper{7.25in,10.5in}%
1890   \def\Hy@pageheight{720}%
1891 }
1892 \define@key{Hyp}{setpagesize}[true]{%
1893   \Hy@boolkey{setpagesize}{#1}%
1894 }
1895 \define@key{Hyp}{debug}[true]{%
1896   \Hy@boolkey[debug]{verbose}{#1}%
1897 }
1898 \define@key{Hyp}{linktocpage}[true]{%
1899   \Hy@boolkey{linktocpage}{#1}%
1900   \ifHy@linktocpage
1901     \let\Hy@linktoc\Hy@linktoc@page
1902   \else
1903     \let\Hy@linktoc\Hy@linktoc@section
1904   \fi
1905 }
1906 \chardef\Hy@linktoc@none=0 %
1907 \chardef\Hy@linktoc@section=1 %
1908 \chardef\Hy@linktoc@page=2 %
1909 \chardef\Hy@linktoc@all=3 %
1910 \ifHy@linktocpage
1911   \let\Hy@linktoc\Hy@linktoc@page
1912 \else
1913   \let\Hy@linktoc\Hy@linktoc@section
1914 \fi
1915 \define@key{Hyp}{linktoc}{%
1916   \@ifundefined{Hy@linktoc@#1}{%
1917     \Hy@Warning{%
1918       Unexpected value ‘#1’ of\MessageBreak
1919       option ‘linktoc’ instead of ‘none’,\MessageBreak
1920       ‘section’, ‘page’ or ‘all’%
1921     }%
1922   }{%
1923     \expandafter\let\expandafter\Hy@linktoc
1924       \csname Hy@linktoc@#1\endcsname
1925   }%
1926 }
1927 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1928 \let\XR@ext\relax
1929 \define@key{Hyp}{verbose}[true]{%
1930   \Hy@boolkey{verbose}{#1}%
1931 }
1932 \define@key{Hyp}{typexml}[true]{%
1933   \Hy@boolkey{typexml}{#1}%
1934 }

```

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.

```

1935 \define@key{Hyp}{raiselinks}[true]{%
1936   \Hy@boolkey{raiselinks}{#1}%
1937 }

```

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

```

1938 \def\Hy@setbreaklinks#1{%
1939   \csname breaklinks#1\endcsname
1940 }

1941 \def\Hy@breaklinks@unsupported{%
1942   \ifx\Hy@setbreaklinks\@gobble
1943     \ifHy@breaklinks
1944       \Hy@WarningNoLine{%
1945         You have enabled option 'breaklinks'.\MessageBreak
1946         But driver '\Hy@driver.def' does not support this.\MessageBreak
1947         Expect trouble with the link areas of broken links%
1948       }%
1949     \fi
1950   \fi
1951 }

1952 \define@key{Hyp}{breaklinks}[true]{%
1953   \Hy@boolkey{breaklinks}{#1}%
1954   \let\Hy@setbreaklinks\@gobble
1955 }

```

Determines whether an automatic anchor is put on each page

```

1956 \define@key{Hyp}{pageanchor}[true]{%
1957   \Hy@boolkey{pageanchor}{#1}%
1958 }

```

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.

```

1959 \define@key{Hyp}{plainpages}[true]{%
1960   \Hy@boolkey{plainpages}{#1}%
1961 }

```

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

```

1962 \define@key{Hyp}{naturalnames}[true]{%
1963   \Hy@boolkey{naturalnames}{#1}%
1964 }

```

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

```

1965 \define@key{Hyp}{hypertexnames}[true]{%
1966   \Hy@boolkey{hypertexnames}{#1}%
1967 }

```

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

```

1968 \define@key{Hyp}{nesting}[true]{%
1969   \Hy@boolkey{nesting}{#1}%
1970 }

```

```

1971 \define@key{Hyp}{unicode}[true]{%
1972   \Hy@boolkey{unicode}{#1}%
1973   \ifHy@unicode
1974     \def\HyPsd@pdfencoding{unicode}%
1975   \else
1976     \def\HyPsd@pdfencoding{pdfdoc}%
1977   \fi
1978   \HyPsd@LoadUnicode
1979 }

1980 \def\HyPsd@LoadUnicode{%
1981   \@ifundefined{T@PU}{\input{puenc.def}}{}%
1982   \DeclareFontFamily{PU}{pdf}{}%
1983   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%

```

```

1984 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
1985 \global\let\HyPsd@LoadUnicode\relax
1986 }
1987 \AtBeginDocument{%
1988 \ifx\HyPsd@LoadUnicode\relax
1989 \else
1990 \def\HyPsd@LoadUnicode{%
1991 \PackageError{hyperref}{%
1992 Unicode support for bookmarks is not available.\MessageBreak
1993 Activate unicode support by using one of the options\MessageBreak
1994 'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
1995 in the preamble%
1996 } \@ehc
1997 \global\let\HyPsd@LoadUnicode\relax
1998 \global\Hy@unicodedefalse
1999 \global\let\Hy@unicodetrue\Hy@unicodedefalse
2000 }%
2001 \fi
2002 }

2003 \define@key{Hyp}{pdfencoding}{%
2004 \edef\HyPsd@temp{#1}%
2005 \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2006 \let\HyPsd@pdfencoding\HyPsd@temp
2007 \Hy@unicodedefalse
2008 \else
2009 \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2010 \z@
2011 \else
2012 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2013 \z@
2014 \else
2015 \@ne
2016 \fi
2017 \fi
2018 \let\HyPsd@pdfencoding\HyPsd@temp
2019 \hypersetup{unicode}%
2020 \ifHy@unicode
2021 \def\HyPsd@pdfencoding{#1}%
2022 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2023 \HyPsd@LoadStringEncoding
2024 \fi
2025 \else
2026 \Hy@Warning{Cannot switch to unicode bookmarks}%
2027 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2028 \fi
2029 \else
2030 \@onelevel@sanitize\HyPsd@temp
2031 \Hy@Warning{%
2032 Values of option 'pdfencoding':\MessageBreak
2033 'pdfdoc', 'unicode', 'auto'.\MessageBreak
2034 Ignoring unknown value '\HyPsd@temp'%
2035 }%
2036 \fi
2037 \fi
2038 }
2039 \def\HyPsd@pdfencoding@auto{auto}
2040 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}

```

```

2041 \def\HyPsd@pdfencoding@unicode{unicode}
2042 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
2043 \def\HyPsd@LoadStringEnc{%
2044   \RequirePackage{stringenc}[2007/06/14]%
2045   \let\HyPsd@LoadStringEnc\relax
2046 }
2047 \AtBeginDocument{%
2048   \ifpackageloaded{stringenc}{%
2049     \let\HyPsd@LoadStringEnc\relax
2050   }{%
2051     \def\HyPsd@LoadStringEnc{%
2052       \Hy@WarningNoLine{%
2053         Missing package ‘stringenc’. Use ‘pdfencoding=auto’\MessageBreak
2054         in the preamble or load the package there%
2055       }%
2056     }%
2057   }%
2058 }

2059 \newif\ifHy@setpdfversion
2060 \define@key{Hyp}{pdfversion}{%
2061   \ifundefined{Hy@pdfversion@#1}{%
2062     \PackageWarning{hyperref}{%
2063       Unsupported PDF version ‘#1’.\MessageBreak
2064       Valid values: 1.2 until 1.7%
2065     }%
2066   }{%
2067     \Hy@setpdfversiontrue
2068     \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
2069   }%
2070 }
2071 \@namedef{Hy@pdfversion@1.2}{2}%
2072 \@namedef{Hy@pdfversion@1.3}{3}%
2073 \@namedef{Hy@pdfversion@1.4}{4}%
2074 \@namedef{Hy@pdfversion@1.5}{5}%
2075 \@namedef{Hy@pdfversion@1.6}{6}%
2076 \@namedef{Hy@pdfversion@1.7}{7}%
2077 \def\Hy@pdfversion{2}

```

10 Options for different drivers

```

2078 \define@key{Hyp}{hyperref}[true]{%
2079 \define@key{Hyp}{tex4ht}[true]{%
2080   \Hy@texhttrue
2081   \setkeys{Hyp}{colorlinks=true}%
2082   \def\BeforeTeXIVht{\usepackage{color}}%
2083   \def\Hy@driver{htex4ht}%
2084   \def\MaybeStopEarly{%
2085     \typeout{Hyperref stopped early}%
2086     \AfterBeginDocument{%
2087       \PDF@FinishDoc
2088       \gdef\PDF@FinishDoc{}}%
2089   }%
2090   \endinput
2091 }%
2092 }
2093 \define@key{Hyp}{pdftex}[true]{%
2094   \def\Hy@driver{hpdftex}%

```

```

2095 }
2096 \define@key{Hyp}{nativepdf}[true]{%
2097   \def\Hy@driver{hdvips}%
2098 }
2099 \define@key{Hyp}{dvipdfm}[true]{%
2100   \def\Hy@driver{hdvipdfm}%
2101 }
2102 \define@key{Hyp}{dvipdfmx}[true]{%
2103   \def\Hy@driver{hdvipdfm}%
2104 }
2105 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2106   \expandafter\ifx\csname if#1\expandafter\endcsname
2107     \csname iftrue\endcsname
2108     \chardef\SpecialDvipdfmxOutlineOpen@ne
2109   \else
2110     \chardef\SpecialDvipdfmxOutlineOpen@z@
2111   \fi
2112 }
2113 \define@key{Hyp}{xetex}[true]{%
2114   \def\Hy@driver{hdvipdfm}%
2115 }
2116 \define@key{Hyp}{pdfmark}[true]{%
2117   \def\Hy@driver{hdvips}%
2118 }
2119 \define@key{Hyp}{dvips}[true]{%
2120   \def\Hy@driver{hdvips}%
2121 }
2122 \define@key{Hyp}{hypertex}[true]{%
2123   \def\Hy@driver{hypertex}%
2124 }
2125 \let\Hy@MaybeStopNow\relax
2126 \define@key{Hyp}{vtex}[true]{%
2127   \begingroup\expandafter\expandafter\expandafter\endgroup
2128   \expandafter\ifx\csname OpMode\endcsname\relax
2129     \@latex@error{Non-VTeX processor}{}%
2130     \global\let\Hy@MaybeStopNow\endinput
2131   \endinput
2132 \else
2133   \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2134     \def\Hy@driver{hvtex}%
2135   \else
2136     \ifnum\OpMode=10\relax
2137       \def\Hy@driver{hvtexhtm}%
2138       \def\MaybeStopEarly{%
2139         \typeout{Hyperref stopped early}%
2140         \AfterBeginDocument{%
2141           \PDF@FinishDoc
2142           \gdef\PDF@FinishDoc{}}%
2143       }%
2144       \endinput
2145     }%
2146   \else
2147     \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2148     \global\let\Hy@MaybeStopNow\endinput
2149   \endinput
2150 \fi
2151 \fi

```

```

2152 \fi
2153 }
2154 \define@key{Hyp}{vtexpdfmark}[true]{%
2155 \beginngroup\expandafter\expandafter\expandafter\endgroup
2156 \expandafter\ifx\csname OpMode\endcsname\relax
2157 \latexerror{Non-VTeX processor}{}%
2158 \let\Hy@MaybeStopNow\endinput
2159 \endinput
2160 \else
2161 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2162 \def\Hy@driver{hvtexmrk}%
2163 \else
2164 \latexerror{Mode (\the\OpMode) has no hyperref driver}{}%
2165 \let\Hy@MaybeStopNow\endinput
2166 \endinput
2167 \fi
2168 \fi
2169 }
2170 \define@key{Hyp}{dviwindo}[true]{%
2171 \def\Hy@driver{hdviwind}%
2172 \setkeys{Hyp}{colorlinks}%
2173 \PassOptionsToPackage{dviwindo}{color}%
2174 }
2175 \define@key{Hyp}{dvipsone}[true]{%
2176 \def\Hy@driver{hdvipson}%
2177 }
2178 \define@key{Hyp}{textures}[true]{%
2179 \def\Hy@driver{htexture}%
2180 }
2181 \define@key{Hyp}{latex2html}[true]{%
2182 \AtBeginDocument{\@@latextohtmlX}%
2183 }

```

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

```

2184 \define@key{Hyp}{ps2pdf}[true]{%
2185 \def\Hy@driver{hdvips}%
2186 \providecommand*\pdfborder{0 0 1}%
2187 }

```

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.

```

2188 \define@key{Hyp}{hyperfigures}[true]{%
2189 \Hy@boolkey[hyperfigures]{figures}{#1}%
2190 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

2191 \define@key{Hyp}{hyperfootnotes}[true]{%
2192 \Hy@boolkey{hyperfootnotes}{#1}%
2193 }

```

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

```

2194 \def\back@none{none}
2195 \def\back@section{section}
2196 \def\back@page{page}
2197 \def\back@slide{slide}
2198 \define@key{Hyp}{backref}[section]{%

```

```

2199 \lowercase{\def\Hy@tempa{#1}}%
2200 \ifx\Hy@tempa\@empty
2201   \let\Hy@tempa\back@section
2202 \fi
2203 \ifx\Hy@tempa\Hy@false
2204   \let\Hy@tempa\back@none
2205 \fi
2206 \ifx\Hy@tempa\back@slide
2207   \let\Hy@tempa\back@section
2208 \fi
2209 \ifx\Hy@tempa\back@page
2210   \PassOptionsToPackage{hyperpageref}{backref}%
2211   \Hy@backreftrue
2212 \else
2213   \ifx\Hy@tempa\back@section
2214     \PassOptionsToPackage{hyperref}{backref}%
2215     \Hy@backreftrue
2216   \else
2217     \ifx\Hy@tempa\back@none
2218       \Hy@backreffalse
2219     \else
2220       \Hy@WarnOptionValue{#1}{backref}{%
2221         'section', 'slide', 'page', 'none', \MessageBreak
2222         or 'false'}%
2223     \fi
2224   \fi
2225 \fi
2226 }
2227 \define@key{Hyp}{pagebackref}[true]{%
2228   \lowercase{\def\Hy@tempa{#1}}%
2229   \ifx\Hy@tempa\@empty
2230     \let\Hy@tempa\Hy@true
2231   \fi
2232   \ifx\Hy@tempa\Hy@true
2233     \PassOptionsToPackage{hyperpageref}{backref}%
2234     \Hy@backreftrue
2235   \else
2236     \ifx\Hy@tempa\Hy@false
2237       \Hy@backreffalse
2238     \else
2239       \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
2240     \fi
2241   \fi
2242 }

```

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

```

2243 \define@key{Hyp}{hyperindex}[true]{%
2244   \Hy@boolkey{hyperindex}{#1}%
2245 }

```

Configuration of encap char.

```

2246 \define@key{Hyp}{encap}[|]{%
2247   \def\HyInd@EncapChar{#1}%
2248 }

```

12 Language options

The `\autoref` feature depends on the language.

```
2249 \def\HyLang@afrikaans{%
2250   \def\equationautorefname{Vergelyking}%
2251   \def\footnoteautorefname{Voetnota}%
2252   \def\itemautorefname{Item}%
2253   \def\figureautorefname{Figuur}%
2254   \def\tableautorefname{Tabel}%
2255   \def\partautorefname{Deel}%
2256   \def\appendixautorefname{Bylae}%
2257   \def\chapterautorefname{Hoofstuk}%
2258   \def\sectionautorefname{Afdeling}%
2259   \def\subsectionautorefname{Subafdeling}%
2260   \def\subsubsectionautorefname{Subsubafdeling}%
2261   \def\paragraphautorefname{Paragraaf}%
2262   \def\subparagraphautorefname{Subparagraaf}%
2263   \def\FancyVerbLineautorefname{Lyn}%
2264   \def\theoremautorefname{Teorema}%
2265   \def\pageautorefname{Bladsy}%
2266 }
2267 \def\HyLang@english{%
2268   \def\equationautorefname{Equation}%
2269   \def\footnoteautorefname{footnote}%
2270   \def\itemautorefname{item}%
2271   \def\figureautorefname{Figure}%
2272   \def\tableautorefname{Table}%
2273   \def\partautorefname{Part}%
2274   \def\appendixautorefname{Appendix}%
2275   \def\chapterautorefname{chapter}%
2276   \def\sectionautorefname{section}%
2277   \def\subsectionautorefname{subsection}%
2278   \def\subsubsectionautorefname{subsubsection}%
2279   \def\paragraphautorefname{paragraph}%
2280   \def\subparagraphautorefname{subparagraph}%
2281   \def\FancyVerbLineautorefname{line}%
2282   \def\theoremautorefname{Theorem}%
2283   \def\pageautorefname{page}%
2284 }
2285 \def\HyLang@french{%
2286   \def\equationautorefname{\`Equation}%
2287   \def\footnoteautorefname{note}%
2288   \def\itemautorefname{item}%
2289   \def\figureautorefname{Figure}%
2290   \def\tableautorefname{Tableau}%
2291   \def\partautorefname{Partie}%
2292   \def\appendixautorefname{Appendice}%
2293   \def\chapterautorefname{chapitre}%
2294   \def\sectionautorefname{section}%
2295   \def\subsectionautorefname{sous-section}%
2296   \def\subsubsectionautorefname{sous-sous-section}%
2297   \def\paragraphautorefname{paragraphe}%
2298   \def\subparagraphautorefname{sous-paragraphe}%
2299   \def\FancyVerbLineautorefname{ligne}%
2300   \def\theoremautorefname{Th\'eor\`eme}%
2301   \def\pageautorefname{page}%
2302 }
```



```

2303 \def\HyLang@german{%
2304   \def\equationautorefname{Gleichung}%
2305   \def\footnoteautorefname{Fu\ss note}%
2306   \def\itemautorefname{Punkt}%
2307   \def\figureautorefname{Abbildung}%
2308   \def\tableautorefname{Tabelle}%
2309   \def\partautorefname{Teil}%
2310   \def\appendixautorefname{Anhang}%
2311   \def\chapterautorefname{Kapitel}%
2312   \def\sectionautorefname{Abschnitt}%
2313   \def\subsectionautorefname{Unterabschnitt}%
2314   \def\subsubsectionautorefname{Unterunterabschnitt}%
2315   \def\paragraphautorefname{Absatz}%
2316   \def\subparagraphautorefname{Unterabsatz}%
2317   \def\FancyVerbLineautorefname{Zeile}%
2318   \def\theoremautorefname{Theorem}%
2319   \def\pageautorefname{Seite}%
2320 }
2321 \def\HyLang@italian{%
2322   \def\equationautorefname{Equazione}%
2323   \def\footnoteautorefname{nota}%
2324   \def\itemautorefname{punto}%
2325   \def\figureautorefname{Figura}%
2326   \def\tableautorefname{Tabella}%
2327   \def\partautorefname{Parte}%
2328   \def\appendixautorefname{Appendice}%
2329   \def\chapterautorefname{Capitolo}%
2330   \def\sectionautorefname{sezione}%
2331   \def\subsectionautorefname{sottosezione}%
2332   \def\subsubsectionautorefname{sottosottosezione}%
2333   \def\paragraphautorefname{paragrafo}%
2334   \def\subparagraphautorefname{sottoparagrafo}%
2335   \def\FancyVerbLineautorefname{linea}%
2336   \def\theoremautorefname{Teorema}%
2337   \def\pageautorefname{Pag.\@}%
2338 }
2339 \def\HyLang@magyar{%
2340   \def\equationautorefname{Egyenlet}%
2341   \def\footnoteautorefname{l\'abjegyzet}%
2342   \def\itemautorefname{Elem}%
2343   \def\figureautorefname{\`Abra}%
2344   \def\tableautorefname{T\'abl\'azat}%
2345   \def\partautorefname{R\'esz}%
2346   \def\appendixautorefname{F\'uggel\'ek}%
2347   \def\chapterautorefname{fejezet}%
2348   \def\sectionautorefname{szakasz}%
2349   \def\subsectionautorefname{alszakasz}%
2350   \def\subsubsectionautorefname{alalszakasz}%
2351   \def\paragraphautorefname{bekezd\'es}%
2352   \def\subparagraphautorefname{albekezd\'es}%
2353   \def\FancyVerbLineautorefname{sor}%
2354   \def\theoremautorefname{T\'étel}%
2355   \def\pageautorefname{oldal}%
2356 }
2357 \def\HyLang@portuges{%
2358   \def\equationautorefname{Equa\c c\~ao}%
2359   \def\footnoteautorefname{Nota de rodap\'e}%

```

```

2360 \def\itemautorefname{Item}%
2361 \def\figureautorefname{Figura}%
2362 \def\tableautorefname{Tabela}%
2363 \def\partautorefname{Parte}%
2364 \def\appendixautorefname{Ap\`endice}%
2365 \def\chapterautorefname{Cap\`itulo}%
2366 \def\sectionautorefname{Se\c c\~ao}%
2367 \def\subsectionautorefname{Subse\c c\~ao}%
2368 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
2369 \def\paragraphautorefname{par\`agrafo}%
2370 \def\subparagraphautorefname{subpar\`agrafo}%
2371 \def\FancyVerbLineautorefname{linha}%
2372 \def\theoremautorefname{Teorema}%
2373 \def\pageautorefname{P\`agina}%
2374 }

```

Next commented section for Russian is provided by Olga Lapko.

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

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

```

2375 \def\HyLang@russian{%

```

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

```

2376 \def\equationautorefname{\cyr\cyrv\cyrery\cyr.}%

```

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

```

2377 % \def\equationautorefname{%
2378 %     \cyr\cyrv\cyrery\cyr\cyrz\cyre\cyrn\cyri\cyre
2379 % }%

```

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

```

2380 \def\footnoteautorefname{%
2381     \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyr.\ \cyrp\cyr\cyri\cyrm.%
2382 }%

```

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

```

2383 % \def\footnoteautorefname{%
2384 %     \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyr\cyrh\cyrn\cyro\cyre\ %
2385 %     \cyrp\cyr\cyri\cyrm\cyre\cyrh\cyra\cyrn\cyri\cyre
2386 % }%

```

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

```

2387 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
2388 % \def\Accfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyru}%

```

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

```

2389 \def\itemautorefname{\cyr\cyrp.}%
2390 % \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.

```

2391 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
2392 \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.

```

2393 \def\partautorefname{\cyr\cyrch.}%
2394 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
2395 \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.

```

2396 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
2397 % \def\appendixautorefname{%
2398 % \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrrh\cyre\cyrn\cyri\cyre
2399 % }%

```

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.

```

2400 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
2401 \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.

```

2402 \def\paragraphautorefname{\cyr\cyrp.}%
2403 \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.

```

2404 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
2405 % \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.

```

2406 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%

```

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

```

2407 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
2408 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%

```

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

```

2409 % \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 ...

```

2410 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%

```

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

```
2411 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
2412 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
2413 \def\pageautorefname{\cyr\cyrs.}%
2414 }

2415 \def\HyLang@spanish{%
2416 \def\equationautorefname{Ecuaci\'on}%
2417 \def\footnoteautorefname{Nota a pie de p\'agina}%
2418 \def\itemautorefname{Elemento}%
2419 \def\figureautorefname{Figura}%
2420 \def\tableautorefname{Tabla}%
2421 \def\partautorefname{Parte}%
2422 \def\appendixautorefname{Ap\'endice}%
2423 \def\chapterautorefname{Cap\'itulo}%
2424 \def\sectionautorefname{Secci\'on}%
2425 \def\subsectionautorefname{Subsecci\'on}%
2426 \def\subsubsectionautorefname{Subsubsecci\'on}%
2427 \def\paragraphautorefname{P\'arrafo}%
2428 \def\subparagraphautorefname{Subp\'arrafo}%
2429 \def\FancyVerbLineautorefname{L\'inea}%
2430 \def\theoremautorefname{Teorema}%
2431 \def\pageautorefname{P\'agina}%
2432 }

2433 \def\HyLang@vietnamese{%
2434 \def\equationautorefname{Ph\`uhorn{}\`ohorn{}ng tr\'inh}%
2435 \def\footnoteautorefname{Ch\`u th\'ich}%
2436 \def\itemautorefname{m\`d{u}c}%
2437 \def\figureautorefname{H\`inh}%
2438 \def\tableautorefname{B\`h{a}ng}%
2439 \def\partautorefname{Ph\`acircumflex{}n}%
2440 \def\appendixautorefname{Ph\`d{u} l\`d{u}c}%
2441 \def\chapterautorefname{ch\`uhorn{}\`ohorn{}ng}%
2442 \def\sectionautorefname{m\`d{u}c}%
2443 \def\subsectionautorefname{m\`d{u}c}%
2444 \def\subsubsectionautorefname{m\`d{u}c}%
2445 \def\paragraphautorefname{d\`j{o\`d{a}n}%
2446 \def\subparagraphautorefname{d\`j{o\`d{a}n}%
2447 \def\FancyVerbLineautorefname{d\`ong}%
2448 \def\theoremautorefname{DJ\`d{i}nh l\`y}%
2449 \def\pageautorefname{Trang}%
2450 }
```

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

```
2451 \def\HyLang@addto#1#2{%
2452 #2%
2453 \@temptokena{#2}%
2454 \ifx#1\relax
2455 \let#1\@empty
2456 \fi
2457 \ifx#1\undefined
2458 \edef#1{\the\@temptokena}%
2459 \else
2460 \toks@\expandafter{#1}%
```

```

2461 \edef#1{\the\toks@\the\@temptokena}%
2462 \fi
2463 \@temptokena{\toks@\@temptokena
2464 }

2465 \def\HyLang@DeclareLang#1#2#3{%
2466 \begingroup
2467 \edef\x##1##2{%
2468 \noexpand\ifx##2\relax
2469 \errmessage{No definitions for language #2' found!}%
2470 \noexpand\fi
2471 \endgroup
2472 \noexpand\define@key{Hyp}{#1}[]{%
2473 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
2474 #3%
2475 }%
2476 }%
2477 \expandafter\x\csname extras#1\expandafter\endcsname
2478 \csname HyLang@#2\endcsname
2479 }

2480 \HyLang@DeclareLang{english}{english}{}
2481 \HyLang@DeclareLang{UKenglish}{english}{}
2482 \HyLang@DeclareLang{british}{english}{}
2483 \HyLang@DeclareLang{USenglish}{english}{}
2484 \HyLang@DeclareLang{american}{english}{}
2485 \HyLang@DeclareLang{german}{german}{}
2486 \HyLang@DeclareLang{austrian}{german}{}
2487 \HyLang@DeclareLang{ngerman}{german}{}
2488 \HyLang@DeclareLang{naustrian}{german}{}
2489 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
2490 \HyLang@DeclareLang{brazil}{portuges}{}
2491 \HyLang@DeclareLang{brazilian}{portuges}{}
2492 \HyLang@DeclareLang{portuguese}{portuges}{}
2493 \HyLang@DeclareLang{spanish}{spanish}{}
2494 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
2495 \HyLang@DeclareLang{french}{french}{}
2496 \HyLang@DeclareLang{frenchb}{french}{}
2497 \HyLang@DeclareLang{francais}{french}{}
2498 \HyLang@DeclareLang{acadian}{french}{}
2499 \HyLang@DeclareLang{canadien}{french}{}
2500 \HyLang@DeclareLang{italian}{italian}{}
2501 \HyLang@DeclareLang{magyar}{magyar}{}
2502 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

2503 \define@key{Hyp}{vietnamese}[]{}%
2504 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
2505 \AtEndOfPackage{%
2506 \ifundefined{T@PU}{}{}%
2507 \input{puvnenc.def}%
2508 }%
2509 }%
2510 }

2511 \define@key{Hyp}{vietnam}[]{}%
2512 \HyLang@addto\extravietnam\HyLang@vietnamese
2513 \AtEndOfPackage{%
2514 \ifundefined{T@PU}{}{}%
2515 \input{puvnenc.def}%

```

```

2516 }%
2517 }%
2518 }

```

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

```

2519 \define@key{Hyp}{arabic}[]{%
2520   \AtEndOfPackage{%
2521     \ifundefined{T@PU}{-}{%
2522       \input{puarenc.def}%
2523     }%
2524   }%
2525 }

```

13 Options to change appearance of links

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

```

2526 \define@key{Hyp}{colorlinks}[true]{%
2527   \Hy@boolkey{colorlinks}{#1}%
2528 }
2529 \define@key{Hyp}{ocgcolorlinks}[true]{%
2530   \Hy@boolkey{ocgcolorlinks}{#1}%
2531 }
2532 \AtBeginDocument{%
2533   \begingroup
2534     \ifundefined{OBJ@OCG@view}{%
2535       \ifHy@ocgcolorlinks
2536         \Hy@Warning{%
2537           Driver does not support ‘ocgcolorlinks’,\MessageBreak
2538           using ‘colorlinks’ instead%
2539         }%
2540       \fi
2541     }{}%
2542   \endgroup
2543 }
2544 \define@key{Hyp}{frenchlinks}[true]{%
2545   \Hy@boolkey{frenchlinks}{#1}%
2546 }

```

14 Bookmarking

```

2547 \define@key{Hyp}{bookmarks}[true]{%
2548   \Hy@boolkey{bookmarks}{#1}%
2549 }
2550 \define@key{Hyp}{bookmarksopen}[true]{%
2551   \Hy@boolkey{bookmarksopen}{#1}%
2552 }

```

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.

```

2553 \let\Hy@bookmarksdepth\c@tocdepth
2554 \define@key{Hyp}{bookmarksdepth}[]{%
2555   \begingroup
2556     \edef\x{#1}%
2557     \ifx\x\empty
2558       \global\let\Hy@bookmarksdepth\c@tocdepth
2559     \else
2560       \@ifundefined{toclevel@x}{%
2561         \@onelevel@sanitize\x
2562         \edef\y{\expandafter\@car\x\@nil}%
2563         \ifcase 0\expandafter\ifx\y-1\fi
2564           \expandafter\ifnum\expandafter'\y>47 %
2565             \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
2566           \Hy@Warning{Unknown document division name (\x)}%
2567         \else
2568           \setbox\z@=\hbox{%
2569             \count@=\x
2570             \xdef\Hy@bookmarksdepth{\the\count@}%
2571           }%
2572         \fi
2573       }{%
2574         \setbox\z@=\hbox{%
2575           \count@=\csname toclevel@x\endcsname
2576           \xdef\Hy@bookmarksdepth{\the\count@}%
2577         }%
2578       }%
2579     \fi
2580 \endgroup
2581 }

```

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

```

2582 \define@key{Hyp}{bookmarksopenlevel}{%
2583   \def\@bookmarksopenlevel{#1}%
2584 }
2585 \def\@bookmarksopenlevel{\maxdimen}
2586 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
2587 \define@key{Hyp}{bookmarkstype}{%
2588   \def\Hy@bookmarkstype{#1}%
2589 }
2590 \def\Hy@bookmarkstype{toc}

```

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

```

2591 \define@key{Hyp}{bookmarksnumbered}[true]{%
2592   \Hy@boolkey{bookmarksnumbered}{#1}%
2593 }

```

Option `CJKbookmarks` enables the patch for CJK bookmarks.

```

2594 \define@key{Hyp}{CJKbookmarks}[true]{%
2595   \Hy@boolkey{CJKbookmarks}{#1}%
2596 }
2597 \def\Hy@temp#1{%
2598   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
2599 }

```

```

2600 \def\Hy@temp#1#2#3{%
2601   \define@key{Hyp}{#2color}{%
2602     \HyColor@HyperrefColor{##1}#1%
2603   }%
2604   \def#1{#3}%
2605 }
2606 \Hy@temp{link}{red}
2607 \Hy@temp{anchor}{black}
2608 \Hy@temp{cite}{green}
2609 \Hy@temp{file}{cyan}
2610 \Hy@temp{url}{magenta}
2611 \Hy@temp{menu}{red}
2612 \Hy@temp{run}{\@filecolor}
2613 \define@key{Hyp}{pagecolor}{%
2614   \Hy@WarningPageColor
2615 }
2616 \def\Hy@WarningPageColor{%
2617   \Hy@WarningNoLine{Option 'pagecolor' is not available anymore}%
2618   \global\let\Hy@WarningPageColor\relax
2619 }

2620 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2621 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2622 \let\@baseurl\empty
2623 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2624 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2625 \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.

```

2626 \let\@pdfpagetransition\relax
2627 \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.

```

2628 \let\@pdfpageduration\relax
2629 \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.

```

2630 \newif\ifHy@useHidKey
2631 \Hy@useHidKeyfalse
2632 \define@key{Hyp}{pdfpagehidden}[true]{%
2633   \Hy@boolkey{pdfpagehidden}{#1}%
2634   \ifHy@pdfpagehidden
2635     \global\Hy@useHidKeytrue
2636   \fi
2637 }

```

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).

```

2638 \def\Hy@ColorList{cite,file,link,menu,run,url}
2639 \@for\Hy@temp:=\Hy@ColorList\do{%
2640   \edef\Hy@temp{%
2641     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2642       \noexpand\HyColor@HyperrefBorderColor
2643       {##1}%
2644       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
2645       {hyperref}%
2646       {\Hy@temp bordercolor}%
2647     }%
2648   }%
2649   \Hy@temp
2650 }
2651 \define@key{Hyp}{pagebordercolor}{%
2652   \Hy@WarningPageBorderColor
2653 }
2654 \def\Hy@WarningPageBorderColor{%
2655   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
2656   \global\let\Hy@WarningPageBorderColor\relax
2657 }
2658 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2659 \Hy@DefNameKey{pdfhighlight}{%
2660   \do{/I}{Invert}%
2661   \do{/N}{None}%
2662   \do{/O}{Outline}%
2663   \do{/P}{Push}%
2664 }
2665 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2666 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2667 \def\Hy@setpdfborder{%
2668   \ifx\@pdfborder\@empty
2669   \else
2670     /Border[\@pdfborder]%
2671   \fi
2672   \ifx\@pdfborderstyle\@empty
2673   \else
2674     /BS<<\@pdfborderstyle>>%
2675   \fi
2676 }
2677 \Hy@DefNameKey{pdfpagemode}{%
2678   \do{UseNone}{}%
2679   \do{UseOutlines}{}%
2680   \do{UseThumbs}{}%
2681   \do{FullScreen}{}%
2682   \do{UseOC}{PDF 1.5}%
2683   \do{UseAttachments}{PDF 1.6}%
2684 }
2685 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2686   \do{UseNone}{}%
2687   \do{UseOutlines}{}%
2688   \do{UseThumbs}{}%
2689   \do{FullScreen}{}%

```

```

2690 \do{UseOC}{PDF 1.5}%
2691 \do{UseAttachments}{PDF 1.6}%
2692 }
2693 \Hy@DefNameKey{pdfdirection}{%
2694 \do{L2R}{Left to right}%
2695 \do{R2L}{Right to left}%
2696 }
2697 \Hy@DefNameKey{pdfviewarea}{%
2698 \do{MediaBox}{}%
2699 \do{CropBox}{}%
2700 \do{BleedBox}{}%
2701 \do{TrimBox}{}%
2702 \do{ArtBox}{}%
2703 }
2704 \Hy@DefNameKey{pdfviewclip}{%
2705 \do{MediaBox}{}%
2706 \do{CropBox}{}%
2707 \do{BleedBox}{}%
2708 \do{TrimBox}{}%
2709 \do{ArtBox}{}%
2710 }
2711 \Hy@DefNameKey{pdfprintarea}{%
2712 \do{MediaBox}{}%
2713 \do{CropBox}{}%
2714 \do{BleedBox}{}%
2715 \do{TrimBox}{}%
2716 \do{ArtBox}{}%
2717 }
2718 \Hy@DefNameKey{pdfprintclip}{%
2719 \do{MediaBox}{}%
2720 \do{CropBox}{}%
2721 \do{BleedBox}{}%
2722 \do{TrimBox}{}%
2723 \do{ArtBox}{}%
2724 }
2725 \Hy@DefNameKey{pdfprintscaling}{%
2726 \do{AppDefault}{}%
2727 \do{None}{}%
2728 }
2729 \Hy@DefNameKey{pdfduplex}{%
2730 \do{Simplex}{}%
2731 \do{DuplexFlipShortEdge}{}%
2732 \do{DuplexFlipLongEdge}{}%
2733 }
2734 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
2735 \do{true}{}%
2736 \do{false}{}%
2737 }
2738 \define@key{Hyp}{pdfprintpagerange}{%
2739 \def\@pdfprintpagerange{#1}%
2740 }
2741 \Hy@DefNameKey{pdfnumcopies}{%
2742 \do{2}{two copies}%
2743 \do{3}{three copies}%
2744 \do{4}{four copies}%
2745 \do{5}{five copies}%
2746 }

```

```

2747 \define@key{Hyp}{pdfusetitle}[true]{%
2748   \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2749 }
2750 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2751 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2752 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2753 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2754 \define@key{Hyp}{pdfcreationdate}{%
2755   \beginngroup
2756     \Hy@unicodedefalse
2757     \pdfstringdef\@pdfcreationdate{#1}%
2758   \endgroup
2759 }
2760 \define@key{Hyp}{pdfmoddate}{%
2761   \beginngroup
2762     \Hy@unicodedefalse
2763     \pdfstringdef\@pdfmoddate{#1}%
2764   \endgroup
2765 }
2766 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2767 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2768 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
2769 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2770 \let\setpdflinkmargin@gobble
2771 \def\calculate@pdfview#1 #2\{%
2772   \def\@pdfview{#1}%
2773   \ifx\#2\%
2774     \def\@pdfviewparams{ -32768}%
2775   \else
2776     \def\@pdfviewparams{ #2}%
2777   \fi
2778 }
2779 \beginngroup\expandafter\expandafter\expandafter\endgroup
2780 \expandafter\ifx\csname numexpr\endcsname\relax
2781   \def\Hy@number#1{%
2782     \expandafter\@firstofone\expandafter{\number#1}%
2783   }%
2784 \else
2785   \def\Hy@number#1{%
2786     \the\numexpr#1\relax
2787   }%
2788 \fi
2789 \define@key{Hyp}{pdfstartpage}{%
2790   \ifx\#1\%
2791     \def\@pdfstartpage{}%
2792   \else
2793     \edef\@pdfstartpage{\Hy@number{#1}}%
2794   \fi
2795 }%
2796 \define@key{Hyp}{pdfstartview}{%
2797   \ifx\#1\%
2798     \def\@pdfstartview{}%
2799   \else
2800     \hypercalcbpdef\@pdfstartview{ /#1 }%
2801   \fi
2802 }
2803 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}

```

```

2804 \define@key{Hyp}{pdftoolbar}[true]{%
2805   \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2806 }
2807 \define@key{Hyp}{pdfmenubar}[true]{%
2808   \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2809 }
2810 \define@key{Hyp}{pdfwindowui}[true]{%
2811   \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2812 }
2813 \define@key{Hyp}{pdffitwindow}[true]{%
2814   \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2815 }
2816 \define@key{Hyp}{pdfcenterwindow}[true]{%
2817   \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2818 }
2819 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2820   \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2821 }
2822 \define@key{Hyp}{pdfa}[true]{%
2823   \Hy@boolkey[pdfa]{#1}%
2824 }
2825 \define@key{Hyp}{pdfnewwindow}[true]{%
2826   \def\Hy@temp{#1}%
2827   \ifx\Hy@temp\empty
2828     \Hy@newwindowsetfalse
2829   \else
2830     \Hy@newwindowsettrue
2831     \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2832   \fi
2833 }
2834 \def\Hy@SetNewWindow{%
2835   \ifHy@newwindowset
2836     /NewWindow %
2837   \ifHy@newwindow true\else false\fi
2838   \fi
2839 }
2840 \Hy@DefNameKey{pdfpagelayout}{%
2841   \do{SinglePage}{}%
2842   \do{OneColumn}{}%
2843   \do{TwoColumnLeft}{}%
2844   \do{TwoColumnRight}{}%
2845   \do{TwoPageLeft}{PDF 1.5}%
2846   \do{TwoPageRight}{PDF 1.5}%
2847 }
2848 \define@key{Hyp}{pdflang}{%
2849   \def\@pdflang{#1}%
2850 }
2851 \define@key{Hyp}{pdfpagelabels}[true]{%
2852   \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2853 }
2854 \define@key{Hyp}{pdfescapeform}[true]{%
2855   \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2856 }

```

Default values:

```

2857 \def\@linkbordercolor{1 0 0}
2858 \def\@urlbordercolor{0 1 1}
2859 \def\@menubordercolor{1 0 0}

```

```

2860 \def\@filebordercolor{0 .5 .5}
2861 \def\@runbordercolor{0 .7 .7}
2862 \def\@citebordercolor{0 1 0}
2863 \def\@pdfhighlight{/I}
2864 \def\@pdftitle{}
2865 \def\@pdfauthor{}
2866 \let\@pdfproducer\relax
2867 \def\@pdfcreator{LaTeX with hyperref package}
2868 \def\@pdfcreationdate{}
2869 \def\@pdfmoddate{}
2870 \def\@pdfsubject{}
2871 \def\@pdfkeywords{}
2872 \def\@pdfpagescrop{}
2873 \def\@pdfstartview{ /Fit }
2874 \def\@pdfstartpage{1}
2875 \def\@pdfprintpagerange{}
2876 \def\@pdflang{}
2877 \let\PDF@SetupDoc\@empty
2878 \let\PDF@FinishDoc\@empty
2879 \let\phantomsection\@empty
2880 \let\special@paper\@empty
2881 \def\HyperDestNameFilter#1{#1}
2882 \ifundefined{stockwidth}{%
2883   \ifdim\paperwidth>\z@
2884     \ifdim\paperheight>\z@
2885       \edef\special@paper{\the\paperwidth,\the\paperheight}%
2886     \fi
2887   \fi
2888 }{%
2889   \ifdim\stockwidth>\z@
2890     \ifdim\stockheight>\z@
2891       \edef\special@paper{\the\stockwidth,\the\stockheight}%
2892     \fi
2893   \fi
2894 }
2895 \begingroup
2896 \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
2897 \dimen@=\x\relax
2898 \ifdim\dimen@>\z@
2899 \else
2900   \dimen@=11in\relax
2901   \Hy@WarningNoLine{%
2902     Height of page (\expandafter\string\x) %
2903     is invalid (\the\x),\MessageBreak
2904     using 11in%
2905   }%
2906 \fi
2907 \dimen@=0.99626401\dimen@
2908 \xdef\Hy@pageheight{\strip@pt\dimen@}%
2909 \endgroup
2910 \def\HyInd@EncapChar{\|}
2911 \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.

```

2912 \let\hyper@normalise\ExecuteOptions

```

```

2913 \let\ExecuteOptions\hypersetup
2914 \Hy@RestoreCatcodes
2915 \InputIfFileExists{hyperref.cfg}{-}{-}
2916 \Hy@SetCatcodes
2917 \let\ExecuteOptions\hyper@normalise
2918 \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`.

```

2919 \RequirePackage{kvoptions}[2006/08/17]

```

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

```

2920 \@ifpackageloaded{tex4ht}{%
2921   \@ifpackagewith{hyperref}{tex4ht}{-}{-}%
2922   \PassOptionsToPackage{tex4ht}{hyperref}%
2923 }%
2924 }{}

```

```

2925 \let\ReadBookmarks\relax
2926 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2927 \AtBeginDocument{%
2928   \ifHy@draft
2929     \let\hyper@@anchor\@gobble
2930     \gdef\hyper@link#1#2#3{#3}%
2931     \let\hyper@anchorstart\@gobble
2932     \let\hyper@anchorend\@empty
2933     \let\hyper@linkstart\@gobbletwo
2934     \let\hyper@linkend\@empty
2935     \def\hyper@linkurl#1#2{#1}%
2936     \def\hyper@linkfile#1#2#3{#1}%
2937     \def\hyper@link@[#1]#2#3{#1}%
2938     \def\Acrobatmenu#1#2{\leavevmode#2}%
2939     \let\PDF@SetupDoc\@empty
2940     \let\PDF@FinishDoc\@empty
2941     \let\@fifthoffive\@secondoftwo
2942     \let\@secondoffive\@secondoftwo
2943     \let\ReadBookmarks\relax
2944     \let\WriteBookmarks\relax
2945     \Hy@WarningNoLine{ draft mode on}%
2946   \fi
2947   \Hy@DisableOption{draft}%
2948   \Hy@DisableOption{nolinks}%
2949   \Hy@DisableOption{final}%
2950 }

```

15.1 PDF/A

```

2951 \Hy@DisableOption{pdfa}

2952 \ifHy@pdfa
2953   \setkeys{Hyp}{pdfversion=1.4}%
2954   \def\Hy@Acrobatmenu#1#2{%
2955     \leavevmode
2956     \begingroup
2957     \edef\x{#1}%

```

```

2958 \@onelevel@sanitize\x
2959 \ifx\x\Hy@NextPage
2960 \let\y=Y%
2961 \else
2962 \ifx\x\Hy@PrevPage
2963 \let\y=Y%
2964 \else
2965 \ifx\x\Hy@FirstPage
2966 \let\y=Y%
2967 \else
2968 \ifx\x\Hy@LastPage
2969 \let\y=Y%
2970 \else
2971 \let\y=N%
2972 \fi
2973 \fi
2974 \fi
2975 \fi
2976 \expandafter\endgroup
2977 \ifx\y Y%
2978 \else
2979 \PackageError{hyperref}{%
2980 PDF/A: Named action ‘#1’ is not permitted%
2981 }\@ehc
2982 {#2}%
2983 \expandafter\@gobble
2984 \fi
2985 }%
2986 \def\Hy@temp#1{%
2987 \expandafter\def\csname Hy@#1\endcsname{#1}%
2988 \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
2989 }%
2990 \Hy@temp{NextPage}%
2991 \Hy@temp{PrevPage}%
2992 \Hy@temp{FirstPage}%
2993 \Hy@temp{LastPage}%
2994 \else
2995 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
2996 \fi

```

15.2 Patch for babel’s \texttilde

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

```

2997 \Hy@nextfalse
2998 \@ifundefined{spanish@sh@"@sel}{\Hy@nexttrue}
2999 \@ifundefined{galician@sh@"@sel}{\Hy@nexttrue}
3000 \@ifundefined{estonian@sh@"@sel}{\Hy@nexttrue}
3001 \ifHy@next
3002 \let\texttilde\~%
3003 \fi

```

15.3 Patch for babel 3.8j

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

```

3004 \@ifpackageloaded{babel}{%

```

```

3005 \@ifpackagelater{babel}{2008/03/16}{%
3006   \def\Hy@PatchLanguageShorthands#1{%
3007     \begingroup
3008       \edef\x{#1}%
3009       \@onelevel@sanitize\x
3010       \def\y{system}%
3011       \@onelevel@sanitize\y
3012     \expandafter\endgroup
3013     \ifx\x\y
3014     \else
3015       \HyOrg@languageshorthands{#1}%
3016     \fi
3017   }%
3018   \AtBeginDocument{%
3019     \begingroup
3020       \toks0=\expandafter{\pdfstringdefPreHook}%
3021       \xdef\pdfstringdefPreHook{%
3022         \let\noexpand\HyOrg@languageshorthands
3023         \noexpand\languageshorthands
3024         \let\noexpand\languageshorthands
3025         \noexpand\Hy@PatchLanguageShorthands
3026         \the\toks0 %
3027         \let\noexpand\languageshorthands
3028         \noexpand\HyOrg@languageshorthands
3029       }%
3030     \endgroup
3031   }%
3032 }{}%
3033 }{}

3034 \ifHy@figures
3035   \Hy@Info{Hyper figures ON}%
3036 \else
3037   \Hy@Info{Hyper figures OFF}%
3038 \fi
3039 \ifHy@nesting
3040   \Hy@Info{Link nesting ON}%
3041 \else
3042   \Hy@Info{Link nesting OFF}%
3043 \fi
3044 \ifHy@hyperindex
3045   \Hy@Info{Hyper index ON}%
3046 \else
3047   \Hy@Info{Hyper index OFF}%
3048 \fi
3049 \ifHy@plainpages
3050   \Hy@Info{Plain pages ON}%
3051 \else
3052   \Hy@Info{Plain pages OFF}%
3053 \fi
3054 \ifHy@backref
3055   \Hy@Info{Backreferencing ON}%
3056 \else
3057   \Hy@Info{Backreferencing OFF}%
3058 \fi
3059 \ifHy@typexml
3060   \AtEndOfPackage{%
3061     \RequirePackage{color}%

```



```

3062 \RequirePackage{nameref}%
3063 }%
3064 \fi
3065 \Hy@DisableOption{typexml}
3066 \ifHy@implicit
3067 \typeout{Implicit mode ON; LaTeX internals redefined}%
3068 \else
3069 \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
3070 \def\MaybeStopEarly{%
3071 \typeout{Hyperref stopped early}%
3072 \AfterBeginDocument{%
3073 \PDF@FinishDoc
3074 \gdef\PDF@FinishDoc{}}%
3075 }%
3076 \endinput
3077 }%
3078 \AtBeginDocument{%
3079 \let\autoref\ref
3080 \let\autopageref\pageref
3081 \ifx\@pdfpagemode\@empty
3082 \gdef\@pdfpagemode{UseNone}%
3083 \fi
3084 \global\Hy@backreffalse
3085 }%
3086 \AtEndOfPackage{%
3087 \global\let\ReadBookmarks\relax
3088 \global\let\WriteBookmarks\relax
3089 }%
3090 \fi
3091 \Hy@DisableOption{implicit}

```

15.3.1 Driver loading

```

3092 \AtEndOfPackage{%
3093 \@ifpackageloaded{tex4ht}{%
3094 \def\Hy@driver{htex4ht}%
3095 \Hy@texhttrue
3096 }{}%

```

Some drivers can be detected. Check for these drivers, whether the given driver option is ok. Otherwise force the right driver or use the default driver.

```

3097 \ifx\Hy@driver\@empty
3098 \else
3099 \def\Hy@temp{hpdftex}%
3100 \ifpdf
3101 \ifx\Hy@driver\Hy@temp
3102 \else
3103 \Hy@WarningNoLine{%
3104 Wrong driver ‘\Hy@driver.def’;\MessageBreak
3105 pdfTeX is running in PDF mode.\MessageBreak
3106 Forcing driver ‘\Hy@temp.def’%
3107 }%
3108 \let\Hy@driver\Hy@temp
3109 \fi
3110 \else
3111 \ifx\Hy@driver\Hy@temp
3112 \Hy@WarningNoLine{%
3113 Wrong driver ‘\Hy@driver.def’;\MessageBreak

```

```

3114         pdfTeX is not running in PDF mode.\MessageBreak
3115         Using default driver%
3116     }%
3117     \let\Hy@driver\@empty
3118 \fi
3119 \fi
3120 \fi
3121 \ifx\Hy@driver\@empty
3122 \else
3123     \def\Hy@temp{hdvipdfm}%
3124     \ifxetex
3125         \ifx\Hy@driver\Hy@temp
3126         \else
3127             \Hy@WarningNoLine{%
3128                 Wrong driver '\Hy@driver.def';\MessageBreak
3129                 XeTeX is running.\MessageBreak
3130                 Forcing driver '\Hy@temp.def' for XeTeX%
3131             }%
3132             \let\Hy@driver\Hy@temp
3133         \fi
3134     \fi
3135 \fi
3136 \ifx\Hy@driver\@empty
3137 \else
3138     \def\Hy@temp{hvtexhtm}%
3139     \ifvtexhtml
3140         \ifx\Hy@driver\Hy@temp
3141         \else
3142             \Hy@WarningNoLine{%
3143                 Wrong driver '\Hy@driver.def';\MessageBreak
3144                 VTeX is running in HTML mode.\MessageBreak
3145                 Forcing driver '\Hy@temp.def'%
3146             }%
3147             \let\Hy@driver\Hy@temp
3148         \fi
3149     \else
3150         \ifx\Hy@driver\Hy@temp
3151             \Hy@WarningNoLine{%
3152                 Wrong driver '\Hy@driver.def';\MessageBreak
3153                 VTeX is not running in HTML mode.\MessageBreak
3154                 Using default driver%
3155             }%
3156             \let\Hy@driver\@empty
3157         \fi
3158     \fi
3159 \fi

```

If the driver is not given, find the right driver or use the default driver.

```

3160 \ifx\Hy@driver\@empty
3161     \providecommand*{\Hy@defaultdriver}{hypertex}%
3162     \ifpdf
3163         \def\Hy@driver{hpdfTeX}%
3164     \else
3165         \ifxetex
3166             \def\Hy@driver{hdvipdfm}%
3167         \else
3168             \ifvtexhtml
3169                 \def\Hy@driver{hvtexhtm}%

```

```

3170         \def\MaybeStopEarly{%
3171             \typeout{Hyperref stopped early}%
3172             \AfterBeginDocument{%
3173                 \PDF@FinishDoc
3174                 \gdef\PDF@FinishDoc{%
3175                     }%
3176             \endinput
3177         }%
3178     \else
3179         \ifvtexpdf
3180             \def\Hy@driver{hvtex}%
3181         \else
3182             \ifvtexps
3183                 \def\Hy@driver{hvtex}%
3184             \else
3185                 \let\Hy@driver\Hy@defaultdriver
3186             \fi
3187         \fi
3188     \fi
3189 \fi
3190 \fi
3191 \ifx\Hy@driver\Hy@defaultdriver
3192     \def\Hy@temp{hdvwind}%
3193     \ifx\Hy@temp\Hy@driver
3194         \setkeys{Hyp}{colorlinks}%
3195         \PassOptionsToPackage{dviwindo}{color}%
3196     \fi
3197 \fi
3198 \typeout{*hyperref using default driver \Hy@driver*}%
3199 \else
3200     \typeout{*hyperref using driver \Hy@driver*}%
3201 \fi
3202 \input{\Hy@driver.def}%
3203 \let\@unprocessedoptions\relax
3204 \Hy@RestoreCatcodes
3205 }
3206 \newif\ifHy@DvipdfmxOutlineOpen
3207 \begingroup\expandafter\expandafter\expandafter\endgroup
3208 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
3209 \else
3210     \ifnum\SpecialDvipdfmxOutlineOpen>\z@
3211         \Hy@DvipdfmxOutlineOpentru
3212     \fi
3213 \fi
3214 \Hy@DisableOption{tex4ht}
3215 \Hy@DisableOption{pdftex}
3216 \Hy@DisableOption{nativepdf}
3217 \Hy@DisableOption{dvipdfm}
3218 \Hy@DisableOption{dvipdfmx}
3219 \Hy@DisableOption{dvipdfmx-outline-open}
3220 \Hy@DisableOption{pdfmark}
3221 \Hy@DisableOption{dvips}
3222 \Hy@DisableOption{hypertex}
3223 \Hy@DisableOption{vtex}
3224 \Hy@DisableOption{vtexpdfmark}
3225 \Hy@DisableOption{dviwindo}
3226 \Hy@DisableOption{dvipsone}

```

```

3227 \Hy@DisableOption{textures}
3228 \Hy@DisableOption{latex2html}
3229 \Hy@DisableOption{ps2pdf}
3230 \Hy@DisableOption{xetex}
3231 \AtEndOfPackage{%
3232   \Hy@DisableOption{pdfversion}%
3233 }

```

15.3.2 Bookmarks

```

3234 \def\WriteBookmarks{0}
3235 \def\@bookmarkopenstatus#1{%
3236   \ifHy@bookmarksopen

```

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

```

3237   \ifnum#1<\expandafter\@firstofone\expandafter
3238     {\number\@bookmarkopenlevel} % explicit space
3239   \else
3240     -%
3241   \fi
3242 \else
3243   -%
3244 \fi
3245 }
3246 \ifHy@bookmarks
3247   \Hy@Info{Bookmarks ON}%
3248   \ifx\@pdfpagemode\@empty
3249     \def\@pdfpagemode{UseOutlines}%
3250   \fi
3251 \else
3252   \def\@bookmarkopenstatus#1{%
3253     \Hy@Info{Bookmarks OFF}%
3254     \AtEndOfPackage{%
3255       \global\let\ReadBookmarks\relax
3256       \global\let\WriteBookmarks\relax
3257     }%
3258     \ifx\@pdfpagemode\@empty
3259       \def\@pdfpagemode{UseNone}%
3260     \fi
3261 \fi
3262 \Hy@DisableOption{bookmarks}

```

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

```

3263 \AtBeginDocument{%
3264   \ifHy@ocgcolorlinks
3265     \setkeys{Hyp}{colorlinks}%
3266     \ifHy@pdfa
3267       \Hy@Warning{%
3268         PDF/A: Optional Content Groups are prohibited,\MessageBreak
3269         using ‘colorlinks’ instead of ‘ocgcolorlinks’%
3270       }%
3271       \Hy@ocgcolorlinksfalse
3272     \fi
3273   \fi
3274   \ifHy@ocgcolorlinks
3275   \else
3276     \Hy@DisableOption{ocgcolorlinks}%
3277   \fi

```

```

3278 \ifHy@colorlinks
3279   \def\@pdfborder{0 0 0}%
3280   \let\@pdfborderstyle\@empty
3281   \ifHy@typexml
3282   \else
3283     \RequirePackage{color}%
3284   \fi
3285   \def\Hy@colorlink#1{%
3286     \begingroup
3287     \HyColor@UseColor#1%
3288   }%
3289   \def\Hy@endcolorlink{\endgroup}%
3290   \Hy@Info{Link coloring ON}%
3291 \else
3292   \ifHy@frenchlinks
3293     \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
3294     \def\Hy@endcolorlink{\endgroup}%
3295     \Hy@Info{French linking ON}%
3296   \else
for grouping consistency:
3297     \def\Hy@colorlink#1{\begingroup}%
3298     \def\Hy@endcolorlink{\endgroup}%
3299     \Hy@Info{Link coloring OFF}%
3300   \fi
3301 \fi
3302 \Hy@DisableOption{colorlinks}%
3303 \Hy@DisableOption{frenchlinks}%
3304 \ifHy@texht
3305   \long\def\@firstoffive#1#2#3#4#5{#1}%
3306   \long\def\@secondoffive#1#2#3#4#5{#2}%
3307   \long\def\@thirdoffive#1#2#3#4#5{#3}%
3308   \long\def\@fourthoffive#1#2#3#4#5{#4}%
3309   \long\def\@fifthoffive#1#2#3#4#5{#5}%
3310   \providecommand*\@safe@activestruer{}%
3311   \providecommand*\@safe@activesfalse{}%
3312   \def\T@ref#1{%
3313     \Hy@safe@activestruer
3314     \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
3315     \Hy@safe@activesfalse
3316   }%
3317   \def\T@pageref#1{%
3318     \Hy@safe@activestruer
3319     \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
3320     \Hy@safe@activesfalse
3321   }%
3322 \else
3323   \ifHy@typexml\else\RequirePackage{nameref}\fi
3324 \fi
3325 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
3326 \DeclareRobustCommand\pageref{%
3327   \@ifstar\@pagerefstar\T@pageref
3328 }%
3329 }
3330 \AfterBeginDocument{%
3331   \ifHy@texht
3332   \else
3333     \ReadBookmarks

```

```

3334 \fi
3335 }
3336 \ifHy@backref
3337 \RequirePackage{backref}%
3338 \else
3339 \let\Hy@backout\@gobble
3340 \fi
3341 \Hy@DisableOption{backref}
3342 \Hy@DisableOption{pagebackref}
3343 \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.

```

3344 \begingroup
3345 \endlinechar=-1 %
3346 \catcode'\^A=14 %
3347 \catcode'\^M\active
3348 \catcode'\%\active
3349 \catcode'\#\active
3350 \catcode'\_\active
3351 \catcode'\$\active
3352 \gdef\hyper@normalise{^A
3353 \begingroup
3354 \catcode'\^M\active
3355 \def^M{ }^A
3356 \catcode'\%\active
3357 \let%\@percentchar
3358 \let%\@percentchar
3359 \catcode'\#\active
3360 \def#{\hyper@hash}^A
3361 \def\#{\hyper@hash}^A
3362 \@makeother\&^A
3363 \edef\textunderscore{\string_}^A
3364 \let_\textunderscore
3365 \catcode'\_\active
3366 \let_\textunderscore
3367 \let~\hyper@tilde
3368 \let~\hyper@tilde
3369 \let\textasciitilde\hyper@tilde
3370 \let\\\@backslashchar
3371 \edef$\string$^A
3372 \Hy@safe@activetrue
3373 \hyper@n@rmalise
3374 }^A
3375 \catcode'\#=6 ^A
3376 \gdef\Hy@ActiveCarriageReturn{^M}^A
3377 \gdef\hyper@n@rmalise#1#2{^A
3378 \def\Hy@tempa{#2}^A
3379 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
3380 \Hy@ReturnAfterElseFi{^A

```

```

3381         \hyper@@normalise{#1}^^A
3382     }^^A
3383     \else
3384         \Hy@ReturnAfterFi{^^A
3385         \hyper@@normalise{#1}{#2}^^A
3386     }^^A
3387     \fi
3388 }^^A
3389 \gdef\hyper@@normalise#1#2{^^A
3390     \edef\Hy@tempa{^^A
3391         \endgroup
3392         \noexpand#1{\Hy@RemovePercentCr#2%\^M\@nil}^^A
3393     }^^A
3394     \Hy@tempa
3395 }^^A
3396 \gdef\Hy@RemovePercentCr#1%\^M#2\@nil{^^A
3397     #1^^A
3398     \ifx\limits#2\limits
3399     \else
3400         \Hy@ReturnAfterFi{^^A
3401         \Hy@RemovePercentCr #2\@nil
3402     }^^A
3403     \fi
3404 }^^A
3405 \endgroup
3406 \providecommand*\hyper@chars{%
3407     \let#\hyper@hash
3408     \let%\@percentchar
3409     \Hy@safe@activetrue
3410 }

3411 \def\hyperlink#1#2{%
3412     \hyper@@link{#1}{#2}%
3413 }

3414 \DeclareRobustCommand*\href{%
3415     \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
3416 }
3417 \def\Hy@href#1{%
3418     \hyper@normalise\href@
3419 }
3420 \begingroup
3421     \catcode'\$=6 %
3422     \catcode'\#=12 %
3423     \gdef\href$1{\expandafter\href@split$1##\}%
3424     \gdef\href@split$1#$2#$3\{\%
3425         \hyper@@link{$1}{$2}%
3426     }%
3427 \endgroup

```

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

```

3428 \RequirePackage{url}
3429 \let\HyOrg@url\url
3430 \def\Hurl{\begingroup \Url}
3431 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
3432 \def\nolinkurl@#1{\Hurl{#1}}
3433 \DeclareRobustCommand*\url{\hyper@normalise\url@}
3434 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

```

```

3435 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
3436 \providecommand\hyper@image[2]{#2}

3437 \def\hypertarget#1#2{%
3438   \ifHy@nesting
3439     \hyper@@anchor{#1}{#2}%
3440   \else
3441     \hyper@@anchor{#1}{\relax}#2%
3442   \fi
3443 }

```

`\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.

```

3444 \DeclareRobustCommand*\hyperref{%
3445   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref}
3446 }

3447 \def\Hy@babelnormalise#1[#2]{%
3448   \begingroup
3449     \Hy@safe@activestrue
3450     \edef\Hy@tempa{%
3451       \endgroup
3452       \noexpand#1[{#2}]%
3453     }%
3454   \Hy@tempa
3455 }

3456 \def\@hyperref{\hyper@normalise\@hyperref}
3457 \def\@hyperref#1#2#3{%
3458   \edef\ref@one{\ifx\\#2\\\else#2.\fi#3}%
3459   \expandafter\tryhyper@link\ref@one\{#1}%
3460 }

3461 \def\tryhyper@link#1\\#2{%
3462   \hyper@@link{#2}{#1}%
3463 }

3464 \def\hyperdef{\@ifnextchar[{\label@hyperdef}\@hyperdef}}
3465 \def\@hyperdef#1#2#3{%, category, name, text
3466   \ifHy@nesting
3467     \hyper@@anchor{#1.#2}{#3}%
3468   \else
3469     \hyper@@anchor{#1.#2}{\relax}#3%
3470   \fi
3471 }

```

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

```

3472 \def\label@hyperref[#1]{%
3473   \expandafter\label@\@hyperref\csname r@#1\endcsname{#1}%
3474 }%

3475 \def\label@\@hyperref#1#2#3{%
3476   \ifx#1\relax
3477     \protect\G@refundefinedtrue
3478     \@latex@warning{%
3479       Hyper reference ‘#2’ on page \thepage \space undefined%
3480     }%
3481     \hyper@@link{}{??}{#3}%

```



```

3482 \else
3483   \hyper@@link{\expandafter\@fifthoffive#1}%
3484   {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
3485 \fi
3486 }
3487 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
3488                               % anchor text
3489   \@bspack
3490   \if@filesw
3491     \protected@write\@auxout{%
3492       {\string\newlabel{#1}{#2}{#3}{#4}\@empty}{#2.#3}}%
3493   \fi
3494   \@espack
3495   \ifHy@nesting
3496     \hyper@@anchor{#2.#3}{#4}%
3497   \else
3498     \hyper@@anchor{#2.#3}{\relax}#4%
3499   \fi
3500 }

```

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.

```

3501 \def\hyper@@link{\let\Hy@reserved@a\relax
3502   \ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
3503 }
3504 \def\hyper@link@[#1]#2#3#4{%
3505   \begingroup
3506     \protected@edef\Hy@tempa{#2}%
3507     \Hy@safe@activestrue
3508     \edef\x{#3}%
3509     \ifx\Hy@tempa\@empty
3510       \toks0{\hyper@link{#1}}%
3511     \else
3512       \toks0{\expandafter\hyper@readexternallink#2\@{#1}}%
3513     \fi
3514     \toks2{%
3515       \Hy@safe@activesfalse
3516       #4%
3517     }%
3518     \edef\Hy@tempa{\the\toks2}%
3519     \edef\x{\endgroup
3520       \ifx\Hy@tempa\@empty
3521         \noexpand\Hy@Warning{Suppressing empty link}%
3522       \else
3523         \the\toks0 {\x}{\the\toks2}}%
3524     \fi
3525   }%
3526   \x
3527 }

```

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.

```
3528 \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.

```
3529 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1::\|#1}%
3530 }
```

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

```
3531 \def\@pdftempwordfile{file}%
3532 \def\@pdftempwordrun{run}%
3533 \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:

```
3534 \ifx\|#6\|
3535 \expandafter\@hyper@linkfile file:#7\|#3}{#2}%
3536 \else
3537 \ifx\|#4\|
3538 \expandafter\@hyper@linkfile file:#7\|#3}{#2}%
3539 \else
```

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

```
3540 \def\@pdftempa{#4}%
3541 \ifx\@pdftempa\@pdftempwordfile
3542 \expandafter\@hyper@linkfile#7\|#3}{#2}%
3543 \else
```

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

```
3544 \ifx\@pdftempa\@pdftempwordrun
3545 \ifHy@pdfa
3546 \PackageError{hyperref}{%
3547 PDF/A: Launch action is prohibited%
3548 }\@ehc
3549 \begingroup
3550 \leavevmode
3551 #2%
3552 \endgroup
3553 \else
3554 \expandafter\@hyper@launch#7\|#3}{#2}%
3555 \fi
3556 \else
```

otherwise its a URL

```
3557         \hyper@linkurl{#3}{#7\ifx\\#2\\\else\hyper@hash#2\fi}%
3558         \fi
3559     \fi
3560 \fi
3561 \fi
3562 }
```

By default, turn run: into file:

```
3563 \def\@hyper@launch run:#1\\#2#3{% filename, anchor text, linkname
3564     \hyper@linkurl{#2}{%
3565         \Hy@linkfileprefix
3566         #1%
3567         \ifx\\#3\\%
3568         \else
3569             \hyper@hash
3570             #3%
3571         \fi
3572     }%
3573 }
```

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

```
3574 \def\@hyper@linkfile file:#1\\#2#3{%
3575     %file url,link string, name
3576     \filename@parse{#1}%
3577     \ifx\filename@ext\relax
3578         \edef\filename@ext{\XR@ext}%
3579     \fi
3580     \def\use@file{\filename@area\filename@base.\filename@ext}%
3581     \ifx\filename@ext\XR@ext
3582         \hyper@linkfile{#2}{\use@file}{#3}%
3583     \else
3584         \ifx\@baseurl\@empty
3585             \hyper@linkurl{#2}{%
3586                 \Hy@linkfileprefix\use@file\ifx\\#3\\\else\hyper@hash#3\fi
3587             }%
3588         \else
3589             \hyper@linkurl{#2}{\use@file\ifx\\#3\\\else\hyper@hash#3\fi}%
3590         \fi
3591     \fi
3592 }
```

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.

```
3593 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
3594 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
3595     \ifx\\#1\\%
3596         #2\Hy@WarningNoLine{empty link? #1: #2#3}%
3597     \else
3598         \def\anchor@spot{#2#3}%
3599         \let\put@me@back\@empty
3600         \ifx\relax#2\relax
```

```

3601 \else
3602 \ifHy@nesting
3603 \else
3604 \ifcat a\noexpand#2\relax
3605 \else
3606 \ifcat 0\noexpand#2 \relax
3607 \else
3608 % \typeout{Anchor start is not alphanumeric %
3609 % on input line\the\inputlineno%
3610 % }%
3611 \let\anchor@spot\@empty
3612 \def\put@me@back{#2#3}%
3613 \fi
3614 \fi
3615 \fi
3616 \fi
3617 \ifHy@activeanchor
3618 \anchor@spot
3619 \else
3620 \hyper@anchor{#1}%
3621 \fi
3622 \expandafter\put@me@back
3623 \fi
3624 \let\anchor@spot\@empty
3625 }

```

18 Compatibility with the *L^AT_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.

```

3626 \let\htmladdimg\hyperimage
3627 \def\htmladdnormallink#1#2{\href{#2}{#1}}
3628 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
3629 \def\htmlref#1#2{% anchor text, label
3630 \label@hyperref[{#2}]{#1}%
3631 }

```

This is really too much. The *L^AT_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.

```

3632 \def\@@latextohtmlX{%
3633 \let\hyperref\hyperref
3634 \def\hyperref##1##2##3##4{% anchor text for HTML
3635 % text to print before label in print
3636 % label
3637 % post-label text in print
3638 ##2\ref{##4}##3%
3639 }%
3640 }

```

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.

```
3641 \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
```

```
3642 \def\HyField@NewFlag#1#2{%
3643   \lowercase{\HyField@NewOption{#2}}%
3644   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3645 }
```

```
\HyField@NewFlagOnly
```

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

```
\HyField@NewOption #1: option name
```

```
3649 \def\HyField@NewOption#1{%
3650   \expandafter\newif\csname ifFld@#1\endcsname
3651   \define@key{Field}{#1}[true]{%
3652     \lowercase{\Field@boolkey{##1}}{#1}%
3653   }%
3654 }
```

```
\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
```

```
3655 \def\HyField@NewBitsetFlag#1#2#3#4{%
3656   \begingroup
3657     \count@=#4\relax
3658     \advance\count@\m@ne
3659     \def\x##1{%
3660       \endgroup
3661       \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
3662       \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
3663         \expandafter\edef\csname HyField@#3@##1\endcsname{%
3664           (\number#4) #2%
3665         }%
3666       \else
3667         \expandafter\edef\csname HyField@#3@##1\endcsname{%
```

```

3668         \csname HyField@#3@##1\endcsname
3669         /#2%
3670     }%
3671     \fi
3672 }%
3673 \expandafter\x\expandafter{\the\count@}%
3674 }

\HyField@UseFlag The bit set is HyField@#1
3675 \def\HyField@UseFlag#1#2{%
3676     \lowercase{\HyField@@UseFlag{#2}}{#1}%
3677 }

\HyField@@UseFlag
3678 \def\HyField@@UseFlag#1#2{%
3679     \bitsetSetValue{HyField@#2}{%
3680         \csname HyField@#2@#1\endcsname
3681     }{%
3682         \csname ifFld@#1\endcsname 1\else 0\fi
3683     }%
3684 }

\HyField@SetFlag The bit set is HyField@#1
3685 \def\HyField@SetFlag#1#2{%
3686     \lowercase{\HyField@@SetFlag{#2}}{#1}%
3687 }

\HyField@@SetFlag
3688 \def\HyField@@SetFlag#1#2{%
3689     \bitsetSetValue{HyField@#2}{%
3690         \csname HyField@#2@#1\endcsname
3691     }{1}%
3692 }

\HyField@PrintFlags
3693 \def\HyField@PrintFlags#1#2{%
3694     \ifHy@verbose
3695         \begingroup
3696         \let\Hy@temp\@empty
3697         \let\MessageBreak\relax
3698         \expandafter\@for\expandafter\x\expandafter:\expandafter=%
3699         \bitsetGetSetBitList{HyField@#1}\do{%
3700             \edef\Hy@temp{%
3701                 \Hy@temp
3702                 \csname HyField@#1@\x\endcsname\MessageBreak
3703             }%
3704         }%
3705         \edef\x{\endgroup
3706             \noexpand\Hy@Info{%
3707                 Field flags: %
3708                 \expandafter\ifx\@car#1\@nil S\else/\fi
3709                 #1 %
3710                 \bitsetGetDec{HyField@#1} %
3711                 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
3712                 \Hy@temp
3713                 for #2%

```

```

3714      }%
3715      }\x
3716      \fi
3717 }

```

19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

3718 \HyField@NewFlag{Ff}{ReadOnly}{1}
3719 \HyField@NewFlag{Ff}{Required}{2}
3720 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

3721 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
3722 \HyField@NewFlag{Ff}{Radio}{16}
3723 \HyField@NewFlag{Ff}{Pushbutton}{17}
3724 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

3725 \HyField@NewFlag{Ff}{Multiline}{13}
3726 \HyField@NewFlag{Ff}{Password}{14}
3727 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
3728 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3729 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
3730 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
3731 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

3732 \HyField@NewFlag{Ff}{Combo}{18}
3733 \HyField@NewFlag{Ff}{Edit}{19}
3734 \HyField@NewFlag{Ff}{Sort}{20}
3735 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
3736 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3737 \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.

```

3738 \newif\ifFld@popdown
3739 \define@key{Field}{popdown}[true]{%
3740   \lowercase{\Field@boolkey{#1}}{popdown}%
3741 }

```

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.

```

3742 \HyField@NewFlag{F}{Invisible}{1}
3743 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
3744 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
3745 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
3746 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
3747 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
3748 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
3749 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
3750 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

```

```

3751 \ifHy@pdfa
3752   \def\HyField@PDFAFlagWarning#1#2{%
3753     \Hy@Warning{%
3754       PDF/A: Annotation flag ‘#1’ must\MessageBreak
3755       be set to ‘#2’%
3756     }%
3757   }%
3758   \Fld@invisiblefalse
3759   \def\Fld@invisibletrue{%
3760     \HyField@PDFAFlagWarning{invisible}{false}%
3761   }%
3762   \Fld@hiddenfalse
3763   \def\Fld@hiddentrue{%
3764     \HyField@PDFAFlagWarning{hidden}{false}%
3765   }%
3766   \Fld@printtrue
3767   \def\Fld@printfalse{%
3768     \HyField@PDFAFlagWarning{print}{true}%
3769   }%
3770   \Fld@nozoomtrue
3771   \def\Fld@nozoomfalse{%
3772     \HyField@PDFAFlagWarning{nozoom}{true}%
3773   }%
3774   \Fld@norotatetrue
3775   \def\Fld@norotatefalse{%
3776     \HyField@PDFAFlagWarning{norotate}{true}%
3777   }%
3778   \Fld@noviewfalse
3779   \def\Fld@noviewtrue{%
3780     \HyField@PDFAFlagWarning{noview}{false}%
3781   }%
3782 \fi

```

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

```

3783 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
3784 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
3785 \HyField@NewFlag{Submit}{GetMethod}{4}
3786 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
3787 \HyField@NewFlagOnly{Submit}{XFDF}{6}
3788 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
3789 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
3790 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
3791 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
3792 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
3793 \HyField@NewFlag{Submit}{ExclFKey}{12}
3794 \HyField@NewFlag{Submit}{EmbedForm}{14}

3795 \define@key{Field}{export}{%
3796   \lowercase{\def\Hy@temp{#1}}%
3797   \@ifundefined{Fld@export@Hy@temp}{%
3798     \onelevel@sanitize\Hy@temp
3799     \PackageError{hyperref}{%
3800       Unknown export format ‘\Hy@temp’.\MessageBreak
3801       Known formats are ‘FDF’, ‘HTML’, ‘XFDF’, and ‘PDF’%
3802     } \@ehc
3803   }{%
3804     \let\Fld@export\Hy@temp
3805   }%

```



```

3806 }
3807 \def\Fld@export{fdf}
3808 \@namedef{Fld@export@fdf}{0}%
3809 \@namedef{Fld@export@html}{1}%
3810 \@namedef{Fld@export@xfdf}{2}%
3811 \@namedef{Fld@export@pdf}{3}%

```

19.1.2 Set submit flags

\HyField@FlagsSubmit

```

3812 \def\HyField@FlagsSubmit{%
3813   \bitsetReset{HyField@Submit}%
3814   \ifcase\@nameuse{Fld@export@}\Fld@export} %
3815   % FDF
3816   \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3817   \HyField@UseFlag{Submit}{SubmitCoordinates}%
3818   \HyField@UseFlag{Submit}{IncludeAppendSaves}%
3819   \HyField@UseFlag{Submit}{IncludeAnnotations}%
3820   \HyField@UseFlag{Submit}{CanonicalFormat}%
3821   \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
3822   \HyField@UseFlag{Submit}{ExclFKey}%
3823   \HyField@UseFlag{Submit}{EmbedForm}%
3824   \or % HTML
3825   \HyField@SetFlag{Submit}{ExportFormat}%
3826   \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3827   \HyField@UseFlag{Submit}{GetMethod}%
3828   \HyField@UseFlag{Submit}{SubmitCoordinates}%
3829   \HyField@UseFlag{Submit}{CanonicalFormat}%
3830   \or % XFDF
3831   \HyField@SetFlag{Submit}{XFDF}%
3832   \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3833   \HyField@UseFlag{Submit}{SubmitCoordinates}%
3834   \HyField@UseFlag{Submit}{CanonicalFormat}%
3835   \or % PDF
3836   \HyField@SetFlag{Submit}{SubmitPDF}%
3837   \HyField@UseFlag{Submit}{GetMethod}%
3838   \fi
3839   \HyField@PrintFlags{Submit}{submit button field}%
3840   \bitsetIsEmpty{HyField@Submit}{%
3841     \def\Fld@submitflags{%
3842     }{%
3843     \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
3844     }%
3845   }

```

19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

3846 \def\HyField@FlagsAnnot#1{%
3847   \bitsetReset{HyField@F}%
3848   \HyField@UseFlag{F}{Invisible}%
3849   \HyField@UseFlag{F}{Hidden}%
3850   \HyField@UseFlag{F}{Print}%
3851   \HyField@UseFlag{F}{NoZoom}%
3852   \HyField@UseFlag{F}{NoRotate}%
3853   \HyField@UseFlag{F}{NoView}%

```

```

3854 \HyField@UseFlag{F}{Locked}%
3855 \HyField@UseFlag{F}{ToggleNoView}%
3856 \HyField@UseFlag{F}{LockedContents}%
3857 \HyField@PrintFlags{F}{#1}%
3858 \bitsetIsEmpty{HyField@F}{%
3859     \def\Fld@annotflags{%
3860     }{%
3861     \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
3862     }%
3863 }

```

19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

3864 \def\HyField@FlagsPushButton{%
3865 \HyField@FlagsAnnot{push button field}%
3866 \bitsetReset{HyField@Ff}%
3867 \HyField@UseFlag{Ff}{ReadOnly}%
3868 \HyField@UseFlag{Ff}{Required}%
3869 \HyField@UseFlag{Ff}{NoExport}%
3870 \HyField@SetFlag{Ff}{PushButton}%
3871 \HyField@PrintFlags{Ff}{push button field}%
3872 \bitsetIsEmpty{HyField@Ff}{%
3873     \def\Fld@flags{%
3874     }{%
3875     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3876     }%
3877 }

```

19.1.5 Check box field

\HyField@FlagsCheckBox

```

3878 \def\HyField@FlagsCheckBox{%
3879 \HyField@FlagsAnnot{check box field}%
3880 \bitsetReset{HyField@Ff}%
3881 \HyField@UseFlag{Ff}{ReadOnly}%
3882 \HyField@UseFlag{Ff}{Required}%
3883 \HyField@UseFlag{Ff}{NoExport}%
3884 \HyField@PrintFlags{Ff}{check box field}%
3885 \bitsetIsEmpty{HyField@Ff}{%
3886     \def\Fld@flags{%
3887     }{%
3888     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3889     }%
3890 }

```

19.1.6 Radio button field

\HyField@FlagsRadioButton

```

3891 \def\HyField@FlagsRadioButton{%
3892 \HyField@FlagsAnnot{radio button field}%
3893 \bitsetReset{HyField@Ff}%
3894 \HyField@UseFlag{Ff}{ReadOnly}%
3895 \HyField@UseFlag{Ff}{Required}%
3896 \HyField@UseFlag{Ff}{NoExport}%
3897 \HyField@UseFlag{Ff}{NoToggleToOff}%

```

```

3898 \HyField@SetFlag{Ff}{Radio}%
3899 \HyField@UseFlag{Ff}{RadiosInUnison}%
3900 \HyField@PrintFlags{Ff}{radio button field}%
3901 \bitsetIsEmpty{HyField@Ff}{%
3902   \def\Fld@flags{%
3903 }{%
3904   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3905 }%
3906 }

```

19.1.7 Text fields

\HyField@FlagsText

```

3907 \def\HyField@FlagsText{%
3908   \HyField@FlagsAnnot{text field}%
3909   \bitsetReset{HyField@Ff}%
3910   \HyField@UseFlag{Ff}{ReadOnly}%
3911   \HyField@UseFlag{Ff}{Required}%
3912   \HyField@UseFlag{Ff}{NoExport}%
3913   \HyField@UseFlag{Ff}{Multiline}%
3914   \HyField@UseFlag{Ff}{Password}%
3915   \HyField@UseFlag{Ff}{FileSelect}%
3916   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
3917   \HyField@UseFlag{Ff}{DoNotScroll}%
3918   \ifFld@comb
3919     \ifcase0\ifFld@multiline
3920       \else\ifFld@password
3921       \else\ifFld@fileselect
3922       \else 1\fi\fi\fi\relax
3923     \PackageError{hyperref}{%
3924       Field option ‘comb’ cannot be used together with\MessageBreak
3925       ‘multiline’, ‘password’, or ‘fileselect’%
3926     }\@ehc
3927   \else
3928     \HyField@UseFlag{Ff}{Comb}%
3929   \fi
3930 \fi
3931 \HyField@UseFlag{Ff}{RichText}%
3932 \HyField@PrintFlags{Ff}{text field}%
3933 \bitsetIsEmpty{HyField@Ff}{%
3934   \def\Fld@flags{%
3935 }{%
3936   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3937 }%
3938 }

```

19.1.8 Choice fields

\HyField@FlagsChoice

```

3939 \def\HyField@FlagsChoice{%
3940   \HyField@FlagsAnnot{choice field}%
3941   \bitsetReset{HyField@Ff}%
3942   \HyField@UseFlag{Ff}{ReadOnly}%
3943   \HyField@UseFlag{Ff}{Required}%
3944   \HyField@UseFlag{Ff}{NoExport}%
3945   \HyField@UseFlag{Ff}{Combo}%

```

```

3946 \ifFld@combo
3947   \HyField@UseFlag{Ff}{Edit}%
3948 \fi
3949 \HyField@UseFlag{Ff}{Sort}%
3950 \HyField@UseFlag{Ff}{MultiSelect}%
3951 \ifFld@combo
3952   \ifFld@edit
3953     \HyField@UseFlag{Ff}{DoNotSpellCheck}%
3954   \fi
3955 \fi
3956 \HyField@UseFlag{Ff}{CommitOnSelChange}%
3957 \HyField@PrintFlags{Ff}{choice field}%
3958 \bitsetIsEmpty{HyField@Ff}{%
3959   \def\Fld@flags{%
3960   }{%
3961     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3962   }%
3963 }

```

19.2 Choice field

```

3964 \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`.

```

3965 \def\HyField@PDFChoices#1{%
3966   \begingroup
3967     \gdef\Fld@choices{%
3968       \def\HyTmp@optlist{%
3969         \let\HyTmp@optitem\relax
3970         \count@=0 %
3971         \kv@parse{#1}{%
3972           \Hy@pdfstringdef\kv@key\kv@key
3973           \ifx\kv@value\relax
3974             \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
3975               \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
3976             \else
3977               \xdef\Fld@choices{\Fld@choices(\kv@key)}%
3978             \fi
3979           \else
3980             \Hy@pdfstringdef\kv@value\kv@value
3981             \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@value)]}%
3982           \fi
3983           \edef\HyTmp@optlist{%
3984             \HyTmp@optlist
3985             \HyTmp@optitem{\the\count@}{\kv@key}0%
3986           }%
3987           \advance\count@ by 1 %
3988           \@gobbletwo
3989         }%
3990       \xdef\Fld@choices{/Opt[\Fld@choices]}%
3991     \ifFld@multiselect
3992       \HyField@@PDFChoices{DV}\Fld@default
3993       \HyField@@PDFChoices{V}\Fld@value
3994     \else
3995       \ifx\Fld@default\relax

```

```

3996     \else
3997     \pdfstringdef\Hy@gtemp\Fld@default
3998     \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
3999     \fi
4000     \ifx\Fld@value\relax
4001     \else
4002     \pdfstringdef\Hy@gtemp\Fld@value
4003     \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
4004     \fi
4005     \fi
4006 \endgroup
4007 }

```

\HyField@@PDFChoices

```

4008 \def\HyField@@PDFChoices#1#2{%
4009     \ifx#2\relax
4010     \else
4011     \count@=0 %
4012     \def\HyTmp@optitem##1##2##3{%
4013     \def\HyTmp@key{##2}%
4014     \ifx\HyTmp@key\Hy@gtemp
4015     \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
4016     \HyTmp@optlist
4017     \HyTmp@optitem{##1}{##2}1%
4018     }%
4019     \let\HyTmp@found=Y%
4020     \else
4021     \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
4022     \HyTmp@optlist
4023     \HyTmp@optitem{##1}{##2}##3%
4024     }%
4025     \fi
4026     }%
4027     \expandafter\comma@parse\expandafter{#2}{%
4028     \pdfstringdef\Hy@gtemp\comma@entry
4029     \let\HyTmp@found=N %
4030     \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
4031     \HyTmp@optlist
4032     \ifx\HyTmp@found Y%
4033     \advance\count@ by 1 %
4034     \else
4035     \@onelevel@sanitize\comma@entry
4036     \PackageWarning{hyperref}{%
4037     \string\ChoiceBox: Ignoring value ‘\comma@entry’,%
4038     \MessageBreak
4039     it cannot be found in the choices%
4040     }%
4041     \fi
4042     \@gobble
4043     }%
4044     \def\HyTmp@optitem##1##2##3{%
4045     \ifnum##3=1 %
4046     (##2)%
4047     \fi
4048     }%
4049     \ifcase\count@
4050     \or

```

```

4051 \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
4052 \else
4053 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]]}%
4054 \ifx#1V%
4055 \def\HyTmp@optitem##1##2##3{%
4056 \ifnum##3=1 %
4057 \@firstofone{ ##1}%
4058 \fi
4059 }%
4060 \edef\HyTmp@optlist{\HyTmp@optlist}%
4061 \xdef\Fld@choices{%
4062 \Fld@choices
4063 /I[\expandafter\@firstofone\HyTmp@optlist]}%
4064 }%
4065 \fi
4066 \fi
4067 \fi
4068 }

```

19.3 Forms

\HyField@SetKeys

```

4069 \def\HyField@SetKeys{%
4070 \setkeys{Field}%
4071 }

4072 \newif\ifFld@checked
4073 \newif\ifFld@disabled
4074 \Fld@checkedfalse
4075 \Fld@disabledfalse
4076 \newcount\Fld@menulength
4077 \newdimen\Field@Width
4078 \newdimen\Fld@charsize
4079 \Fld@charsize=10\p@
4080 \def\Fld@maxlen{0}
4081 \def\Fld@align{0}
4082 \def\Fld@color{0 0 0 rg}
4083 \def\Fld@bcolor{1 1 1}
4084 \def\Fld@bordercolor{1 0 0}
4085 \def\Fld@bordersep{1\p@}
4086 \def\Fld@borderwidth{1}
4087 \def\Fld@borderstyle{S}
4088 \def\Fld@cbsymbol{4}
4089 \def\Fld@rotation{0}
4090 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
4091 \def\endForm{\@endForm}
4092 \newif\ifForm@html
4093 \Form@htmlfalse
4094 \def\Form@boolkey#1#2{%
4095 \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
4096 }
4097 \define@key{Form}{action}{%
4098 \hyper@normalise\Hy@DefFormAction{#1}%
4099 }
4100 \def\Hy@DefFormAction{\def\Form@action}
4101 \def\enc@html{html}
4102 \define@key{Form}{encoding}{%

```

```

4103 \def\Hy@tempa{#1}%
4104 \ifx\Hy@tempa\enc@html
4105   \Form@htmltrue
4106   \def\Fld@export{html}%
4107 \else
4108   \typeout{hyperref: form 'encoding' key set to #1 %
4109     -- unknown type%
4110   }%
4111   \Form@htmlfalse
4112 \fi
4113 }
4114 \define@key{Form}{method}{%
4115   \lowercase{\def\Hy@temp{#1}}%
4116   \@ifundefined{Form@method@\Hy@temp}{%
4117     \@onelevel@sanitize\Hy@temp
4118     \PackageError{hyperref}{%
4119       Unknown method '\Hy@temp'.\MessageBreak
4120       Known values are 'post' and 'get'%
4121     }\@ehc
4122   }{%
4123     \let\Form@method\Hy@temp
4124     \ifcase\@nameuse{Form@method@\Hy@temp} %
4125       \Fld@getmethodfalse
4126     \else
4127       \Fld@getmethodtrue
4128     \fi
4129   }%
4130 }
4131 \def\Form@method{}
4132 \@namedef{Form@method@post}{0}
4133 \@namedef{Form@method@get}{1}
4134 \def\Field@boolkey#1#2{%
4135   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
4136 }
4137 \newtoks\Field@toks
4138 \Field@toks={ }%
4139 \def\Field@addtoks#1#2{%
4140   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
4141   \@processme
4142 }
4143 \def\Fld@checkequals#1=#2=#3\{\%
4144   \def\@currDisplay{#1}%
4145   \ifx\#2\%
4146     \def\@currValue{#1}%
4147   \else
4148     \def\@currValue{#2}%
4149   \fi
4150 }
4151 \define@key{Field}{loc}{%
4152   \def\Fld@loc{#1}%
4153 }
4154 \define@key{Field}{checked}[true]{%
4155   \lowercase{\Field@boolkey{#1}}{checked}%
4156 }
4157 \define@key{Field}{disabled}[true]{%
4158   \lowercase{\Field@boolkey{#1}}{disabled}%
4159 }

```

```

4160 \define@key{Field}{accesskey}{%
4161   \Field@addtoks{accesskey}{#1}%
4162 }
4163 \define@key{Field}{tabkey}{%
4164   \Field@addtoks{tabkey}{#1}%
4165 }
4166 \define@key{Field}{name}{%
4167   \def\Fld@name{#1}%
4168 }
4169 \define@key{Field}{width}{%
4170   \def\Fld@width{#1}%
4171   \Field@Width#1\setbox0=\hbox{m}%
4172 }
4173 \define@key{Field}{maxlen}{%
4174   \def\Fld@maxlen{#1}%
4175 }
4176 \define@key{Field}{menulength}{%
4177   \Fld@menulength=#1\relax
4178 }
4179 \define@key{Field}{height}{%
4180   \def\Fld@height{#1}%
4181 }
4182 \define@key{Field}{charsize}{%
4183   \Fld@charsize#1%
4184 }
4185 \define@key{Field}{borderwidth}{%
4186   \def\Fld@borderwidth{#1}%
4187 }
4188 \define@key{Field}{borderstyle}{%
4189   \def\Fld@borderstyle{#1}%
4190 }
4191 \define@key{Field}{bordersep}{%
4192   \def\Fld@bordersep{#1}%
4193 }
4194 \define@key{Field}{default}{%
4195   \def\Fld@default{#1}%
4196 }
4197 \define@key{Field}{align}{%
4198   \def\Fld@align{#1}%
4199 }
4200 \define@key{Field}{value}{%
4201   \def\Fld@value{#1}%
4202 }
4203 \define@key{Field}{checkboxsymbol}{%
4204   \def\Fld@cbsymbol{#1}%
4205 }
4206 \define@key{Field}{rotation}{%
4207   \def\Fld@rotation{#1}%
4208 }
4209 \define@key{Field}{backgroundcolor}{%
4210   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
4211 }
4212 \define@key{Field}{bordercolor}{%
4213   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
4214 }
4215 \define@key{Field}{color}{%
4216   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%

```



```

4217 }
4218 \def\Fld@format@code{}
4219 \def\Fld@validate@code{}
4220 \def\Fld@calculate@code{}
4221 \def\Fld@keystroke@code{}
4222 \def\Fld@onfocus@code{}
4223 \def\Fld@onblur@code{}
4224 \def\Fld@onmousedown@code{}
4225 \def\Fld@onmouseup@code{}
4226 \def\Fld@onenter@code{}
4227 \def\Fld@onexit@code{}
4228 \def\Hy@temp#1{%
4229   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
4230 }
4231 \def\Hy@@temp#1#2{%
4232   \ifHy@pdfa
4233     \define@key{Field}{#2}{%
4234       \PackageError{hyperref}{%
4235         PDF/A: Additional action ‘#2’ is prohibited%
4236       }\@ehc
4237     }%
4238   \else
4239     \define@key{Field}{#2}{%
4240       \def#1{##1}%
4241     }%
4242   \fi
4243 }
4244 \Hy@temp{keystroke}
4245 \Hy@temp{format}
4246 \Hy@temp{validate}
4247 \Hy@temp{calculate}
4248 \Hy@temp{onfocus}
4249 \Hy@temp{onblur}
4250 \Hy@temp{onenter}
4251 \Hy@temp{onexit}
4252 \def\Hy@temp#1{%
4253   \define@key{Field}{#1}{%
4254     \Field@addtoks{#1}{##1}%
4255   }%
4256 }
4257 \Hy@temp{onselect}
4258 \Hy@temp{onchange}
4259 \Hy@temp{ondblclick}
4260 \Hy@temp{onmousedown}
4261 \Hy@temp{onmouseup}
4262 \Hy@temp{onmouseover}
4263 \Hy@temp{onmousemove}
4264 \Hy@temp{onmouseout}
4265 \Hy@temp{onkeypress}
4266 \Hy@temp{onkeydown}
4267 \Hy@temp{onkeyup}
4268 \ifHy@pdfa
4269   \define@key{Field}{onclick}{%
4270     \PackageError{hyperref}{%
4271       PDF/A: Action ‘onclick’ is prohibited%
4272     }\@ehc
4273   }%

```

```

4274 \else
4275   \define@key{Field}{onclick}{%
4276     \def\Fld@onclick{#1}%
4277     \Field@addtoks{onclick}{#1}%
4278   }%
4279 \fi

4280 \DeclareRobustCommand\TextField{%
4281   \@ifnextchar[{\@TextField}{\@TextField[]}%
4282 }
4283 \DeclareRobustCommand\ChoiceMenu{%
4284   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
4285 }
4286 \DeclareRobustCommand\CheckBox{%
4287   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
4288 }
4289 \DeclareRobustCommand\PushButton{%
4290   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
4291 }
4292 \DeclareRobustCommand\Gauge{%
4293   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
4294 }
4295 \DeclareRobustCommand\Submit{%
4296   \@ifnextchar[{\@Submit}{\@Submit[]}%
4297 }
4298 \DeclareRobustCommand\Reset{%
4299   \@ifnextchar[{\@Reset}{\@Reset[]}%
4300 }
4301 \def\LayoutTextField#1#2{% label, field
4302   #1 #2%
4303 }
4304 \def\LayoutChoiceField#1#2{% label, field
4305   #1 #2%
4306 }
4307 \def\LayoutCheckField#1#2{% label, field
4308   #1 #2%
4309 }
4310 \def\LayoutPushButtonField#1{% button
4311   #1%
4312 }
4313 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4314 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4315 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4316 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4317 \def\MakeButtonField#1{%
4318   \sbox0{%
4319     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
4320   }%
4321   \@tempdima\ht0 %
4322   \advance\@tempdima by \Fld@borderwidth bp %
4323   \advance\@tempdima by \Fld@borderwidth bp %
4324   \ht0\@tempdima
4325   \@tempdima\dp0 %
4326   \advance\@tempdima by \Fld@borderwidth bp %
4327   \advance\@tempdima by \Fld@borderwidth bp %
4328   \dp0\@tempdima
4329   \box0\relax
4330 }

```

```

4331 \def\DefaultHeightofSubmit{14pt}
4332 \def\DefaultWidthofSubmit{2cm}
4333 \def\DefaultHeightofReset{14pt}
4334 \def\DefaultWidthofReset{2cm}
4335 \def\DefaultHeightofCheckBox{\baselineskip}
4336 \def\DefaultWidthofCheckBox{\baselineskip}
4337 \def\DefaultHeightofChoiceMenu{\baselineskip}
4338 \def\DefaultWidthofChoiceMenu{\baselineskip}
4339 \def\DefaultHeightofText{\baselineskip}
4340 \def\DefaultHeightofTextMultiline{4\baselineskip}
4341 \def\DefaultWidthofText{3cm}
4342 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
4343 \def\DefaultOptionsofReset{print,name=Reset,noexport}
4344 \def\DefaultOptionsofPushButton{print}
4345 \def\DefaultOptionsofCheckBox{print}
4346 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

4347 \def\DefaultOptionsofListBox{print}
4348 \def\DefaultOptionsofComboBox{print,edit,sort}
4349 \def\DefaultOptionsofPopdownBox{print}
4350 \def\DefaultOptionsofRadio{print,notoggletooff}

```

20 Setup

```

4351 \ifHy@figures
4352   \Hy@Info{Hyper figures ON}%
4353 \else
4354   \Hy@Info{Hyper figures OFF}%
4355 \fi
4356 \ifHy@nesting
4357   \Hy@Info{Link nesting ON}%
4358 \else
4359   \Hy@Info{Link nesting OFF}%
4360 \fi
4361 \ifHy@hyperindex
4362   \Hy@Info{Hyper index ON}%
4363 \else
4364   \Hy@Info{Hyper index OFF}%
4365 \fi
4366 \ifHy@backref
4367   \Hy@Info{backreferencing ON}%
4368 \else
4369   \Hy@Info{backreferencing OFF}%
4370 \fi
4371 \ifHy@colorlinks
4372   \Hy@Info{Link coloring ON}%
4373 \else
4374   \Hy@Info{Link coloring OFF}%
4375 \fi
4376 \ifHy@ocgcolorlinks
4377   \Hy@Info{Link coloring with OCG ON}%
4378 \else
4379   \Hy@Info{Link coloring with OCG OFF}%
4380 \fi
4381 \ifHy@pdfa
4382   \Hy@Info{PDF/A mode ON}%

```

```

4383 \else
4384   \Hy@Info{PDF/A mode OFF}%
4385 \fi

```

21 Low-level utility macros

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

```

4386 \edef\hyper@hash{\string#}
4387 \edef\hyper@tilde{\string~}
4388 \edef\hyper@quote{\string"}
4389 \let\@currentHref\@empty
4390 \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.

```

4391 \AfterBeginDocument{%
4392   \Hy@pdfstringtrue
4393   \PDF@SetupDoc
4394   \let\PDF@SetupDoc\@empty
4395   \Hy@DisableOption{pdfpagescrop}%
4396   \Hy@DisableOption{pdfpagemode}%
4397   \Hy@DisableOption{pdfnonfullscreenpagemode}%
4398   \Hy@DisableOption{pdfdirection}%
4399   \Hy@DisableOption{pdfviewarea}%
4400   \Hy@DisableOption{pdfviewclip}%
4401   \Hy@DisableOption{pdfprintarea}%
4402   \Hy@DisableOption{pdfprintclip}%
4403   \Hy@DisableOption{pdfprintscaling}%
4404   \Hy@DisableOption{pdfduplex}%
4405   \Hy@DisableOption{pdfpicktraybypdfsize}%
4406   \Hy@DisableOption{pdfprintpagerange}%
4407   \Hy@DisableOption{pdfnumcopies}%
4408   \Hy@DisableOption{pdfstartview}%
4409   \Hy@DisableOption{pdfstartpage}%
4410   \Hy@DisableOption{pdftoolbar}%
4411   \Hy@DisableOption{pdfmenubar}%
4412   \Hy@DisableOption{pdfwindowui}%
4413   \Hy@DisableOption{pdffitwindow}%
4414   \Hy@DisableOption{pdfcenterwindow}%
4415   \Hy@DisableOption{pdfdisplaydoctitle}%
4416   \Hy@DisableOption{pdfpagelayout}%
4417   \Hy@DisableOption{pdflang}%
4418   \Hy@DisableOption{baseurl}%
4419   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
4420   \Hy@pdfstringfalse
4421 }

```

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.

```

4422 \def\NoHyper{%
4423   \def\hyper@link@{##1}##2##3##4{##4}%
4424   \def\hyper@@anchor##1{ }%

```

```

4425 \global\let\hyper@livelink\hyper@link
4426 \gdef\hyper@link##1##2##3{##3}%
4427 \def\hyper@anchorstart##1{}%
4428 \let\hyper@anchorend\@empty
4429 \def\hyper@linkstart##1##2{}%
4430 \let\hyper@linkend\@empty
4431 \def\hyper@linkurl##1##2{##1}%
4432 \def\hyper@linkfile##1##2##3{##1}%
4433 \def\hyper@link@{##1}##2##3{}%
4434 \let\Hy@backout\@gobble
4435 }
4436 \def\stop@hyper{%
4437 \def\hyper@link@{##1}##2##3##4{##4}%
4438 \let\Hy@backout\@gobble
4439 \def\hyper@@anchor##1{}%
4440 \def\hyper@link##1##2##3{##3}%
4441 \def\hyper@anchorstart##1{}%
4442 \let\hyper@anchorend\@empty
4443 \def\hyper@linkstart##1##2{}%
4444 \let\hyper@linkend\@empty
4445 \def\hyper@linkurl##1##2{##1}%
4446 \def\hyper@linkfile##1##2##3{##1}%
4447 \def\hyper@link@{##1}##2##3{}%
4448 }
4449 \def\endNoHyper{%
4450 \global\let\hyper@link\hyper@livelink
4451 }
4452 \</package>

```

23 Package nohyperref

This package is introduced by Sebastian Rahtz.

Package nohyperref is a dummy package that defines some low level and some top-level commands. It is done for jadetex, which calls hyperref low-level commands, but it would also be useful with people using normal hyperref, who really do not want the package loaded at all.

Some low-level commands:

```

4453 \<*nohyperref>
4454 \let\hyper@@anchor\@gobble
4455 \def\hyper@link#1#2#3{#3}%
4456 \let\hyper@anchorstart\@gobble
4457 \let\hyper@anchorend\@empty
4458 \let\hyper@linkstart\@gobbletwo
4459 \let\hyper@linkend\@empty
4460 \def\hyper@linkurl#1#2{#1}%
4461 \def\hyper@linkfile#1#2#3{#1}%
4462 \def\hyper@link@{#1}#2#3{}%
4463 \let\PDF@SetupDoc\@empty
4464 \let\PDF@FinishDoc\@empty
4465 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

4466 \def\Acrobatmenu#1#2{\leavevmode#2}
4467 \let\pdfstringdefDisableCommands\@gobbletwo
4468 \let\texorpdfstring\@firstoftwo
4469 \let\pdfbookmark\@undefined

```

```

4470 \newcommand\pdfbookmark[3] [] {}
4471 \let\phantomsection\@empty
4472 \let\hypersetup\@gobble
4473 \let\hyperbaseurl\@gobble
4474 \let\href\@gobble
4475 \let\hyperdef\@gobbletwo
4476 \let\hyperlink\@gobble
4477 \let\hypertarget\@gobble
4478 \def\hyperref{%
4479   \@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
4480 }
4481 \long\def\@gobbleopt[#1]{}
4482 \let\hyperpage\@empty
4483 \nohyperref

```

24 The Mangling Of Aux and Toc Files

Some extra tests so that the hyperref package may be removed or added to a document without having to remove .aux and .toc files (this section is by David Carlisle) All the code is delayed to \begin{document}

```

4484 \*package
4485 \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.

```

4486 \if@filesw
4487   \ifHy@typexml
4488     \immediate\closeout\@mainaux
4489     \immediate\openout\@mainaux\jobname.aux\relax
4490     \immediate\write\@auxout{<relaxxml>\relax}%
4491   \fi
4492   \immediate\write\@auxout{%
4493     \string\ifx\string\hyper@anchor\string\@undefined^^J%
4494     \global\let\string\oldcontentsline\string\contentsline^^J%
4495     \gdef\string\contentsline%
4496       \string#1\string#2\string#3\string#4{%
4497       \string\oldcontentsline%
4498       {\string#1}{\string#2}{\string#3}}^^J%
4499     \global\let\string\oldnewlabel\string\newlabel^^J%
4500     \gdef\string\newlabel\string#1\string#2{%
4501     \string\newlabelxx{\string#1}\string#2}^^J%
4502     \gdef\string\newlabelxx%
4503     \string#1\string#2\string#3\string#4\string#5\string#6{%
4504     \string\oldnewlabel{\string#1}{\string#2}{\string#3}}^^J%

```

But the new aux file will be read again at the end, with the normal definitions expected, so better put things back as they were.

```

4505   \string\AtEndDocument{%
4506     \let\string\contentsline\string\oldcontentsline^^J%
4507     \let\string\newlabel\string\oldnewlabel^^J%

```

If the document is being run with hyperref put this definition into the aux file, so we can spot it on the next run.

```

4508   \string\else^^J%
4509   \global\let\string\hyper@last\relax^^J%

```

```

4510     \string\fi^^J%
4511   }%
4512 \fi

```

Now the code to deal with adding the hyperref package to a document with aux and toc written the standard way.

If hyperref was used last time, do nothing. If it was not used, or an old version of hyperref was used, don't use that TOC at all but generate a warning. Not ideal, but better than failing with pre-5.0 hyperref TOCs.

```

4513 \ifx\hyper@last\@undefined
4514   \def\@starttoc#1{%
4515     \begingroup
4516       \makeatletter
4517       \IfFileExists{\jobname.#1}{%
4518         \Hy@WarningNoLine{%
4519           old #1 file detected, not used; run LaTeX again%
4520         }%
4521       }{%
4522         \if@filesw
4523           \expandafter\newwrite\csname tf@#1\endcsname
4524           \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
4525         \fi
4526         \@nobreakfalse
4527       \endgroup
4528     }%
4529   \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
4530 \fi
4531 }

```

25 Title strings

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

```

4532 \ifHy@usetitle
4533   \let\HyOrg@title\title
4534   \let\HyOrg@author\author
4535   \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
4536   \def\Hy@scanopttitle[#1]{%
4537     \gdef\Hy@title{#1}%
4538     \HyOrg@title[{#1}]%
4539   }%
4540   \def\Hy@scantitle#1{%
4541     \gdef\Hy@title{#1}%
4542     \HyOrg@title{#1}%
4543   }%
4544   \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
4545   \def\Hy@scanoptauthor[#1]{%
4546     \gdef\Hy@author{#1}%
4547     \HyOrg@author[{#1}]%
4548   }%
4549   \def\Hy@scanauthor#1{%
4550     \gdef\Hy@author{#1}%
4551     \HyOrg@author{#1}%
4552   }%

```

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.

```

4553 \begingroup
4554   \def\process@me#1\@nil#2{%
4555     \expandafter\let\expandafter\x\csname @#2\endcsname
4556     \edef\y{\expandafter\strip@prefix\meaning\x}%
4557     \def\c##1##2\@nil{%
4558       \ifx\\##1\\%
4559         \else
4560           \expandafter\gdef\csname Hy@#2\expandafter\endcsname
4561             \expandafter{\x}%
4562         \fi
4563       }%
4564       \expandafter\c\y\relax#1\@nil
4565     }%
4566     \expandafter\process@me\string\@latex@\@nil{title}%
4567     \expandafter\process@me\string\@latex@\@nil{author}%
4568   \endgroup
4569 \fi
4570 \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.

```

4571 \def\Hy@UseMaketitleString#1{%
4572   \@ifundefined{Hy@#1}{}{%
4573     \begingroup
4574       \let\Hy@saved@hook\pdfstringdefPreHook
4575       \pdfstringdefDisableCommands{%
4576         \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
4577         \let\newline\\%
4578       }%
4579       \expandafter\ifx\csname @pdf#1\endcsname\@empty
4580         \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
4581           \csname Hy@#1\endcsname\@empty
4582         }%
4583       \fi
4584       \global\let\pdfstringdefPreHook\Hy@saved@hook
4585     \endgroup
4586   }%
4587 }
4588 \def\Hy@newline@title#1{ #1}
4589 \def\Hy@newline@author#1{, #1}
4590 \def\Hy@UseMaketitleInfos{%
4591   \Hy@UseMaketitleString{title}%
4592   \Hy@UseMaketitleString{author}%
4593 }

```


26 Page numbers

This stuff is done by Heiko Oberdiek.

27 Every page

```
4594 \RequirePackage{atbegshi}[2007/09/09]
4595 \def\Hy@EveryPageHook{}
4596 \def\Hy@EveryPageBoxHook{}
4597 \def\Hy@FirstPageHook{}
4598 \AtBeginShipout{%
4599   \Hy@EveryPageHook
4600   \ifx\Hy@EveryPageBoxHook\@empty
4601   \else
4602     \setbox\AtBeginShipoutBox=\vbox{%
4603       \offinterlineskip
4604       \Hy@EveryPageBoxHook
4605       \box\AtBeginShipoutBox
4606     }%
4607   \fi
4608 }
4609 \AtBeginShipoutFirst{%
4610   \Hy@FirstPageHook
4611 }
4612 \g@addto@macro\Hy@FirstPageHook{%
4613   \PDF@FinishDoc
4614   \gdef\PDF@FinishDoc{}}%
4615 }
```

27.1 PDF /PageLabels

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

```
4616 \ifHy@pagelabels
4617   \begingroup\expandafter\expandafter\expandafter\endgroup
4618   \expandafter\ifx\csname thepage\endcsname\relax
4619     \Hy@pagelabelsfalse
4620     \Hy@WarningNoLine{%
4621       Option 'pdfpagelabels' is turned off\MessageBreak
4622       because \string\thepage\space is undefined%
4623     }%
4624     \csname fi\endcsname
4625     \csname iffalse\expandafter\endcsname
4626   \fi
```

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

```
4627 \def\thispdfpagelabel#1{%
4628   \gdef\HyPL@thisLabel{#1}%
4629 }%
4630 \global\let\HyPL@thisLabel\relax
```

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

```
4631 \def\HyPL@Labels{}
```

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

```
4632 \newcount\Hy@abspage
4633 \Hy@abspage=0 %
```

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

```
4634 \def\HyPL@LastType{init}%
4635 \def\HyPL@LastNumber{0}%
4636 \def\HyPL@LastPrefix{}
```

Definitions for the PDF names of the \LaTeX pendants.

```
4637 \def\HyPL@arabic{D}%
4638 \def\HyPL@Roman{R}%
4639 \def\HyPL@roman{r}%
4640 \def\HyPL@Alph{A}%
4641 \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.

```
4642 \def\HyPL@EveryPage{%
4643   \begingroup
4644   \ifx\HyPL@thisLabel\relax
4645     \let\HyPL@page\thepage
4646   \else
4647     \let\HyPL@page\HyPL@thisLabel
4648     \global\let\HyPL@thisLabel\relax
4649   \fi
4650   \let\HyPL@Type\relax
4651   \ifnum\the\c@page>0 %
4652     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
4653   \fi
4654   \let\Hy@temp Y%
4655   \ifx\HyPL@Type\HyPL@LastType
4656   \else
4657     \let\Hy@temp N%
4658   \fi
4659   \ifx\HyPL@Type\relax
4660     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
4661   \else
4662     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
4663   \fi
4664   \ifx\HyPL@Prefix\HyPL@LastPrefix
4665   \else
4666     \let\Hy@temp N%
4667   \fi
4668   \if Y\Hy@temp
4669     \advance\c@page by -1 %
4670     \ifnum\HyPL@LastNumber=\the\c@page\relax
4671     \else
4672       \let\Hy@temp N%
4673     \fi
4674     \Hy@StepCount\c@page
4675   \fi
4676   \if N\Hy@temp
4677     \ifx\HyPL@Type\relax
4678       \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
4679     \else
4680       \HyPL@StorePageLabel{%
4681         \ifx\HyPL@Prefix\@empty
4682         \else
4683           /P(\HyPL@Prefix)%
4684         \fi
```

```

4685         /S/\csname HyPL\HyPL@Type\endcsname
4686         \ifnum\the\c@page=1 %
4687         \else
4688         \space/St \the\c@page
4689         \fi
4690     }%
4691 \fi
4692 \fi
4693 \xdef\HyPL@LastNumber{\the\c@page}%
4694 \global\let\HyPL@LastType\HyPL@Type
4695 \global\let\HyPL@LastPrefix\HyPL@Prefix
4696 \endgroup
4697 \Hy@GlobalStepCount\Hy@abspage
4698 }%

```

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

```

4699 \def\HyPL@CheckThePage#1\@nil{%
4700     \HyPL@@CheckThePage{#1}\csname\endcsname\c@page\@nil
4701 }%

```

`\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`.

```

4702 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
4703     \def\Hy@tempa{#4}%
4704     \def\Hy@tempb{\csname\endcsname\c@page}%
4705     \ifx\Hy@tempa\Hy@tempb
4706         \expandafter\ifx\csname HyPL#3\endcsname\relax
4707         \else
4708             \def\HyPL@Type{#3}%
4709             \def\HyPL@Prefix{#2}%
4710         \fi
4711     \else
4712         \begingroup
4713             \let\Hy@next\endgroup
4714             \let\HyPL@found\@undefined
4715             \def\arabic{\HyPL@Format{arabic}}%
4716             \def\Roman{\HyPL@Format{Roman}}%
4717             \def\roman{\HyPL@Format{roman}}%
4718             \def\Alph{\HyPL@Format{Alph}}%
4719             \def\alph{\HyPL@Format{alph}}%
4720             \protected@edef\Hy@temp{#1}%
4721             \ifx\HyPL@found\relax
4722                 \toks@{\expandafter{\Hy@temp}}%
4723                 \edef\Hy@next{\endgroup
4724                     \noexpand\HyPL@@@CheckThePage\the\toks@
4725                     \noexpand\HyPL@found\relax\noexpand\@nil
4726                 }%
4727             \fi
4728             \Hy@next
4729         \fi
4730     }%

```

`\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`.

```

4731 \def\HyPL@Format#1#2{%
4732   \ifx\HyPL@found\undefined
4733     \expandafter\ifx\csname c@#2\endcsname\c@page
4734       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
4735     \else
4736       \expandafter\noexpand\csname#1\endcsname{#2}%
4737     \fi
4738   \else
4739     \expandafter\noexpand\csname#1\endcsname{#2}%
4740   \fi
4741 }%

```

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

```

4742 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
4743   \def\Hy@tempa{#3}%
4744   \def\Hy@tempb{\HyPL@found\relax}%
4745   \ifx\Hy@tempa\Hy@tempb
4746     \def\HyPL@Type{#2}%
4747     \def\HyPL@Prefix{#1}%
4748   \fi
4749 }%

```

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

```

4750 \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`.

```

4751 \def\HyPL@Useless{0<</S/D>>}%
4752 \@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.

```

4753 \def\HyPL@SetPageLabels{%
4754   \@onelevel@sanitize\HyPL@Labels
4755   \ifx\HyPL@Labels\@empty
4756     \else
4757       \ifx\HyPL@Labels\HyPL@Useless
4758       \else
4759         \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
4760       \fi
4761     \fi
4762 }%

```

```

4763 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
4764 \fi

```

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

```

4765 \Hy@DisableOption{pdfpagelabels}
4766 </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

```
4767 <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.

```
4768 <*vTeX>
4769 \providecommand*{\XR@ext}{pdf}
4770 \edef\Hy@VTeXversion{%
4771   \ifx\VTeXversion\@undefined
4772     \z@
4773   \else
4774     \ifx\VTeXversion\relax
4775       \z@
4776     \else
4777       \VTeXversion
4778     \fi
4779   \fi
4780 }
4781 \begingroup
4782   \ifnum\Hy@VTeXversion<660 %
4783     \gdef\Hy@PutCatalog#1{%
4784       \Hy@WarningNoLine{%
4785         VTeX 6.59g or above required for pdfpagelabels%
4786       }%
4787     }%
4788   \else
4789     \gdef\Hy@PutCatalog#1{%
4790       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
4791     }%
4792     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
4793       \ifx\#2\%
4794         \else
4795           \immediate\special{!pdfpagelabels #2}%
4796         \fi
4797       }%
4798     \fi
4799 \endgroup
4800 </vTeX>

4801 <*pdfTeX | vTeX>
```

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

```
4802 \ifHy@pagelabels
4803   \def\HyPL@StorePageLabel#1{%
4804     \toks@\expandafter{\HyPL@Labels}%
4805     \xdef\HyPL@Labels{%
4806       \the\toks@
4807       \the\Hy@abspage<<#1>>%
4808     }%
4809   }%
```

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.

```
4810 \@ifclassloaded{revtex4}{%
4811   \g@addto@macro\clear@document{\HyPL@SetPageLabels}%
```

```

4812 }{%
4813   \AtEndDocument{\clearpage\HyPL@SetPageLabels}%
4814 }%

4815 \fi
4816 </pdfTeX | vTeX>

```

27.1.2 pdfmarkbase, dvipdfm

```

4817 <*pdfmarkbase>
4818 \begingroup
4819   \toks@{\expandafter{\Hy@FirstPageHook}}%
4820   \xdef\Hy@FirstPageHook{%
4821     \noexpand\headerps@out{%
4822       systemdict /pdfmark known%
4823       {%
4824         userdict /?pdfmark systemdict /exec get put%
4825       }{%
4826         userdict /?pdfmark systemdict /pop get put %
4827         userdict /pdfmark systemdict /cleartomark get put%
4828       }%
4829       ifelse%
4830     }%
4831     \the\toks@
4832   }%
4833 \endgroup
4834 </pdfmarkbase>

\Hy@PutCatalog

4835 <dvipdfm>\def\Hy@PutCatalog#1{\@pdfmark{docview << #1 >>}}
4836 <*pdfmarkbase>
4837 \def\Hy@PutCatalog#1{%
4838   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
4839 }
4840 </pdfmarkbase>

4841 <*pdfmarkbase | dvipdfm>
4842 \ifHy@pagelabels

```

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

```

4843 \def\HyPL@StorePageLabel#1{%
4844   \if@filesw
4845     \begingroup
4846       \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
4847       \immediate\write\@mainaux{%
4848         \string\HyPL@Entry{\Hy@tempa}%
4849       }%
4850     \endgroup
4851   \fi
4852 }%

```

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.

```

4853 \AfterBeginDocument{%
4854   \if@filesw
4855     \immediate\write\@mainaux{%
4856       \string\providecommand\string*\string\HyPL@Entry[1]{}%
4857     }%

```

```

4858 \fi
4859 \ifx\HyPL@Labels\@empty
4860 \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
4861 \else
4862 \HyPL@SetPageLabels
4863 \fi
4864 \let\HyPL@Entry\@gobble
4865 }%

\HyPL@Entry

4866 \def\HyPL@Entry#1{%
4867 \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
4868 \HyPL@Labels
4869 #1%
4870 }%
4871 }%

4872 \fi
4873 </pdfmarkbase | dvipdfm>
4874 <*package>
4875 \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

```

4876 \def\Hy@CounterExists#1{%
4877 \begingroup\expandafter\expandafter\expandafter\endgroup
4878 \expandafter\ifx\csname c@#1\endcsname\relax
4879 \expandafter\@gobble
4880 \else
4881 \begingroup\expandafter\expandafter\expandafter\endgroup
4882 \expandafter\ifx\csname the#1\endcsname\relax
4883 \expandafter\expandafter\expandafter\@gobble
4884 \else
4885 \expandafter\expandafter\expandafter\@firstofone
4886 \fi
4887 \fi
4888 }
4889 \Hy@CounterExists{section}{%

```

```

4890 \newcommand\theHequation{\theHsection.\arabic{equation}}%
4891 }
4892 \Hy@CounterExists{part}{%
4893 \newcommand\theHpart{\arabic{part}}%
4894 }
4895 \@ifundefined{thechapter}{%
4896 \newcommand\theHsection {\arabic{section}}%
4897 \newcommand\theHfigure {\arabic{figure}}%
4898 \newcommand\theHtable {\arabic{table}}%
4899 }{%
4900 \newcommand\theHchapter {\arabic{chapter}}%
4901 \newcommand\theHfigure {\theHchapter.\arabic{figure}}%
4902 \newcommand\theHtable {\theHchapter.\arabic{table}}%
4903 \newcommand\theHsection {\theHchapter.\arabic{section}}%
4904 }
4905 \newcommand\theHsubsection {\theHsection.\arabic{subsection}}
4906 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
4907 \newcommand\theHparagraph {\theHsubsubsection.\arabic{paragraph}}
4908 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
4909 \newcommand\theHtheorem {\theHsection.\arabic{theorem}}
4910 \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.

```

4911 \let\H@item\item
4912 \newcounter{Item}
4913 \def\theHItem{\arabic{Item}}
4914 \def\item{%
4915 \@hyper@itemfalse
4916 \if@nmbrlist\@hyper@itemtrue\fi
4917 \H@item
4918 }
4919 \newcommand\theHenumi {\theHItem}
4920 \newcommand\theHenumii {\theHItem}
4921 \newcommand\theHenumiii {\theHItem}
4922 \newcommand\theHenumiv {\theHItem}
4923 \newcommand\theHHfootnote {\arabic{Hfootnote}}
4924 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
4925 \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.

```

4926 \let\H@refstepcounter\refstepcounter
4927 \edef\name@of@eq{equation}%
4928 \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.

```

4929 \newif\if@hyper@item
4930 \newif\if@skiphyperref
4931 \@hyper@itemfalse
4932 \@skiphyperreffalse
4933 \def\refstepcounter#1{%
4934 \ifHy@pdfstring
4935 \else

```



```

4936 \H@refstepcounter{#1}%
4937 \edef\This@name{#1}%
4938 \ifx\This@name\name@of@slide
4939 \else
4940 \if@skiphyperref
4941 \else
4942 \if@hyper@item
4943 \stepcounter{Item}%
4944 \hyper@refstepcounter{Item}%
4945 \@hyper@itemfalse
4946 \else
4947 \hyper@refstepcounter{#1}%
4948 \fi
4949 \fi
4950 \fi
4951 \fi
4952 }

```

AMS^LTEX 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.

```

4953 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

4954 \def\hyper@refstepcounter#1{%
4955 \edef\This@name{#1}%
4956 \ifx\This@name\name@of@eq
4957 \ifundefined{theHequation}{%
4958 \make@stripped@name{\theequation}%
4959 \let\theHequation\newname
4960 }{}%
4961 \fi
4962 \ifundefined{theH#1}{%
4963 \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
4964 }{}%
4965 \hyper@makecurrent{#1}%
4966 \ifmeasuring@
4967 \else
4968 \Hy@raisedlink{%
4969 \hyper@anchorstart{\@currentHref}\hyper@anchorend
4970 }%
4971 \fi
4972 }

```

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`.

```

4973 \begingroup\expandafter\expandafter\expandafter\endgroup
4974 \expandafter\ifx\csname chapter\endcsname\relax
4975 \def\Hy@chapterstring{section}%
4976 \else
4977 \def\Hy@chapterstring{chapter}%
4978 \fi
4979 \def\Hy@appendixstring{appendix}

```

```

4980 \def\Hy@chapapp{\Hy@chapterstring}
4981 \let\HyOrg@appendix\appendix
4982 \def\appendix{%
4983   \@ifundefined{chapter}%
4984     {\gdef\theHsection{\Alph{section}}}%
4985     {\gdef\theHchapter{\Alph{chapter}}}%
4986   \xdef\Hy@chapapp{\Hy@appendixstring}%
4987   \HyOrg@appendix
4988 }

```

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

```

4989 \def\hyper@makecurrent#1{%
4990   \begingroup
4991     \edef\Hy@param{#1}%
4992     \ifx\Hy@param\Hy@chapterstring
4993       \let\Hy@param\Hy@chapapp
4994     \fi
4995     \ifHy@hypertextnames
4996       \let\@number\@firstofone
4997       \@ifundefined{latin@Alph}{\}{%
4998         \ifx\@Alph\greek@Alph
4999           \def\@Alph{Alph\@arabic}%
5000         \fi
5001       }%
5002       \ifx\@Alph\@Alph@bul
5003         \def\@Alph{Alph\@arabic}%
5004       \fi
5005       \ifx\@alph\@alph@bul
5006         \def\@alph{alph\@arabic}%
5007       \fi
5008       \ifHy@naturalnames
5009         \let\textlatin\@firstofone
5010         \xdef\@currentHlabel{\csname the#1\endcsname}%
5011       \else
5012         \xdef\@currentHlabel{\csname theH#1\endcsname}%
5013       \fi
5014       \xdef\@currentHref{%
5015         \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
5016       }%
5017     \else
5018       \Hy@GlobalStepCount\Hy@linkcounter
5019       \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
5020     \fi
5021   \endgroup
5022 }

5023 \@ifpackageloaded{fancyvrb}{%
5024   \def\FV@StepLineNo{%
5025     \FV@SetLineNo
5026     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
5027     \FV@StepLineNo
5028   }%
5029 }{}

```

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`

```

5030 \AtBeginDocument{%
5031   \@ifclassloaded{revtex4}{%
5032     \namedef{ver@lastpage.sty}{1994/06/25}%
5033   }{}%
5034   \@ifpackageloaded{lastpage}{%
5035     \ifHy@pageanchor
5036     \else
5037       \Hy@WarningNoLine{%
5038         The \string\pageref{LastPage} link doesn't work\MessageBreak
5039         with disabled option 'pageanchor'%
5040       }%
5041     \fi
5042     \def\lastpage@putlabel{%
5043       \addtocounter{page}{-1}%
5044       \if@filesw
5045         \begingroup
5046           \let\@number\@firstofone
5047           \ifHy@pageanchor
5048             \ifHy@hypertexnames
5049               \ifHy@plainpages
5050                 \def\Hy@temp{\arabic{page}}%
5051               \else
5052                 \Hy@unicodedefalse
5053                 \pdfstringdef\Hy@temp{\thepage}%
5054             \fi
5055           \else
5056             \def\Hy@temp{\the\Hy@pagecounter}%
5057           \fi
5058         \fi
5059         \immediate\write\@auxout{%
5060           \string\newlabel
5061             {LastPage}{\the\thepage}{\the\thepage}{\the\thepage}{\the\thepage}{\the\thepage}%
5062           \ifHy@pageanchor page.\Hy@temp\fi}{\the\thepage}%
5063         }%
5064       \endgroup
5065     \fi
5066     \addtocounter{page}{1}%
5067   }%
5068   \@ifclassloaded{revtex4}{%
5069     \begingroup
5070       \toks@\expandafter{\lastpage@putlabel}%
5071     \edef\x{\endgroup
5072       \def\noexpand\lastpage@putlabel{%
5073         \noexpand\stepcounter{page}%
5074         \the\toks@
5075         \noexpand\addtocounter{page}\noexpand\m@ne
5076       }%

```

```

5077         }%
5078         \x
5079     }{}%
5080 }{}%
5081 }
5082 </package>
5083 <*check>
5084 \checkpackage{lastpage}[1994/06/25]
5085 \checkcommand\def\lastpage@putlabel{%
5086     \addtocounter{page}{-1}%
5087     \immediate\write\@auxout{%
5088         \string\newlabel{LastPage}{\the\thepage}}%
5089     }%
5090     \addtocounter{page}{1}%
5091 }
5092 </check>
5093 <*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.

```

5094 \def\hypergetref#1{\getrefbykeydefault{#1}{}{??}}
5095 \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:

```

5096 \@ifpackageloaded{titlesec}{%
5097     \def\ttl@Hy@steplink#1{%
5098         \Hy@GlobalStepCount\Hy@linkcounter
5099         \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
5100         \def\ttl@Hy@saveanchor{%
5101             \Hy@raisedlink{%
5102                 \hyper@anchorstart{\@currentHref}\hyper@anchorend
5103             }%
5104         }%
5105     }%
5106     \def\ttl@Hy@refstepcounter#1{%
5107         \let\ttl@b\Hy@raisedlink
5108         \def\Hy@raisedlink##1{%
5109             \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
5110         }%
5111         \refstepcounter{#1}%
5112         \let\Hy@raisedlink\ttl@b
5113     }%
5114 }{}

```

Package titletoc support:

```

5115 \@ifpackageloaded{titletoc}{%
5116     \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
5117 }{}

```

32 Package varioref support

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

```
5118 \def\Hy@varioref@undefined{{??}{??}{}}{}{}
5119 \@ifpackageloaded{varioref}{%
5120   \def\vref@pagenum#1#2{%
5121     \@ifundefined{r@#2}{%
5122       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
5123     }{}%
5124     \edef#1{\getpagerefnumber{#2}}%
5125   }%
5126 }{}
```

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

```
5127 \@ifpackageloaded{longtable}{%
5128   \begingroup
5129     \def\y{\LT@array}%
5130     \@ifundefined{scr@LT@array}{}{\def\y{\scr@LT@array}}%
5131     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
5132       \expandafter\endgroup
5133       \expandafter\def\y[#1]##2{%
5134         \H@refstepcounter{#1}%
5135         \hyper@makecurrent{table}%
5136         \let\Hy@LT@currentHlabel\@currentHlabel
5137         \let\Hy@LT@currentHref\@currentHref
5138         #2\@sharp####4%
5139       }%
5140     }%
5141     \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil
```

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

```
5142   \begingroup
5143     \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
5144     \endgroup
5145     \def\LT@start{%
5146       #1%
5147       \let\@currentHlabel\Hy@LT@currentHlabel
5148       \let\@currentHref\Hy@LT@currentHref
5149       \Hy@raisedlink{%
5150         \hyper@anchorstart{\@currentHref}\hyper@anchorend
5151       }%
5152       \ifvoid\LT@firsthead\copy
5153       #2%
5154     }%
5155   }%
5156   \expandafter\x\LT@start\@nil
5157 }{}
```

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.

```

5158 \let\new@refstepcounter\refstepcounter
5159 \let\H@equation\equation
5160 \let\H@endequation\endequation

5161 \@ifpackageloaded{amsmath}{%
5162   \long\def\Hy@temp{%
5163     \incr@eqnum
5164     \mathdisplay@push
5165     \st@rredfalse \global\@eqnswtrue
5166     \mathdisplay{equation}%
5167   }%
5168   \ifx\Hy@temp\equation
5169     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
5170       \csname iftrue\endcsname
5171   \else
5172     \long\def\equation{%
5173       \mathdisplay@push
5174       \st@rredfalse \global\@eqnswtrue
5175       \mathdisplay{equation}%
5176       \incr@eqnum
5177     }%
5178   \fi
5179 \fi
5180 }{%
5181 \def\equation{%
5182   \let\refstepcounter\H@refstepcounter
5183   \H@equation
5184   \@ifundefined{theHequation}{%
5185     \make@stripped@name{\theequation}%
5186     \let\theHequation\newname
5187   }{%
5188     \hyper@makecurrent{equation}%
5189     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
5190     \let\refstepcounter\new@refstepcounter
5191   }%
5192 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
5193 }
```

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.

```

5194 \newif\if@eqnstar
5195 \@eqnstarfalse
5196 \let\H@eqnarray\eqnarray
5197 \let\H@endeqnarray\endeqnarray
5198 \def\eqnarray{%
5199   \let\Hy@reserved@a\relax
5200   \def\@currentHref{}%
```

```

5201 \H@eqnarray
5202 \if@eqnstar
5203 \else
5204   \ifx\\ \@currentHref\\%
5205   \else
5206     \ifundefined{theHequation}{%
5207       \make@stripped@name{\theequation}%
5208       \let\theHequation\newname
5209     }{}%
5210     \hyper@makecurrent{equation}%
5211     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
5212   \fi
5213 \fi
5214 }
5215 \def\endeqnarray{%
5216   \H@endeqnarray
5217 }

```

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.

```

5218 \@namedef{eqnarray*}{%
5219   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
5220 }
5221 \@namedef{endeqnarray*}{%
5222   \nonumber\endeqnarray\@eqnstarfalse
5223 }

```

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

```

5224 \@ifundefined{subeqnarray}{%
5225   \let\H@subeqnarray\subeqnarray
5226   \let\H@endsubeqnarray\endsubeqnarray
5227   \def\subeqnarray{%
5228     \let\Hy@reserved@a\relax
5229     \H@subeqnarray
5230     \@ifundefined{theHequation}{%
5231       \make@stripped@name{\theequation}%
5232       \let\theHequation\newname
5233     }{}%
5234     \hyper@makecurrent{equation}%
5235     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
5236   }%
5237   \def\endsubeqnarray{%
5238     \H@endsubeqnarray
5239   }%
5240   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
5241 }

```

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

```

5242 \def\make@stripped@name#1{%
5243   \begingroup
5244     \escapechar\m@ne
5245     \global\let\newname\@empty
5246     \protected@edef\Hy@tempa{#1}%
5247     \edef\@tempb{%
5248       \noexpand\@tfor\noexpand\Hy@tempa:=%
5249       \expandafter\strip@prefix\meaning\Hy@tempa
5250     }%
5251     \@tempb\do{%

```

```

5252     \if{\Hy@tempa\else
5253     \if}\Hy@tempa\else
5254     \xdef\newname{\newname\Hy@tempa}%
5255     \fi
5256     \fi
5257 }%
5258 \endgroup
5259 }

Support for amsmath's subequations:

5260 \begingroup\expandafter\expandafter\expandafter\endgroup
5261 \expandafter\ifx\csname subequations\endcsname\relax
5262 \else
5263 \let\HyOrg@subequations\subequations
5264 \def\subequations{%
5265     \stepcounter{equation}%
5266     \protected@edef\theHparentequation{%
5267         \ifundefined{theHequation}\theequation\theHequation
5268     }%
5269     \addtocounter{equation}{-1}%
5270     \HyOrg@subequations
5271     \def\theHequation{\theHparentequation\alph{equation}}%
5272     \ignorespaces
5273 }%
5274 \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.

```

5275 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
5276 \ifHy@hyperfootnotes
5277 \newcounter{Hfootnote}%
5278 \let\H@@footnotetext\@footnotetext
5279 \let\H@@footnotemark\@footnotemark
5280 \def\@xfootnotenext[#1]{%
5281     \begingroup
5282     \csname c@\@mpfn\endcsname #1\relax
5283     \unrestored@protected@xdef\@thefnmark{\thempfn}%
5284     \endgroup
5285     \ifx\@footnotetext\@mpfootnotetext
5286     \expandafter\H@@mpfootnotetext
5287     \else
5288     \expandafter\H@@footnotetext
5289     \fi
5290 }%
5291 \def\@xfootnotemark[#1]{%
5292     \begingroup
5293     \c@footnote #1\relax
5294     \unrestored@protected@xdef\@thefnmark{\thefnmark}%
5295     \endgroup
5296     \H@@footnotemark
5297 }%

```



```

5298 \let\H@mpfootnotetext\@mpfootnotetext
5299 \long\def\@mpfootnotetext#1{%
5300   \H@mpfootnotetext{%
5301     \ifHy@nesting
5302       \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
5303     \else
5304       \Hy@raisedlink{%
5305         \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5306       }#1%
5307     \fi
5308   }%
5309 }%
5310 \long\def\@footnotetext#1{%
5311   \H@footnotetext{%
5312     \ifHy@nesting
5313       \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
5314     \else
5315       \Hy@raisedlink{%
5316         \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5317       }%
5318       \let\@currentHlabel\Hy@footnote@currentHlabel
5319       \let\@currentHref\Hy@footnote@currentHref
5320       \let\@currentlabelname\@empty
5321       #1%
5322     \fi
5323   }%
5324 }%

```

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.

```

5325 \def\@footnotemark{%
5326   \leavevmode
5327   \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
5328   \stepcounter{Hfootnote}%
5329   \global\let\Hy@saved@currentHlabel\@currentHlabel
5330   \global\let\Hy@saved@currentHref\@currentHref
5331   \hyper@makecurrent{Hfootnote}%
5332   \global\let\Hy@footnote@currentHlabel\@currentHlabel
5333   \global\let\Hy@footnote@currentHref\@currentHref
5334   \global\let\@currentHlabel\Hy@saved@currentHlabel
5335   \global\let\@currentHref\Hy@saved@currentHref
5336   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
5337   \@makefnmark
5338   \hyper@linkend
5339   \ifhmode\spacefactor\x@sf\fi
5340   \relax
5341 }%

```

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

```

5342 \@ifpackageloaded{longtable}{%
5343   \CheckCommand*\LT@p@ftntext}[1]{%
5344     \edef\@tempa{%
5345       \the\LT@p@ftn

```

```

5346     \noexpand\footnotetext[\the\c@footnote]%
5347   }%
5348   \global\LT@p@ftn\expandafter{\@tempa{#1}}%
5349 }%
5350 \long\def\LT@p@ftntext#1{%
5351   \edef\@tempa{%
5352     \the\LT@p@ftn
5353     \begingroup
5354       \noexpand\c@footnote=\the\c@footnote\relax
5355       \noexpand\protected@xdef
5356         \noexpand\@thefnmark{\noexpand\thempfn}%
5357       \noexpand\protected@xdef\noexpand\@thefnmark{%
5358         \noexpand\thempfn
5359       }%
5360       \expandafter\expandafter\expandafter\noexpand
5361       \expandafter\expandafter\expandafter\Hy@LT@footnotetext
5362       \expandafter\expandafter\expandafter{%
5363         \expandafter\Hy@footnote@currentHref\expandafter
5364         }\expandafter{\Hy@footnote@currentHlabel}%
5365     }%
5366     \global\LT@p@ftn\expandafter{%
5367       \@tempa{#1}%
5368     \endgroup
5369   }%
5370 }%
5371 \long\def\Hy@LT@footnotetext#1#2#3{%
5372   \H@@footnotetext{%
5373     \ifHy@nesting
5374       \hyper@@anchor{#1}{#3}%
5375     \else
5376       \Hy@raisedlink{%
5377         \hyper@@anchor{#1}{\relax}%
5378       }%
5379       \def\@currentHlabel{#2}%
5380       \def\@currentHref{#1}%
5381       \let\@currentlabelname\@empty
5382       #3%
5383     \fi
5384   }%
5385 }%
5386 }-}%

```

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

```

5387 \ifpackageloaded{fancyvrb}{%
5388   \def\V@@footnotetext{%
5389     \insert\footins\bgroup
5390     \csname reset@font\endcsname
5391     \footnotesize
5392     \interlinepenalty\interfootnotelinepenalty
5393     \splittopskip\footnotesep
5394     \splitmaxdepth\dp\strutbox
5395     \floatingpenalty \@MM
5396     \hsize\columnwidth
5397     \@parboxrestore
5398     \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
5399     \makefntext{}%
5400     \rule{\z@}{\footnotesep}%
5401     \bgroup

```

```

5402 \aftergroup\V@@@footnotetext
5403 \Hy@raisedlink{%
5404   \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5405 }%
5406 \let\@currentHlabel\Hy@footnote@currentHlabel
5407 \let\@currentHref\Hy@footnote@currentHref
5408 \let\@currentlabelname\@empty
5409 \ignorespaces
5410 }%
5411 }{}%

```

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.

```

5412 \let\HyOrg@maketitle\maketitle
5413 \def\maketitle{%
5414   \let\Hy@saved@footnotemark\@footnotemark
5415   \let\Hy@saved@footnotetext\@footnotetext
5416   \let\@footnotemark\H@@footnotemark
5417   \let\@footnotetext\H@@footnotetext
5418   \@ifnextchar[\Hy@maketitle@optarg{% ]
5419     \HyOrg@maketitle
5420     \Hy@maketitle@end
5421   }%
5422 }%
5423 \def\Hy@maketitle@optarg[#1]{%
5424   \HyOrg@maketitle[#{#1}]%
5425   \Hy@maketitle@end
5426 }%
5427 \def\Hy@maketitle@end{%
5428   \ifx\@footnotemark\H@@footnotemark
5429     \let\@footnotemark\Hy@saved@footnotemark
5430   \fi
5431   \ifx\@footnotetext\H@@footnotetext
5432     \let\@footnotetext\Hy@saved@footnotetext
5433   \fi
5434 }%

```

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

```

5435 \def\realfootnote{%
5436   \@ifnextchar[\@xfootnote{%
5437     \stepcounter{\@mpfn}%
5438     \protected@xdef\@thefnmark{\thempfn}%
5439     \H@@footnotemark\H@@footnotetext
5440   }%
5441 }%
5442 \fi
5443 \Hy@DisableOption{hyperfootnotes}
5444 \</package>
5445 \<check>
5446 \checklatex
5447 \checkcommand\def\@xfootnotenext[#1]{%
5448   \begingroup
5449     \csname c@\@mpfn\endcsname #1\relax
5450     \unrestored@protected@xdef\@thefnmark{\thempfn}%
5451   \endgroup
5452   \@footnotetext

```

```

5453 }
5454 \checkcommand\def\xfootnotemark[#1]{%
5455   \begingroup
5456     \c@footnote #1\relax
5457     \unrestored@protected@xdef\thefnmark{\thefootnote}%
5458   \endgroup
5459   \@footnotemark
5460 }
5461 \checkcommand\def\@footnotemark{%
5462   \leavevmode
5463   \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
5464   \@makefnmark
5465   \ifhmode\spacefactor\x@sf\fi
5466   \relax
5467 }
5468 </check>
5469 <*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.

```

5470 \def\caption{%
5471   \ifx\@captype\@undefined
5472     \@latex@error{\noexpand\caption outside float}\@ehd
5473     \expandafter\@gobble
5474   \else
5475     \H@refstepcounter\@captype
5476     \let\Hy@tempa\@caption
5477     \@ifundefined{float@caption}{%
5478       }{%
5479         \expandafter\ifx\csname @float@c@\@captype\endcsname
5480           \float@caption
5481           \let\Hy@tempa\Hy@float@caption
5482         \fi
5483       }%
5484     \expandafter\@firstofone
5485   \fi
5486   {\@dblarg{\Hy@tempa\@captype}}%
5487 }
5488 \long\def\@caption#1[#2]#3{%
5489   \expandafter\ifx\csname if@capstart\expandafter\endcsname
5490     \csname iftrue\endcsname
5491     \global\let\@currentHref\hc@currentHref
5492   \else
5493     \hyper@makecurrent{\@captype}%
5494   \fi
5495   \def\@currentlabelname{#2}%
5496   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
5497     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
5498   }%
5499   \begingroup
5500     \@parboxrestore
5501     \if@minipage
5502       \setminipage
5503     \fi

```

```

5504 \normalsize
5505 \expandafter\ifx\csname if@capstart\expandafter\endcsname
5506 \csname iftrue\endcsname
5507 \global\@capstartfalse
5508 \makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
5509 \else
5510 \makecaption{\csname fnum@#1\endcsname}{%
5511 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

5512 \ifHy@nesting
5513 \hyper@@anchor{\@currentHref}{#3}%
5514 \else
5515 \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
5516 \fi
5517 }%
5518 \fi
5519 \par
5520 \endgroup
5521 }

```

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.

```

5522 \let\Hy@float@caption\@caption
5523 \ifpackageloaded{float}{%
5524 \def\Hy@float@caption{%
5525 \ifx\Hy@float@currentHref\@undefined
5526 \hyper@makecurrent{\@cuptype}%
5527 \global\let\Hy@float@currentHref\@currentHref
5528 \else
5529 \let\@currentHref\Hy@float@currentHref
5530 \fi
5531 \float@caption
5532 }%
5533 \let\HyOrg@float@makebox\float@makebox
5534 \renewcommand{\float@makebox}[1]{%
5535 \HyOrg@float@makebox{%
5536 #1\relax
5537 \ifx\Hy@float@currentHref\@undefined
5538 \else
5539 \hyper@@anchor{\Hy@float@currentHref}{\relax}%
5540 \global\let\Hy@float@currentHref\@undefined
5541 \fi
5542 }%
5543 }%
5544 }{}
5545 </package>
5546 <*check>
5547 \checklatex[1999/06/01 - 2000/06/01]
5548 \checkcommand\def\caption{%
5549 \ifx\@cuptype\@undefined
5550 \@latex@error{noexpand\caption outside float}\@ehd
5551 \expandafter\@gobble
5552 \else
5553 \refstepcounter{\@cuptype
5554 \expandafter\@firstofone
5555 \fi
5556 {\@dblarg{\@caption\@cuptype}}%

```

```

5557 }
5558 \checkcommand\long\def\@caption#1[#2]#3{%
5559   \par
5560   \addcontentsline{\csname ext@#1\endcsname}{#1}%
5561     {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
5562   \begingroup
5563     \@parboxrestore
5564     \if@minipage
5565       \@setminipage
5566     \fi
5567     \normalsize
5568     \makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
5569   \endgroup
5570 }
5571 </check>
5572 <*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.

```

5573 \def\hyper@natlinkstart#1{%
5574   \Hy@backout{#1}%
5575   \hyper@linkstart{cite}{cite.#1}%
5576   \def\hyper@nat@current{#1}%
5577 }
5578 \def\hyper@natlinkend{%
5579   \hyper@linkend
5580 }
5581 \def\hyper@natlinkbreak#1#2{%
5582   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
5583 }
5584 \def\hyper@natanchorstart#1{%
5585   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
5586 }
5587 \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.

```

5588 \ifundefined{NAT@parse}{%
5589   \providecommand*\@extra@binfo{}%
5590   \providecommand*\@extra@b@citeb{}%
5591   \def\bibcite#1#2{%
5592     \@newl@bel{b}{#1\@extra@binfo}{%
5593       \hyper@link[cite]{}{cite.#1\@extra@b@citeb}{#2}%
5594     }%
5595   }%
5596   \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.”.

```

5597 \let\Hy@bibtex\bibtex
5598 \begingroup
5599 \ifundefined{bbl@cite@choice}{\%
5600 \g@addto@macro\bbl@cite@choice{\%
5601 \let\bibtex\Hy@bibtex
5602 }%
5603 }%
5604 \endgroup

```

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

```

5605 \providecommand*\@BIBLABEL{\@biblabel}%
5606 \def\@bibitem[#1]#2{%
5607 \@skiphyperreftrue
5608 \H@item[%
5609 \ifx\Hy@raisedlink\@empty
5610 \hyper@anchorstart{cite.#2\@extra@b@citeb}%
5611 \@BIBLABEL{#1}%
5612 \hyper@anchorend
5613 \else
5614 \Hy@raisedlink{%
5615 \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
5616 }%
5617 \@BIBLABEL{#1}%
5618 \fi
5619 \hfill
5620 ]%
5621 \@skiphyperreffalse
5622 \if@filesw
5623 \begingroup
5624 \let\protect\@noexpand
5625 \immediate\write\@auxout{%
5626 \string\bibtex{#2}{#1}%
5627 }%
5628 \endgroup
5629 \fi
5630 \ignorespaces
5631 }%

```

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

```

5632 \def\@bibitem#1{%
5633 \@skiphyperreftrue\H@item\@skiphyperreffalse
5634 \Hy@raisedlink{%
5635 \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
5636 }%
5637 \if@filesw
5638 \begingroup
5639 \let\protect\@noexpand
5640 \immediate\write\@auxout{%
5641 \string\bibtex{#1}{\the\value{\@listctr}}%
5642 }%
5643 \endgroup
5644 \fi
5645 \ignorespaces
5646 }%
5647 }{}

```

```

5648 </package>
5649 <*check>
5650 \checklatex
5651 \checkcommand\def\@lbibitem[#1]#2{%
5652   \item[\@biblabel{#1}\hfill]%
5653   \if@filesw
5654     {%
5655       \let\protect\noexpand
5656       \immediate\write\@auxout{%
5657         \string\bibcite{#2}{#1}%
5658       }%
5659     }%
5660   \fi
5661   \ignorespaces
5662 }
5663 \checkcommand\def\@bibitem#1{%
5664   \item
5665   \if@filesw
5666     \immediate\write\@auxout{%
5667       \string\bibcite{#1}{\the\value{\@listctr}}%
5668     }%
5669   \fi
5670   \ignorespaces
5671 }
5672 </check>
5673 <*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.

```

5674 \@ifclassloaded{revtex}{%
5675   \Hy@Info{*** compatibility with revtex **** }%
5676   \def\revtex@checking#1#2{%
5677     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
5678     \expandafter\def\csname b@#1\endcsname{#2}%
5679     \@SetMaxRnhefLabel{#1}%
5680     \expandafter\let\csname b@#1\endcsname\T@temp
5681   }%

```

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

```

5682 \@ifundefined{CITE}{\def\CITE{\@cite}}{}%
5683 \providecommand*{\extra@b@citeb}{}%
5684 \def\CITE[#1]#2{%
5685   \let\@citea\@empty
5686   \leavevmode
5687   \unskip
5688   $^{}%
5689   \scriptstyle
5690   \CITE{%
5691     \@for\@citeb:=#2\do{%
5692       \@citea
5693       \def\@citea{\penalty\@m\ }%
5694       \edef\@citeb{\expandafter\@firstofone\@citeb}%
5695       \if@filesw
5696         \immediate\write\@auxout{\string\citation{\@citeb}}%
5697       \fi
5698       \@ifundefined{b@\@citeb\extra@b@citeb}{}%

```



```

5699         \mbox{\reset@font\bfseries ?}%
5700         \G@refundefinedtrue
5701         \@latex@warning{%
5702             Citation ‘\@citeb’ on page \thepage \space undefined%
5703         }%
5704     }{%
5705         {\csname b@\@citeb\@extra@b@citeb\endcsname}%
5706     }%
5707 }%
5708 }{#1}%
5709 }$%
5710 }%

```

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.

```

5711 \def\@citex[#1]#2{%
5712     \let\@citea\@empty
5713     \@cite{%
5714         \@for\@citeb:=#2\do{%
5715             \@citea
5716             \def\@citea{\penalty\@m\ }%
5717             \edef\@citeb{\expandafter\@firstofone\@citeb}%
5718             \if@filesw
5719                 \immediate\write\@auxout{\string\citation{\@citeb}}%
5720             \fi
5721             \@ifundefined{b@\@citeb\@extra@b@citeb}{%
5722                 \mbox{\reset@font\bfseries ?}%
5723                 \G@refundefinedtrue
5724                 \@latex@warning{%
5725                     Citation ‘\@citeb’ on page \thepage \space undefined%
5726                 }%
5727             }{%
5728                 \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
5729             }%
5730         }%
5731     }{#1}%
5732 }%
5733 }{}

```

37.1 Package harvard

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

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

```

5734 \@ifpackageloaded{harvard}{%
5735     \AtBeginDocument{%
5736         \Hy@Info{*** compatibility with harvard ***}%
5737         \Hy@raiselinksfalse
5738         \def\harvardcite#1#2#3#4{%
5739             \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{\cite.#1}{#2}}%
5740             \global\@namedef{HAR@an@#1}{\hyper@link[cite]{\cite.#1}{#3}}%
5741             \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{\cite.#1}{#4}}%
5742             \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
5743         }%

```

```

5744 \def\HAR@citetoaux#1{%
5745 \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
5746 \ifHy@backref
5747 \ifx\@empty\@currentlabel
5748 \else
5749 \@bsphack
5750 \if@filesw
5751 \protected@write\@auxout{}{%
5752 \string\@writefile{brf}{%
5753 \string\backcite{#1}{%
5754 {\thepage}{\@currentlabel}{\@currentHref}%
5755 }%
5756 }%
5757 }%
5758 \fi
5759 \@esphack
5760 \fi
5761 \fi
5762 }%
5763 \def\harvarditem{%
5764 \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
5765 }%
5766 \def\@harvarditem[#1]#2#3#4#5\par{%
5767 \item[]%
5768 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
5769 \if@filesw
5770 \begingroup
5771 \def\protect##1{\string ##1\space}%
5772 \ifthenelse{\equal{#1}{\null}}%
5773 {\def\next{{#4}{#2}{#2}{#3}}}%
5774 {\def\next{{#4}{#2}{#1}{#3}}}%
5775 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
5776 \endgroup
5777 \fi
5778 \protect\hspace*{-\labelwidth}%
5779 \protect\hspace*{-\labelsep}%
5780 \ignorespaces
5781 #5%
5782 \ifHy@backref
5783 \newblock
5784 \backref{\csname br@#4\endcsname}%
5785 \fi
5786 \par
5787 }%

```

\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:

```

5788 \long\def\HAR@checkcitations#1#2#3#4{%
5789 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
5790 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
5791 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
5792 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
5793 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
5794 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
5795 \else
5796 \@tempswatrue

```

```

5797         \fi
5798     \else
5799         \@tempswatrue
5800     \fi
5801 \else
5802     \@tempswatrue
5803 \fi
5804 }%
5805 }%

5806 }{}

```

37.2 Package chicago

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

```

5807 \ifpackageloaded{chicago}{%

```

`\citeN`

```

5808 \def\citeN{%
5809     \def\@citesep{-1000}%
5810     \def\@cite##1##2{##1}%
5811     \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
5812     \@citedata@opt
5813 }%

```

`\shortciteN`

```

5814 \def\shortciteN{%
5815     \def\@citesep{-1000}%
5816     \def\@cite##1##2{##1}%
5817     \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
5818     \@citedata@opt
5819 }%

```

`\@citedata@opt`

```

5820 \def\@citedata@opt{%
5821     \let\@cite@opt\@empty
5822     \@ifnextchar [{%
5823         \@tempswatrue
5824         \@citedatax@opt
5825     }{%
5826         \@tempswafalse
5827         \@citedatax[]%
5828     }%
5829 }%

```

`\@citedatax@opt`

```

5830 \def\@citedatax@opt[#1]{%
5831     \def\@cite@opt{, #1}%
5832     \@citedatax[{#1}]%
5833 }%

5834 }{}

```

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.

```
5835 \def\Hy@EveryPageAnchor{%
5836   \Hy@DistillerDestFix
5837   \ifHy@pageanchor
5838     \ifHy@hypertextnames
5839     \ifHy@plainpages
5840       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
5841     \else
5842       \begingroup
5843         \let\@number\@firstofone
5844         \Hy@unicodedefalse
5845         \pdfstringdef\@theH@page{\thepage}%
5846       \endgroup
5847       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@theH@page}}%
5848     \fi
5849   \else
5850     \Hy@GlobalStepCount\Hy@pagecounter
5851     \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}%
5852   \fi
5853   \vbox to 0pt{%
5854     \kern\voffset
5855     \kern\topmargin
5856     \kern-1bp\relax
5857     \hbox to 0pt{%
5858       \kern\hoffset
5859       \kern\ifodd\value{page}%
5860         \oddsidemargin
5861       \else
5862         \evensidemargin
5863       \fi
5864       \kern-1bp\relax
5865       \Hy@TempPageAnchor
5866     \hss
5867   }%
5868   \vss
5869 }%
5870 \fi
5871 }
5872 \g@addto@macro\Hy@EveryPageBoxHook{%
5873   \Hy@EveryPageAnchor
5874 }
```

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.

```
5875 \begingroup\expandafter\expandafter\expandafter\endgroup
```

```

5876 \expandafter\ifx\csname chapter\endcsname\relax
5877 \def\toclevel@part{0}%
5878 \else
5879 \def\toclevel@part{-1}%
5880 \fi
5881 \def\toclevel@chapter{0}
5882 \def\toclevel@section{1}
5883 \def\toclevel@subsection{2}
5884 \def\toclevel@subsubsection{3}
5885 \def\toclevel@paragraph{4}
5886 \def\toclevel@subparagraph{5}
5887 \def\toclevel@figure{0}
5888 \def\toclevel@table{0}
5889 \@ifpackageloaded{listings}{%
5890 \providecommand*\theHlstlisting{\thelstlisting}%
5891 \providecommand*\toclevel@lstlisting{0}%
5892 }{}
5893 \@ifpackageloaded{listing}{%
5894 \providecommand*\theHlisting{\thelisting}%
5895 \providecommand*\toclevel@listing{0}%
5896 }{}
5897 \def\addcontentsline#1#2#3{% toc extension, type, tag
5898 \begingroup
5899 \let\label@gobble
5900 \let\textlatin@firstofone
5901 \ifx\@currentHref\@empty
5902 \Hy@Warning{%
5903 No destination for bookmark of \string\addcontentsline,%
5904 \MessageBreak destination is added%
5905 }%
5906 \phantomsection
5907 \fi
5908 \expandafter\ifx\csname toclevel@#2\endcsname\relax
5909 \begingroup
5910 \def\Hy@tempa{#1}%
5911 \ifx\Hy@tempa\Hy@bookmarkstype
5912 \Hy@WarningNoLine{%
5913 bookmark level for unknown #2 defaults to 0%
5914 }%
5915 \else
5916 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
5917 \fi
5918 \endgroup
5919 \expandafter\gdef\csname toclevel@#2\endcsname{0}%
5920 \fi
5921 \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
5922 \Hy@writebookmark{\csname the#2\endcsname}%
5923 {#3}%
5924 {\@currentHref}%
5925 {\Hy@toclevel}%
5926 {#1}%
5927 \ifHy@verbose
5928 \def\Hy@tempa{#3}%
5929 \@onelevel@sanitize\Hy@tempa
5930 \typeout{pdfTeX: bookmark at \the\inputlineno: %
5931 {\csname the#2\endcsname}%
5932 {\Hy@tempa}%

```

```

5933      {\@currentHref}%
5934      {\Hy@toclevel}%
5935      {#1}%
5936    }%
5937  \fi
5938  \addtocontents{#1}{%
5939    \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
5940  }%
5941  \endgroup
5942 }
5943 \def\contentsline#1#2#3#4{%
5944   \ifx\#4\%
5945     \csname l@#1\endcsname{#2}{#3}%
5946   \else
5947     \ifcase\Hy@linktoc % none
5948       \csname l@#1\endcsname{#2}{#3}%
5949     \or % section
5950       \csname l@#1\endcsname{%
5951         \hyper@linkstart{link}{#4}{#2}\hyper@linkend
5952       }{#3}%
5953     \or % page
5954       \csname l@#1\endcsname{#2}{%
5955         \hyper@linkstart{link}{#4}{#3}\hyper@linkend
5956       }%
5957     \else % all
5958       \csname l@#1\endcsname{%
5959         \hyper@linkstart{link}{#4}{#2}\hyper@linkend
5960       }{%
5961         \hyper@linkstart{link}{#4}{#3}\hyper@linkend
5962       }%
5963     \fi
5964   \fi
5965 }
5966 \</package>
5967 \< *check>
5968 \checklatex
5969 \checkcommand\def\addcontentsline#1#2#3{%
5970   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
5971 }
5972 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
5973 \</check>
5974 \< *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.

```

5975 \let\H@definecounter\@definecounter
5976 \def\@definecounter#1{%
5977   \H@definecounter{#1}%
5978   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
5979 }

```

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.

```

5980 \let\H@newctr\@newctr

```

```

5981 \def\@newctr#1[#2]{%
5982   \H@newctr#1[#2]}%
5983   \expandafter\def\csname theH#1\endcsname{%
5984     \csname the\@ifundefined{theH#2}{H}#2\endcsname.\arabic{#1}%
5985   }%
5986 }

```

41 AMS \LaTeX compatibility

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

Version 6.77p uses a patch by Ross Moore.

```

5987 \ifpackageloaded{amsmath}{%
5988   \def\Hy@make@anchor{%
5989     \Hy@GlobalStepCount\Hy@linkcounter
5990     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5991     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5992   }%
5993   \def\Hy@make@df@tag@@#1{%
5994     \gdef\df@tag{%
5995       \maketag@@@{\Hy@make@anchor#1}%
5996       \def\@currentlabel{#1}%
5997     }%
5998   }%
5999   \def\Hy@make@df@tag@@@#1{%
6000     \gdef\df@tag{%
6001       \tagform@{\Hy@make@anchor#1}%
6002       \toks@{\p@equation{#1}}%
6003       \edef\@currentlabel{\the\toks@}%
6004     }%
6005   }%
6006   \let\HyOrg@make@df@tag@@\make@df@tag@@
6007   \let\HyOrg@make@df@tag@@@\make@df@tag@@@
6008   \let\make@df@tag@@\Hy@make@df@tag@@
6009   \let\make@df@tag@@@\Hy@make@df@tag@@@
6010 }{}

```

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

```

6011 \ifpackagewith{hyperref}{pdf $\TeX$ }{%
6012   \let\H@seteqlabel\@seteqlabel
6013   \def\@seteqlabel#1{%
6014     \H@seteqlabel{#1}%
6015     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
6016     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
6017   }%
6018 }{}

```

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@tagform0{\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.

```

6019 \let\HyOrg@addtoreset\@addtoreset
6020 \def\@addtoreset#1#2{%
6021   \HyOrg@addtoreset{#1}{#2}%
6022   \expandafter\xdef\csname theH#1\endcsname{%
6023     \expandafter\noexpand
6024     \csname the\@ifundefined{theH#2}{}H#2\endcsname
6025     .\noexpand\the\noexpand\value{#1}%
6026   }%
6027 }

```

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

```

6028 </package>
6029 <*check>
6030 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
6031 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
6032   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
6033     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
6034       \@addtoreset{#2}{#3}%
6035       \@xp\xdef\csname the#2\endcsname{%
6036         \@xp@nx\csname the#3\endcsname .\@nx#1{#2}%
6037       }%
6038     }%
6039   }%
6040 }%
6041 </check>
6042 <*package>
6043 \@ifpackageloaded{amsmath}{%
6044   \@ifpackagelater{amsmath}{1999/12/14}{%
6045     \renewcommand*{\numberwithin}[3][\arabic]{%
6046       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
6047         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
6048           \HyOrg@addtoreset{#2}{#3}%
6049           \@xp\xdef\csname the#2\endcsname{%
6050             \@xp@nx\csname the#3\endcsname .\@nx#1{#2}%
6051           }%
6052           \@xp\xdef\csname theH#2\endcsname{%
6053             \@xp@nx
6054             \csname the\@ifundefined{theH#3}{}H#3\endcsname
6055             .\@nx#1{#2}%
6056           }%
6057         }%
6058       }%
6059     }%
6060   }{%
6061     \Hy@WarningNoLine{%
6062       \string\numberwithin\space of package 'amsmath' %
6063       only fixed\MessageBreak

```



```

6064     for version 2000/06/06 v2.12 or newer%
6065   }%
6066 }%
6067 {}

```

42 Included figures

Simply intercept the low level graphics package macro.

```

6068 \ifHy@figures
6069   \let\Hy@Gin@setfile\Gin@setfile
6070   \def\Gin@setfile#1#2#3{%
6071     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
6072   }%
6073 \fi
6074 \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.

```

6075 \ifHy@hyperindex
6076   \def\HyInd@ParenLeft{({}%
6077   \def\HyInd@ParenRight{)}}%
6078   \Hy@nextfalse
6079   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
6080   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
6081   \begingroup
6082     \lccode'\|=\expandafter'\HyInd@EncapChar\relax
6083   \lowercase{\endgroup
6084     \ifHy@next
6085       \let\HyInd@org@wrindex\@wrindex
6086       \def\@wrindex#1#2{\HyInd@wrindex{#1}#2||\}%
6087       \def\HyInd@wrindex#1#2|#3|#4\{\%
6088         \ifx\|#3\%
6089           \HyInd@org@wrindex{#1}{#2|hyperpage}%
6090         \else
6091           \def\Hy@temp@A{#3}%
6092           \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
6093             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
6094             \relax
6095           \HyInd@org@wrindex{#1}{#2|#3}%
6096         \else
6097           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
6098         \fi
6099       \fi
6100     }%
6101   \else

```

```

6102 \def\@wrindex#1{\@wrindex#1||\}%
6103 \def\@wrindex#1|#2|#3\{\%
6104 \if@filesw
6105 \ifx\#2\%
6106 \protected@write\@indexfile{}\%
6107 \string\indexentry{#1|hyperpage}{\thepage}%
6108 }%
6109 \else
6110 \def\Hy@temp@A{#2}%
6111 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
6112 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
6113 \relax
6114 \protected@write\@indexfile{}\%
6115 \string\indexentry{#1|#2}{\thepage}%
6116 }%
6117 \else
6118 \protected@write\@indexfile{}\%
6119 \string\indexentry{#1|#2hyperpage}{\thepage}%
6120 }%
6121 \fi
6122 \fi
6123 \fi
6124 \endgroup
6125 \@esphack
6126 }%
6127 \fi
6128 }%
6129 \fi
6130 \Hy@DisableOption{hyperindex}
6131 \Hy@DisableOption{encap}

```

`\nohyperpage` The definition of `\nohyperpage` is just a precaution. It is used to mark code that does not belong to a page number, but `\nohyperpage` is never executed.

```

6132 \def\nohyperpage#1{#1}

```

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.

```

6133 \def\hyperpage#1{\%
6134 \HyInd@hyperpage#1\nohyperpage{}\@nil
6135 }
6136 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{\%
6137 \HyInd@@hyperpage{#1}%
6138 #2%
6139 \def\Hy@temp{#3}%
6140 \ifx\Hy@temp\@empty
6141 \else
6142 \Hy@ReturnAfterFi{\%
6143 \HyInd@hyperpage#3\@nil
6144 }%
6145 \fi
6146 }
6147 \def\HyInd@@hyperpage#1{\@hyperpage#1---\}%
6148 \def\@hyperpage#1--#2--#3\{\%
6149 \ifx\#2\%
6150 \@commahyperpage{#1}%
6151 \else
6152 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%

```

```

6153 \fi
6154 }
6155 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
6156 \def\@commahyperpage#1, #2,#3\{\%
6157 \ifx\#2\%
6158 \HyInd@pagelink{#1}%
6159 \else
6160 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
6161 \fi
6162 }

```

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

```

6163 \def\HyInd@pagelink#1{%
6164 \begingroup
6165 \toks@={}%
6166 \HyInd@removespaces#1 \@nil
6167 \endgroup
6168 }
6169 \def\HyInd@removespaces#1 #2\@nil{%
6170 \toks@=\expandafter{\the\toks@#1}%
6171 \ifx\#2\%
6172 \edef\x{\the\toks@}%
6173 \ifx\x\@empty
6174 \else
6175 \hyperlink{page.\the\toks@}{\the\toks@}%
6176 \fi
6177 \else
6178 \Hy@ReturnAfterFi{%
6179 \HyInd@removespaces#2\@nil
6180 }%
6181 \fi
6182 }

```

44 Compatibility with foiltex

```

6183 \@ifclassloaded{foils}{%
6184 \providecommand*\ext@table{lot}%
6185 \providecommand*\ext@figure{lof}%
6186 }{}

```

45 Compatibility with seminar slide package

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

```

6187 \@ifclassloaded{seminar}{%
6188 \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}%
6189 }{%
6190 \Hy@seminarslidesfalse
6191 }
6192 \@ifpackageloaded{slidesec}{%
6193 \newcommand\theHslidesection {\arabic{slidesection}}%
6194 \newcommand\theHslidesubsection{%
6195 \theHslidesection.\arabic{slidesubsection}}%
6196 }%
6197 \def\slide@heading[#1]#2{%

```

```

6198 \H@refstepcounter{slidesection}%
6199 \@addtoreset{slidesubsection}{slidesection}%
6200 \addtocontents{los}{%
6201   \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
6202   {\@SCTR}{slideheading.\theslidesection}%
6203 }%
6204 \def\Hy@tempa{#2}%
6205 \ifx\Hy@tempa\@empty
6206 \else
6207   {%
6208     \edef\@currentlabel{%
6209       \csname p@slidesection\endcsname\theslidesection
6210     }%
6211     \makeslideheading{#2}%
6212   }%
6213 \fi
6214 \gdef\theslideheading{#1}%
6215 \gdef\theslidesubheading{}%
6216 \ifHy@bookmarksnumbered
6217   \def\Hy@slidetitle{\theslidesection\space #1}%
6218 \else
6219   \def\Hy@slidetitle{#1}%
6220 \fi
6221 \ifHy@hypertextnames
6222   \ifHy@naturalnames
6223     \hyper@@anchor{slideheading.\theslidesection}{\relax}%
6224     \Hy@writebookmark
6225       {\theslidesection}%
6226       {\Hy@slidetitle}%
6227       {slideheading.\theslidesection}%
6228       {1}%
6229       {toc}%
6230   \else
6231     \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
6232     \Hy@writebookmark
6233       {\theslidesection}%
6234       {\Hy@slidetitle}%
6235       {slideheading.\theHslidesection}%
6236       {1}%
6237       {toc}%
6238   \fi
6239 \else
6240   \Hy@GlobalStepCount\Hy@linkcounter
6241   \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
6242   \Hy@writebookmark
6243     {\theslidesection}%
6244     {\Hy@slidetitle}%
6245     {slideheading.\the\Hy@linkcounter}%
6246     {1}%
6247     {toc}%
6248 \fi
6249 }%
6250 \def\slide@subheading[#1]#2{%
6251   \H@refstepcounter{slidesubsection}%
6252   \addtocontents{los}{%
6253     \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
6254     {\@SCTR}{slideheading.\theslidesubsection}%

```

```

6255 }%
6256 \def\Hy@tempa{#2}%
6257 \ifx\Hy@tempa\@empty
6258 \else
6259 {%
6260   \edef\@currentlabel{%
6261     \csname p@slidesubsection\endcsname\theslidesubsection
6262   }%
6263   \makeslidesubheading{#2}%
6264 }%
6265 \fi
6266 \gdef\theslidesubheading{#1}%
6267 \ifHy@bookmarksnumbered
6268   \def\Hy@slidetitle{\theslidesubsection\space #1}%
6269 \else
6270   \def\Hy@slidetitle{#1}%
6271 \fi
6272 \ifHy@hypertextnames
6273   \ifHy@naturalnames
6274     \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
6275     \Hy@writebookmark
6276       {\theslidesubsection}%
6277       {\Hy@slidetitle}%
6278       {slideheading.\theslidesubsection}%
6279       {2}%
6280       {toc}%
6281   \else
6282     \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
6283     \Hy@writebookmark
6284       {\theslidesubsection}%
6285       {\Hy@slidetitle}%
6286       {slideheading.\theHslidesubsection}%
6287       {2}%
6288       {toc}%
6289   \fi
6290 \else
6291   \Hy@GlobalStepCount\Hy@linkcounter
6292   \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
6293   \Hy@writebookmark
6294     {\theslidesubsection}%
6295     {\Hy@slidetitle}%
6296     {slideheading.\the\Hy@linkcounter}%
6297     {1}%
6298     {toc}%
6299 \fi
6300 }%
6301 \providecommand*\listslidenamename{List of Slides}%
6302 \def\listofslides{%
6303   \section*{%
6304     \listslidenamename
6305     \@mkboth{%
6306       \expandafter\MakeUppercase\listslidenamename
6307     }{%
6308       \expandafter\MakeUppercase\listslidenamename
6309     }%
6310   }%
6311   \def\l@slide##1##2##3##4{%

```

```

6312     \slide@undottedcline{%
6313         \slidenumberline{##3}{\hyperlink{##4}{##2}}%
6314     }{%
6315 }%
6316 \let\l@subslide\l@slide
6317 \@startlos
6318 }%
6319 \def\slide@contents{%
6320     \def\l@slide##1##2##3##4{%
6321         \slide@cline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
6322     }%
6323     \let\l@subslide\@gobblefour
6324     \@startlos
6325 }%
6326 \def\Slide@contents{%
6327     \def\l@slide##1##2##3##4{%
6328         \ifcase\lslide@flag
6329             \message{##1 ** \the\c@slide@section}%
6330             \ifnum##1>\c@slide@section
6331                 \def\lslide@flag{1}%
6332             {%
6333                 \large
6334                 \slide@cline{%
6335                     \slidenumberline{$\rightarrow\bullet$}%
6336                     {\hyperlink{##4}{##2}}%
6337                 }{##3}%
6338             }%
6339         \else
6340             {%
6341                 \large
6342                 \slide@cline{%
6343                     \slidenumberline{$\surd\;\bullet$}%
6344                     {\hyperlink{##4}{##2}}%
6345                 }{##3}%
6346             }%
6347         \fi
6348     \or
6349         \def\lslide@flag{2}%
6350         {%
6351             \large
6352             \slide@cline{%
6353                 \slidenumberline{$\bullet$}%
6354                 {\hyperlink{##4}{##2}}%
6355             }{##3}%
6356         }%
6357     \or
6358         {%
6359             \large
6360             \slide@cline{%
6361                 \slidenumberline{$\bullet$}%
6362                 {\hyperlink{##4}{##2}}%
6363             }{##3}%
6364         }%
6365     \fi
6366 }%
6367 \def\l@subslide##1##2##3##4{%
6368     \ifnum\lslide@flag=1 %

```

```

6369      \undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
6370      \fi
6371    }%
6372    \def\lslide@flag{0}%
6373    \@startlos
6374  }%
6375 }{}

```

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.)

```

6376 \ifHy@texht
6377   \expandafter\endinput
6378 \fi
6379 \let\real@setref\@setref
6380 \def\@setref#1#2#3{% csname, extract group, refname
6381   \ifx#1\relax
6382     \protect\G@refundefinedtrue
6383     \nfss@text{\reset@font\bfseries ??}%
6384     \@latex@warning{%
6385       Reference ‘#3’ on page \thepage \space undefined%
6386     }%
6387   \else
6388     \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
6389   \fi
6390 }

```

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

```

6391 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
6392   \begingroup
6393   \toks0={\hyper@@link{#5}{#4}}%
6394   \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
6395   \edef\x{\endgroup
6396     \the\toks0 \the\toks1 }%
6397   }%
6398   \x
6399 }
6400 \def\@pagesetref#1#2#3{% csname, extract macro, ref
6401   \ifx#1\relax
6402     \protect\G@refundefinedtrue
6403     \nfss@text{\reset@font\bfseries ??}%
6404     \@latex@warning{%
6405       Reference ‘#3’ on page \thepage \space undefined%
6406     }%
6407   \else
6408     \protect\hyper@@link
6409     {\expandafter\@fifthoffive#1}%
6410     {page.\expandafter\@secondoffive#1}%
6411     {\expandafter\@secondoffive#1}%
6412   \fi
6413 }
6414 </package>
6415 <*check>
6416 \checklatex
6417 \checkcommand\def\@setref#1#2#3{%
6418   \ifx#1\relax
6419     \protect\G@refundefinedtrue

```

```

6420 \nfss@text{\reset@font\bfseries ??}%
6421 \latex@warning{%
6422   Reference '#3' on page \thepage\space undefined%
6423 }%
6424 \else
6425   \expandafter#2#1\null
6426 \fi
6427 }
6428 \</check>
6429 \<*package>

```

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

```

6430 \def\HyRef@StarSetRef#1{%
6431   \begingroup
6432   \Hy@safe@activestrue
6433   \edef\x{#1}%
6434   \@onelevel@sanitize\x
6435   \edef\x{\endgroup
6436     \noexpand\HyRef@@StarSetRef
6437     \expandafter\noexpand\csname r@\x\endcsname{\x}%
6438   }%
6439   \x
6440 }
6441 \def\HyRef@@StarSetRef#1#2#3{%
6442   \ifx#1\@undefined
6443     \let#1\relax
6444   \fi
6445   \real@setref#1#3{#2}%
6446 }
6447 \def\@refstar#1{%
6448   \HyRef@StarSetRef{#1}\@firstoffive
6449 }
6450 \def\@pagerefstar#1{%
6451   \HyRef@StarSetRef{#1}\@secondoffive
6452 }
6453 \AtBeginDocument{%
6454   \ifpackageloaded{varioref}{%
6455     \def\@Refstar#1{%
6456       \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
6457     }%
6458     \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
6459       \MakeUppercase#1%
6460     }%
6461     \DeclareRobustCommand*\Ref*{%
6462       \@ifstar\@Refstar\HyRef@Ref
6463     }%
6464     \def\HyRef@Ref#1{%
6465       \hyperref[#{#1}]{\Ref*{#1}}%
6466     }%
6467     \def\Vr@f#1{%
6468       \leavevmode\unskip\vref@space
6469       \hyperref[#{#1}]{%
6470         \Ref*{#1}%
6471         \let\vref@space\nobreakspace
6472         \vpageref[\unskip]{#1}%
6473       }%
6474     }%

```



```

6475 \def\vr@f#1{%
6476 \leavevmode\unskip\href@space
6477 \begingroup
6478 \let\T@pageref\@pagerefstar
6479 \hyperref[{#1}] {%
6480 \ref*{#1}%
6481 \vpageref[\unskip]{#1}%
6482 }%
6483 \endgroup
6484 }%
6485 }{}%
6486 }
6487 \DeclareRobustCommand*\autopageref{%
6488 \ifstar{%
6489 \HyRef@autopagerefname\pageref*%
6490 }\HyRef@autopageref
6491 }
6492 \def\HyRef@autopageref#1{%
6493 \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
6494 }
6495 \def\HyRef@autopagerefname{%
6496 \ifundefined{pageautorefname}{%
6497 \ifundefined{pagename}{%
6498 \Hy@Warning{No autoref name for 'page'}%
6499 }{%
6500 \pagename\nobreakspace
6501 }%
6502 }{%
6503 \pageautorefname\nobreakspace
6504 }%
6505 }
6506 \DeclareRobustCommand*\autoref{%
6507 \ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}%
6508 }
6509 \def\HyRef@autoref#1#2{%
6510 \begingroup
6511 \Hy@safe@activetrue
6512 \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
6513 \endgroup
6514 }
6515 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
6516 \HyRef@ShowKeysRef{#2}%
6517 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
6518 \edef\HyRef@thisref{%
6519 \expandafter\@fourthoffive#1\@empty\@empty\@empty
6520 }%
6521 \expandafter\HyRef@testreftype\HyRef@thisref.\.%
6522 \Hy@safe@activesfalse
6523 #3{%
6524 \expandafter\@fifthoffive#1\@empty\@empty\@empty
6525 }{%
6526 \expandafter\@fourthoffive#1\@empty\@empty\@empty
6527 }{%
6528 \HyRef@currentHtag
6529 \expandafter\@firstoffive#1\@empty\@empty\@empty
6530 \null
6531 }%

```

```

6532 \else
6533   \protect\G@refundefinedtrue
6534   \nfss@text{\reset@font\bfseries ??}%
6535   \@latex@warning{%
6536     Reference ‘#2’ on page \thepage\space undefined%
6537   }%
6538 \fi
6539 }
6540 \def\HyRef@testreftype#1.#2\\{%
6541   \@ifundefined{#1autorefname}{%
6542     \@ifundefined{#1name}{%
6543       \HyRef@StripStar#1\\*\\@nil{#1}%
6544       \@ifundefined{\HyRef@name autorefname}{%
6545         \@ifundefined{\HyRef@name name}{%
6546           \def\HyRef@currentHtag{%
6547             \Hy@Warning{No autoref name for ‘#1’}%
6548           }{%
6549             \edef\HyRef@currentHtag{%
6550               \expandafter\noexpand\csname\HyRef@name name\endcsname
6551             \noexpand~%
6552           }%
6553         }%
6554       }{%
6555         \edef\HyRef@currentHtag{%
6556           \expandafter\noexpand\csname\HyRef@name autorefname\endcsname
6557           \noexpand~%
6558         }%
6559       }%
6560     }{%
6561       \edef\HyRef@currentHtag{%
6562         \expandafter\noexpand\csname#1name\endcsname
6563         \noexpand~%
6564       }%
6565     }%
6566   }{%
6567     \edef\HyRef@currentHtag{%
6568       \expandafter\noexpand\csname#1autorefname\endcsname
6569       \noexpand~%
6570     }%
6571   }%
6572 }
6573 \def\HyRef@StripStar#1*\\#2@nil#3{%
6574   \def\HyRef@name{#2}%
6575   \ifx\HyRef@name\HyRef@CaseStar
6576     \def\HyRef@name{#1}%
6577   \else
6578     \def\HyRef@name{#3}%
6579   \fi
6580 }
6581 \def\HyRef@CaseStar{*\\}
6582 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

6583 \let\HyRef@ShowKeysRef\@gobble
6584 \def\HyRef@ShowKeysInit{%
6585   \begingroup\expandafter\expandafter\expandafter\endgroup

```

```

6586 \expandafter\ifx\csname SK@@label\endcsname\relax
6587 \else
6588   \ifx\SK@ref\@empty
6589   \else
6590     \def\HyRef@ShowKeysRef{%
6591       \SK@\SK@@ref
6592     }%
6593   \fi
6594 \fi
6595 }
6596 \@ifpackageloaded{showkeys}{%
6597   \HyRef@ShowKeysInit
6598 }{%
6599   \AtBeginDocument{%
6600     \@ifpackageloaded{showkeys}{%
6601       \HyRef@ShowKeysInit
6602     }{}%
6603   }%
6604 }

```

Defaults for the names that `\autoref` uses.

```

6605 \providecommand*\AMSautorefname{\equationautorefname}
6606 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
6607 \providecommand*\Itemautorefname{\itemautorefname}
6608 \providecommand*\itemautorefname{item}
6609 \providecommand*\equationautorefname{Equation}
6610 \providecommand*\footnoteautorefname{footnote}
6611 \providecommand*\itemautorefname{item}
6612 \providecommand*\figureautorefname{Figure}
6613 \providecommand*\tableautorefname{Table}
6614 \providecommand*\partautorefname{Part}
6615 \providecommand*\appendixautorefname{Appendix}
6616 \providecommand*\chapterautorefname{chapter}
6617 \providecommand*\sectionautorefname{section}
6618 \providecommand*\subsectionautorefname{subsection}
6619 \providecommand*\subsubsectionautorefname{subsubsection}
6620 \providecommand*\paragraphautorefname{paragraph}
6621 \providecommand*\subparagraphautorefname{subparagraph}
6622 \providecommand*\FancyVerbLineautorefname{line}
6623 \providecommand*\theoremautorefname{Theorem}
6624 \providecommand*\pageautorefname{page}
6625 </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_T_EX offers `\pdfescapestring`.

```

6626 <*pdfTEX | dvipdfm | vTex | pdfmarkbase | dviwindo>
6627 \RequirePackage{pdfTEXcmds}[2007/11/11]

```

```

6628 \begingroup\expandafter\expandafter\expandafter\endgroup
6629 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
6630   \begingroup
6631     \catcode'\|=0 %
6632     \@makeother\| %
6633     \@firstofone{\endgroup
6634       |def|Hy@pstringdef#1#2{%
6635         |begingroup
6636           |edef~{|string~}%
6637           |xdef|Hy@gtemp{#2}%
6638         |endgroup
6639         |let#1|Hy@gtemp
6640         |@onelevel@sanitize#1%
6641         |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
6642         |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
6643         |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
6644       }%
6645       |def|Hy@ExchangeBackslash#1\#2|@nil{%
6646         #1%
6647         |ifx|\#2|\%%
6648         |else
6649           \\\%
6650           |Hy@ReturnAfterFi{%
6651             |Hy@ExchangeBackslash#2|@nil
6652           }%
6653         |fi
6654       }%
6655     }%
6656   \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
6657     #1%
6658     \ifx\#2\%%
6659     \else
6660       \@backslashchar(%
6661       \Hy@ReturnAfterFi{%
6662         \Hy@ExchangeLeftParenthesis#2\@nil
6663       }%
6664     \fi
6665   }%
6666   \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
6667     #1%
6668     \ifx\#2\%%
6669     \else
6670       \@backslashchar)%
6671       \Hy@ReturnAfterFi{%
6672         \Hy@ExchangeRightParenthesis#2\@nil
6673       }%
6674     \fi
6675   }%
6676 \else
6677   \def\Hy@pstringdef#1#2{%
6678     \begingroup
6679     \edef~{\string~}%
6680     \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
6681   \endgroup
6682   \let#1\Hy@gtemp
6683 }%
6684 \fi

```

```
6685 </pdfTeX | dvipdfm | vtex | pdfmarkbase | dviwindo>
```

46.2 pdfTeX

```
6686 <*pdfTeX>
6687 \providecommand*{\XR@ext}{pdf}
6688 \Hy@setbreaklinks{true}
```

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, 2005-08-08: \pdfminorversion

```
6689 \let\Hy@pdfminorversion\relax
6690 \begingroup\expandafter\expandafter\expandafter\endgroup
6691 \expandafter\ifx\csname pdfminorversion\endcsname\relax
6692   \begingroup\expandafter\expandafter\expandafter\endgroup
6693   \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
6694     \else
6695       \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
6696     \fi
6697   \else
6698     \def\Hy@pdfminorversion{\pdfminorversion}%
6699   \fi
6700 \ifundefined{Hy@pdfminorversion}{%
6701   \PackageInfo{hyperref}{%
6702     PDF version is not set, because pdfTeX is too old (<1.10a)%
6703   }%
6704 }{%
6705   \ifHy@ocgcolorlinks
6706     \ifnum\Hy@pdfminorversion<5 %
6707       \setkeys{Hyp}{pdfversion=1.5}%
6708     \fi
6709   \fi
6710   \ifHy@setpdfversion
6711     \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
6712     \else
6713       \Hy@pdfminorversion=\Hy@pdfversion\relax
6714     \fi
6715     \PackageInfo{hyperref}{%
6716       \expandafter\string\Hy@pdfminorversion
6717       :=\number\Hy@pdfversion\space
6718     }%
6719   \fi
6720   \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
6721 }
6722 \Hy@DisableOption{pdfversion}%
6723 \ifHy@ocgcolorlinks
6724   \immediate\pdfobj{%
6725     <<%
6726       /Type/OCG%
6727       /Name(View)%
6728       /Usage<<%
6729         /Print<<%
6730           /PrintState/OFF%
```

```

6731         >>%
6732         /View<<%
6733         /ViewState/ON%
6734         >>%
6735     >>%
6736 >>%
6737 }%
6738 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
6739 \immediate\pdfobj{%
6740     <<%
6741     /Type/OCG%
6742     /Name(Print)%
6743     /Usage<<%
6744     /Print<<%
6745     /PrintState/ON%
6746     >>%
6747     /View<<%
6748     /ViewState/OFF%
6749     >>%
6750     >>%
6751     >>%
6752 }%
6753 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
6754 \immediate\pdfobj{%
6755     [%
6756     \OBJ@OCG@view\space\OBJ@OCG@print
6757     ]%
6758 }%
6759 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
6760 \pdfcatalog{%
6761     /OCProperties<<%
6762     /OCGs \OBJ@OCGs
6763     /D<<%
6764     /OFF[\OBJ@OCG@print]%
6765     /AS[%
6766     <<%
6767     /Event/View%
6768     /OCGs \OBJ@OCGs
6769     /Category[/View]%
6770     >>%
6771     <<%
6772     /Event/Print%
6773     /OCGs \OBJ@OCGs
6774     /Category[/Print]%
6775     >>%
6776     <<%
6777     /Event/Export%
6778     /OCGs \OBJ@OCGs
6779     /Category[/Print]%
6780     >>%
6781     ]%
6782     >>%
6783     >>%
6784 }%
6785 \beginngroup
6786 \edef\x{\endgroup
6787     \pdfpageresources{%

```

```

6788      /Properties<<%
6789      /OCView \OBJ@OCG@view
6790      /OCPrint \OBJ@OCG@print
6791      >>%
6792  }%
6793 }%
6794 \x
6795 \AtBeginDocument{%
6796   \def\Hy@colorlink#1{%
6797     \begingroup
6798     \ifHy@ocgcolorlinks
6799       \def\Hy@ocgcolor{#1}%
6800       \setbox0=\color@hbox
6801     \else
6802       \HyColor@UseColor#1%
6803     \fi
6804   }%
6805   \def\Hy@endcolorlink{%
6806     \ifHy@ocgcolorlinks
6807       \color@endbox
6808     \mbox{%
6809       \pdfliteral page{/OC/OCPrint BDC}%
6810       \rlap{\copy0}%
6811       \pdfliteral page{EMC/OC/OCView BDC}%
6812     \begingroup
6813       \expandafter\HyColor@UseColor\Hy@ocgcolor
6814       \box0 %
6815     \endgroup
6816     \pdfliteral page{EMC}%
6817   }%
6818   \fi
6819 \endgroup
6820 }%
6821 }%
6822 \else
6823   \Hy@DisableOption{ocgcolorlinks}%
6824 \fi

```

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

```

6825 \def\setpdflinkmargin#1{\pdflinkmargin#1}
6826 \ifx\pdfstartlink\@undefined% less than version 14
6827   \let\pdfstartlink\pdfannotlink
6828   \let\pdflinkmargin\@tempdima
6829   \let\pdfxform\pdfform
6830   \let\pdflastxform\pdfastform
6831   \let\pdfrefxform\pdfrefform
6832 \else
6833   \pdflinkmargin1pt %
6834 \fi

```

First set up the default linking

```

6835 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

6836 \def\new@pdflink#1{%
6837   \ifHy@verbose
6838     \typeout{pdftex: define anchor at line \the\inputlineno: #1}%
6839   \fi
6840   \Hy@SaveLastskip

```

```

6841 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
6842 \Hy@DestName\Hy@pstringDest\@pdfview
6843 \Hy@RestoreLastskip
6844 }
6845 \let\pdf@endanchor\@empty

```

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

```

6846 \def\Hy@DestName#1#2{%
6847 \pdfdest name{#1}#2\relax
6848 }

```

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.

```

6849 \providecommand*\@pdfborder{0 0 1}
6850 \providecommand*\@pdfborderstyle{}
6851 \def\Hy@undefinedname{UNDEFINED}
6852 \def\find@pdflink#1#2{%
6853 \leavevmode
6854 \protected@edef\Hy@testname{#2}%
6855 \ifx\Hy@testname\@empty
6856 \let\Hy@testname\Hy@undefinedname
6857 \else
6858 \Hy@pstringdef\Hy@testname{%
6859 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
6860 }%
6861 \fi
6862 \Hy@StartlinkName{%
6863 \ifHy@pdfa /F 4\fi
6864 \Hy@setpdfborder
6865 \ifx\@pdfhighlight\@empty
6866 \else
6867 /H\@pdfhighlight
6868 \fi
6869 \ifx\CurrentBorderColor\relax
6870 \else
6871 /C[\CurrentBorderColor]%
6872 \fi
6873 }\Hy@testname
6874 \expandafter\Hy@colorlink\csname @#1color\endcsname
6875 }
6876 \def\Hy@StartlinkName#1#2{%
6877 \pdfstartlink attr{#1}goto name{#2}\relax
6878 }
6879 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
6880 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
6881 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
6882 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
6883 \def\hyper@linkstart#1#2{%
6884 \@ifundefined{#1bordercolor}{%
6885 \let\CurrentBorderColor\relax
6886 }{%
6887 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6888 }%
6889 \find@pdflink{#1}{#2}%

```



```

6890 }
6891 \def\hyper@linkend{\close@pdflink}
6892 \def\hyper@link#1#2#3{%
6893   \@ifundefined{@#1bordercolor}{%
6894     \let\CurrentBorderColor\relax
6895   }{%
6896     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6897   }%
6898   \find@pdflink{#1}{#2}#3%
6899   \close@pdflink
6900 }
6901 \let\CurrentBorderColor\@linkbordercolor
6902 \def\hyper@linkurl#1#2{%
6903   \begingroup
6904     \Hy@pstringdef\Hy@pstringURI{#2}%
6905     \hyper@chars
6906     \leavevmode
6907     \pdfstartlink
6908       attr{%
6909         \Hy@setpdfborder
6910         \ifx\@pdfhighlight\@empty
6911         \else
6912           /H\@pdfhighlight
6913         \fi
6914         \ifx\@urlbordercolor\relax
6915         \else
6916           /C[\@urlbordercolor]%
6917         \fi
6918       }%
6919       user{%
6920         /Subtype/Link%
6921         \ifHy@pdfa /F 4\fi
6922         /A<<%
6923           /Type/Action%
6924           /S/URI%
6925           /URI(\Hy@pstringURI)%
6926         >>%
6927       }%
6928       \relax
6929       \Hy@colorlink\@urlcolor#1%
6930     \close@pdflink
6931   \endgroup
6932 }
6933 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
6934   \begingroup
6935     \Hy@pstringdef\Hy@pstringF{#2}%
6936     \Hy@pstringdef\Hy@pstringD{#3}%
6937     \leavevmode
6938     \pdfstartlink
6939       attr{%
6940         \Hy@setpdfborder
6941         \ifx\@pdfhighlight\@empty
6942         \else
6943           /H\@pdfhighlight
6944         \fi
6945         \ifx\@filebordercolor\relax
6946         \else

```

```

6947         /C[\@filebordercolor]%
6948     \fi
6949 }%
6950 user {%
6951     /Subtype/Link%
6952     \ifHy@pdfa /F 4\fi
6953     /A<<%
6954     /F(\Hy@pstringF)%
6955     /S/GoToR%
6956     \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}

```

```

6957     \ifx\#3\%
6958         /D[0 \@pdfstartview]%
6959     \else
6960         /D(\Hy@pstringD)%
6961     \fi
6962     >>%
6963 }%
6964 \relax
6965 \Hy@colorlink\@filecolor#1%
6966 \close@pdflink
6967 \endgroup
6968 }
6969 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
6970 \beginngroup
6971     \Hy@pstringdef\Hy@pstringF{#1}%
6972     \Hy@pstringdef\Hy@pstringP{#3}%
6973     \leavevmode
6974     \pdfstartlink
6975     attr{%
6976         \Hy@setpdfborder
6977         \ifx\@pdfhighlight\@empty
6978         \else
6979             /H\@pdfhighlight
6980         \fi
6981         \ifx\@runbordercolor\relax
6982         \else
6983             /C[\@runbordercolor]%
6984         \fi
6985     }%
6986     user {%
6987         /Subtype/Link%
6988         \ifHy@pdfa /F 4\fi
6989         /A<<%
6990         /F(\Hy@pstringF)%
6991         /S/Launch%
6992         \Hy@SetNewWindow

```

```

6993         \ifx\\#3\\%
6994         \else
6995             /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
6996         \fi
6997     >>%
6998 }%
6999 \relax
7000 \Hy@colorlink\@runcolor#2%
7001 \close@pdflink
7002 \endgroup
7003 }

```

\@pdfproducer

```

7004 \ifx\@pdfproducer\relax
7005 \begingroup\expandafter\expandafter\expandafter\endgroup
7006 \expandafter\ifx\csname luatexversion\endcsname\relax
7007     \def\@pdfproducer{pdfTeX}%
7008     \ifx\eTeXversion\undefined
7009     \else
7010         \ifx\eTeXversion\relax
7011         \else
7012             \ifnum\eTeXversion>0 %
7013                 \def\@pdfproducer{pdfTeX}%
7014             \fi
7015         \fi
7016     \fi
7017     \ifx\pdfTeXversion\undefined
7018     \else
7019         \ifnum\pdfTeXversion<100 %
7020             \edef\@pdfproducer{%
7021                 \@pdfproducer
7022                 \the\pdfTeXversion.\pdfTeXrevision
7023             }%
7024         \else
7025             \ifnum\pdfTeXversion<130 %
7026                 \edef\@pdfproducer{%
7027                     \@pdfproducer-%
7028                     \expandafter\@car\the\pdfTeXversion\empty\@nil.%
7029                     \expandafter\@cdr\the\pdfTeXversion\empty\@nil.%
7030                     \pdfTeXrevision
7031                 }%
7032             \else
7033                 \ifnum\pdfTeXversion<140 %
7034                 \else
7035                     \def\@pdfproducer{pdfTeX}%
7036                 \fi
7037                 \edef\@pdfproducer{%
7038                     \@pdfproducer-%
7039                     \expandafter\@car\the\pdfTeXversion\empty\@nil.%
7040                     \expandafter\@cdr\the\pdfTeXversion\empty\@nil.%
7041                     \pdfTeXrevision
7042                 }%
7043             \fi
7044         \fi
7045     \fi
7046 \else
7047 \begingroup

```

```

7048     \count@=\luatexversion
7049     \divide\count@ by 100 %
7050     \edef\x{\the\count@}%
7051     \count@=-\x\relax
7052     \multiply\count@ by 100 %
7053     \advance\count@ by \luatexversion
7054     \edef\x{\endgroup
7055         \def\noexpand\@pdfproducer{%
7056             LuaTeX-\x.\the\count@.\luatexrevision
7057         }%
7058     }%
7059     \x
7060 \fi
7061 \fi

```

\PDF@SetupDox

```

7062 \def\PDF@SetupDoc{%
7063   \ifx\@pdfpagescrop\@empty
7064   \else
7065     \edef\process@me{%
7066       \pdfpagesattr={%
7067         /CropBox[\@pdfpagescrop]%
7068         \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
7069         \else
7070           ^^J\the\pdfpagesattr
7071         \fi
7072       }%
7073     }%
7074     \process@me
7075   \fi
7076   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7077   \pdfcatalog{%
7078     /PageMode/\@pdfpagemode
7079     \ifx\@baseurl\@empty
7080     \else
7081       /URI<</Base(\Hy@pstringB)>>%
7082     \fi
7083   }%
7084   \ifx\@pdfstartpage\@empty
7085   \else
7086     \ifx\@pdfstartview\@empty
7087     \else
7088       openaction goto page\@pdfstartpage{\@pdfstartview}%
7089     \fi
7090   \fi
7091   \edef\Hy@temp{%
7092     \ifHy@toolbar\else /HideToolbar true\fi
7093     \ifHy@menubar\else /HideMenubar true\fi
7094     \ifHy>windowui\else /HideWindowUI true\fi
7095     \ifHy@fitwindow /FitWindow true\fi
7096     \ifHy@centerwindow /CenterWindow true\fi
7097     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7098     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7099     \Hy@UseNameKey{Direction}\@pdfdirection
7100     \Hy@UseNameKey{ViewArea}\@pdfviewarea
7101     \Hy@UseNameKey{ViewClip}\@pdfviewclip
7102     \Hy@UseNameKey{PrintArea}\@pdfprintarea

```

```

7103 \Hy@UseNameKey{PrintClip}\@pdfprintclip
7104 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7105 \Hy@UseNameKey{Duplex}\@pdfduplex
7106 \ifx\@pdfpicktraybypdfsize\@empty
7107 \else
7108 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7109 \fi
7110 \ifx\@pdfprintpagerange\@empty
7111 \else
7112 /PrintPageRange[\@pdfprintpagerange]%
7113 \fi
7114 \ifx\@pdfnumcopies\@empty
7115 \else
7116 /NumCopies \@pdfnumcopies
7117 \fi
7118 }%
7119 \pdfcatalog{%
7120 \ifx\Hy@temp\@empty
7121 \else
7122 /ViewerPreferences<<\Hy@temp>>%
7123 \fi
7124 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7125 \ifx\@pdflang\@empty
7126 \else
7127 /Lang(\@pdflang)%
7128 \fi
7129 }%
7130 }

```

\PDF@FinishDoc

```

7131 \def\PDF@FinishDoc{%
7132 \Hy@UseMaketitleInfos
7133 \pdfinfo{%
7134 /Author(\@pdfauthor)%
7135 /Title(\@pdftitle)%
7136 /Subject(\@pdfsubject)%
7137 /Creator(\@pdfcreator)%
7138 \ifx\@pdfcreationdate\@empty
7139 \else
7140 /CreationDate(\@pdfcreationdate)%
7141 \fi
7142 \ifx\@pdfmoddate\@empty
7143 \else
7144 /ModDate(\@pdfmoddate)%
7145 \fi
7146 \ifx\@pdfproducer\relax
7147 \else
7148 /Producer(\@pdfproducer)%
7149 \fi
7150 /Keywords(\@pdfkeywords)%
7151 }%
7152 \Hy@DisableOption{pdfauthor}%
7153 \Hy@DisableOption{pdftitle}%
7154 \Hy@DisableOption{pdfsubject}%
7155 \Hy@DisableOption{pdfcreator}%
7156 \Hy@DisableOption{pdfcreationdate}%
7157 \Hy@DisableOption{pdfmoddate}%

```

```

7158 \Hy@DisableOption{pdfproducer}%
7159 \Hy@DisableOption{pdfkeywords}%
7160 }

```

`\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`.

```

7161 \def\hyper@pagetransition{%
7162   \ifx\@pdfpagetransition\relax
7163   \else
7164     \expandafter\Hy@RemoveTransPageAttr
7165     \the\pdfpageattr^^J/Trans{>>\END
7166     \ifx\@pdfpagetransition\@empty
7167     \else
7168       \edef\@processme{%
7169         \global\pdfpageattr{%
7170           \the\pdfpageattr
7171             ^^J/Trans << /S /\@pdfpagetransition\space >>%
7172         }%
7173       }%
7174       \@processme
7175     \fi
7176   \fi
7177 }

```

`\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.

```

7178 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
7179   \ifx\#2\%
7180     \global\pdfpageattr{#1}%
7181   \else
7182     \Hy@RemoveTransPageAttr#1#4\END
7183   \fi
7184 }

```

`\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`.

```

7185 \def\hyper@pageduration{%
7186   \ifx\@pdfpageduration\relax
7187   \else
7188     \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
7189     \ifx\@pdfpageduration\@empty
7190     \else
7191       \edef\@processme{%
7192         \global\pdfpageattr{%
7193           \the\pdfpageattr
7194             ^^J/Dur \@pdfpageduration\space
7195         }%
7196       }%
7197       \@processme
7198     \fi
7199   \fi
7200 }

```

`\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.

```
7201 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
7202   \ifx\#2\%
7203     \global\pdfpageattr{#1}%
7204   \else
7205     \Hy@RemoveDurPageAttr#1#4\END
7206   \fi
7207 }
```

`\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).

```
7208 \def\hyper@pagehidden{%
7209   \ifHy@useHidKey
7210     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{ } \END
7211   \ifHy@pdfpagehidden
7212     \edef\@processme{%
7213       \global\pdfpageattr{%
7214         \the\pdfpageattr
7215         ^^J/Hid true % SPACE
7216       }%
7217     }%
7218     \@processme
7219   \fi
7220 \fi
7221 }
```

`\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.

```
7222 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
7223   \ifx\#2\%
7224     \global\pdfpageattr{#1}%
7225   \else
7226     \Hy@RemoveHidPageAttr#1#4\END
7227   \fi
7228 }
```

```
7229 \g@addto@macro\Hy@EveryPageHook{%
7230   \hyper@pagetransition
7231   \hyper@pageduration
7232   \hyper@pagehidden
7233 }

7234 \AtBeginDocument{%
7235   \ifHy@setpagesize
7236     \expandafter\@firstofone
7237   \else
7238     \expandafter\@gobble
7239   \fi
7240 }%
7241 \@ifclassloaded{seminar}{%
7242   \setlength{\pdfhorigin}{1truein}%
}
```

```

7243 \setlength{\pdfvorigin}{1truein}%
7244 \ifportrait
7245 \ifdim\paperwidth=\z@
7246 \else
7247 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
7248 \fi
7249 \ifdim\paperheight=\z@
7250 \else
7251 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
7252 \fi
7253 \else
7254 \ifdim\paperheight=\z@
7255 \else
7256 \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
7257 \fi
7258 \ifdim\paperwidth=\z@
7259 \else
7260 \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
7261 \fi
7262 \fi
7263 }{%
7264 \@ifundefined{stockwidth}{%
7265 \ifdim\paperwidth=\z@
7266 \else
7267 \setlength{\pdfpagewidth}{\paperwidth}%
7268 \fi
7269 \ifdim\paperheight=\z@
7270 \else
7271 \setlength{\pdfpageheight}{\paperheight}%
7272 \fi
7273 }{%
7274 \ifdim\stockwidth=\z@
7275 \else
7276 \setlength{\pdfpagewidth}{\stockwidth}%
7277 \fi
7278 \ifdim\stockheight=\z@
7279 \else
7280 \setlength{\pdfpageheight}{\stockheight}%
7281 \fi
7282 }%
7283 }%
7284 }%
7285 \Hy@DisableOption{setpagesize}%
7286 }
7287 \def\Acrobatmenu#1#2{%
7288 \Hy@Acrobatmenu{#1}{#2}{%
7289 \pdfstartlink
7290 attr{%
7291 \Hy@setpdfborder
7292 \ifx\@pdfhighlight\@empty
7293 \else
7294 /H\@pdfhighlight
7295 \fi
7296 \ifx\@menubordercolor\relax
7297 \else
7298 /C[\@menubordercolor]%
7299 \fi

```



```

7300      }%
7301      user{%
7302      /Subtype/Link%
7303      \ifHy@pdfa /F 4\fi
7304      /A<<%
7305      /S/Named/N/#1%
7306      >>%
7307      }%
7308      \relax
7309      \Hy@colorlink\@menucolor#2%
7310      \close@pdflink
7311      }%
7312 }
7313 </pdfTex>
7314 <*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 TeX file — the TeX commands between the two ends of a pair form an *anchor* in the document. In the case of an *href* command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by *href_string*. The *anchor* associated with a name command represents a possible location to which other hypertext links may refer, either as local references (of the form `href="#name_string"` with the *name_string* identical to the one in the name command) or as part of a URL (of the form `URL#name_string`). Here *href_string* is a valid URL or local identifier, while *name_string* could be any string at all: the only caveat is that ‘’ characters should be escaped with a backslash (\), and if it looks like a URL name it may cause problems.

```

7315 \providecommand*{\XR@ext}{dvi}
7316 \def\PDF@FinishDoc{}
7317 \def\PDF@SetupDoc{%
7318   \ifx\@baseurl\@empty
7319   \else
7320     \special{html:<base href="\@baseurl">}}%
7321   \fi

```

```

7322 }
7323 \def\hyper@anchor#1{%
7324   \Hy@SaveLastskip
7325   \begingroup
7326     \let\protect=\string
7327     \hyper@chars
7328     \special{html:<a name=%
7329       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
7330   \endgroup
7331   \Hy@activeanchortrue
7332   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7333   \special{html:</a>}%
7334   \Hy@activeanchorfalse
7335   \Hy@RestoreLastskip
7336 }
7337 \def\hyper@anchorstart#1{%
7338   \Hy@SaveLastskip
7339   \begingroup
7340     \hyper@chars
7341     \special{html:<a name=%
7342       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
7343   \endgroup
7344   \Hy@activeanchortrue
7345 }
7346 \def\hyper@anchorend{%
7347   \special{html:</a>}%
7348   \Hy@activeanchorfalse
7349   \Hy@RestoreLastskip
7350 }
7351 \def\@urltype{url}
7352 \def\hyper@linkstart#1#2{%
7353   \expandafter\Hy@colorlink\csname @#1color\endcsname
7354   \def\Hy@tempa{#1}%
7355   \ifx\Hy@tempa\@urltype
7356     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7357   \else
7358     \begingroup
7359       \hyper@chars
7360       \special{html:<a href=%
7361         \hyper@quote\# \HyperDestNameFilter{#2}\hyper@quote>}%
7362     \endgroup
7363   \fi
7364 }
7365 \def\hyper@linkend{%
7366   \special{html:</a>}%
7367   \Hy@endcolorlink
7368 }
7369 \def\hyper@linkfile#1#2#3{%
7370   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\\#3\fi}%
7371 }
7372 \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.

```

7373   \leavevmode
7374   \ifHy@raiselinks
7375     \setbox\@tempboxa=\color@hbox #1\color@endbox

```

```

7376 \@linkdim\dp\@tempboxa
7377 \lower\@linkdim\hbox{%
7378 \hyper@chars
7379 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
7380 }%
7381 \Hy@colorlink\@urlcolor#1%
7382 \@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).

```

7383 \advance\@linkdim by -6.5\p@
7384 \raise\@linkdim\hbox{\special{html:</a>}}%
7385 \Hy@endcolorlink
7386 \else
7387 \begingroup
7388 \hyper@chars
7389 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
7390 \Hy@colorlink\@urlcolor#1%
7391 \special{html:</a>}}%
7392 \Hy@endcolorlink
7393 \endgroup
7394 \fi
7395 }

```

Very poor implementation of \hyper@link without considering #1.

```

7396 \def\hyper@link#1#2#3{%
7397 \hyper@linkurl{#3}{\#HyperDestNameFilter{#2}}%
7398 }

7399 \def\hyper@image#1#2{%
7400 \begingroup
7401 \hyper@chars
7402 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
7403 \endgroup
7404 }
7405 </hypertex>
7406 <*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.

```

7407 \providecommand*\XR@ext{dvi}
7408 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
7409 \def\hyper@anchor#1{%
7410 \Hy@SaveLastskip
7411 \begingroup
7412 \let\protect=\string

```

```

7413 \special{mark: #1}%
7414 \endgroup
7415 \Hy@activeanchortrue
7416 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7417 \Hy@activeanchorfalse
7418 \Hy@RestoreLastskip
7419 }
7420 \def\hyper@anchorstart#1{%
7421 \Hy@SaveLastskip
7422 \special{mark: #1}%
7423 \Hy@activeanchortrue
7424 }
7425 \def\hyper@anchorend{%
7426 \Hy@activeanchorfalse
7427 \Hy@RestoreLastskip
7428 }
7429 \def\hyper@linkstart#1#2{%
7430 \expandafter\Hy@colorlink\csname @#1color\endcsname
7431 \special{button: %
7432 10000000 %
7433 \number\baselineskip\space
7434 #2%
7435 }%
7436 }
7437 \def\hyper@linkend{%
7438 \Hy@endcolorlink
7439 }
7440 \def\hyper@link#1#2#3{%
7441 \setbox\@tempboxa=\color@hbox #3\color@endbox
7442 \leavevmode
7443 \ifHy@raiselinks
7444 \@linkdim\dp\@tempboxa
7445 \lower\@linkdim\hbox{%
7446 \special{button: %
7447 \number\wd\@tempboxa\space
7448 \number\ht\@tempboxa\space
7449 #2%
7450 }%
7451 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
7452 \Hy@endcolorlink
7453 }%
7454 \@linkdim\ht\@tempboxa
7455 \advance\@linkdim by -6.5\p@
7456 \raise\@linkdim\hbox{%}%
7457 \else
7458 \special{button: %
7459 \number\wd\@tempboxa\space
7460 \number\ht\@tempboxa\space
7461 #2%
7462 }%
7463 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
7464 \Hy@endcolorlink
7465 \fi
7466 }
7467 \def\hyper@linkurl#1#2{%
7468 \begingroup
7469 \hyper@chars

```

```

7470 \leavevmode
7471 \setbox\@tempboxa=\color@hbox #1\color@endbox
7472 \ifHy@raiselinks
7473 \@linkdim\dp\@tempboxa
7474 \lower\@linkdim\hbox{%
7475 \special{button: %
7476 \number\wd\@tempboxa\space
7477 \number\ht\@tempboxa\space
7478 launch: \wwwbrowser\space
7479 #2%
7480 }%
7481 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7482 }%
7483 \@linkdim\ht\@tempboxa
7484 \advance\@linkdim by -6.5\p@
7485 \raise\@linkdim\hbox{}}%
7486 \else
7487 \special{button: %
7488 \number\wd\@tempboxa\space
7489 \number\ht\@tempboxa\space
7490 launch: \wwwbrowser\space
7491 #2%
7492 }%
7493 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7494 \fi
7495 \endgroup
7496 }
7497 \def\hyper@linkfile#1#2#3{%
7498 \begingroup
7499 \hyper@chars
7500 \leavevmode
7501 \setbox\@tempboxa=\color@hbox #1\color@endbox
7502 \ifHy@raiselinks
7503 \@linkdim\dp\@tempboxa
7504 \lower\@linkdim\hbox{%
7505 \special{button: %
7506 \number\wd\@tempboxa\space
7507 \number\ht\@tempboxa\space
7508 #3,%
7509 file: #2%
7510 }%
7511 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7512 }%
7513 \@linkdim\ht\@tempboxa
7514 \advance\@linkdim by -6.5\p@
7515 \raise\@linkdim\hbox{}}%
7516 \else
7517 \special{button: %
7518 \number\wd\@tempboxa\space
7519 \number\ht\@tempboxa\space
7520 #3,%
7521 file: #2%
7522 }%
7523 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7524 \fi
7525 \endgroup
7526 }

```

```

7527 \ifx\@pdfproducer\relax
7528   \def\@pdfproducer{dviwindo + Distiller}%
7529 \fi
7530 \def\PDF@FinishDoc{%
7531   \Hy@UseMaketitleInfos
7532   \special{PDF: Keywords \@pdfkeywords}%
7533   \special{PDF: Title \@pdftitle}%
7534   \special{PDF: Creator \@pdfcreator}%
7535   \ifx\@pdfcreationdate\@empty
7536   \else
7537     \special{PDF: CreationDate \@pdfcreationdate}%
7538   \fi
7539   \ifx\@pdfmoddate\@empty
7540   \else
7541     \special{PDF: ModDate \@pdfmoddate}%
7542   \fi
7543   \special{PDF: Author \@pdfauthor}%
7544   \ifx\@pdfproducer\relax
7545   \else
7546     \special{PDF: Producer \@pdfproducer}%
7547   \fi
7548   \special{PDF: Subject \@pdfsubject}%
7549   \Hy@DisableOption{pdfauthor}%
7550   \Hy@DisableOption{pdftitle}%
7551   \Hy@DisableOption{pdfsubject}%
7552   \Hy@DisableOption{pdfcreator}%
7553   \Hy@DisableOption{pdfcreationdate}%
7554   \Hy@DisableOption{pdfmoddate}%
7555   \Hy@DisableOption{pdfproducer}%
7556   \Hy@DisableOption{pdfkeywords}%
7557 }
7558 \def\PDF@SetupDoc{%
7559   \ifx\@baseurl\@empty
7560   \else
7561     \special{PDF: Base \@baseurl}%
7562   \fi
7563   \ifx\@pdfpagescrop\@empty\else
7564     \special{PDF: BBox \@pdfpagescrop}%
7565   \fi
7566   \def\Hy@temp{%
7567     \ifx\@pdfstartpage\@empty
7568     \else
7569       \ifx\@pdfstartview\@empty
7570       \else
7571         \edef\Hy@temp{%
7572           ,Page=\@pdfstartpage
7573           ,View=\@pdfstartview
7574         }%
7575       \fi
7576     \fi
7577     \edef\Hy@temp{%
7578       \noexpand\pdfmark{%
7579         pdfmark=/DOCVIEW,%
7580         PageMode=/\@pdfpagemode
7581       }\Hy@temp
7582     }%
7583   }%

```

```

7584 \Hy@temp
7585 \ifx\@pdfpagescrop\@empty
7586 \else
7587 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7588 \fi
7589 \edef\Hy@temp{%
7590 \ifHy@toolbar\else /HideToolbar true\fi
7591 \ifHy@menubar\else /HideMenubar true\fi
7592 \ifHy>windowui\else /HideWindowUI true\fi
7593 \ifHy@fitwindow /FitWindow true\fi
7594 \ifHy@centerwindow /CenterWindow true\fi
7595 \ifHy@displaydoctitle /DisplayDocTitle true\fi
7596 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7597 \Hy@UseNameKey{Direction}\@pdfdirection
7598 \Hy@UseNameKey{ViewArea}\@pdfviewarea
7599 \Hy@UseNameKey{ViewClip}\@pdfviewclip
7600 \Hy@UseNameKey{PrintArea}\@pdfprintarea
7601 \Hy@UseNameKey{PrintClip}\@pdfprintclip
7602 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7603 \Hy@UseNameKey{Duplex}\@pdfduplex
7604 \ifx\@pdfpicktraybypdfsize\@empty
7605 \else
7606 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7607 \fi
7608 \ifx\@pdfprintpagerange\@empty
7609 \else
7610 /PrintPageRange[\@pdfprintpagerange]%
7611 \fi
7612 \ifx\@pdfnumcopies\@empty
7613 \else
7614 /NumCopies \@pdfnumcopies
7615 \fi
7616 }%
7617 \pdfmark{pdfmark=/PUT,%
7618 Raw={%
7619 \string{Catalog\string}<<%
7620 \ifx\Hy@temp\@empty
7621 \else
7622 /ViewerPreferences<<\Hy@temp>>%
7623 \fi
7624 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7625 \ifx\@pdflang\@empty
7626 \else
7627 /Lang(\@pdflang)%
7628 \fi
7629 >>%
7630 }%
7631 }%
7632 }
7633 </dviwindo>
7634 <*dvi pdfm>

```

46.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

7635 \providecommand*{\XR@ext}{pdf}
7636 \Hy@setbreaklinks{true}

```

```

7637 \newsavebox{\pdfm@box}
7638 \def\@pdfm@mark#1{\special{pdf:#1}}
7639 \def\@pdfm@dest#1{%
7640   \Hy@SaveLastskip
7641   \beginngroup
7642     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
7643     \def\x{XYZ}%
7644     \ifx\x\@pdfview
7645       \def\x{XYZ @xpos @ypos null}%
7646     \else
7647       \def\x{FitH}%
7648       \ifx\x\@pdfview
7649         \def\x{FitH @ypos}%
7650       \else
7651         \def\x{FitBH}%
7652         \ifx\x\@pdfview
7653           \def\x{FitBH @ypos}%
7654         \else
7655           \def\x{FitV}%
7656           \ifx\x\@pdfview
7657             \def\x{FitV @xpos}%
7658           \else
7659             \def\x{FitBV}%
7660             \ifx\x\@pdfview
7661               \def\x{FitBV @xpos}%
7662             \else
7663               \def\x{Fit}%
7664               \ifx\x\@pdfview
7665                 \let\x\@pdfview
7666               \else
7667                 \def\x{FitB}%
7668                 \ifx\x\@pdfview
7669                   \let\x\@pdfview
7670                 \else
7671                   \def\x{FitR}%
7672                   \ifx\x\@pdfview
7673                     \Hy@Warning{'pdfview=FitR' is not supported}%
7674                     \def\x{XYZ @xpos @ypos null}%
7675                   \else
7676                     \@onelevel@sanitize\@pdfview
7677                     \Hy@Warning{Unknown value '\@pdfview' for pdfview}%
7678                     \def\x{XYZ @xpos @ypos null}%
7679                   \fi
7680                 \fi
7681               \fi
7682             \fi
7683           \fi
7684         \fi
7685       \fi
7686     \fi
7687     \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
7688   \endgroup
7689   \Hy@RestoreLastskip
7690 }
7691 \providecommand*\@pdfview{XYZ}
7692 \providecommand*\@pdfborder{0 0 1}
7693 \providecommand*\@pdfborderstyle{}

```



```

7694 \def\hyper@anchor#1{%
7695   \@pdfm@dest{#1}%
7696 }
7697 \def\hyper@anchorstart#1{%
7698   \Hy@activeanchortrue
7699   \@pdfm@dest{#1}%
7700 }
7701 \def\hyper@anchorend{%
7702   \Hy@activeanchorfalse
7703 }
7704 \ifHy@ocgcolorlinks
7705   \def\OBJ@OCG@view{@OCG@view}%
7706   \@pdfm@mark{%
7707     obj \OBJ@OCG@view <<%
7708       /Type/OCG%
7709       /Name(View)%
7710       /Usage<<%
7711         /Print<<%
7712         /PrintState/OFF%
7713       >>%
7714       /View<<%
7715       /ViewState/ON%
7716     >>%
7717   >>%
7718   >>%
7719   }%
7720   \@pdfm@mark{close \OBJ@OCG@view}%
7721   \def\OBJ@OCG@print{@OCG@print}%
7722   \@pdfm@mark{%
7723     obj \OBJ@OCG@print <<%
7724       /Type/OCG%
7725       /Name(Print)%
7726       /Usage<<%
7727         /Print<<%
7728         /PrintState/ON%
7729       >>%
7730       /View<<%
7731       /ViewState/OFF%
7732     >>%
7733   >>%
7734   >>%
7735   }%
7736   \@pdfm@mark{close \OBJ@OCG@print}%
7737   \def\OBJ@OCGs{@OCGs}%
7738   \@pdfm@mark{%
7739     obj \OBJ@OCGs [%
7740       \OBJ@OCG@view\space\OBJ@OCG@print
7741     ]%
7742   }%
7743   \@pdfm@mark{close \OBJ@OCGs}%
7744   \@pdfm@mark{%
7745     put @catalog <<%
7746       /OCProperties<<%
7747         /OCGs \OBJ@OCGs
7748       /D<<%
7749         /OFF[\OBJ@OCG@print]%
7750       /AS[%

```

```

7751         <<%
7752             /Event/View%
7753             /OCGs \OBJ@OCGs
7754             /Category[/View]%
7755         >>%
7756         <<%
7757             /Event/Print%
7758             /OCGs \OBJ@OCGs
7759             /Category[/Print]%
7760         >>%
7761         <<%
7762             /Event/Export%
7763             /OCGs \OBJ@OCGs
7764             /Category[/Print]%
7765         >>%
7766     ]%
7767     >>%
7768     >>%
7769     >>%
7770 }%
7771 \@pdfm@mark{%
7772     put @resources <<%
7773         /Properties<<%
7774             /OCView \OBJ@OCG@view
7775             /OCPrint \OBJ@OCG@print
7776         >>%
7777     >>%
7778 }%
7779 \AtBeginDocument{%
7780     \def\Hy@colorlink#1{%
7781         \begingroup
7782             \ifHy@ocgcolorlinks
7783                 \def\Hy@ocgcolor{#1}%
7784                 \setbox0=\color@hbox
7785             \else
7786                 \HyColor@UseColor#1%
7787             \fi
7788         }%
7789         \def\Hy@endcolorlink{%
7790             \ifHy@ocgcolorlinks
7791                 \color@endbox
7792                 \mbox{%
7793                     \@pdfm@mark{content /OC/OCPrint BDC}%
7794                     \rlap{\copy0}%
7795                     \@pdfm@mark{content EMC/OC/OCView BDC}%
7796                     \begingroup
7797                         \expandafter\HyColor@UseColor\Hy@ocgcolor
7798                         \box0 %
7799                     \endgroup
7800                     \@pdfm@mark{content EMC}%
7801                 }%
7802             \fi
7803         \endgroup
7804     }%
7805 }%
7806 \else
7807     \Hy@DisableOption{ocgcolorlinks}%

```

```

7808 \fi
7809 \def\Hy@undefinedname{UNDEFINED}
7810 \def\hyper@linkstart#1#2{%
7811   \protected@edef\Hy@testname{#2}%
7812   \ifx\Hy@testname\empty
7813     \let\Hy@testname\Hy@undefinedname
7814   \else
7815     \Hy@pstringdef\Hy@testname{%
7816       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
7817     }%
7818   \fi
7819   \@pdfm@mark{%
7820     bann<<%
7821       /Type/Annot%
7822       /Subtype/Link%
7823       \ifHy@pdfa /F 4\fi
7824       \Hy@setpdfborder
7825       \expandafter\ifx\csname @#1bordercolor\endcsname\relax
7826       \else
7827         /C[\csname @#1bordercolor\endcsname]%
7828       \fi
7829       /A<<%
7830       /S/GoTo%
7831       /D(\Hy@testname)%
7832       >>%
7833     >>%
7834   }%
7835   \expandafter\Hy@colorlink\csname @#1color\endcsname
7836 }
7837 \def\hyper@linkend{%
7838   \Hy@endcolorlink
7839   \@pdfm@mark{eann}%
7840 }
7841 \def\hyper@link#1#2#3{%
7842   \hyper@linkstart{#1}{#2}#3\hyper@linkend
7843 }
7844 \def\hyper@linkfile#1#2#3{%
7845   \Hy@pstringdef\Hy@pstringF{#2}%
7846   \Hy@pstringdef\Hy@pstringD{#3}%
7847   \leavevmode
7848   \@pdfm@mark{%
7849     bann<<%
7850       /Type/Annot%
7851       /Subtype/Link%
7852       \ifHy@pdfa /F 4\fi
7853       \Hy@setpdfborder
7854       \ifx\@filebordercolor\relax
7855       \else
7856         /C[\@filebordercolor]%
7857       \fi
7858       /A<<%
7859       /S/GoToR%
7860       /F(\Hy@pstringF)%
7861       /D\ifx\#3\[\[0 \@pdfstartview\else(\Hy@pstringD)\fi
7862       \Hy@SetNewWindow
7863     >>%
7864     >>%

```

```

7865 }%
7866 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7867 \@pdfm@mark{eann}%
7868 }
7869 \def\hyper@linkurl#1#2{%
7870 \Hy@pstringdef\Hy@pstringURI{#2}%
7871 \leavevmode
7872 \@pdfm@mark{%
7873   bann<<%
7874     /Type/Annot%
7875     /Subtype/Link%
7876     \ifHy@pdfa /F 4\fi
7877     \Hy@setpdfborder
7878     \ifx\@urlbordercolor\relax
7879     \else
7880       /C[\@urlbordercolor]%
7881     \fi
7882     /A<<%
7883     /S/URI%
7884     /URI(\Hy@pstringURI)%
7885     >>%
7886   >>%
7887 }%
7888 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7889 \@pdfm@mark{eann}%
7890 }
7891 \def\Acrobatmenu#1#2{%
7892 \Hy@Acrobatmenu{#1}{#2}{%
7893   \@pdfm@mark{%
7894     bann<<%
7895       /Type/Annot%
7896       /Subtype/Link%
7897       \ifHy@pdfa /F 4\fi
7898       /A<<%
7899       /S/Named%
7900       /N/#1%
7901       >>%
7902       \Hy@setpdfborder
7903       \ifx\@menubordercolor\relax
7904       \relax
7905       /C[\@menubordercolor]%
7906     \fi
7907     >>%
7908   }%
7909   \Hy@colorlink\@menucolor#2\Hy@endcolorlink
7910   \@pdfm@mark{eann}%
7911 }%
7912 }
7913 \ifx\@pdfproducer\relax
7914 \def\@pdfproducer{dvipdfm}%

```

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

```

7915 \begingroup\expandafter\expandafter\expandafter\endgroup
7916 \expandafter\ifx\csname XeTeXversion\endcsname\relax
7917 \else
7918 \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
7919 \fi
7920 \fi

```

```

7921 \def\PDF@FinishDoc{%
7922   \Hy@UseMaketitleInfos
7923   \@pdfm@mark{%
7924     docinfo<<%
7925       /Title(\@pdftitle)%
7926       /Subject(\@pdfsubject)%
7927       /Creator(\@pdfcreator)%
7928       \ifx\@pdfcreationdate\@empty
7929       \else
7930         /CreationDate(\@pdfcreationdate)%
7931       \fi
7932       \ifx\@pdfmoddate\@empty
7933       \else
7934         /ModDate(\@pdfmoddate)%
7935       \fi
7936       /Author(\@pdfauthor)%
7937       \ifx\@pdfproducer\relax
7938       \else
7939         /Producer(\@pdfproducer)%
7940       \fi
7941       /Keywords(\@pdfkeywords)%
7942     >>%
7943   }%
7944   \Hy@DisableOption{pdfauthor}%
7945   \Hy@DisableOption{pdftitle}%
7946   \Hy@DisableOption{pdfsubject}%
7947   \Hy@DisableOption{pdfcreator}%
7948   \Hy@DisableOption{pdfcreationdate}%
7949   \Hy@DisableOption{pdfmoddate}%
7950   \Hy@DisableOption{pdfproducer}%
7951   \Hy@DisableOption{pdfkeywords}%
7952 }

7953 \def\PDF@SetupDoc{%
7954   \edef\Hy@temp{%
7955     \ifHy@toolbar\else /HideToolbar true\fi
7956     \ifHy@menubar\else /HideMenubar true\fi
7957     \ifHy>windowui\else /HideWindowUI true\fi
7958     \ifHy@fitwindow /FitWindow true\fi
7959     \ifHy@centerwindow /CenterWindow true\fi
7960     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7961     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7962     \Hy@UseNameKey{Direction}\@pdfdirection
7963     \Hy@UseNameKey{ViewArea}\@pdfviewarea
7964     \Hy@UseNameKey{ViewClip}\@pdfviewclip
7965     \Hy@UseNameKey{PrintArea}\@pdfprintarea
7966     \Hy@UseNameKey{PrintClip}\@pdfprintclip
7967     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7968     \Hy@UseNameKey{Duplex}\@pdfduplex
7969     \ifx\@pdfpicktraybypdfsize\@empty
7970     \else
7971       /PickTrayByPDFSize \@pdfpicktraybypdfsize
7972     \fi
7973     \ifx\@pdfprintpagerange\@empty
7974     \else
7975       /PrintPageRange[\@pdfprintpagerange]%
7976     \fi
7977     \ifx\@pdfnumcopies\@empty

```

```

7978 \else
7979 /NumCopies \@pdfnumcopies
7980 \fi
7981 }%
7982 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7983 \@pdfm@mark{%
7984 docview<<%
7985 \ifx\@pdfstartpage\@empty
7986 \else
7987 \ifx\@pdfstartview\@empty
7988 \else
7989 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
7990 \fi
7991 \fi
7992 \ifx\@baseurl\@empty
7993 \else
7994 /URI<</Base(\Hy@pstringB)>>%
7995 \fi
7996 /PageMode/\@pdfpagemode
7997 \ifx\Hy@temp\@empty
7998 \else
7999 /ViewerPreferences<<\Hy@temp>>%
8000 \fi
8001 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8002 \ifx\@pdflang\@empty
8003 \else
8004 /Lang(\@pdflang)%
8005 \fi
8006 >>%
8007 }%
8008 \ifx\@pdfpagescrop\@empty
8009 \else
8010 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
8011 \fi
8012 }
8013 \AtBeginShipoutFirst{%
8014 \ifx\special@paper\@empty\else
8015 \ifHy@setpagesize
8016 \special{papersize=\special@paper}%
8017 \fi
8018 \fi
8019 \Hy@DisableOption{setpagesize}%
8020 }
8021 </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.

```

8022 <*vtexhtml>
8023 \providecommand*{\XR@ext}{htm}
8024 \RequirePackage{vtexhtml}
8025 \newif\if@Localurl
8026 \def\PDF@FinishDoc{}
8027 \def\PDF@SetupDoc{%
8028 \ifx\@baseurl\@empty

```

```

8029 \else
8030 \special{!direct <base href="\@baseurl">}%
8031 \fi
8032 }
8033 \def\@urltype{url}
8034 \def\hyper@link#1#2#3{%
8035 \leavevmode
8036 \special{!direct <a href=%
8037 \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
8038 #3%
8039 \special{!direct </a>}%
8040 }
8041 \def\hyper@linkurl#1#2{%
8042 \begingroup
8043 \hyper@chars
8044 \leavevmode
8045 \MathBSuppress=1\relax
8046 \special{!direct <a href=%
8047 \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
8048 #1%
8049 \MathBSuppress=0\relax
8050 \special{!direct </a>}%
8051 \endgroup
8052 }
8053 \def\hyper@linkfile#1#2#3{%
8054 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\\#3\fi}%
8055 }
8056 \def\hyper@linkstart#1#2{%
8057 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
8058 \@Localurltrue
8059 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
8060 \else
8061 \@Localurlfalse
8062 \begingroup
8063 \hyper@chars
8064 \special{!aref \HyperDestNameFilter{#2}}%
8065 \endgroup
8066 \fi
8067 }
8068 \def\hyper@linkend{%
8069 \if@Localurl
8070 \special{!endaref}%
8071 \else
8072 \special{!direct </a>}%
8073 \fi
8074 }
8075 \def\hyper@anchorstart#1{%
8076 \Hy@SaveLastskip
8077 \begingroup
8078 \hyper@chars
8079 \special{!aname #1}%
8080 \special{!direct <a name=%
8081 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8082 \endgroup
8083 \Hy@activeanchortrue
8084 }
8085 \def\hyper@anchorend{%

```

```

8086 \special{!direct </a>}%
8087 \Hy@activeanchorfalse
8088 \Hy@RestoreLastskip
8089 }
8090 \def\hyper@anchor#1{%
8091 \Hy@SaveLastskip
8092 \begingroup
8093 \let\protect=\string
8094 \hyper@chars
8095 \leavevmode
8096 \special{!aname #1}%
8097 \special{!direct <a name=%
8098 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8099 \endgroup
8100 \Hy@activeanchortrue
8101 \bgroup\anchor@spot\egroup
8102 \special{!direct </a>}%
8103 \Hy@activeanchorfalse
8104 \Hy@RestoreLastskip
8105 }
8106 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
8107 \def\@endForm{}
8108 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8109 \typeout{Sorry, TeXpider does not yet support FORM gauges}%
8110 }
8111 \def\@TextField[#1]#2{% parameters, label
8112 \typeout{Sorry, TeXpider does not yet support FORM text fields}%
8113 }
8114 \def\@CheckBox[#1]#2{% parameters, label
8115 \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
8116 }
8117 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8118 \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
8119 }
8120 \def\@PushButton[#1]#2{% parameters, label
8121 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
8122 }
8123 \def\@Reset[#1]#2{%
8124 \typeout{Sorry, TeXpider does not yet support FORMs}%
8125 }
8126 \def\@Submit[#1]#2{%
8127 \typeout{Sorry, TeXpider does not yet support FORMs}%
8128 }
8129 </vtexhtml>
8130 <*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.

```

8131 \ifx\mediaheight\@undefined
8132 \else
8133 \ifx\mediaheight\relax
8134 \else
8135 \ifHy@setpagesize
8136 \providecommand*{\VTeXInitMediaSize}{%
8137 \@ifundefined{stockwidth}{%
8138 \ifdim\paperheight>0pt %

```



```

8139         \setlength\mediaheight\paperheight
8140     \fi
8141     \ifdim\paperheight>0pt %
8142         \setlength\mediawidth\paperwidth
8143     \fi
8144 }{%
8145     \ifdim\stockheight>0pt %
8146         \setlength\mediaheight\stockheight
8147     \fi
8148     \ifdim\stockwidth>0pt %
8149         \setlength\mediawidth\stockwidth
8150     \fi
8151 }%
8152 }%
8153 \AtBeginDocument{\VTeXInitMediaSize}%
8154 \fi
8155 \Hy@DisableOption{setpagesize}%
8156 \fi
8157 \fi

```

Older versions of VTeX require xyz in lower case.

```

8158 \providecommand*\@pdfview{xyz}
8159 \providecommand*\@pdfborder{0 0 1}
8160 \providecommand*\@pdfborderstyle{}
8161 \let\CurrentBorderColor\@linkbordercolor
8162 \def\hyper@anchor#1{%
8163     \Hy@SaveLastskip
8164     \begingroup
8165         \let\protect=\string
8166         \hyper@chars
8167         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
8168     \endgroup
8169     \Hy@activeanchortrue
8170     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8171     \Hy@activeanchorfalse
8172     \Hy@RestoreLastskip
8173 }
8174 \def\hyper@anchorstart#1{%
8175     \Hy@SaveLastskip
8176     \begingroup
8177         \hyper@chars
8178         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
8179     \endgroup
8180     \Hy@activeanchortrue
8181 }
8182 \def\hyper@anchorend{%
8183     \Hy@activeanchorfalse
8184     \Hy@RestoreLastskip
8185 }
8186 \def\@urltype{url}
8187 \def\Hy@undefinedname{UNDEFINED}
8188 \def\hyper@linkstart#1#2{%
8189     \Hy@pstringdef\Hy@pstringURI{#2}%
8190     \expandafter\Hy@colorlink\csname @#1color\endcsname
8191     \@ifundefined{@#1bordercolor}{%
8192         \let\CurrentBorderColor\relax
8193     }{%
8194         \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%

```

```

8195 }%
8196 \def\Hy@tempa{#1}%
8197 \ifx\Hy@tempa\@urltype
8198   \special{!%
8199     aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
8200     a=<%
8201       \ifHy@pdfa /F 4\fi
8202       \Hy@setpdfborder
8203       \ifx\CurrentBorderColor\relax
8204       \else
8205         /C [\CurrentBorderColor]%
8206       \fi
8207     >%
8208   }%
8209 \else
8210   \protected@edef\Hy@testname{#2}%
8211   \ifx\Hy@testname\@empty
8212     \let\Hy@testname\Hy@undefinedname
8213   \fi
8214   \special{!%
8215     aref \expandafter\HyperDestNameFilter
8216         \expandafter{\Hy@testname};;%
8217     a=<%
8218       \ifHy@pdfa /F 4\fi
8219       \Hy@setpdfborder
8220       \ifx\CurrentBorderColor\relax
8221       \else
8222         /C [\CurrentBorderColor]%
8223       \fi
8224     >%
8225   }%
8226 \fi
8227 }
8228 \def\hyper@linkend{%
8229   \special{!endaref}%
8230   \Hy@endcolorlink
8231 }
8232 \def\hyper@linkfile#1#2#3{%
8233   \leavevmode
8234   \special{!%
8235     aref <%
8236       \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
8237     f=#2>#3;%
8238     a=<%
8239       \ifHy@pdfa /F 4\fi
8240       \Hy@setpdfborder
8241       \ifx\@filebordercolor\relax
8242       \else
8243         /C [\@filebordercolor]%
8244       \fi
8245     >%
8246   }%
8247   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
8248   \special{!endaref}%
8249 }
8250 \def\hyper@linkurl#1#2{%
8251   \begingroup

```

```

8252 \Hy@pstringdef\Hy@pstringURI{#2}%
8253 \hyper@chars
8254 \leavevmode
8255 \special{!%
8256   aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
8257   a=<%
8258     \ifHy@pdfa /F 4\fi
8259     \Hy@setpdfborder
8260     \ifx\@urlbordercolor\relax
8261     \else
8262       /C [\@urlbordercolor]%
8263     \fi
8264   >%
8265 }%
8266 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
8267 \special{!endaref}%
8268 \endgroup
8269 }
8270 \def\hyper@link#1#2#3{%
8271   \@ifundefined{#@#1bordercolor}{%
8272     \let\CurrentBorder\relax
8273   }{%
8274     \edef\CurrentBorder{\csname @#1bordercolor\endcsname}%
8275   }%
8276   \leavevmode
8277   \protected@edef\Hy@testname{#2}%
8278   \ifx\Hy@testname\@empty
8279     \let\Hy@testname\Hy@undefinedname
8280   \fi
8281   \special{!%
8282     aref \expandafter\HyperDestNameFilter
8283       \expandafter{\Hy@testname};%
8284     a=<%
8285       \ifHy@pdfa /F 4\fi
8286       \Hy@setpdfborder
8287       \ifx\CurrentBorder\relax
8288       \else
8289         /C [\CurrentBorder]%
8290       \fi
8291     >%
8292   }%
8293   \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
8294   \special{!endaref}%
8295 }
8296 \def\hyper@image#1#2{%
8297   \hyper@linkurl{#2}{#1}%
8298 }
8299 \def\@hyper@launch run:#1\#2#3{%
8300   \Hy@pstringdef\Hy@pstringF{#1}%
8301   \Hy@pstringdef\Hy@pstringP{#3}%
8302   \leavevmode
8303   \special{!aref %
8304     <u=%
8305       /Type/Action%
8306       /S/Launch%
8307       /F(\Hy@pstringF)%
8308       \Hy@SetNewWindow

```

```

8309     \ifx\#3\else /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>\fi%
8310     >;%
8311     a=<%
8312     \ifHy@pdfa /F 4\fi
8313     \Hy@setpdfborder
8314     \ifx\@runbordercolor\relax
8315     \else
8316     /C[\@runbordercolor]%
8317     \fi
8318     >%
8319     }%
8320     \Hy@colorlink\@runcolor#2\Hy@endcolorlink
8321     \special{!endaref}%
8322 }
8323 \def\Acrobatmenu#1#2{%
8324 \Hy@Acrobatmenu{#1}{#2}{%
8325 \special{!%
8326   aref <u=/S /Named /N /#1>;%
8327   a=<%
8328   \ifHy@pdfa /F 4\fi
8329   \Hy@setpdfborder
8330   \ifx\@menubordercolor\relax
8331   \else
8332   /C[\@menubordercolor]%
8333   \fi
8334   >%
8335   }%
8336   \Hy@colorlink\@menucolor#2\Hy@endcolorlink
8337   \special{!endaref}%
8338   }%
8339 }

```

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.

```

8340 \ifnum\Hy@VTeXversion<702 %
8341 \else
8342 \def\hyper@pagetransition{%
8343 \ifx\@pdfpagetransition\relax
8344 \else
8345 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

8346 \else
8347 \hvtex@parse@trans\@pdfpagetransition
8348 \fi
8349 \fi
8350 }%

```

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

Syntax of \TeX `\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:

```

8351 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
8352 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
8353 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
8354 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
8355 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
8356 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
8357 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

8358 \def\hvtex@par@dimension{/Dm}%
8359 \def\hvtex@par@direction{/Di}%
8360 \def\hvtex@par@duration{/D}%
8361 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

8362 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}%

```

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

```

8363 \def\hvtex@gettoken#1 #2\@nil{%
8364   \edef\hvtex@token{#1}%
8365   \edef\hvtex@buffer{#2}%
8366 }%
8367 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

8368 \let\hvtex@trans@code\@empty
8369 \let\hvtex@param@dimension\@empty
8370 \let\hvtex@param@direction\@empty
8371 \let\hvtex@param@duration\@empty
8372 \let\hvtex@param@motion\@empty
8373 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

8374 \hvtex@gettoken
8375 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

8376 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

8377 \else
8378 \hvtex@gettoken
8379 \fi
8380 \fi
8381 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

8382 \hvtex@trans@params
8383 }%

```

Reentrant macro to parse optional parameters.

```

8384 \def\hvtex@trans@params{%
8385   \ifx\hvtex@buffer\@empty
8386   \else
8387     \hvtex@gettoken
8388     \let\hvtex@trans@par\hvtex@token
8389     \ifx\hvtex@buffer\@empty
8390     \else
8391       \hvtex@gettoken
8392       \ifx\hvtex@trans@par\hvtex@par@duration

```

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

```

8393       \let\hvtex@param@duration\hvtex@token
8394       \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

8395       \expandafter\edef\expandafter\hvtex@param@motion
8396       \expandafter{\expandafter\@gobble\hvtex@token}%
8397       \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

8398       \expandafter\edef\expandafter\hvtex@param@dimension
8399       \expandafter{\expandafter\@gobble\hvtex@token}%
8400       \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).

```

8401       \let\hvtex@param@direction\hvtex@token
8402       \fi\fi\fi\fi
8403       \fi
8404       \fi
8405       \ifx\hvtex@buffer\@empty
8406       \let\next\hvtex@produce@trans
8407       \else
8408       \let\next\hvtex@trans@params
8409       \fi
8410       \next
8411   }%

```

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

```

8412 \def\hvtex@produce@trans{%
8413   \let\vtex@trans@special\@empty
8414   \if S\hvtex@trans@code
8415     \edef\vtex@trans@special{\hvtex@trans@code
8416       \hvtex@param@dimension\hvtex@param@motion}%
8417   \else\if B\hvtex@trans@code
8418     \edef\vtex@trans@special{%
8419       \hvtex@trans@code\hvtex@param@dimension
8420     }%
8421   \else\if X\hvtex@trans@code
8422     \edef\vtex@trans@special{%
8423       \hvtex@trans@code\hvtex@param@motion
8424     }%
8425   \else\if W\hvtex@trans@code
8426     \edef\vtex@trans@special{%
8427       \hvtex@trans@code\hvtex@param@direction
8428     }%
8429   \else\if D\hvtex@trans@code

```

```

8430     \let\vtex@trans@special\hvtex@trans@code
8431     \else\if R\hvtex@trans@code
8432         \let\vtex@trans@special\hvtex@trans@code
8433     \else\if G\hvtex@trans@code
8434         \edef\vtex@trans@special{%
8435             \hvtex@trans@code\hvtex@param@direction
8436         }%
8437     \fi\fi\fi\fi\fi\fi\fi
8438     \ifx\vtex@trans@special\@empty
8439     \else
8440         \ifx\hvtex@param@duration\@empty
8441         \else
8442             \setlength{\dimen@}{\hvtex@param@duration\p}%

```

I'm not guilty of possible overflow.

```

8443         \multiply\dimen@\@m
8444         \edef\vtex@trans@special{%
8445             \vtex@trans@special,\strip@pt\dimen@
8446         }%
8447     \fi

```

And all the mess is just for this.

```

8448     \special{!trans \vtex@trans@special}%
8449     \fi
8450 }%

8451 \def\hyper@pageduration{%
8452     \ifx\@pdfpageduration\relax
8453     \else
8454         \ifx\@pdfpageduration\@empty
8455             \special{!duration-}%
8456         \else
8457             \special{!duration \@pdfpageduration}%
8458         \fi
8459     \fi
8460 }%

8461 \def\hyper@pagehidden{%
8462     \ifHy@useHidKey
8463         \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
8464     \fi
8465 }%

8466 \g@addto@macro\Hy@EveryPageBoxHook{%
8467     \hyper@pagetransition
8468     \hyper@pageduration
8469     \hyper@pagehidden
8470 }%
8471 \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

```

8472 \ifx\@pdfproducer\relax
8473   \def\@pdfproducer{VTeX}%
8474   \ifnum\Hy@VTeXversion>\z@
8475     \count@\VTeXversion
8476     \divide\count@ 100 %
8477     \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
8478     \multiply\count@ -100 %
8479     \advance\count@\VTeXversion
8480     \edef\@pdfproducer{%
8481       \@pdfproducer
8482       .\ifnum\count@<10 0\fi\the\count@
8483       \ifx\VTeXOS\undefined\else
8484         \ifnum\VTeXOS>0 %
8485           \ifnum\VTeXOS<6 %
8486             \space(%
8487             \ifcase\VTeXOS
8488               \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
8489             \fi
8490             )%
8491           \fi
8492         \fi
8493       \fi
8494       ,\space
8495       \ifnum\OpMode=\@ne PDF\else PS\fi
8496       \space backend%
8497       \ifx\gexmode\undefined\else
8498         \ifnum\gexmode>\z@\space with GeX\fi
8499       \fi
8500     }%
8501   \fi
8502 \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).

```

8503 \def\PDF@SetupDoc{%
8504   \ifx\@pdfpagescrop\@empty
8505   \else
8506     \special{!pdfinfo b=<\@pdfpagescrop>}%
8507   \fi
8508   \ifx\@pdfstartpage\@empty
8509   \else
8510     \ifx\@pdfstartview\@empty
8511     \else
8512       \special{!onopen Page\@pdfstartpage}%
8513     \fi

```



```

8514 \fi
8515 \special{!pdfinfo p=<\/\@pdfpagemode>}%
8516 \ifx\@baseurl\@empty
8517 \else
8518 \special{!pdfinfo u=<<<\/Base (\@baseurl)>>>}%
8519 \fi
8520 \special{!pdfinfo v=<<<%
8521 \ifHy@toolbar\else /HideToolbar true\fi
8522 \ifHy@menubar\else /HideMenubar true\fi
8523 \ifHy@windowui\else /HideWindowUI true\fi
8524 \ifHy@fitwindow /FitWindow true\fi
8525 \ifHy@centerwindow /CenterWindow true\fi
8526 \ifHy@displaydoctitle /DisplayDocTitle true\fi
8527 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8528 \Hy@UseNameKey{Direction}\@pdfdirection
8529 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8530 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8531 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8532 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8533 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8534 \Hy@UseNameKey{Duplex}\@pdfduplex
8535 \ifx\@pdfpicktraybypdfsize\@empty
8536 \else
8537 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8538 \fi
8539 \ifx\@pdfprintpagerange\@empty
8540 \else
8541 /PrintPageRange[\@pdfprintpagerange]%
8542 \fi
8543 \ifx\@pdfnumcopies\@empty
8544 \else
8545 /NumCopies \@pdfnumcopies
8546 \fi
8547 >>>}%
8548 \ifx\@pdfpagelayout\@empty
8549 \else
8550 \special{!pdfinfo l=<\/\@pdfpagelayout\space>}%
8551 \fi
8552 }%
8553 \def\PDF@FinishDoc{%
8554 \Hy@UseMaketitleInfos
8555 \special{!pdfinfo a=<\/\@pdfauthor>}%
8556 \special{!pdfinfo t=<\/\@pdftitle>}%
8557 \special{!pdfinfo s=<\/\@pdfsubject>}%
8558 \special{!pdfinfo c=<\/\@pdfcreator>}%
8559 \ifx\@pdfproducer\relax
8560 \else
8561 \special{!pdfinfo r=<\/\@pdfproducer>}%
8562 \fi
8563 \special{!pdfinfo k=<\/\@pdfkeywords>}%
8564 \Hy@DisableOption{pdfauthor}%
8565 \Hy@DisableOption{pdftitle}%
8566 \Hy@DisableOption{pdfsubject}%
8567 \Hy@DisableOption{pdfcreator}%
8568 \Hy@DisableOption{pdfcreationdate}%
8569 \Hy@DisableOption{pdfmoddate}%
8570 \Hy@DisableOption{pdfproducer}%

```

```

8571 \Hy@DisableOption{pdfkeywords}%
8572 }
8573 </vtex>

```

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.

```

8574 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
8575 <package>\providecommand*\Hy@DistillerDestFix{}
8576 <*pdfmark | dviwindo>
8577 \def\Hy@DistillerDestFix{%
8578   \begingroup
8579     \let\x\literalps@out

```

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

```

8580   \ifnum \@ifundefined{OpMode}{0}{%
8581     \@ifundefined{gexmode}{0}{%
8582       \ifnum\gexmode>0 \OpMode\else 0\fi
8583     }>1 %
8584   \def\x##1{%
8585     \immediate\special{!=##1}%
8586   }%
8587 \fi
8588 \x{%
8589   /product where{%
8590     pop %
8591     product(Distiller)search{%
8592       pop pop pop %
8593       version(.)search{%
8594         exch pop exch pop%
8595         (3011)eq{%
8596           gsave %
8597           newpath 0 0 moveto closepath clip%
8598           /Courier findfont 10 scalefont setfont %
8599           72 72 moveto(.)show %
8600           grestore%
8601         }if%
8602       }{pop}ifelse%
8603     }{pop}ifelse%
8604   }if%
8605 }%
8606 \endgroup
8607 }
8608 </pdfmark | dviwindo>

```

46.8 Direct pdfmark support

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

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

and the correct definitions of the following PostScript procedures:

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

```

8609 <*pdfmark>
8610 \Hy@breaklinks@unsupported
8611 \def\hyper@anchor#1{%
8612   \Hy@SaveLastskip
8613   \beginngroup
8614     \pdfmark[\anchor@spot]{%
8615       pdfmark=/DEST,%
8616       linktype=anchor,%
8617       View=/\@pdfview \@pdfviewparams,%
8618       DestAnchor={#1}%
8619     }%
8620   \endgroup
8621   \Hy@RestoreLastskip
8622 }
8623 \@ifundefined{hyper@anchorstart}{\endinput}{}
8624 \def\hyper@anchorstart#1{%
8625   \Hy@SaveLastskip
8626   \literalps@out{H.S}%
8627   \xdef\hyper@currentanchor{#1}%
8628   \Hy@activeanchortrue
8629 }
8630 \def\hyper@anchorend{%
8631   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
8632   \pdfmark{%
8633     pdfmark=/DEST,%
8634     linktype=anchor,%
8635     View=/\@pdfview \@pdfviewparams,%
8636     DestAnchor=\hyper@currentanchor,%
8637   }%
8638   \Hy@activeanchorfalse
8639   \Hy@RestoreLastskip
8640 }
8641 \def\hyper@linkstart#1#2{%
8642   \ifHy@breaklinks
8643   \else
8644     \leavevmode\hbox\bgroup
8645     \fi
8646     \expandafter\Hy@colorlink\csname @#1color\endcsname
8647     \literalps@out{H.S}%
8648     \xdef\hyper@currentanchor{#2}%
8649     \gdef\hyper@currentlinktype{#1}%
8650 }
8651 \def\hyper@linkend{%
8652   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
8653   \@ifundefined{@\hyper@currentlinktype bordercolor}{%
8654     \let\Hy@tempcolor\relax

```

```

8655 }{%
8656   \edef\Hy@tempcolor{%
8657     \csname @\hyper@currentlinktype bordercolor\endcsname
8658   }%
8659 }%
8660 \pdfmark{%
8661   pdfmark=/ANN,%
8662   linktype=link,%
8663   Subtype=/Link,%
8664   PDFAFlags=4,%
8665   Dest=\hyper@currentanchor,%
8666   AcroHighlight=\@pdfhighlight,%
8667   Border=\@pdfborder,%
8668   BorderStyle=\@pdfborderstyle,%
8669   Color=\Hy@tempcolor,%
8670   Raw=H.B%
8671 }%
8672 \Hy@endcolorlink
8673 \ifHy@breaklinks
8674 \else
8675   \egroup
8676 \fi
8677 }

```

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.

```

8678 \begingroup
8679 \catcode'P=12 %
8680 \catcode'T=12 %
8681 \lowercase{\endgroup
8682 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
8683 }
8684 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

\hyper@pagetransition

```

8685 \def\hyper@pagetransition{%
8686   \ifx\@pdfpagetransition\relax
8687   \else
8688     \ifx\@pdfpagetransition\@empty
8689       % 1. Does an old entry have to be deleted?
8690       % 2. If 1=yes, how to delete?
8691     \else
8692       \pdfmark{%
8693         pdfmark=/PUT,%
8694         Raw={%
8695           \string{ThisPage\string}%
8696           <</Trans << /S /\@pdfpagetransition\space >> >>%
8697         }%
8698       }%
8699     \fi
8700 \fi
8701 }

```

\hyper@pageduration

```

8702 \def\hyper@pageduration{%
8703   \ifx\@pdfpageduration\relax

```

```

8704 \else
8705   \ifx\@pdfpageduration\@empty
8706     % 1. Does an old entry have to be deleted?
8707     % 2. If 1=yes, how to delete?
8708   \else
8709     \pdfmark{%
8710       pdfmark=/PUT,%
8711       Raw={%
8712         \string{ThisPage\string}%
8713         <</Dur \@pdfpageduration>>%
8714       }%
8715     }%
8716   \fi
8717 \fi
8718 }

```

\hyper@pagehidden

```

8719 \def\hyper@pagehidden{%
8720   \ifHy@useHidKey
8721     \pdfmark{%
8722       pdfmark=/PUT,%
8723       Raw={%
8724         \string{ThisPage\string}%
8725         <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
8726       }%
8727     }%
8728   \fi
8729 }

8730 \g@addto@macro\Hy@EveryPageBoxHook{%
8731   \hyper@pagetransition
8732   \hyper@pageduration
8733   \hyper@pagehidden
8734 }

8735 \def\hyper@image#1#2{%
8736   \hyper@linkurl{#2}{#1}%
8737 }

8738 \def\Hy@undefinedname{UNDEFINED}
8739 \def\hyper@link#1#2#3{%
8740   \@ifundefined{#1bordercolor}{%
8741     \let\Hy@tempcolor\relax
8742   }{%
8743     \edef\Hy@tempcolor{\csname #1bordercolor\endcsname}%
8744   }%
8745   \begin{group}
8746     \protected@edef\Hy@testname{#2}%
8747     \ifx\Hy@testname\@empty
8748       \let\Hy@testname\Hy@undefinedname
8749     \fi
8750     \pdfmark[#{3}]{%
8751       Color=\Hy@tempcolor,%
8752       linktype={#1},%
8753       AcroHighlight=\@pdfhighlight,%
8754       Border=\@pdfborder,%
8755       BorderStyle=\@pdfborderstyle,%
8756       pdfmark=/ANN,%
8757       Subtype=/Link,%

```

```

8758         PDFAFlags=4,%
8759         Dest=\Hy@testname
8760     }%
8761 \endgroup
8762 }
8763 \newtoks\pdf@docset
8764 \def\PDF@FinishDoc{%
8765     \Hy@UseMaketitleInfos
8766     \let\Hy@temp\@empty
8767     \ifx\@pdfcreationdate\@empty
8768     \else
8769         \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
8770     \fi
8771     \ifx\@pdfmoddate\@empty
8772     \else
8773         \expandafter\def\expandafter\Hy@temp\expandafter{%
8774             \Hy@temp
8775             ModDate=\@pdfmoddate,%
8776         }%
8777     \fi
8778     \ifx\@pdfproducer\relax
8779     \else
8780         \expandafter\def\expandafter\Hy@temp\expandafter{%
8781             \Hy@temp
8782             Producer=\@pdfproducer,%
8783         }%
8784     \fi
8785     \expandafter
8786     \pdfmark\expandafter{%
8787         \Hy@temp
8788         pdfmark=/DOCINFO,%
8789         Title=\@pdftitle,%
8790         Subject=\@pdfsubject,%
8791         Creator=\@pdfcreator,%
8792         Author=\@pdfauthor,%
8793         Keywords=\@pdfkeywords
8794     }%
8795     \Hy@DisableOption{pdfauthor}%
8796     \Hy@DisableOption{pdftitle}%
8797     \Hy@DisableOption{pdfsubject}%
8798     \Hy@DisableOption{pdfcreator}%
8799     \Hy@DisableOption{pdfcreationdate}%
8800     \Hy@DisableOption{pdfmoddate}%
8801     \Hy@DisableOption{pdfproducer}%
8802     \Hy@DisableOption{pdfkeywords}%
8803 }
8804 \def\PDF@SetupDoc{%
8805     \def\Hy@temp{}%
8806     \ifx\@pdfstartpage\@empty
8807     \else
8808         \ifx\@pdfstartview\@empty
8809         \else
8810             \edef\Hy@temp{%
8811                 ,Page=\@pdfstartpage
8812                 ,View=\@pdfstartview
8813             }%
8814         \fi

```

```

8815 \fi
8816 \edef\Hy@temp{%
8817     \noexpand\pdfmark{%
8818         pdfmark=/DOCVIEW,%
8819         PageMode=/\@pdfpagemode
8820         \Hy@temp
8821     }%
8822 }%
8823 \Hy@temp
8824 \ifx\@pdfpagescrop\@empty
8825 \else
8826     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
8827 \fi
8828 \edef\Hy@temp{%
8829     \ifHy@toolbar\else /HideToolbar true\fi
8830     \ifHy@menubar\else /HideMenubar true\fi
8831     \ifHy>windowui\else /HideWindowUI true\fi
8832     \ifHy@fitwindow /FitWindow true\fi
8833     \ifHy@centerwindow /CenterWindow true\fi
8834     \ifHy@displaydoctitle /DisplayDocTitle true\fi
8835     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8836     \Hy@UseNameKey{Direction}\@pdfdirection
8837     \Hy@UseNameKey{ViewArea}\@pdfviewarea
8838     \Hy@UseNameKey{ViewClip}\@pdfviewclip
8839     \Hy@UseNameKey{PrintArea}\@pdfprintarea
8840     \Hy@UseNameKey{PrintClip}\@pdfprintclip
8841     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8842     \Hy@UseNameKey{Duplex}\@pdfduplex
8843     \ifx\@pdfpicktraybypdfsize\@empty
8844     \else
8845         /PickTrayByPDFSize \@pdfpicktraybypdfsize
8846     \fi
8847     \ifx\@pdfprintpagerange\@empty
8848     \else
8849         /PrintPageRange[\@pdfprintpagerange]%
8850     \fi
8851     \ifx\@pdfnumcopies\@empty
8852     \else
8853         /NumCopies \@pdfnumcopies
8854     \fi
8855 }%
8856 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8857 \pdfmark{%
8858     pdfmark=/PUT,%
8859     Raw={%
8860         \string{Catalog\string}<<%
8861         \ifx\Hy@temp\@empty
8862         \else
8863             /ViewerPreferences<<\Hy@temp>>%
8864         \fi
8865         \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8866         \ifx\@pdflang\@empty
8867         \else
8868             /Lang(\@pdflang)%
8869         \fi
8870         \ifx\@baseurl\@empty
8871         \else

```

```

8872      /URI<</Base(\Hy@pstringB)>>%
8873      \fi
8874      >>%
8875      }%
8876      }%
8877  }
8878  </pdfmark>
8879  <*pdfmarkbase>

```

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.

```

8880 \newif\ifHy@pdfmarkerror
8881 \def\pdfmark{\@ifnextchar [{\pdfmark@}{\pdfmark@[]}}
8882 \def\pdfmark@[#1]#2{%
8883   \Hy@pdfmarkerrorfalse
8884   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
8885   \@processme
8886   \let\pdf@type\relax
8887   \setkeys{PDF}{#2}%
8888   \ifHy@pdfmarkerror
8889   \else
8890     \ifx\pdf@type\relax
8891       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
8892       \ifx\#1\%
8893         \else
8894           \pdf@rect{#1}%
8895         \fi
8896       \else
8897         \ifx\#1\%
8898           \literalps@out{%
8899             [\the\pdf@toks\space\pdf@type\space pdfmark%
8900             ]%
8901           \else
8902             \@ifundefined{@\pdf@linktype color}{%
8903               \Hy@colorlink\@linkcolor
8904             }{%
8905               \expandafter\Hy@colorlink
8906                 \csname @\pdf@linktype color\endcsname
8907             }%
8908             \pdf@rect{#1}%
8909             \literalps@out{%
8910               [\the\pdf@toks\space\pdf@type\space pdfmark%
8911               ]%
8912             \Hy@endcolorlink
8913           \fi
8914         \fi
8915       \fi
8916 }

```

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}

8917 \newsavebox{\pdf@box}
8918 \providecommand*{\Hy@setouterhbox}{\sbox}
8919 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
8920 \def\Hy@DEST{/DEST}
8921 \def\pdf@rect#1{%
8922   \leavevmode
8923   \ifHy@breaklinks
8924     \Hy@setouterhbox\pdf@box{#1}%
8925   \else
8926     \sbox\pdf@box{#1}%
8927   \fi
8928   \dimen@ht\pdf@box
8929   \ifdim\dp\pdf@box=\z@
8930     \literalps@out{H.S}%
8931   \else
8932     \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
8933   \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...).

```

8934 \ifHy@breaklinks
8935   \expandafter\Hy@breaklinksunhbox
8936 \else
8937   \expandafter\box
8938 \fi
8939 \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

8940 \ifdim\dimen@=\z@
8941   \literalps@out{H.R}%
8942 \else
8943   \raise\dimen@\hbox{\literalps@out{H.R}}%
8944 \fi
8945 \ifx\pdf@type\Hy@DEST
8946 \else
8947   \pdf@addtoksx{H.B}%
8948 \fi
8949 }

```

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.

```

8950 \newtoks\pdf@toks
8951 \newtoks\pdf@defaulttoks
8952 \pdf@defaulttoks={}
8953 \def\pdf@addtoks#1#2{%
8954   \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
8955   \@processme
8956 }
8957 \def\pdf@addtoksx#1{%

```

```

8958 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
8959 \@processme
8960 }
8961 \def\PDFdefaults#1{%
8962 \pdf@defaulttoks={#1}%
8963 }

```

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

```

8964 % what is the type of pdfmark?
8965 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
8966 % what is the link type?
8967 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
8968 \def\pdf@linktype{link}
8969 % parameter is a stream of PDF
8970 \define@key{PDF}{Raw}{\pdf@addtoks{x{#1}}
8971 % parameter is a name
8972 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
8973 % parameter is a array
8974 \define@key{PDF}{Border}{%
8975 \edef\Hy@temp{#1}%
8976 \ifx\Hy@temp\@empty
8977 \else
8978 \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
8979 \fi
8980 }
8981 \let\Hy@BorderArrayPatch\@empty
8982 % parameter is a dictionary
8983 \define@key{PDF}{BorderStyle}{%
8984 \edef\Hy@temp{#1}%
8985 \ifx\Hy@temp\@empty
8986 \else
8987 \pdf@addtoks{<<#1>>}{BS}%
8988 \fi
8989 }
8990 % parameter is a array
8991 \define@key{PDF}{Color}{%
8992 \ifx\relax#1\relax
8993 \else
8994 \pdf@addtoks{[#1]}{Color}% hash-ok
8995 \fi
8996 }
8997 % parameter is a string
8998 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
8999 % parameter is a integer
9000 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
9001 % parameter is a array
9002 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
9003 % parameter is a string
9004 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
9005 % parameter is a string or file
9006 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
9007 % parameter is a destination
9008 \define@key{PDF}{Dest}{%
9009 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9010 \ifx\Hy@pstringDest\@empty
9011 \Hy@pdfmarkerrortrue
9012 \Hy@Warning{Destination with empty name ignored}%
9013 \else

```

```

9014 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
9015 \fi
9016 }
9017 \define@key{PDF}{DestAnchor}{%
9018 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9019 \ifx\Hy@pstringDest\empty
9020 \Hy@pdfmarkerrortrue
9021 \Hy@Warning{Destination with empty name ignored}%
9022 \else
9023 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
9024 \fi
9025 }
9026 % parameter is a string
9027 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
9028 % parameter is a string
9029 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
9030 % parameter is a int
9031 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
9032 \define@key{PDF}{PDFAFlags}{%
9033 \ifHy@pdfa
9034 \pdf@addtoks{#1}{F}%
9035 \fi
9036 }
9037 % parameter is a name
9038 \define@key{PDF}{AcroHighlight}{%
9039 \begingroup
9040 \edef\x{#1}%
9041 \expandafter\endgroup\ifx\x\empty
9042 \else
9043 \pdf@addtoks{#1}{H}%
9044 \fi
9045 }
9046 % parameter is a string
9047 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
9048 % parameter is a string
9049 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
9050 % parameter is a string
9051 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9052 % parameter is a string
9053 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
9054 % parameter is a Boolean
9055 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
9056 % parameter is a integer or name
9057 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
9058 % parameter is a name
9059 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
9060 % parameter is a string
9061 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
9062 % parameter is a array
9063 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
9064 % parameter is a integer
9065 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
9066 % parameter is a name
9067 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
9068 % parameter is a string
9069 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
9070 % parameter is a string

```

```

9071 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
9072 % parameter is a string
9073 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
9074 % parameter is an array
9075 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
9076 % parameter is a string
9077 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

9078 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
9079 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
9080 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
9081 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9082 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
9083 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
9084 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
9085 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9086 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
9087 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
9088 </pdfmarkbase>
9089 <*pdfmark>
9090 \def\Acrobatmenu#1#2{%
9091   \Hy@Acrobatmenu{#1}{#2}{%
9092     \pdfmark[{#2}]{%
9093       linktype=menu,%
9094       pdfmark=/ANN,%
9095       AcroHighlight=\@pdfhighlight,%
9096       Border=\@pdfborder,%
9097       BorderStyle=\@pdfborderstyle,%
9098       Action={<< /Subtype /Named /N /#1 >>},%
9099       Subtype=/Link,%
9100       PDFAFlags=4%
9101     }%
9102   }%
9103 }

```

And now for some useful examples:

```

9104 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
9105 \def\PDFNextPage@[#1]#2{%
9106   \pdfmark[{#2}]{%
9107     #1,%
9108     Border=\@pdfborder,%
9109     BorderStyle=\@pdfborderstyle,%
9110     Color=.2 .1 .5,%
9111     pdfmark=/ANN,%
9112     Subtype=/Link,%
9113     PDFAFlags=4,%
9114     Page=/Next%
9115   }%
9116 }
9117 \def\PDFPreviousPage{%
9118   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
9119 }
9120 \def\PDFPreviousPage@[#1]#2{%
9121   \pdfmark[{#2}]{%
9122     #1,%
9123     Border=\@pdfborder,%
9124     BorderStyle=\@pdfborderstyle,%

```

```

9125     Color=.4 .4 .1,%
9126     pdfmark=/ANN,%
9127     Subtype=/Link,%
9128     PDFAFlags=4,%
9129     Page=/Prev%
9130 }%
9131 }
9132 \def\PDFOpen#1{%
9133   \pdfmark{#1,pdfmark=/DOCVIEW}%
9134 }

```

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

```

9135 \def\hyper@linkurl#1#2{%
9136   \begingroup
9137     \Hy@pstringdef\Hy@pstringURI{#2}%
9138     \hyper@chars
9139     \leavevmode
9140     \pdfmark[{#1}]{%
9141       pdfmark=/ANN,%
9142       linktype=url,%
9143       AcroHighlight=\@pdfhighlight,%
9144       Border=\@pdfborder,%
9145       BorderStyle=\@pdfborderstyle,%
9146       Color=\@urlbordercolor,%
9147       Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
9148       Subtype=/Link,%
9149       PDFAFlags=4%
9150     }%
9151   \endgroup
9152 }
9153 \def\hyper@linkfile#1#2#3{%
9154   \begingroup
9155     \Hy@pstringdef\Hy@pstringF{#2}%
9156     \Hy@pstringdef\Hy@pstringD{#3}%
9157     \leavevmode
9158     \pdfmark[{#1}]{%
9159       pdfmark=/ANN,%
9160       Subtype=/Link,%
9161       PDFAFlags=4,%
9162       AcroHighlight=\@pdfhighlight,%
9163       Border=\@pdfborder,%
9164       BorderStyle=\@pdfborderstyle,%
9165       linktype=file,%
9166       Color=\@filebordercolor,%
9167       Action={%
9168         <<%
9169           /S/GoToR%
9170           \Hy@SetNewWindow
9171           /F(\Hy@pstringF)%
9172           /D\ifx\#3\0 \@pdfstartview\else(\Hy@pstringD)cvn\fi
9173         >>%
9174       }%
9175     }%
9176   \endgroup
9177 }
9178 \def\@hyper@launch run:#1\#2#3{%
9179   \begingroup
9180     \Hy@pstringdef\Hy@pstringF{#1}%

```

```

9181 \Hy@pstringdef\Hy@pstringP{#3}%
9182 \leavevmode
9183 \pdfmark[#{#2}]{%
9184   pdfmark=/ANN,%
9185   Subtype=/Link,%
9186   PDFAFlags=4,%
9187   AcroHighlight=\@pdfhighlight,%
9188   Border=\@pdfborder,%
9189   BorderStyle=\@pdfborderstyle,%
9190   linktype=run,%
9191   Color=\@runbordercolor,%
9192   Action={%
9193     <<%
9194     /S/Launch%
9195     \Hy@SetNewWindow
9196     /F(\Hy@pstringF)%
9197     \ifx\#3\%
9198     \else
9199     /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9200     \fi
9201     >>%
9202   }%
9203 }%
9204 \endgroup
9205 }
9206 </pdfmark>

```

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.

```

9207 <*dvips>
9208 \providecommand*{\XR@ext}{pdf}
9209 \def\Hy@raisedlink{}
9210 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
9211 \def\headerps@out#1{\special{! #1}}%
9212 \input{pdfmark.def}%
9213 \ifx\@pdfproducer\relax
9214   \def\@pdfproducer{dvips + Distiller}%
9215 \fi
9216 \providecommand*\@pdfborder{0 0 1}
9217 \providecommand*\@pdfborderstyle{}
9218 \providecommand*\@pdfview{XYZ}
9219 \providecommand*\@pdfviewparams{ H.V}
9220 \def\Hy@BorderArrayPatch{BorderArrayPatch}
9221 \g@addto@macro\Hy@FirstPageHook{%
9222   \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.

```
9223 /DvipsToPDF{72.27 mul Resolution div} def%
9224 /PDFToDvips{72.27 div Resolution mul} def%
9225 /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.

```
9226 /BorderArrayPatch{%
9227   [exch{%
9228     dup dup type/integertype eq exch type/realtype eq or%
9229     {BPToDvips}if%
9230   }forall]%
9231 }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.

```
9232 /HyperBorder {1 PDFToDvips} def%
9233 /H.V {pdf@hoff pdf@voff null} def%
9234 /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

```
9235 /H.S {%
9236   currentpoint %
9237   HyperBorder add /pdf@lly exch def %
9238   dup DvipsToPDF 72 add /pdf@hoff exch def %
9239   HyperBorder sub /pdf@llx exch def%
9240 } 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`

```
9241 /H.L {%
9242   2 sub dup%
9243   /HyperBasePt exch def %
9244   PDFToDvips /HyperBaseDvips exch def %
9245   currentpoint %
9246   HyperBaseDvips sub /pdf@ury exch def%
9247   /pdf@urx exch def%
9248 } def%
9249 /H.A {%
9250   H.L %
9251 % |pdf@voff| = the distance from the top of the page to a point
9252 % |\baselineskip| above the current point in PDF coordinates
9253   currentpoint exch pop %
9254   vsize 72 sub exch DvipsToPDF %
9255   HyperBasePt sub % baseline skip
```

```

9256      sub /pdf@voff exch def%
9257    } def%
9258    /H.R {%
9259      currentpoint %
9260      HyperBorder sub /pdf@ury exch def %
9261      HyperBorder add /pdf@urx exch def %
9262    % | /pdf@voff| = the distance from the top of the page to the current point, in
9263    % PDF coordinates
9264      currentpoint exch pop vsize 72 sub %
9265      exch DvipsToPDF sub /pdf@voff exch def%
9266    } def%
9267  }%
9268 }
9269 \AfterBeginDocument{%
9270   \ifx\special@paper\@empty\else
9271     \ifHy@setpagesize
9272       \special{papersize=\special@paper}%
9273     \fi
9274   \fi
9275   \Hy@DisableOption{setpagesize}%
9276 }
9277 </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.

```

9278 < *vtexpdfmark>
9279 \providecommand*{\XR@ext}{pdf}
9280 \def\Hy@raisedlink{}
9281 \def\literalps@out#1{\special{pS:#1}}%
9282 \def\headerps@out#1{\immediate\special{pS:#1}}%
9283 \input{pdfmark.def}%
9284 \ifx\@pdfproducer\relax
9285   \ifnum\OpMode=\@ne
9286     \def\@pdfproducer{VTeX}%
9287   \else
9288     \def\@pdfproducer{VTeX + Distiller}%
9289   \fi
9290 \fi
9291 \providecommand*\@pdfborder{0 0 1}
9292 \providecommand*\@pdfborderstyle{}
9293 \providecommand*\@pdfview{XYZ}
9294 \providecommand*\@pdfviewparams{ H.V}
9295 \g@addto@macro\Hy@FirstPageHook{%
9296   \headerps@out{%
9297     /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.

```

9298   /HyperBorder {1} def%
9299   /H.V {pdf@hoff pdf@voff null} def%
9300   /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: $\text{pdf@lly} = Y_c - \text{HyperBorder}$, $\text{pdf@hoff} = X_c + 72$, $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

9301    /H.S {%
9302        currentpoint %
9303        HyperBorder sub%
9304        /pdf@lly exch def %
9305        dup 72 add /pdf@hoff exch def %
9306        HyperBorder sub%
9307        /pdf@llx exch def%
9308    } def%
```

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

```

9309    /H.L {%
9310        2 sub%
9311        /HyperBasePt exch def %
9312        currentpoint %
9313        HyperBasePt add HyperBorder add%
9314        /pdf@ury exch def %
9315        HyperBorder add%
9316        /pdf@urx exch def%
9317    } def%
9318    /H.A {%
9319        H.L %
9320        currentpoint exch pop %
9321        vsize 72 sub exch %
9322        HyperBasePt add add%
9323        /pdf@voff exch def%
9324    } def%
```

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

```

9325    /H.R {%
9326        currentpoint %
9327        HyperBorder add%
9328        /pdf@ury exch def %
9329        HyperBorder add%
9330        /pdf@urx exch def %
9331        currentpoint exch pop vsize 72 sub add%
9332        /pdf@voff exch def%
9333    } def%
9334    }%
9335 }
9336 </vtxpdfmark>
```

46.11 Textures

```

9337 <*textures>
9338 \providecommand*{\XR@ext}{pdf}
```

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.

```
9339 \begingroup
9340   \obeylines %
9341   \gdef\Hy@ps@CR{\noexpand
9342     }%
9343 \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`.

```
9344 \def\literalps@out#1{%
9345   \special{postscript 0 0 transform}%
9346   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
9347 }%
9348 %
```

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.

```
9349 \def\headerps@out#1{%
9350   \special{%
9351     prepostscript TeXdict begin\Hy@ps@CR
9352       #1\Hy@ps@CR
9353     end%
9354   }%
9355 }%
9356 %
```

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.

```
9357 \g@addto@macro\Hy@FirstPageHook{%
9358   \headerps@out{%
9359     /betterpdfmark {%
9360       systemdict begin %
9361         dup /BP eq%
9362         {cleartomark gsave nulldevice []}%
9363         {dup /EP eq%
9364           {cleartomark cleartomark grestore}%
9365           {cleartomark}%
9366         }ifelse%
9367       }ifelse %
9368     end%
9369   }def\Hy@ps@CR
9370   __pdfmark__ not{/pdfmark /betterpdfmark load def}if%
9371 }% end of \headerps@out
9372 }% end of \AtBeginShipoutFirst
9373 %
9374 \input{pdfmark.def}%
9375 %
9376 \ifx\@pdfproducer\relax
```

```

9377 \def\@pdfproducer{Textures + Distiller}%
9378 \fi
9379 \providecommand*\@pdfborder{0 0 1}
9380 \providecommand*\@pdfborderstyle{}
9381 \providecommand*\@pdfview{XYZ}
9382 \providecommand*\@pdfviewparams{ H.V}
9383 %

```

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 .

```

9384 \headerps@out{%

```

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

```

9385 /vsize {\Hy@pageheight} def%
9386 /DvipsToPDF {} def%
9387 /PDFToDvips {} def%
9388 /BPToDvips {} def%
9389 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
9390 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
9391 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
9392 /H.S {%
9393     currentpoint %
9394     HyperBorder add /pdf@lly exch def %
9395     dup DvipsToPDF 72 add /pdf@hoff exch def %
9396     HyperBorder sub /pdf@llx exch def%
9397 } def\Hy@ps@CR
9398 /H.L {%
9399     2 sub %
9400     PDFToDvips /HyperBase exch def %
9401     currentpoint %
9402     HyperBase sub /pdf@ury exch def%
9403     /pdf@urx exch def%
9404 } def\Hy@ps@CR
9405 /H.A {%
9406     H.L %
9407     currentpoint exch pop %
9408     vsize 72 sub exch DvipsToPDF %
9409     HyperBase sub % baseline skip
9410     sub /pdf@voff exch def%
9411 } def\Hy@ps@CR
9412 /H.R {%
9413     currentpoint %
9414     HyperBorder sub /pdf@ury exch def %
9415     HyperBorder add /pdf@urx exch def %
9416     currentpoint exch pop vsize 72 sub %
9417     exch DvipsToPDF sub /pdf@voff exch def%
9418 } def\Hy@ps@CR
9419 }

9420 \AfterBeginDocument{%
9421     \ifHy@colorlinks
9422         \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
9423     \fi
9424 }

```

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.

```

9425 \expandafter\let\expandafter\keepPDF@SetupDoc
9426   \csname PDF@SetupDoc\endcsname
9427 \def\PDF@SetupDoc{%
9428   \ifx\@baseurl\@empty
9429   \else
9430     \special{html:<base href="\@baseurl">}%
9431   \fi
9432   \keepPDF@SetupDoc
9433 }
9434 \def\hyper@anchor#1{%
9435   \Hy@SaveLastskip
9436   \begingroup
9437     \let\protect=\string
9438     \special{html:<a name=%
9439       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9440   \endgroup
9441   \Hy@activeanchortrue
9442   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9443   \special{html:</a>}%
9444   \Hy@activeanchorfalse
9445   \Hy@RestoreLastskip
9446 }
9447 \def\hyper@anchorstart#1{%
9448   \Hy@SaveLastskip
9449   \begingroup
9450     \hyper@chars
9451     \special{html:<a name=%
9452       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9453   \endgroup
9454   \Hy@activeanchortrue
9455 }
9456 \def\hyper@anchorend{%
9457   \special{html:</a>}%
9458   \Hy@activeanchorfalse
9459   \Hy@RestoreLastskip
9460 }
9461 \def\@urltype{url}
9462 \def\hyper@linkstart#1#2{%
9463   \expandafter\Hy@colorlink\csname @#1color\endcsname
9464   \def\Hy@tempa{#1}%
9465   \ifx\Hy@tempa\@urltype
9466     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9467   \else
9468     \begingroup
9469       \hyper@chars
9470       \special{html:<a href=%
9471         \hyper@quote\#HyperDestNameFilter{#2}\hyper@quote>}%
9472     \endgroup
9473   \fi
9474 }
9475 \def\hyper@linkend{%
9476   \special{html:</a>}%
9477   \Hy@endcolorlink
9478 }
9479 \def\hyper@linkfile#1#2#3{%

```

```

9480 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9481 }
9482 \def\hyper@linkurl#1#2{%
9483   \leavevmode
9484   \ifHy@raiselinks
9485     \setbox\@tempboxa=\color@hbox #1\color@endbox
9486     \@linkdim\dp\@tempboxa
9487     \lower\@linkdim\hbox{%
9488       \hyper@chars
9489       \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9490     }%
9491     \Hy@colorlink\@urlcolor#1%
9492     \@linkdim\ht\@tempboxa
9493     \advance\@linkdim by -6.5\p@
9494     \raise\@linkdim\hbox{\special{html:</a>}}%
9495     \Hy@endcolorlink
9496   \else
9497     \begingroup
9498     \hyper@chars
9499     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9500     \Hy@colorlink\@urlcolor#1%
9501     \special{html:</a>}%
9502     \Hy@endcolorlink
9503   \endgroup
9504   \fi
9505 }

```

Very poor implementation of \hyper@link without considering #1.

```

9506 \def\hyper@link#1#2#3{%
9507   \hyper@linkurl{#3}{\#HyperDestNameFilter{#2}}%
9508 }
9509 \def\hyper@image#1#2{%
9510   \begingroup
9511     \hyper@chars
9512     \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9513   \endgroup
9514 }
9515 </textures>

```

46.12 dvipsone

```

9516 % \subsection{dvipsone driver}
9517 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
9518 % |\special| commands.
9519 <*dvipsone>
9520 \providecommand*\XR@ext{pdf}
9521 \def\Hy@raisedlink{}
9522 \providecommand*\@pdfborder{0 0 1}
9523 \providecommand*\@pdfborderstyle{}
9524 \def\literalps@out#1{\special{ps:#1}}%
9525 \def\headerps@out#1{\special{headertext=#1}}%
9526 \input{pdfmark.def}%
9527 \ifx\@pdfproducer\relax
9528   \def\@pdfproducer{dvipsone + Distiller}%
9529 \fi
9530 \def\PDF@FinishDoc{%
9531   \Hy@UseMaketitleInfos
9532   \special{PDF: Keywords \@pdfkeywords}%

```

```

9533 \special{PDF: Title \@pdftitle}%
9534 \special{PDF: Creator \@pdfcreator}%
9535 \ifx\@pdfcreationdate\@empty
9536 \else
9537 \special{PDF: CreationDate \@pdfcreationdate}%
9538 \fi
9539 \ifx\@pdfmoddate\@empty
9540 \else
9541 \special{PDF: ModDate \@pdfmoddate}%
9542 \fi
9543 \special{PDF: Author \@pdfauthor}%
9544 \ifx\@pdfproducer\relax
9545 \else
9546 \special{PDF: Producer \@pdfproducer}%
9547 \fi
9548 \special{PDF: Subject \@pdfsubject}%
9549 \Hy@DisableOption{pdfauthor}%
9550 \Hy@DisableOption{pdftitle}%
9551 \Hy@DisableOption{pdfsubject}%
9552 \Hy@DisableOption{pdfcreator}%
9553 \Hy@DisableOption{pdfcreationdate}%
9554 \Hy@DisableOption{pdfmoddate}%
9555 \Hy@DisableOption{pdfproducer}%
9556 \Hy@DisableOption{pdfkeywords}%
9557 }
9558 \def\PDF@SetupDoc{%
9559 \def\Hy@temp{%
9560 \ifx\@pdfstartpage\@empty
9561 \else
9562 \ifx\@pdfstartview\@empty
9563 \else
9564 \edef\Hy@temp{%
9565 ,Page=\@pdfstartpage
9566 ,View=\@pdfstartview
9567 }%
9568 \fi
9569 \fi
9570 \edef\Hy@temp{%
9571 \noexpand\pdfmark{%
9572 pdfmark=/DOCVIEW,%
9573 PageMode=/\@pdfpagemode
9574 \Hy@temp
9575 }%
9576 }%
9577 \Hy@temp
9578 \ifx\@pdfpagescrop\@empty
9579 \else
9580 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9581 \fi
9582 \edef\Hy@temp{%
9583 \ifHy@toolbar\else /HideToolbar true\fi
9584 \ifHy@menubar\else /HideMenubar true\fi
9585 \ifHy@windowui\else /HideWindowUI true\fi
9586 \ifHy@fitwindow /FitWindow true\fi
9587 \ifHy@centerwindow /CenterWindow true\fi
9588 \ifHy@displaydoctitle /DisplayDocTitle true\fi
9589 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode

```

```

9590 \Hy@UseNameKey{Direction}\@pdfdirection
9591 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9592 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9593 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9594 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9595 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9596 \Hy@UseNameKey{Duplex}\@pdfduplex
9597 \ifx\@pdfpicktraybypdfsize\@empty
9598 \else
9599 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9600 \fi
9601 \ifx\@pdfprintpagerange\@empty
9602 \else
9603 /PrintPageRange[\@pdfprintpagerange]%
9604 \fi
9605 \ifx\@pdfnumcopies\@empty
9606 \else
9607 /NumCopies \@pdfnumcopies
9608 \fi
9609 }%
9610 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9611 \pdfmark{%
9612 pdfmark=/PUT,%
9613 Raw={%
9614 \string{Catalog\string}<<%
9615 \ifx\Hy@temp\@empty
9616 \else
9617 /ViewerPreferences<<\Hy@temp>>%
9618 \fi
9619 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9620 \ifx\@pdflang\@empty
9621 \else
9622 /Lang(\@pdflang)%
9623 \fi
9624 \ifx\@baseurl\@empty
9625 \else
9626 /URI<</Base(\Hy@pstringB)>>%
9627 \fi
9628 >>%
9629 }%
9630 }%
9631 }
9632 \providecommand*\@pdfview{XYZ}
9633 \providecommand*\@pdfviewparams{ %
9634 gsave revscl currentpoint grestore %
9635 72 add exch pop null exch null%
9636 }
9637 \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.

```

9638 \g@addto@macro\Hy@FirstPageHook{%
9639 \headerps@out{%

```

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

```

9640 /DvipsToPDF { 65781 div } def%
9641 /PDFToDvips { 65781 mul } def%
9642 /BPToDvips{65781 mul}def%
9643 /HyperBorder { 1 PDFToDvips } def%
9644 /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.

```

9645 /BorderArrayPatch{%
9646   [exch{%
9647     dup dup type/integertype eq exch type/realtype eq or%
9648     {BPToDvips}if%
9649   }forall]]%
9650 }def%
9651 /H.S {%
9652   currentpoint %
9653   HyperBorder add /pdf@lly exch def %
9654   dup DvipsToPDF 72 add /pdf@hoff exch def %
9655   HyperBorder sub /pdf@llx exch def%
9656 } def%
9657 /H.L {%
9658   2 sub %
9659   PDFToDvips /HyperBase exch def %
9660   currentpoint %
9661   HyperBase sub /pdf@ury exch def%
9662   /pdf@urx exch def%
9663 } def%
9664 /H.A {%
9665   H.L %
9666   currentpoint exch pop %
9667   HyperBase sub % baseline skip
9668   DvipsToPDF /pdf@voff exch def%
9669 } def%
9670 /H.R {%
9671   currentpoint %
9672   HyperBorder sub /pdf@ury exch def %
9673   HyperBorder add /pdf@urx exch def %
9674   currentpoint exch pop DvipsToPDF /pdf@voff exch def%
9675 } def%
9676 }%
9677 }
9678 </dvipsone>

```

46.13 TeX4ht

```

9679 <*tex4ht>
9680 \providecommand*{\XR@ext}{html}
9681 \def\Hy@raisedlink{}
9682 \@ifpackageloaded{tex4ht}{%
9683   \typeout{hyperref tex4ht: tex4ht already loaded}%
9684 }{%
9685   \RequirePackage[hx4ht]{tex4ht}%
9686 }
9687 \hyperlinkfileprefix{}
9688 \def\PDF@FinishDoc{}
9689 \def\PDF@SetupDoc{%
9690   \ifx\@baseurl\@empty

```



```

9691 \else
9692 \special{t4ht=<base href="\@baseurl">}%
9693 \fi
9694 }
9695 \def\hyper@anchor#1{%
9696 \Hy@SaveLastskip
9697 \begingroup
9698 \let\protect=\string
9699 \special{t4ht=<a name=%
9700 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9701 \endgroup
9702 \Hy@activeanchortrue
9703 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9704 \special{t4ht=</a>}%
9705 \Hy@activeanchorfalse
9706 \Hy@RestoreLastskip
9707 }
9708 \def\hyper@anchorstart#1{%
9709 \Hy@SaveLastskip
9710 \begingroup
9711 \hyper@chars\special{t4ht=<a name=%
9712 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9713 \endgroup
9714 \Hy@activeanchortrue
9715 }
9716 \def\hyper@anchorend{%
9717 \special{t4ht=</a>}%
9718 \Hy@activeanchorfalse
9719 \Hy@RestoreLastskip
9720 }
9721 \def\@urltype{url}
9722 \def\hyper@linkstart#1#2{%
9723 \expandafter\Hy@colorlink\csname @#1color\endcsname
9724 \def\Hy@tempa{#1}%
9725 \ifx\Hy@tempa\@urltype
9726 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
9727 \else
9728 \begingroup
9729 \hyper@chars
9730 \special{t4ht=<a href=%
9731 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9732 \endgroup
9733 \fi
9734 }
9735 \def\hyper@linkend{%
9736 \special{t4ht=</a>}%
9737 \Hy@endcolorlink
9738 }
9739 \def\hyper@linkfile#1#2#3{%
9740 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
9741 }
9742 \def\hyper@linkurl#1#2{%
9743 \leavevmode
9744 \ifHy@raiselinks
9745 \setbox\@tempboxa=\color@hbox #1\color@endbox
9746 \@linkdim\dp\@tempboxa
9747 \lower\@linkdim\hbox{%

```

```

9748     \begingroup
9749     \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
9750     \endgroup
9751 }%
9752 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9753 \@linkdim\ht\@tempboxa
9754 \advance\@linkdim by -6.5\p@
9755 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
9756 \else
9757   \begingroup
9758   \hyper@chars
9759   \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
9760   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9761   \special{t4ht=</a>}}%
9762   \endgroup
9763 \fi
9764 }

```

Poor implementation of \hyper@link without considering #1.

```

9765 \def\hyper@link#1#2#3{%
9766   \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}}%
9767 }
9768 \def\hyper@image#1#2{%
9769   \begingroup
9770   \hyper@chars
9771   \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}}%
9772   \endgroup
9773 }
9774 \let\autoref\ref
9775 \ifx \rEfLiNK \UnDef
9776   \def\rEfLiNK #1#2{#2}%
9777 \fi
9778 \def\backref#1{}
9779 </tex4ht>
9780 <*tex4htcfg>
9781 \IfFileExists{\jobname.cfg}{\endinput}{}
9782 \Preamble{html}
9783   \begin{document}%
9784 \EndPreamble
9785 \def\TeX{TeX}
9786 \def\OMEGA{\Omega}
9787 \def\LaTeX{LaTeX}
9788 \def\LaTeXe{\LaTeX2e}
9789 \def\eTeX{e-TeX}
9790 \def\MF{Metafont}
9791 \def\MP{MetaPost}
9792 </tex4htcfg>

```

47 Driver-specific form support

47.1 pdfmarks

```

9793 <*pdfmark>
9794 \long\def\@Form[#1]{%
9795   \g@addto@macro\Hy@FirstPageHook{%
9796     \headerps@out{%
9797       [%
9798         /_objdef{pdfDocEncoding}%

```

```

9799 /type/dict%
9800 /OBJ pdfmark%
9801 [%
9802 {pdfDocEncoding}%
9803 <<%
9804 /Type/Encoding%
9805 /Differences[%
9806 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
9807 /tilde %
9808 39/quotesingle %
9809 96/grave %
9810 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
9811 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
9812 /quotedblbase/quotedblleft/quotedblright/quoteleft%
9813 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
9814 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
9815 164/currency %
9816 166/brokenbar %
9817 168/dieresis/copyright/ordfeminine %
9818 172/logicalnot/.notdef/registered/macron/degree/plusminus%
9819 /twosuperior/threesuperior/acute/mu %
9820 183/periodcentered/cedilla/onesuperior/ordmasculine %
9821 188/onequarter/onehalf/threequarters %
9822 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
9823 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
9824 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
9825 /Ocircumflex/Otilde/Odieresis/multiply/Slash/Ugrave%
9826 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
9827 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
9828 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
9829 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
9830 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
9831 /ucircumflex/udieresis/yacute/thorn/ydieresis%
9832 ]%
9833 >>%
9834 /PUT pdfmark%
9835 [%
9836 /_objdef{ZaDb}%
9837 /type/dict%
9838 /OBJ pdfmark%
9839 [%
9840 {ZaDb}%
9841 <<%
9842 /Type/Font%
9843 /Subtype/Type1%
9844 /Name/ZaDb%
9845 /BaseFont/ZapfDingbats%
9846 >>%
9847 /PUT pdfmark%
9848 [%
9849 /_objdef{Helv}%
9850 /type/dict%
9851 /OBJ pdfmark%
9852 [%
9853 {Helv}%
9854 <<%
9855 /Type/Font%

```

```

9856     /Subtype/Type1%
9857     /Name/Helv%
9858     /BaseFont/Helvetica%
9859     /Encoding{pdfDocEncoding}%
9860 >>%
9861 /PUT pdfmark%
9862 [%
9863   /_objdef{aform}%
9864   /type/dict%
9865 /OBJ pdfmark%
9866 [%
9867   /_objdef{afields}%
9868   /type/array%
9869 /OBJ pdfmark%
9870 {%
9871   [%
9872     /BBox[0 0 100 100]%
9873     /_objdef{Check}%
9874 /BP pdfmark %
9875 1 0 0 setrgbcolor%
9876 /ZapfDingbats 80 selectfont %
9877 20 20 moveto%
9878 (4)show%
9879 [/EP pdfmark%
9880 [%
9881   /BBox[0 0 100 100]%
9882   /_objdef{Cross}%
9883 /BP pdfmark %
9884 1 0 0 setrgbcolor%
9885 /ZapfDingbats 80 selectfont %
9886 20 20 moveto%
9887 (8)show%
9888 [/EP pdfmark%
9889 [%
9890   /BBox[0 0 250 100]%
9891   /_objdef{Submit}%
9892 /BP pdfmark %
9893 0.6 setgray %
9894 0 0 250 100 rectfill %
9895 1 setgray %
9896 2 2 moveto %
9897 2 98 lineto %
9898 248 98 lineto %
9899 246 96 lineto %
9900 4 96 lineto %
9901 4 4 lineto %
9902 fill %
9903 0.34 setgray %
9904 248 98 moveto %
9905 248 2 lineto %
9906 2 2 lineto %
9907 4 4 lineto %
9908 246 4 lineto %
9909 246 96 lineto %
9910 fill%
9911 /Helvetica 76 selectfont %
9912 0 setgray %

```

```

9913 8 22.5 moveto%
9914 (Submit)show%
9915 [/EP pdfmark%
9916 [%
9917   /BBox[0 0 250 100]%
9918   /_objdef{SubmitP}%
9919 /BP pdfmark %
9920 0.6 setgray %
9921 0 0 250 100 rectfill %
9922 0.34 setgray %
9923 2 2 moveto %
9924 2 98 lineto %
9925 248 98 lineto %
9926 246 96 lineto %
9927 4 96 lineto %
9928 4 4 lineto %
9929 fill %
9930 1 setgray %
9931 248 98 moveto %
9932 248 2 lineto %
9933 2 2 lineto %
9934 4 4 lineto %
9935 246 4 lineto %
9936 246 96 lineto %
9937 fill%
9938 /Helvetica 76 selectfont %
9939 0 setgray %
9940 10 20.5 moveto%
9941 (Submit)show%
9942 [/EP pdfmark%
9943 } ?pdfmark%
9944 [%
9945 {aform}%
9946 <<%
9947   /Fields{afields}%
9948   /DR<<%
9949     /Font<<%
9950       /ZaDb{ZaDb}%
9951       /Helv{Helv}%
9952     >>%
9953   >>%
9954   /DA(/Helv 10 Tf 0 g)%
9955   /CO{corder}%
9956   \ifHy@pdfa
9957   \else
9958     /NeedAppearances true%
9959   \fi
9960 >>%
9961 /PUT pdfmark%
9962 [%
9963 {Catalog}%
9964 <<%
9965   /AcroForm{aform}%
9966 >>%
9967 /PUT pdfmark%
9968 [%
9969   /_objdef{corder}%

```

```

9970 /type/array%
9971 /OBJ pdfmark% dps
9972 }}%
9973 \setkeys{Form}{#1}%
9974 }
9975 \def\@endForm{}
9976 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9977 \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
9978 }
9979 \def\@TextField[#1]#2{% parameters, label
9980 \def\Fld@name{#2}%
9981 \def\Fld@default{}%
9982 \let\Fld@value\@empty
9983 \def\Fld@width{\DefaultWidthofText}%
9984 \def\Fld@height{%
9985 \ifFld@multiline
9986 \DefaultHeightofTextMultiline
9987 \else
9988 \DefaultHeightofText
9989 \fi
9990 }%
9991 \begingroup
9992 \Field@toks={ }%
9993 \expandafter\HyField@SetKeys\expandafter{%
9994 \DefaultOptionsofText,#1%
9995 }%
9996 \HyField@FlagsText
9997 \ifFld@hidden\def\Fld@width{1sp}\fi
9998 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
9999 \LayoutTextField{#2}{%
10000 \Hy@escapeform\PDFForm@Text
10001 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
10002 pdfmark=/ANN,Raw={\PDFForm@Text}%
10003 }%
10004 }%
10005 \endgroup
10006 }
10007 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10008 \def\Fld@name{#2}%
10009 \let\Fld@default\relax
10010 \let\Fld@value\relax
10011 \def\Fld@width{\DefaultWidthofChoiceMenu}%
10012 \def\Fld@height{\DefaultHeightofChoiceMenu}%
10013 \begingroup
10014 \Fld@menulength=0 %
10015 \@tempdima\z@
10016 \@for\@curropt:=#3\do{%
10017 \expandafter\Fld@checkequals\@curropt==\%
10018 \Hy@StepCount\Fld@menulength
10019 \settowidth{\@tempdimb}{\@currDisplay}%
10020 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10021 }%
10022 \advance\@tempdima by 15\p@
10023 \Field@toks={ }%
10024 \begingroup
10025 \HyField@SetKeys{#1}%
10026 \edef\x{\endgroup

```

```

10027 \noexpand\expandafter
10028 \noexpand\HyField@SetKeys
10029 \noexpand\expandafter{%
10030 \expandafter\noexpand\csname DefaultOptionsof%
10031 \ifFld@radio
10032 Radio%
10033 \else
10034 \ifFld@combo
10035 \ifFld@popdown
10036 PopdownBox%
10037 \else
10038 ComboBox%
10039 \fi
10040 \else
10041 ListBox%
10042 \fi
10043 \fi
10044 \endcsname
10045 }%
10046 }\x
10047 \HyField@SetKeys{#1}%
10048 \ifFld@hidden\def\Fld@width{1sp}\fi
10049 \ifx\Fld@value\relax
10050 \let\Fld@value\Fld@default
10051 \fi
10052 \LayoutChoiceField{#2}{%
10053 \ifFld@radio
10054 \HyField@FlagsRadioButton
10055 \@@Radio{#3}%
10056 \else
10057 \beginngroup
10058 \HyField@FlagsChoice
10059 \ifdim\Fld@width<\@tempdima
10060 \ifdim\@tempdima<1cm\@tempdima1cm\fi
10061 \edef\Fld@width{\the\@tempdima}%
10062 \fi
10063 \ifFld@combo
10064 \else
10065 \@tempdima=\the\Fld@menulength\Fld@charsize
10066 \advance\@tempdima by \Fld@borderwidth bp %
10067 \advance\@tempdima by \Fld@borderwidth bp %
10068 \edef\Fld@height{\the\@tempdima}%
10069 \fi
10070 \@@Listbox{#3}%
10071 \endgroup
10072 \fi
10073 }%
10074 \endgroup
10075 }
10076 \def\@@Radio#1{%
10077 \Fld@listcount=0 %
10078 \@for\@curropt:=#1\do{%
10079 \expandafter\Fld@checkequals\@curropt==\%
10080 \Hy@StepCount\Fld@listcount
10081 \@currDisplay\space
10082 \Hy@escapeform\PDFForm@Radio
10083 \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%

```

```

10084         pdfmark=/ANN,%
10085         Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
10086     } % deliberate space between radio buttons
10087 }%
10088 }
10089 \newcount\Fld@listcount
10090 \def\@@ListBox#1{%
10091     \HyField@PDFChoices{#1}%
10092     \Hy@escapeform\PDFForm@List
10093     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
10094         pdfmark=/ANN,Raw={\PDFForm@List}%
10095     }%
10096 }
10097 \def\@PushButton[#1]#2{% parameters, label
10098     \def\Fld@name{#2}%
10099     \begingroup
10100         \Fld@toks={ }%
10101         \expandafter\HyField@SetKeys\expandafter{%
10102             \DefaultOptionsofPushButton,#1%
10103         }%
10104         \ifHy@pdfa
10105             \PackageError{hyperref}{%
10106                 PDF/A: Push button with JavaScript is prohibited%
10107             }{@ehc}
10108             \LayoutPushButtonField{%
10109                 \leavevmode
10110                 \MakeButtonField{#2}%
10111             }%
10112         \else
10113             \HyField@FlagsPushButton
10114             \ifFld@hidden\def\Fld@width{1sp}\fi
10115             \LayoutPushButtonField{%
10116                 \leavevmode
10117                 \Hy@escapeform\PDFForm@Push
10118                 \pdfmark[\MakeButtonField{#2}]{%
10119                     pdfmark=/ANN,Raw={\PDFForm@Push}%
10120                 }%
10121             }%
10122         \fi
10123     \endgroup
10124 }
10125 \def\@Submit[#1]#2{%
10126     \Fld@toks={ }%
10127     \def\Fld@width{\DefaultWidthofSubmit}%
10128     \def\Fld@height{\DefaultHeightofSubmit}%
10129     \begingroup
10130         \expandafter\HyField@SetKeys\expandafter{%
10131             \DefaultOptionsofSubmit,#1%
10132         }%
10133         \HyField@FlagsPushButton
10134         \HyField@FlagsSubmit
10135         \ifFld@hidden\def\Fld@width{1sp}\fi
10136         \Hy@escapeform\PDFForm@Submit
10137         \pdfmark[\MakeButtonField{#2}]{%
10138             pdfmark=/ANN,%
10139             Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
10140         }%

```



```

10141 \endgroup
10142 }
10143 \def\@Reset[#1]#2{%
10144   \Field@toks={ }%
10145   \def\Fld@width{\DefaultWidthofReset}%
10146   \def\Fld@height{\DefaultHeightofReset}%
10147   \begingroup
10148     \expandafter\HyField@SetKeys\expandafter{%
10149       \DefaultOptionsofReset,#1%
10150     }%
10151     \leavevmode
10152     \ifHy@pdfa
10153       \PackageError{hyperref}{%
10154         PDF/A: Reset action is prohibited%
10155       }\@ehc
10156       \MakeButtonField{#2}%
10157     \else
10158       \HyField@FlagsPushButton
10159       \ifFld@hidden\def\Fld@width{1sp}\fi
10160       \Hy@escapeform\PDFForm@Reset
10161       \pdfmark[\MakeButtonField{#2}]{%
10162         pdfmark=/ANN,Raw={\PDFForm@Reset}%
10163       }%
10164     \fi
10165   \endgroup
10166 }%
10167 \def\@CheckBox[#1]#2{% parameters, label
10168   \def\Fld@name{#2}%
10169   \def\Fld@default{0}%
10170   \begingroup
10171     \def\Fld@width{\DefaultWidthofCheckBox}%
10172     \def\Fld@height{\DefaultHeightofCheckBox}%
10173     \Field@toks={ }%
10174     \expandafter\HyField@SetKeys\expandafter{%
10175       \DefaultOptionsofCheckBox,#1%
10176     }%
10177     \HyField@FlagsCheckBox
10178     \ifFld@hidden\def\Fld@width{1sp}\fi
10179     \LayoutCheckField{#2}{%
10180       \Hy@escapeform\PDFForm@Check
10181       \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
10182         pdfmark=/ANN,Raw={\PDFForm@Check}%
10183       }%
10184     }%
10185   \endgroup
10186 }
10187 \pdfmark>

```

47.2 HyperTeX

```

10188 <*hypertex>
10189 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
10190 \def\@endForm{}
10191 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10192   \typeout{Sorry, HyperTeX does not support FORM gauges}%
10193 }
10194 \def\@TextField[#1]#2{% parameters, label
10195   \typeout{Sorry, HyperTeX does not support FORM text fields}%

```

```

10196 }
10197 \def\@CheckBox[#1]#2{% parameters, label
10198 \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
10199 }
10200 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10201 \typeout{Sorry, HyperTeX does not support FORM choice menus}%
10202 }
10203 \def\@PushButton[#1]#2{% parameters, label
10204 \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
10205 }
10206 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
10207 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
10208 \end{hypertex}

```

47.3 TeX4ht

```

10209 \def\@Form[#1]{%
10210 \setkeys{Form}{#1}%
10211 \HCode{<form action="\Form@action" method="\Form@method">}%
10212 }
10213 \def\@endForm{\HCode{</form>}}
10214 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10215 \typeout{Sorry, TeX4ht does not support gauges}%
10216 }
10217 \def\@TextField[#1]#2{% parameters, label
10218 \let\Hy@reserved@a\@empty
10219 \def\Fld@name{#2}%
10220 \def\Fld@default{}%
10221 \bgroup
10222 \Field@toks={ }%
10223 \setkeys{Field}{#1}%
10224 \HCode{<label for="\Fld@name">#2</label>}%
10225 \ifFld@password
10226 \@@PasswordField
10227 \else
10228 \@@TextField
10229 \fi
10230 \egroup
10231 }
10232 \def\@@PasswordField{%
10233 \HCode{%
10234 <input type="password" %
10235 id="\Fld@name" %
10236 name="\Fld@name" %
10237 \ifFld@hidden type="hidden" \fi
10238 value="\Fld@default" %
10239 \the\Fld@toks
10240 >%
10241 }%
10242 }
10243 \def\@@TextField{%
10244 \ifFld@multiline
10245 \HCode{<textarea %
10246 \ifFld@readonly readonly \fi
10247 id="\Fld@name" %
10248 name="\Fld@name" %
10249 \ifFld@hidden type="hidden" \fi
10250 }%
10251 }

```

```

10251     \the\Field@toks>%
10252   }%
10253   \Fld@default
10254   \HCode{</textarea>}%
10255 \else
10256   \HCode{<input type="text" %
10257     \ifFld@readonly readonly \fi
10258     id="\Fld@name" %
10259     name="\Fld@name" %
10260     \ifFld@hidden type="hidden" \fi
10261     value="\Fld@default" %
10262     \the\Field@toks>%
10263   }%
10264 \fi
10265 }
10266 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10267   \def\Fld@name{#2}%
10268   \def\Fld@default{}%
10269   \let\Hy@reserved@a\relax
10270   \begingroup
10271     \expandafter\Fld@findlength#3\\%
10272     \Field@toks={ }%
10273     \setkeys{Field}{#1}%
10274     #2%
10275     \ifFld@radio
10276       \expandafter\@@Radio#3\\%
10277     \else
10278       \expandafter\@@Menu#3\\%
10279     \fi
10280   \endgroup
10281 }
10282 \def\Fld@findlength#1\\{%
10283   \Fld@menulength=0 %
10284   \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
10285 }
10286 \def\@@Menu#1\\{%
10287   \HCode{<select size="\the\Fld@menulength" %
10288     name="\Fld@name" %
10289     \the\Field@toks>%
10290   }%
10291   \@for\@curropt:=#1\do{%
10292     \expandafter\Fld@checkequals\@curropt==\\%
10293     \HCode{<option %
10294       \ifx\@curropt\Fld@default selected \fi
10295       value="\@currValue">\@currDisplay</option>%
10296     }%
10297   }%
10298   \HCode{</select>}%
10299 }
10300 \def\@@Radio#1\\{%
10301   \@for\@curropt:=#1\do{%
10302     \expandafter\Fld@checkequals\@curropt==\\%
10303     \HCode{<input type="radio" %
10304       \ifx\@curropt\Fld@default checked \fi
10305       name="\Fld@name" %
10306       value="\@currValue" %
10307       \the\Field@toks>%

```

```

10308     }%
10309     \@currDisplay
10310 }%
10311 }
10312 \def\@PushButton[#1]#2{% parameters, label
10313 \def\Fld@name{#2}%
10314 \bgroup
10315 \Field@toks={ }%
10316 \setkeys{Field}{#1}%
10317 \HCode{<input type="button" %
10318     name="\Fld@name" %
10319     value="#2" %
10320     \the\Field@toks>%
10321 }%
10322 \HCode{</button>}%
10323 \egroup
10324 }
10325 \def\@Submit[#1]#2{%
10326 \HCode{<button type="submit">#2</button>}%
10327 }
10328 \def\@Reset[#1]#2{%
10329 \HCode{<button type="reset">#2</button>}%
10330 }
10331 \def\@CheckBox[#1]#2{% parameters, label
10332 \let\Hy@reserved@a\@empty
10333 \def\Fld@name{#2}%
10334 \def\Fld@default{0}%
10335 \bgroup
10336 \Field@toks={ }%
10337 \setkeys{Field}{#1}%
10338 \HCode{<input type="checkbox" %
10339     \ifFld@checked checked \fi
10340     \ifFld@disabled disabled \fi
10341     \ifFld@readonly readonly \fi
10342     name="\Fld@name" %
10343     \ifFld@hidden type="hidden" \fi
10344     value="\Fld@default" %
10345     \the\Field@toks>%
10346     #2%
10347 }%
10348 \egroup
10349 }
10350 </tex4ht>

```

47.4 pdfTeX

```

10351 <*pdfTeX>
10352 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10353 \typeout{Sorry, pdfTeX does not support FORM gauges}%
10354 }
10355 \def\MakeFieldObject#1#2{\sbox0{#1}%
10356 \immediate\pdfxform0 %
10357 \expandafter\edef\csname #2Object\endcsname{%
10358     \the\pdflastxform\space 0 R%
10359 }%
10360 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
10361 }%
10362 \def\@Form[#1]{%

```

```

10363 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
10364 \setkeys{Form}{#1}%
10365 \ifnum\pdftexversion>13 %
10366   \pdfrefobj\OBJ@pdfdocencoding
10367   \pdfrefobj\OBJ@ZaDb
10368   \pdfrefobj\OBJ@Helv
10369   \pdfrefobj\OBJ@acroform
10370 \fi
10371 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
10372 \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

10373   \begingroup
10374     \fontfamily{pzd}%
10375     \fontencoding{U}%
10376     \fontseries{m}%
10377     \fontshape{n}%
10378     \selectfont
10379     \char123 %
10380   \endgroup
10381 }{Ding}%
10382 \MakeFieldObject{%
10383   \fbox{\textcolor{yellow}{\textsf{Submit}}}%
10384 }{Submit}%
10385 \MakeFieldObject{%
10386   \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
10387 }{SubmitP}%
10388 }
10389 \def\@endForm{}
10390 \def\@TextField[#1]#2{% parameters, label
10391   \def\Fld@name{#2}%
10392   \def\Fld@default{}%
10393   \let\Fld@value\@empty
10394   \def\Fld@width{\DefaultWidthofText}%
10395   \def\Fld@height{%
10396     \ifFld@multiline
10397       \DefaultHeightofTextMultiline
10398     \else
10399       \DefaultHeightofText
10400   \fi
10401 }%
10402 \begingroup
10403   \Field@toks={ }%
10404   \expandafter\HyField@SetKeys\expandafter{%
10405     \DefaultOptionsofText,#1%
10406   }%
10407   \PDFForm@Name
10408   \HyField@FlagsText
10409   \ifFld@hidden\def\Fld@width{1sp}\fi
10410   \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
10411   \LayoutTextField{#2}{%
10412     \Hy@escapeform\PDFForm@Text
10413     \pdfstartlink user {\PDFForm@Text}\relax
10414     \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
10415   }%
10416 \endgroup
10417 }
10418 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices

```

```

10419 \def\Fld@name{#2}%
10420 \let\Fld@default\relax
10421 \let\Fld@value\relax
10422 \def\Fld@width{\DefaultWidthofChoiceMenu}%
10423 \def\Fld@height{\DefaultHeightofChoiceMenu}%
10424 \begingroup
10425   \Fld@menulength=0 %
10426   \@tempdima\z@
10427   \for\@curropt:=#3\do{%
10428     \expandafter\Fld@checkequals\@curropt==\%
10429     \Hy@StepCount\Fld@menulength
10430     \settowidth{\@tempdimb}{\@currDisplay}%
10431     \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10432   }%
10433   \advance\@tempdima by 15\p@
10434   \Field@toks={ }%
10435   \begingroup
10436     \HyField@SetKeys{#1}%
10437   \edef\x{\endgroup
10438     \noexpand\expandafter
10439     \noexpand\HyField@SetKeys
10440     \noexpand\expandafter{%
10441       \expandafter\noexpand\csname DefaultOptionsof%
10442         \ifFld@radio
10443           Radio%
10444         \else
10445           \ifFld@combo
10446             \ifFld@popdown
10447               PopdownBox%
10448             \else
10449               ComboBox%
10450             \fi
10451           \else
10452             ListBox%
10453           \fi
10454         \fi
10455       \endcsname
10456     }%
10457   }\x
10458   \HyField@SetKeys{#1}%
10459   \PDFForm@Name
10460   \ifFld@hidden\def\Fld@width{1sp}\fi
10461   \ifx\Fld@value\relax
10462     \let\Fld@value\Fld@default
10463   \fi
10464   \LayoutChoiceField{#2}{%
10465     \ifFld@radio
10466       \HyField@FlagsRadioButton
10467       \@@Radio{#3}%
10468     \else
10469       \begingroup
10470         \HyField@FlagsChoice
10471         \ifdim\Fld@width<\@tempdima
10472           \ifdim\@tempdima<1cm\@tempdima1cm\fi
10473         \edef\Fld@width{\the\@tempdima}%
10474       \fi
10475       \ifFld@combo

```

```

10476         \else
10477             \@tempdima=\the\Fld@menulength\Fld@charsize
10478             \advance\@tempdima by \Fld@borderwidth bp %
10479             \advance\@tempdima by \Fld@borderwidth bp %
10480             \edef\Fld@height{\the\@tempdima}%
10481         \fi
10482         \@@ListBox{#3}%
10483     \endgroup
10484 \fi
10485 }%
10486 \endgroup
10487 }
10488 \def\@@Radio#1{%
10489     \Fld@listcount=0 %
10490     \@for\@curropt:=#1\do{%
10491         \expandafter\Fld@checkequals\@curropt==\%
10492         \Hy@StepCount\Fld@listcount
10493         \currDisplay\space
10494         \leavevmode
10495         \Hy@escapeform\PDFForm@Radio
10496         \pdfstartlink user {%
10497             \PDFForm@Radio
10498             /AP<<%
10499             /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.

```

10500         /\@currValue\space \DingObject
10501         >>%
10502     >>%
10503 }%
10504 \relax
10505 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
10506 \space % deliberate space between radio buttons
10507 }%
10508 }
10509 \newcount\Fld@listcount
10510 \def\@@ListBox#1{%
10511     \HyField@PDFChoices{#1}%
10512     \leavevmode
10513     \Hy@escapeform\PDFForm@List
10514     \pdfstartlink user {\PDFForm@List}\relax
10515     \MakeChoiceField{\Fld@width}{\Fld@height}%
10516     \pdfendlink
10517 }
10518 \def\@PushButton[#1]#2{% parameters, label
10519     \def\Fld@name{#2}%
10520     \begingroup
10521         \Field@toks={}%
10522         \expandafter\HyField@SetKeys\expandafter{%
10523             \DefaultOptionsofPushButton,#1%
10524         }%
10525         \PDFForm@Name
10526         \ifHy@pdfa
10527             \PackageError{hyperref}{%
10528                 PDF/A: Push button with JavaScript is prohibited%
10529             }\@ehc

```

```

10530     \LayoutPushButtonField{%
10531     \leavevmode
10532     \MakeButtonField{#2}%
10533     }%
10534 \else
10535     \HyField@FlagsPushButton
10536     \ifFld@hidden\def\Fld@width{1sp}\fi
10537     \LayoutPushButtonField{%
10538     \leavevmode
10539     \Hy@escapeform\PDFForm@Push
10540     \pdfstartlink user {\PDFForm@Push}\relax
10541     \MakeButtonField{#2}%
10542     \pdfendlink
10543     }%
10544 \fi
10545 \endgroup
10546 }
10547 \def\@Submit[#1]#2{%
10548 \Field@toks={ }%
10549 \def\Fld@width{\DefaultWidthofSubmit}%
10550 \def\Fld@height{\DefaultHeightofSubmit}%
10551 \begingroup
10552 \expandafter\HyField@SetKeys\expandafter{%
10553 \DefaultOptionsofSubmit,#1%
10554 }%
10555 \HyField@FlagsPushButton
10556 \HyField@FlagsSubmit
10557 \ifFld@hidden\def\Fld@width{1sp}\fi
10558 \leavevmode
10559 \Hy@escapeform\PDFForm@Submit
10560 \pdfstartlink user {%
10561 \PDFForm@Submit
10562 /AP<</N \SubmitObject/D \SubmitPObject>>%
10563 }%
10564 \relax
10565 \MakeButtonField{#2}%
10566 \pdfendlink
10567 \endgroup
10568 }
10569 \def\@Reset[#1]#2{%
10570 \Field@toks={ }%
10571 \def\Fld@width{\DefaultWidthofReset}%
10572 \def\Fld@height{\DefaultHeightofReset}%
10573 \begingroup
10574 \expandafter\HyField@SetKeys\expandafter{%
10575 \DefaultOptionsofReset,#1%
10576 }%
10577 \leavevmode
10578 \ifHy@pdfa
10579 \PackageError{hyperref}{%
10580 PDF/A: Reset action is prohibited%
10581 }{\@ehc
10582 \MakeButtonField{#2}%
10583 \else
10584 \HyField@FlagsPushButton
10585 \ifFld@hidden\def\Fld@width{1sp}\fi
10586 \Hy@escapeform\PDFForm@Reset

```



```

10587     \pdfstartlink user {\PDFForm@Reset}\relax
10588     \MakeButtonField{#2}%
10589     \pdfendlink
10590     \fi
10591 \endgroup
10592 }
10593 \def\@CheckBox[#1]#2{% parameters, label
10594     \def\Fld@name{#2}%
10595     \def\Fld@default{0}%
10596     \begingroup
10597         \def\Fld@width{\DefaultWidthofCheckBox}%
10598         \def\Fld@height{\DefaultHeightofCheckBox}%
10599         \Field@toks={ }%
10600         \expandafter\HyField@SetKeys\expandafter{%
10601             \DefaultOptionsofCheckBox,#1%
10602         }%
10603         \PDFForm@Name
10604         \HyField@FlagsCheckBox
10605         \ifFld@hidden\def\Fld@width{1sp}\fi
10606         \LayoutCheckField{#2}{%
10607             \Hy@escapeform\PDFForm@Check
10608             \pdfstartlink user {\PDFForm@Check}\relax
10609             \MakeCheckField{\Fld@width}{\Fld@height}%
10610             \pdfendlink
10611         }%
10612     \endgroup
10613 }
10614 \pdfobj {%
10615 <<%
10616     /Type/Encoding%
10617     /Differences[%
10618         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
10619         /ring/tilde %
10620         39/quotesingle %
10621         96/grave %
10622         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10623         /fraction/guilsinglleft/guilsinglright/minus/perthousand%
10624         /quotedblbase/quotedblleft/quotedblright/quoteleft%
10625         /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
10626         /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
10627         164/currency %
10628         166/brokenbar %
10629         168/dieresis/copyright/ordfeminine %
10630         172/logicalnot/.notdef/registered/macron/degree/plusminus%
10631         /twosuperior/threesuperior/acute/mu %
10632         183/periodcentered/cedilla/onesuperior/ordmasculine %
10633         188/onequarter/onehalf/threequarters %
10634         192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
10635         /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
10636         /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
10637         /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
10638         /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
10639         /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
10640         /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
10641         /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
10642         /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
10643         /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%

```

```

10644    ]%
10645    >>%
10646 }
10647 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
10648 \pdfobj{%
10649   <<%
10650     /Type/Font%
10651     /Subtype/Type1%
10652     /Name/ZaDb%
10653     /BaseFont/ZapfDingbats%
10654   >>%
10655 }
10656 \edef\OBJ@ZaDb{\the\pdflastobj}
10657 \pdfobj{%
10658   <<%
10659     /Type/Font%
10660     /Subtype/Type1%
10661     /Name/Helv%
10662     /BaseFont/Helvetica%
10663     /Encoding \OBJ@pdfdocencoding\space 0 R%
10664   >>%
10665 }
10666 \edef\OBJ@Helv{\the\pdflastobj}
10667 \pdfobj{%
10668   <<%
10669     /Fields[]%
10670     /DR<<%
10671       /Font<<%
10672         /ZaDb \OBJ@ZaDb\space 0 R%
10673         /Helv \OBJ@Helv\space 0 R%
10674       >>%
10675     >>%
10676     /DA(/Helv 10 Tf 0 g)%
10677     \ifHy@pdfa
10678     \else
10679       /NeedAppearances true%
10680     \fi
10681   >>%
10682 }
10683 \edef\OBJ@acroform{\the\pdflastobj}
10684 \pdfobj{</pdfobj>}

```

47.5 dvipdfm

D. P. Story adapted the pdfTeX forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```
10685 < *dvipdfm >
```

\@Gauge

```

10686 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10687   \typeout{Sorry, dvipdfm does not support FORM gauges}%
10688 }

```

\@Form

```

10689 \def\@Form[#1]{%
10690   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
10691   \setkeys{Form}{#1}%

```

```

10692 \@pdfm@mark{obj @afields []}%
10693 \@pdfm@mark{obj @corder []}%
10694 \@pdfm@mark{%
10695     obj @aform <<%
10696     /Fields @afields%
10697     /DR<<%
10698     /Font<<%
10699     /ZaDb @OBJZaDb%
10700     /Helv @OBJHelv%
10701     >>%
10702     >>%
10703     /DA(/Helv 10 Tf 0 g)%
10704     /CO @corder%
10705     \ifHy@pdfa
10706     \else
10707         /NeedAppearances true%
10708     \fi
10709     >>%
10710 }%
10711 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
10712 }

\@endForm

10713 \def\@endForm{ }

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.
10714 \def\dvipdfm@setdim{%
10715     height \the\ht\pdfm@box\space
10716     width \the\wd\pdfm@box\space
10717     depth \the\dp\pdfm@box\space
10718 }

\HyField@AnnotCount
10719 \newcount\HyField@AnnotCount
10720 \HyField@AnnotCount=\z@

\HyField@AdvanceAnnotCount
10721 \def\HyField@AdvanceAnnotCount{%
10722     \global\advance\HyField@AnnotCount\@ne
10723 }

\HyField@TheAnnotCount
10724 \def\HyField@TheAnnotCount{%
10725     \the\HyField@AnnotCount
10726 }

\@TextField
10727 \def\@TextField[#1]#2{% parameters, label
10728     \def\Fld@name{#2}%
10729     \def\Fld@default{}%
10730     \let\Fld@value\@empty
10731     \def\Fld@width{\DefaultWidthofText}%
10732     \def\Fld@height{%
10733         \ifFld@multiline
10734             \DefaultHeightofTextMultiline
10735         \else

```

```

10736     \DefaultHeightofText
10737     \fi
10738 }%
10739 \beginngroup
10740     \Field@toks={ }%
10741     \expandafter\HyField@SetKeys\expandafter{%
10742         \DefaultOptionsofText,#1%
10743     }%
10744     \PDFForm@Name
10745     \HyField@FlagsText
10746     \ifFld@hidden\def\Fld@width{1sp}\fi
10747     \ifx\Fld@value\empty\def\Fld@value{\Fld@default}\fi
10748     \setbox\pdfm@box=\hbox{%
10749         \MakeTextField{\Fld@width}{\Fld@height}%
10750     }%
10751     \HyField@AdvanceAnnotCount
10752     \LayoutTextField{#2}{%
10753         \Hy@escapeform\PDFForm@Text
10754         \@pdfm@mark{%
10755             ann @text\HyField@TheAnnotCount\space
10756             \dvipdfm@setdim << \PDFForm@Text >>%
10757         }%
10758     }%
10759     \unhbox\pdfm@box
10760     \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
10761     % record in @afields array
10762 \endgroup
10763 }

```

\@ChoiceMenu

```

10764 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10765     \def\Fld@name{#2}%
10766     \let\Fld@default\relax
10767     \let\Fld@value\relax
10768     \def\Fld@width{\DefaultWidthofChoiceMenu}%
10769     \def\Fld@height{\DefaultHeightofChoiceMenu}%
10770     \beginngroup
10771         \Fld@menulength=0 %
10772         \@tempdima\z@
10773         \@for\@curropt:=#3\do{%
10774             \expandafter\Fld@checkequals\@curropt==\%
10775             \Hy@StepCount\Fld@menulength
10776             \settowidth{\@tempdimb}{\@currDisplay}%
10777             \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10778         }%
10779         \advance\@tempdima by 15\p@
10780         \Field@toks={ }%
10781         \beginngroup
10782             \HyField@SetKeys{#1}%
10783         \edef\x{\endgroup
10784             \noexpand\expandafter
10785             \noexpand\HyField@SetKeys
10786             \noexpand\expandafter{%
10787                 \expandafter\noexpand\curname DefaultOptionsof%
10788                 \ifFld@radio
10789                     Radio%
10790                 \else

```

```

10791         \ifFld@combo
10792         \ifFld@popdown
10793             PopdownBox%
10794         \else
10795             ComboBox%
10796         \fi
10797     \else
10798         ListBox%
10799     \fi
10800 \fi
10801 \endcsname
10802 }%
10803 }\x
10804 \HyField@SetKeys{#1}%
10805 \PDFForm@Name
10806 \ifFld@hidden\def\Fld@width{1sp}\fi
10807 \ifx\Fld@value\relax
10808     \let\Fld@value\Fld@default
10809 \fi
10810 \LayoutChoiceField{#2}{%
10811     \ifFld@radio
10812         \HyField@FlagsRadioButton
10813         \@@Radio{#3}%
10814     \else
10815         \beginngroup
10816             \HyField@FlagsChoice
10817             \ifdim\Fld@width<\@tempdima
10818                 \ifdim\@tempdima<1cm\@tempdima1cm\fi
10819                 \edef\Fld@width{\the\@tempdima}%
10820             \fi
10821             \ifFld@combo
10822             \else
10823                 \@tempdima=\the\Fld@menulength\Fld@charsize
10824                 \advance\@tempdima by \Fld@borderwidth bp %
10825                 \advance\@tempdima by \Fld@borderwidth bp %
10826                 \edef\Fld@height{\the\@tempdima}%
10827             \fi
10828             \@@Listbox{#3}%
10829         \endgroup
10830     \fi
10831 }%
10832 \endgroup
10833 }

```

\@@Radio

```

10834 \def\@@Radio#1{%
10835     \Fld@listcount=0 %
10836     \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
10837     \@for\@curropt:=#1\do{%
10838         \expandafter\Fld@checkequals\@curropt==\%
10839         \Hy@StepCount\Fld@listcount
10840         \@currDisplay\space
10841         \leavevmode
10842         \Hy@escapeform\PDFForm@Radio
10843         \ifnum\Fld@listcount=1 %
10844             \HyField@AdvanceAnnotCount
10845         \fi

```

```

10846 \pdfmark{%
10847   ann \ifnum\Fld@listcount=1 @radio\HyField@TheAnnotCount\space\fi
10848   \dvi pdfm@setdim
10849   <<%
10850   \PDFForm@Radio
10851   /AP<</N<</\@currValue /null>>>>%
10852   >>%
10853   }%
10854   \unhcopy\pdfm@box\space% deliberate space between radio buttons
10855   \ifnum\Fld@listcount=1 %
10856   \pdfmark{put @afields @radio\HyField@TheAnnotCount}%
10857   \fi
10858   }%
10859 }

```

\Fld@listcount

```

10860 \newcount\Fld@listcount

```

\@@ListBox

```

10861 \def\@@ListBox#1{%
10862   \HyField@PDFChoices{#1}%
10863   \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
10864   \leavevmode
10865   \Hy@escapeform\PDFForm@List
10866   \HyField@AdvanceAnnotCount
10867   \pdfmark{%
10868     ann @list\HyField@TheAnnotCount\space
10869     \dvi pdfm@setdim
10870     <<\PDFForm@List>>%
10871   }%
10872   \unhbox\pdfm@box
10873   \pdfmark{put @afields @list\HyField@TheAnnotCount}%
10874 }

```

\@PushButton

```

10875 \def\@PushButton[#1]#2{% parameters, label
10876   \def\Fld@name{#2}%
10877   \begingroup
10878   \Field@toks={ }%
10879   \expandafter\HyField@SetKeys\expandafter{%
10880     \DefaultOptionsofPushButton,#1%
10881   }%
10882   \PDFForm@Name
10883   \ifHy@pdfa
10884     \PackageError{hyperref}{%
10885       PDF/A: Push button with JavaScript is prohibited%
10886     }\@ehc
10887     \LayoutPushButtonField{%
10888       \leavevmode
10889       \MakeButtonField{#2}%
10890     }%
10891   \else
10892     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10893     \HyField@FlagsPushButton
10894     \ifFld@hidden\def\Fld@width{1sp}\fi
10895     \HyField@AdvanceAnnotCount
10896     \LayoutPushButtonField{%

```

```

10897         \leavevmode
10898         \Hy@escapeform\PDFForm@Push
10899         \@pdfm@mark{%
10900             ann @push\HyField@TheAnnotCount\space
10901             \dvipdfm@setdim
10902             <<\PDFForm@Push>>%
10903         }%
10904     }%
10905     \unhbox\pdfm@box
10906     \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
10907     \fi
10908 \endgroup
10909 }

\@Submit
10910 \def\@Submit[#1]#2{%
10911     \Field@toks={ }%
10912     \def\Fld@width{\DefaultWidthofSubmit}%
10913     \def\Fld@height{\DefaultHeightofSubmit}%
10914     \begingroup
10915         \expandafter\HyField@SetKeys\expandafter{%
10916             \DefaultOptionsofSubmit,#1%
10917         }%
10918         \HyField@FlagsPushButton
10919         \HyField@FlagsSubmit
10920         \ifFld@hidden\def\Fld@width{1sp}\fi
10921         \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10922         \leavevmode
10923         \Hy@escapeform\PDFForm@Submit
10924         \HyField@AdvanceAnnotCount
10925         \@pdfm@mark{%
10926             ann @submit\HyField@TheAnnotCount\space
10927             \dvipdfm@setdim
10928             <<\PDFForm@Submit>>%
10929         }%
10930         \unhbox\pdfm@box%
10931         \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
10932     \endgroup
10933 }

\@Reset
10934 \def\@Reset[#1]#2{%
10935     \Field@toks={ }%
10936     \def\Fld@width{\DefaultWidthofReset}%
10937     \def\Fld@height{\DefaultHeightofReset}%
10938     \begingroup
10939         \expandafter\HyField@SetKeys\expandafter{%
10940             \DefaultOptionsofReset,#1%
10941         }%
10942         \leavevmode
10943         \ifHy@pdfa
10944             \PackageError{hyperref}{%
10945                 PDF/A: Reset action is prohibited%
10946             }\@ehc
10947             \MakeButtonField{#2}%
10948         \else
10949             \HyField@FlagsPushButton

```

```

10950 \ifFld@hidden\def\Fld@width{1sp}\fi
10951 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10952 \Hy@escapeform\PDFForm@Reset
10953 \HyField@AdvanceAnnotCount
10954 \@pdfm@mark{%
10955     ann @reset\HyField@TheAnnotCount\space
10956     \dvipdfm@setdim
10957     <<\PDFForm@Reset>>%
10958 }%
10959 \unhbox\pdfm@box
10960 \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
10961 \fi
10962 \endgroup
10963 }

```

\@CheckBox

```

10964 \def\@CheckBox[#1]#2{% parameters, label
10965     \def\Fld@name{#2}%
10966     \def\Fld@default{0}%
10967     \begingroup
10968         \def\Fld@width{\DefaultWidthofCheckBox}%
10969         \def\Fld@height{\DefaultHeightofCheckBox}%
10970         \Field@toks={ }%
10971         \expandafter\HyField@SetKeys\expandafter{%
10972             \DefaultOptionsofCheckBox,#1%
10973         }%
10974         \PDFForm@Name
10975         \HyField@FlagsCheckBox
10976         \ifFld@hidden\def\Fld@width{1sp}\fi
10977         \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
10978         \HyField@AdvanceAnnotCount
10979         \LayoutCheckField{#2}{%
10980             \Hy@escapeform\PDFForm@Check
10981             \@pdfm@mark{%
10982                 ann @check\HyField@TheAnnotCount\space
10983                 \dvipdfm@setdim
10984                 <<\PDFForm@Check>>%
10985             }%
10986             \unhbox\pdfm@box
10987             \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
10988         }%
10989     \endgroup
10990 }

10991 \@pdfm@mark{obj @OBJpdfdocencoding%
10992     <<%
10993         /Type/Encoding%
10994         /Differences[%
10995             24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
10996             39/quotesingle %
10997             96/grave %
10998             128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10999             /fraction/guilsinglleft/guilsinglright/minus/perthousand%
11000             /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
11001             /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
11002             /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
11003             164/currency %
11004             166/brokenbar %

```



```

11005      168/dieresis/copyright/ordfeminine %
11006      172/logicalnot/.notdef/registered/macron/degree/plusminus%
11007      /twosuperior/threesuperior/acute/mu %
11008      183/periodcentered/cedilla/onesuperior/ordmasculine %
11009      188/onequarter/onehalf/threequarters %
11010      192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
11011      /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
11012      /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
11013      /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
11014      /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
11015      /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
11016      /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
11017      /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
11018      /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
11019      /thorn/ydieresis%
11020      ]%
11021      >>%
11022 }
11023 \pdfmark{obj @OBJZaDb%
11024 <<%
11025     /Type/Font%
11026     /Subtype/Type1%
11027     /Name/ZaDb%
11028     /BaseFont/ZapfDingbats%
11029     >>%
11030 }
11031 \pdfmark{obj @OBJHelv%
11032 <<%
11033     /Type/Font%
11034     /Subtype/Type1%
11035     /Name/Helv%
11036     /BaseFont/Helvetica%
11037     /Encoding @OBJpdfdocencoding%
11038     >>%
11039 }
11040 </dvipdfm>

```

47.6 Common forms part

```
11041 <*pdfform>
```

\Hy@escapestring

```

11042 \begingroup\expandafter\expandafter\expandafter\endgroup
11043 \expandafter\ifx\csname pdfescapestring\endcsname\relax
11044   \let\Hy@escapestring\@firstofone
11045   \def\Hy@escapeform#1{%
11046     \ifHy@escapeform
11047       \def\Hy@escapestring##1{%
11048         \noexpand\Hy@escapestring{\noexpand##1}%
11049       }%
11050     \edef\Hy@temp{#1}%
11051     \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
11052     \def\Hy@escapestring##1{%
11053       \@ifundefined{Hy@esc@\string##1}{%
11054         ##1%
11055       }\ThisShouldNotHappen
11056     }{%

```

```

11057         \csname Hy@esc@\string##1\endcsname
11058     }%
11059 }%
11060 \else
11061     \let\Hy@escapestring\@firstofone
11062 \fi
11063 }%
11064 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
11065     \ifx\#3\%
11066     \else
11067         \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
11068         \Hy@ReturnAfterFi{%
11069             \Hy@@escapeform#3\@nil
11070         }%
11071     \fi
11072 }%
11073 \else
11074 \def\Hy@escapeform#1{%
11075     \ifHy@escapeform
11076         \let\Hy@escapestring\pdfescapestring
11077     \else
11078         \let\Hy@escapestring\@firstofone
11079     \fi
11080 }%
11081 \Hy@escapeform{}%
11082 \fi

```

\PDFForm@Name

```

11083 \def\PDFForm@Name{%
11084     \begingroup
11085         \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
11086             \ifHy@unicode
11087                 \Hy@unicodedefalse
11088             \fi
11089         \fi
11090         \pdfstringdef\Hy@gtemp\Fld@name
11091     \endgroup
11092     \let\Fld@name\Hy@gtemp
11093 }

```

\PDFForm@Check

```

11094 \def\PDFForm@Check{%
11095     /Subtype/Widget%
11096     \Fld@annotflags
11097     /T(\Fld@name)%
11098     /FT/Btn%
11099     \Fld@flags
11100     /Q \Fld@align
11101     /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
11102     /MK<<%
11103         \ifnum\Fld@rotation=\z@
11104         \else
11105             /R \Fld@rotation
11106         \fi
11107         \ifx\Fld@bordercolor\relax
11108         \else
11109             /BC[\Fld@bordercolor]%

```

```

11110 \fi
11111 \ifx\Fld@bcolor\relax
11112 \else
11113 /BG[\Fld@bcolor]%
11114 \fi
11115 /CA(\Hy@escapestring{\Fld@cbsymbol})%
11116 >>%
11117 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
11118 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11119 /H/P%
11120 \ifFld@checked /V/Yes\else /V/Off\fi
11121 }

```

\PDFForm@Push

```

11122 \ifHy@pdfa
11123 \else
11124 \def\PDFForm@Push{%
11125 /Subtype/Widget%
11126 \Fld@annotflags
11127 /T(\Fld@name)%
11128 /FT/Btn%
11129 \Fld@flags
11130 /H/P%
11131 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11132 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11133 \ifx\Fld@bordercolor\relax\else 1\fi
11134 \space
11135 \else
11136 /MK<<%
11137 \ifnum\Fld@rotation=\z@
11138 \else
11139 /R \Fld@rotation
11140 \fi
11141 \ifx\Fld@bordercolor\relax
11142 \else
11143 /BC[\Fld@bordercolor]%
11144 \fi
11145 >>%
11146 \fi
11147 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick})>>%
11148 }%
11149 \fi

```

\Fld@additionalactions

```

11150 \def\Fld@@additionalactions{%
K input (keystroke) format
11151 \ifx\Fld@keystroke@code\@empty
11152 \else
11153 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
11154 \fi
F display format
11155 \ifx\Fld@format@code\@empty
11156 \else
11157 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
11158 \fi

```

V validation

```
11159 \ifx\Fld@validate@code\@empty
11160 \else
11161 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
11162 \fi
```

C calculation

```
11163 \ifx\Fld@calculate@code\@empty
11164 \else
11165 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
11166 \fi
```

Fo receiving the input focus

```
11167 \ifx\Fld@onfocus@code\@empty
11168 \else
11169 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
11170 \fi
```

Bl loosing the input focus (blurred)

```
11171 \ifx\Fld@onblur@code\@empty
11172 \else
11173 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
11174 \fi
```

D pressing the mouse button (down)

```
11175 \ifx\Fld@onmousedown@code\@empty
11176 \else
11177 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
11178 \fi
```

U releasing the mouse button (up)

```
11179 \ifx\Fld@onmouseup@code\@empty
11180 \else
11181 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
11182 \fi
```

E cursor enters the annotation's active area.

```
11183 \ifx\Fld@onenter@code\@empty
11184 \else
11185 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
11186 \fi
```

X cursor exits the annotation's active area.

```
11187 \ifx\Fld@onexit@code\@empty
11188 \else
11189 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
11190 \fi
```

```
11191 }
```

```
11192 \def\Fld@additionalactions{%
11193 \if-\Fld@@additionalactions-%
11194 \else
11195 \ifHy@pdfa
11196 \else
11197 /AA<<\Fld@@additionalactions>>%
11198 \fi
11199 \fi
11200 }
```

\PDFForm@List

```
11201 \def\PDFForm@List{%
```

```

11202 /Subtype/Widget%
11203 \Fld@annotflags
11204 /T(\Fld@name)%
11205 /FT/Ch%
11206 \Fld@flags
11207 /Q \Fld@align
11208 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11209 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11210 \ifx\Fld@bordercolor\relax\else 1\fi
11211 \ifx\Fld@bcolor\relax \else 1\fi
11212 \space
11213 \else
11214 /MK<<%
11215 \ifnum\Fld@rotation=\z@
11216 \else
11217 /R \Fld@rotation
11218 \fi
11219 \ifx\Fld@bordercolor\relax
11220 \else
11221 /BC[\Fld@bordercolor]%
11222 \fi
11223 \ifx\Fld@bcolor\relax
11224 \else
11225 /BG[\Fld@bcolor]%
11226 \fi
11227 >>%
11228 \fi
11229 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
11230 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11231 \Fld@choices
11232 \Fld@additionalactions
11233 }

```

\PDFForm@Radio

```

11234 \def\PDFForm@Radio{%
11235 /Subtype/Widget%
11236 \Fld@annotflags
11237 /T(\Fld@name)%
11238 /FT/Btn%
11239 \Fld@flags
11240 /H/P%
11241 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11242 /MK<<%
11243 \ifnum\Fld@rotation=\z@
11244 \else
11245 /R \Fld@rotation
11246 \fi
11247 \ifx\Fld@bordercolor\relax
11248 \else
11249 /BC[\Fld@bordercolor]%
11250 \fi
11251 \ifx\Fld@bcolor\relax
11252 \else
11253 /BG[\Fld@bcolor]%
11254 \fi
11255 /CA(H)%
11256 >>%

```

```

11257 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
11258 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11259 \ifx\@currValue\Fld@default
11260 /V/\Fld@default
11261 \else
11262 /V/Off%
11263 \fi
11264 \Fld@additionalactions
11265 }

```

\PDFForm@Text

```

11266 \def\PDFForm@Text{%
11267 /Subtype/Widget%
11268 \Fld@annotflags
11269 /T(\Fld@name)%
11270 /FT/Tx%
11271 \Fld@flags
11272 /Q \Fld@align
11273 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
11274 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11275 \ifx\Fld@bordercolor\relax\else 1\fi
11276 \ifx\Fld@bcolor\relax \else 1\fi
11277 \space
11278 \else
11279 /MK<<%
11280 \ifnum\Fld@rotation=\z@
11281 \else
11282 /R \Fld@rotation
11283 \fi
11284 \ifx\Fld@bordercolor\relax
11285 \else
11286 /BC[\Fld@bordercolor]%
11287 \fi
11288 \ifx\Fld@bcolor\relax
11289 \else
11290 /BG[\Fld@bcolor]%
11291 \fi
11292 >>%
11293 \fi
11294 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
11295 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11296 /DV(\Hy@escapestring{\Fld@default})%
11297 /V(\Hy@escapestring{\Fld@value})%
11298 \Fld@additionalactions
11299 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
11300 }

```

\PDFForm@Submit

```

11301 \def\PDFForm@Submit{%
11302 /Subtype/Widget%
11303 \Fld@annotflags
11304 /T(\Fld@name)%
11305 /FT/Btn%
11306 \Fld@flags
11307 /H/P%
11308 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11309 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi

```

```

11310         \ifx\Fld@bordercolor\relax\else 1\fi
11311         \space
11312     \else
11313         /MK<<%
11314         \ifnum\Fld@rotation=\z@
11315         \else
11316             /R \Fld@rotation
11317         \fi
11318         \ifx\Fld@bordercolor\relax
11319         \else
11320             /BC[\Fld@bordercolor]%
11321         \fi
11322         >>%
11323     \fi
11324     /A<<%
11325     /S/SubmitForm%
11326     /F<<%
11327     /FS/URL%
11328     /F(\Hy@escapestring{\Form@action})%
11329     >>%
11330     \Fld@submitflags
11331     >>%
11332 }

```

\PDFForm@Reset

```

11333 \ifHy@pdfa
11334 \else
11335     \def\PDFForm@Reset{%
11336         /Subtype/Widget%
11337         \Fld@annotflags
11338         /T(\Fld@name)%
11339         /FT/Btn%
11340         \Fld@flags
11341         /H/P%
11342         /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
11343         \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11344             \ifx\Fld@bordercolor\relax\else 1\fi
11345             \space
11346         \else
11347             /MK<<%
11348             \ifnum\Fld@rotation=\z@
11349             \else
11350                 /R \Fld@rotation
11351             \fi
11352             \ifx\Fld@bordercolor\relax
11353             \else
11354                 /BC[\Fld@bordercolor]%
11355             \fi
11356         % /CA (Clear)
11357         % /AC (Done)
11358         >>%
11359     \fi
11360     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11361     /A<</S/ResetForm>>%
11362 }%
11363 \fi
11364 </pdfform>

```

11365 \langle *package \rangle

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`

```
11366 \def\phantomsection{%
11367   \Hy@GlobalStepCount\Hy@linkcounter
11368   \xdef\@currentHref{section*.\the\Hy@linkcounter}%
11369   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
11370 }
11371  $\langle$ /package $\rangle$ 
```

48.1 Bookmarks

11372 \langle *outlines \rangle

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`.

```
11373 \def\Hy@writebookmark#1#2#3#4#5{%
11374   % section number, text, label, level, file
11375   \ifx\WriteBookmarks\relax%
11376   \else
11377     \ifnum#4>\Hy@bookmarksdepth\relax
11378     \else
11379       \@writetorep{#1}{#2}{#3}{#4}{#5}%
11380     \fi
11381   \fi
11382 }
11383 \def\Hy@currentbookmarklevel{0}
11384 \def\Hy@numberline#1{#1 }
11385 \def\@writetorep#1#2#3#4#5{%
11386   \begingroup
11387     \edef\Hy@tempa{#5}%
11388     \ifx\Hy@tempa\Hy@bookmarkstype
11389       \edef\Hy@level{#4}%
11390       \ifx\Hy@levelcheck Y%
11391         \@tempcnta\Hy@level\relax
11392         \advance\@tempcnta by -1 %
11393         \ifnum\Hy@currentbookmarklevel<\@tempcnta
11394           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
11395           \advance\@tempcnta by 1 %
11396           \Hy@Warning{%
11397             Difference (\the\@tempcnta) between bookmark levels is %
11398             greater \MessageBreak than one, level fixed%
11399           }%

```



```

11400         \@tempcnta\Hy@currentbookmarklevel
11401         \advance\@tempcnta by 1 %
11402         \edef\Hy@level{\the\@tempcnta}%
11403     \fi
11404 \else
11405     \global\let\Hy@levelcheck Y%
11406 \fi
11407 \global\let\Hy@currentbookmarklevel\Hy@level
11408 \@tempcnta\Hy@level\relax
11409 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
11410 \advance\@tempcnta by -1 %
11411 \edef\Hy@tempa{#3}%
11412 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
11413 \ifx\Hy@tempa\Hy@tempb
11414     \Hy@Warning{%
11415         The anchor of a bookmark and its parent's must not%
11416         \MessageBreak be the same. Added a new anchor%
11417     }%
11418     \phantomsection
11419 \fi
11420 \ifHy@bookmarksnumbered
11421     \let\numberline\Hy@numberline
11422     \let\partnumberline\Hy@numberline
11423     \let\chapternumberline\Hy@numberline
11424 \else
11425     \let\numberline\@gobble
11426     \let\partnumberline\@gobble
11427     \let\chapternumberline\@gobble
11428 \fi
11429 \pdfstringdef\Hy@tempa{#2}%
11430 \if@filesw
11431     \protected@write\@outlinefile{}{%
11432         \protect\BOOKMARK
11433         [\Hy@level] [\@bookmarkopenstatus{\Hy@level}] {#3}%
11434         {\Hy@tempa}{\Hy@tempb}%
11435     }%
11436 \fi
11437 \fi
11438 \endgroup
11439 }

```

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

```

11440 \newcommand{\currentpdfbookmark}{%
11441     \pdfbookmark[\Hy@currentbookmarklevel]%
11442 }
11443 \newcommand{\subpdfbookmark}{%
11444     \@tempcnta\Hy@currentbookmarklevel
11445     \Hy@StepCount\@tempcnta
11446     \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
11447 }
11448 \newcommand{\belowpdfbookmark}[2]{%
11449     \@tempcnta\Hy@currentbookmarklevel
11450     \Hy@StepCount\@tempcnta
11451     \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
11452     \advance\@tempcnta by -1 %
11453     \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
11454 }

```

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.

```

11455 \renewcommand\pdfbookmark[3][0]{%
11456   \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
11457   \hyper@anchorstart{#3.#1}\hyper@anchorend
11458 }
11459 \def\BOOKMARK{\ifnextchar[\@BOOKMARK]{\@@BOOKMARK[1][-]}}
11460 \def\@BOOKMARK[#1]{\ifnextchar[\@BOOKMARK[#1]]{\@@BOOKMARK[#1][-]}}

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfo` macros.

The VTEX section was written originally by VTEX, but then amended by Denis Girou (`denis.girou@idris.fr`), then by Taco Hoekwater (`taco.hoekwater@wkap.nl`). The problem is that VTEX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping `\` and the like.

```

11461 \<vtex>
11462 \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.

```

11463 \begingroup
11464   \catcode'\'=12 %
11465   \ifnum\Hy@VTeXversion<650 %
11466     \catcode'\'=12 %
11467     \gdef\hv@pdf@char#1#2#3{%
11468       \char
11469       \ifcase'#1#2#3 %
11470         "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
11471         \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
11472         \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
11473         \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
11474         \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
11475         \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
11476         \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
11477         \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
11478         \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
11479         \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
11480         \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
11481         \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
11482         \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
11483         \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
11484         \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
11485         \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
11486         \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
11487         \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
11488         \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
11489         \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
11490         \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
11491         \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
11492         \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
11493         \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
11494         \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
11495         \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
11496         \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
11497         \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%

```

```

11498     \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
11499     \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
11500     \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
11501     \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
11502     \fi
11503   }%
11504   \else
11505     \gdef\hv@pdf@char{\char'}%
11506   \fi
11507 \endgroup

```

\@@BOOKMARK

```

11508 \def\@@BOOKMARK[#1][#2]#3#4#5{%
11509   \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
11510   \edef\@mycount{\the\@serial@counter}%
11511   \Hy@StepCount\@serial@counter
11512   \edef\@parcount{%
11513     \expandafter\ifx\csname @count@#5\endcsname\relax
11514     0%
11515     \else
11516       \csname @count@#5\endcsname
11517     \fi
11518   }%
11519   \immediate\special{%
11520     !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
11521     s=\ifx#2-c\else o\fi,t=#4%
11522   }%
11523 }%

```

\ReadBookmarks

```

11524 \def\ReadBookmarks{%
11525   \begingroup
11526     \def\O{\hv@pdf@char 0}%
11527     \def\1{\hv@pdf@char 1}%
11528     \def\2{\hv@pdf@char 2}%
11529     \def\3{\hv@pdf@char 3}%
11530     \def\({}%
11531     \def\)}%
11532     \def\do##1{%
11533       \ifnum\the\catcode'##1=\active
11534         \@makeother##1%
11535       \fi
11536     }%
11537     \dospecials
11538     \InputIfFileExists{\jobname.out}{-}{-}%
11539   \endgroup
11540   \ifx\WriteBookmarks\relax
11541   \else
11542     \if@files
11543       \newwrite\@outlinefile
11544       \immediate\openout\@outlinefile=\jobname.out\relax
11545       \ifHy@typexml
11546         \immediate\write\@outlinefile{<relaxxml>\relax}%
11547       \fi
11548     \fi
11549   \fi
11550 }

```

```

11551 </vtex>
11552 <!*vtex>
11553 \def\ReadBookmarks{%
11554   \begingroup
11555     \escapechar='\\%
11556     \let\escapechar\@gobble %
11557     \def\@@BOOKMARK[##1][##2]###4##5{\calc@bm@number{##5}}%
11558     \InputIfFileExists{\jobname.out}{-}{-}%
11559     \ifx\WriteBookmarks\relax
11560       \global\let\WriteBookmarks\relax
11561     \fi
11562     \def\@@BOOKMARK[##1][##2]###4##5{%
11563       \def\Hy@temp{##4}%
11564 <*pdftex>
11565       \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
11566       \Hy@OutlineName{}\Hy@pstringName{%
11567         ##2\check@bm@number{##3}%
11568       }{%
11569         \expandafter\strip@prefix\meaning\Hy@temp
11570       }%
11571 </pdftex>
11572 <*pdfmark>
11573   \pdfmark{%
11574     pdfmark=/OUT,%
11575     Count={##2\check@bm@number{##3}},%
11576     Dest={##3},%
11577     Title=\expandafter\strip@prefix\meaning\Hy@temp
11578   }%
11579 </pdfmark>
11580 <*dvipdfm>
11581   \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
11582   \@pdfm@mark{%
11583     outline \ifHy@DvipdfmxOutlineOpen
11584       [%
11585       \ifnum##21>\z@
11586       \else
11587       -%
11588       \fi
11589       ] %
11590     \fi
11591     ##1<<%
11592     /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
11593     /A<<%
11594     /S/GoTo%
11595     /D(\Hy@pstringName)%
11596     >>%
11597     >>%
11598   }%
11599 </dvipdfm>
11600   }%
11601   {%
11602     \def\WriteBookmarks{0}%
11603     \InputIfFileExists{\jobname.out}{-}{-}%
11604   }%
11605   {%\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
11606   \ifx\WriteBookmarks\relax
11607   \else

```

```

11608 \if@filesw
11609 \newwrite\@outlinefile
11610 \immediate\openout\@outlinefile=jobname.out\relax
11611 \ifHy@typexml
11612 \immediate\write\@outlinefile{<relaxxml>\relax}%
11613 \fi
11614 \fi
11615 \fi
11616 \endgroup
11617 }
11618 <*pdfTeX>
11619 \def\Hy@OutlineName#1#2#3#4{%
11620 \pdfoutline goto name{#2}count#3{#4}%
11621 }
11622 </pdfTeX>
11623 \def\check@bm@number#1{%
11624 \expandafter\ifx\csname B_#1\endcsname\relax
11625 0%
11626 \else
11627 \csname B_#1\endcsname
11628 \fi
11629 }
11630 \def\calc@bm@number#1{%
11631 \@tempcnta=\check@bm@number{#1}\relax
11632 \advance\@tempcnta by 1 %
11633 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
11634 }
11635 </!vtex>

11636 \ifHy@implicit
11637 \else
11638 \expandafter\endinput
11639 \fi

11640 </outlines>
11641 <*outlines | hypertex>

11642 \let\H@old@ssect\@ssect
11643 \def\@ssect#1#2#3#4#5{%
11644 \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
11645 \phantomsection
11646 }
11647 \let\H@old@schapter\@schapter
11648 \def\@schapter#1{%
11649 \H@old@schapter{#1}%
11650 \begingroup
11651 \let\@mkboth\@gobbletwo
11652 \Hy@GlobalStepCount\Hy@linkcounter
11653 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11654 \Hy@raisedlink{%
11655 \hyper@anchorstart{\@currentHref}\hyper@anchorend
11656 }%
11657 \endgroup
11658 }

```

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:

```

11659 \@ifundefined{@chapter}{-}{%

```

```

11660 \let\Hy@org@chapter\@chapter
11661 \def\@chapter{%
11662   \def\Hy@next{%
11663     \Hy@GlobalStepCount\Hy@linkcounter
11664     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11665     \Hy@raisedlink{%
11666       \hyper@anchorstart{\@currentHref}\hyper@anchorend
11667     }%
11668   }%
11669   \ifnum\c@secnumdepth>\m@ne
11670     \@ifundefined{if@mainmatter}%
11671     \iftrue{\csname if@mainmatter\endcsname}%
11672     \let\Hy@next\relax
11673   \fi
11674   \fi
11675   \Hy@next
11676   \Hy@org@chapter
11677 }%
11678 }

11679 \let\H@old@part\@part
11680 \begingroup\expandafter\expandafter\expandafter\endgroup
11681 \expandafter\ifx\csname chapter\endcsname\relax
11682   \let\Hy@secnum@part\z@
11683 \else
11684   \let\Hy@secnum@part\m@ne
11685 \fi
11686 \def\@part{%
11687   \ifnum\Hy@secnum@part>\c@secnumdepth
11688     \phantomsection
11689   \fi
11690   \H@old@part
11691 }

11692 \let\H@old@spart\@spart
11693 \def\@spart#1{%
11694   \H@old@spart{#1}%
11695   \Hy@GlobalStepCount\Hy@linkcounter
11696   \xdef\@currentHref{part*.\the\Hy@linkcounter}%
11697   \Hy@raisedlink{%
11698     \hyper@anchorstart{\@currentHref}\hyper@anchorend
11699   }%
11700 }

11701 \let\H@old@sect\@sect
11702 \def\@sect#1#2#3#4#5#6[#7]#8{%
11703   \ifnum #2>\c@secnumdepth
11704     \Hy@GlobalStepCount\Hy@linkcounter
11705     \xdef\@currentHref{section*.\the\Hy@linkcounter}%
11706   \fi
11707   \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}%
11708   \ifnum #2>\c@secnumdepth
11709     \Hy@raisedlink{%
11710       \hyper@anchorstart{\@currentHref}\hyper@anchorend
11711     }%
11712   \fi
11713 }

11714 </outlines | hypertex>
11715 <*outlines>

```

```

11716 \expandafter\def\csname Parent-4\endcsname{}
11717 \expandafter\def\csname Parent-3\endcsname{}
11718 \expandafter\def\csname Parent-2\endcsname{}
11719 \expandafter\def\csname Parent-1\endcsname{}
11720 \expandafter\def\csname Parent0\endcsname{}
11721 \expandafter\def\csname Parent1\endcsname{}
11722 \expandafter\def\csname Parent2\endcsname{}
11723 \expandafter\def\csname Parent3\endcsname{}
11724 \expandafter\def\csname Parent4\endcsname{}
11725 </outlines>

```

49 Compatibility with koma-script classes

```
11726 < *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.

```

11727 \def\Hy@tempa{%
11728   \def\@addchap[##1]##2{%
11729     \typeout{##2}%
11730     \if@twoside
11731       \@mkboth{##1}{}%
11732     \else
11733       \@mkboth{}{##1}%
11734     \fi
11735     \addtocontents{lof}{\protect\addvspace{10\p@}}%
11736     \addtocontents{lot}{\protect\addvspace{10\p@}}%
11737     \Hy@GlobalStepCount\Hy@linkcounter
11738     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11739     \Hy@raisedlink{%
11740       \hyper@anchorstart{\@currentHref}\hyper@anchorend
11741     }%
11742     \if@twocolumn
11743       \@topnewpage[\@makeschapterhead{##2}]%
11744     \else
11745       \@makeschapterhead{##2}%
11746       \@afterheading
11747     \fi
11748     \addcontentsline{toc}{chapter}{##1}%
11749   }%
11750 }
11751 \@ifclassloaded{scrbook}{%
11752   \@ifclasslater{scrbook}{2001/01/01}{%
11753     \let\Hy@tempa\@empty
11754   }{}%
11755 }{%
11756   \@ifclassloaded{scrreprt}{%
11757     \@ifclasslater{scrreprt}{2001/01/01}{%
11758       \let\Hy@tempa\@empty
11759     }{}%
11760   }{%
11761     \let\Hy@tempa\@empty
11762   }%
11763 }%
11764 \Hy@tempa

```

11765 </outlines | hypertext>

50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek oberdiek@ruf.uni-freiburg.de

50.1 PD1 encoding

```
11766 <*pd1enc>
11767 \DeclareFontEncoding{PD1}{-}{-}
```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```
11768 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
11769 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
11770 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
11771 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
11772 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed
```

Accents

```
11773 \DeclareTextAccent{\`}{PD1}{\textgrave}
11774 \DeclareTextAccent{\'}{PD1}{\textacute}
11775 \DeclareTextAccent{\^}{PD1}{\textcircumflex}
11776 \DeclareTextAccent{\~}{PD1}{\texttilde}
11777 \DeclareTextAccent{\"}{PD1}{\textdieresis}
11778 \DeclareTextAccent{\r}{PD1}{\textring}
11779 \DeclareTextAccent{\v}{PD1}{\textcaron}
11780 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
11781 \DeclareTextAccent{\c}{PD1}{\textcedilla}
11782 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textgrave}
11783 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
11784 \DeclareTextCompositeCommand{\^}{PD1}{\@empty}{\textcircumflex}
11785 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
11786 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textdieresis}
11787 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
11788 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}
11789 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
11790 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
11791 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
```

Accent glyph names

```
11792 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve
11793 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
11794 \DeclareTextCommand{\textcircumflex}{PD1}{\032} % circumflex
11795 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
11796 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
11797 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
11798 \DeclareTextCommand{\textring}{PD1}{\036} % ring
11799 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde
```

\040: space

\041: exclam

```
11800 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042
11801 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign
11802 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar
11803 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent
11804 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand
```

\047: quotesingle

```
11805 \DeclareTextCommand{\textparenleft}{PD1}{\string\({} % parenleft \050
11806 \DeclareTextCommand{\textparenright}{PD1}{\string\)} % parenright \051
```



```

\052: asterisk
\053: plus
\054: comma
\055: hyphen
\056: period
\057: slash
\060...\071: 0...9
\072: colon
\073: semicolon
11807 \DeclareTextCommand{\textless}{PD1}{<} % less \074
\075: equal
11808 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076
\077: question
\100: at
\101...\132: A...Z
\133: bracketleft
11809 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash
\135: bracketright
11810 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum
11811 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
11812 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave
\141...\172: a...z
11813 \DeclareTextCompositeCommand{\.}{PD1}{i}{i} % i
11814 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
11815 \DeclareTextCommand{\textbar}{PD1}{|} % bar
11816 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
11817 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde
No glyph \177 in PDFDocEncoding.
11818 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
11819 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
11820 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl
11821 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis
11822 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
11823 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
11824 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
11825 \DeclareTextCommand{\textfractionmark}{PD1}{\207} % fraction, \207
11826 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft
11827 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
11828 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
11829 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
11830 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
11831 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
11832 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright
11833 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
11834 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
11835 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
11836 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark
11837 \DeclareTextCommand{\textfi}{PD1}{\223} % fi ?? \223
11838 \DeclareTextCommand{\textfl}{PD1}{\224} % fl ?? \224
11839 \DeclareTextCommand{\L}{PD1}{\225} % Lslash, \225
11840 \DeclareTextCommand{\OE}{PD1}{\226} % OE
11841 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron
11842 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230} % Ydieresis
11843 \DeclareTextCommand{\IJ}{PD1}{\230}
11844 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231} % Zcaron, \231

```

```

11845 \DeclareTextCommand{\i}{PD1}{\232} % dotlessi, \232
11846 \DeclareTextCommand{\l}{PD1}{\233} % lslash, \233
11847 \DeclareTextCommand{\oe}{PD1}{\234} % oe
11848 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
11849 \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.

```

11850 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
11851 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown
11852 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
11853 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
11854 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
11855 \DeclareTextCommand{\textyen}{PD1}{\245} % yen
11856 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
11857 \DeclareTextCommand{\textsection}{PD1}{\247} % section
11858 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
11859 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
11860 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
11861 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
11862 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

```

No glyph \255 in PDFDocEncoding.

```

11863 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
11864 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
11865 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
11866 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
11867 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
11868 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
11869 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
11870 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
11871 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
11872 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
11873 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
11874 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior
11875 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine
11876 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright
11877 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter
11878 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf
11879 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters
11880 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown
11881 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300} % Agrave
11882 \DeclareTextCompositeCommand{\`}{PD1}{A}{\301} % Aacute
11883 \DeclareTextCompositeCommand{\`}{PD1}{A}{\302} % Acircumflex
11884 \DeclareTextCompositeCommand{\`}{PD1}{A}{\303} % Atilde
11885 \DeclareTextCompositeCommand{\`}{PD1}{A}{\304} % Adieresis
11886 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring
11887 \DeclareTextCommand{\AE}{PD1}{\306} % AE
11888 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla
11889 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310} % Egrave
11890 \DeclareTextCompositeCommand{\`}{PD1}{E}{\311} % Eacute
11891 \DeclareTextCompositeCommand{\`}{PD1}{E}{\312} % Ecircumflex
11892 \DeclareTextCompositeCommand{\`}{PD1}{E}{\313} % Edieresis
11893 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314} % Igrave
11894 \DeclareTextCompositeCommand{\`}{PD1}{I}{\315} % Iacute
11895 \DeclareTextCompositeCommand{\`}{PD1}{I}{\316} % Icircumflex
11896 \DeclareTextCompositeCommand{\`}{PD1}{I}{\317} % Idieresis
11897 \DeclareTextCommand{\DH}{PD1}{\320} % Eth
11898 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth

```

```

11899 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321} % Ntilde
11900 \DeclareTextCompositeCommand{\'}{PD1}{O}{\322} % Ograve
11901 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323} % Oacute
11902 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324} % Ocircumflex
11903 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325} % Otilde
11904 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326} % Odieresis
11905 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply
11906 \DeclareTextCommand{\O}{PD1}{\330} % Oslash
11907 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331} % Ugrave
11908 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute
11909 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333} % Ucircumflex
11910 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis
11911 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335} % Yacute
11912 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn
11913 \DeclareTextCommand{\ss}{PD1}{\337} % germandbls
11914 \DeclareTextCompositeCommand{\'}{PD1}{a}{\340} % agrave
11915 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute
11916 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342} % acircumflex
11917 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343} % atilde
11918 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344} % adieresis
11919 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring
11920 \DeclareTextCommand{\ae}{PD1}{\346} % ae
11921 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla
11922 \DeclareTextCompositeCommand{\'}{PD1}{e}{\350} % egrave
11923 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute
11924 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352} % ecircumflex
11925 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353} % edieresis
11926 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
11927 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
11928 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
11929 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
11930 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356} % icircumflex
11931 \DeclareTextCompositeCommand{\~}{PD1}{i}{\356} % icircumflex
11932 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
11933 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
11934 \DeclareTextCommand{\dh}{PD1}{\360} % eth
11935 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361} % ntilde
11936 \DeclareTextCompositeCommand{\'}{PD1}{o}{\362} % ograve
11937 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363} % oacute
11938 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364} % ocircumflex
11939 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365} % otilde
11940 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366} % odieresis
11941 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
11942 \DeclareTextCommand{\o}{PD1}{\370} % oslash
11943 \DeclareTextCompositeCommand{\'}{PD1}{u}{\371} % ugrave
11944 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372} % uacute
11945 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373} % ucircumflex
11946 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374} % udieresis
11947 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375} % yacute
11948 \DeclareTextCommand{\th}{PD1}{\376} % thorn
11949 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377} % ydieresis
11950 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

11951 \DeclareTextCommand{\SS}{PD1}{SS}
11952 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

11953 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}

```

```

11954 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
11955 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
11956 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
11957 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
11958 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
11959 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
11960 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

11961 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
11962 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
11963 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
11964 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
11965 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
11966 \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;

```

11967 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
11968 \DeclareTextCompositeCommand{\'}{PD1}{c}{c} % cacute
11969 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
11970 \DeclareTextCompositeCommand{\'}{PD1}{n}{n} % nacute
11971 \DeclareTextCompositeCommand{\'}{PD1}{s}{s} % sacute
11972 \DeclareTextCompositeCommand{\'}{PD1}{z}{z} % zacute
11973 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot
11974 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
11975 \DeclareTextCompositeCommand{\'}{PD1}{C}{C} % Cacute
11976 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
11977 \DeclareTextCompositeCommand{\'}{PD1}{N}{N} % Nacute
11978 \DeclareTextCompositeCommand{\'}{PD1}{S}{S} % Sacute
11979 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z} % Zacute
11980 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot

```

```

11981 \pdfenc)

```

50.2 PU encoding

```

11982 \*puenc)
11983 \DeclareFontEncoding{PU}{-}{}

```

50.2.1 Basic Latin

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

11984 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
11985 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
11986 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
11987 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
11988 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed

```

Accents

```

11989 \DeclareTextAccent{\'}{PU}{\textgrave}
11990 \DeclareTextAccent{\'}{PU}{\textacute}
11991 \DeclareTextAccent{\^}{PU}{\textcircumflex}
11992 \DeclareTextAccent{\~}{PU}{\texttilde}
11993 \DeclareTextAccent{\"}{PU}{\textdieresis}
11994 \DeclareTextAccent{\r}{PU}{\textring}
11995 \DeclareTextAccent{\v}{PU}{\textcaron}
11996 \DeclareTextAccent{\.}{PU}{\textdotaccent}
11997 \DeclareTextAccent{\c}{PU}{\textcedilla}
11998 \DeclareTextAccent{\U}{PU}{\textbreve}
11999 \DeclareTextAccent{\C}{PU}{\textdoublegrave}

```

```

12000 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textgrave}
12001 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
12002 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textcircumflex}
12003 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
12004 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textdieresis}
12005 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
12006 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
12007 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
12008 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
12009 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
12010 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}
12011 \DeclareTextCommand{=}{PU}[1]{\TextSymbolUnavailable{=#1}}#1}
12012 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
12013 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
12014 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}

Accent glyph names
12015 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
12016 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
12017 \DeclareTextCommand{\textcircumflex}{PU}{\80\032} % circumflex
12018 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
12019 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
12020 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
12021 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
12022 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
12023 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave

\040: space
\041: exclam

12024 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
12025 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
12026 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
12027 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
12028 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand

\047: quotesingle

12029 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft
12030 \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

12031 \DeclareTextCommand{\textless}{PU}{<} % less \80\074

\075: equal

12032 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076

\077: question
\100: at
\101... \132: A...Z
\133: bracketleft

12033 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash

```

\135: bracketright

```
12034 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum
12035 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore
12036 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave
```

\141... \172: a...z

```
12037 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % i
12038 \DeclareTextCommand{\j}{PU}{j} % jdotless
12039 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft
12040 \DeclareTextCommand{\textbar}{PU}{|} % bar
12041 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright
12042 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde
```

No glyph \177 in PDFDocEncoding.

50.2.2 Latin-1 Supplement

```
12043 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212
12044 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223
12045 \DeclareTextCommand{\textfl}{PU}{fl} % fl ?? \80\224
```

There are two positions for the glyphs from \80\225 until \80\236. See the test files testbmoe., testbml, testbmisc, testbmzc, and testbmyi for details. Problematic are all positions, but especially \OE, \oe, and \i.

```
12046 \DeclareTextCommand{\OE}{PU}{OE} % OE
12047 \DeclareTextCommand{\oe}{PU}{oe} % oe
```

The euro \240 is inserted in version 1.3 of the pdf specification.

```
12048 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown
12049 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent
12050 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling
12051 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency
12052 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen
12053 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar
12054 \DeclareTextCommand{\textsection}{PU}{\80\247} % section
12055 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis
12056 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright
12057 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine
12058 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft
12059 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot
```

No glyph \255 in PDFDocEncoding.

```
12060 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered
12061 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron
12062 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree
12063 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus
12064 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior
12065 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior
12066 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute
12067 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu
12068 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph
12069 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered
12070 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla
12071 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior
12072 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine
12073 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright
12074 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter
12075 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf
12076 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters
12077 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown
```

12078 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300} % Agrave
12079 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute
12080 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302} % Acircumflex
12081 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303} % Atilde
12082 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis
12083 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring
12084 \DeclareTextCommand{\AE}{PU}{\80\306} % AE
12085 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla
12086 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310} % Egrave
12087 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311} % Eacute
12088 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312} % Ecircumflex
12089 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis
12090 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314} % Igrave
12091 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315} % Iacute
12092 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316} % Icircumflex
12093 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317} % Idieresis
12094 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth
12095 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321} % Ntilde
12096 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322} % Ograve
12097 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323} % Oacute
12098 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324} % Ocircumflex
12099 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325} % Otilde
12100 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326} % Odieresis
12101 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply
12102 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash
12103 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331} % Ugrave
12104 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332} % Uacute
12105 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333} % Ucircumflex
12106 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334} % Udieresis
12107 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335} % Yacute
12108 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn
12109 \DeclareTextCommand{\ss}{PU}{\80\337} % germandbls
12110 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340} % agrave
12111 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341} % aacute
12112 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342} % acircumflex
12113 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343} % atilde
12114 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344} % adieresis
12115 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
12116 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
12117 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
12118 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350} % egrave
12119 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351} % eacute
12120 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352} % ecircumflex
12121 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353} % edieresis
12122 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave
12123 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave
12124 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
12125 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
12126 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
12127 \DeclareTextCompositeCommand{\~}{PU}{i}{\80\356} % icircumflex
12128 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
12129 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
12130 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
12131 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361} % ntilde
12132 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362} % ograve
12133 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363} % oacute
12134 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364} % ocircumflex

```

12135 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365} % otilde
12136 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366} % odieresis
12137 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
12138 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
12139 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371} % ugrave
12140 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372} % uacute
12141 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373} % ucircumflex
12142 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374} % udieresis
12143 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375} % yacute
12144 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
12145 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377} % ydieresis
12146 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```

12147 \DeclareTextCommand{\SS}{PU}{SS}

```

Aliases (german.sty)

```

12148 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
12149 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
12150 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
12151 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
12152 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
12153 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
12154 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
12155 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

12156 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
12157 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
12158 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
12159 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
12160 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

50.2.3 Latin Extended-A

```

12161 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000} % Amacron
12162 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001} % amacron
12163 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002} % Abreve
12164 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003} % abreve
12165 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004} % Aogonek
12166 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005} % aogonek
12167 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006} % Cacute
12168 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007} % cacute
12169 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010} % Ccircumflex
12170 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011} % ccircumflex
12171 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012} % Cdot
12172 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013} % cdot
12173 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014} % Ccaron
12174 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015} % ccaron
12175 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016} % Dcaron
12176 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017} % dcaron
12177 \DeclareTextCommand{\DJ}{PU}{\81\020} % Dslash
12178 \DeclareTextCommand{\dj}{PU}{\81\021} % dslash
12179 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022} % Emacron
12180 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023} % emacron
12181 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024} % Ebreve
12182 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025} % ebreve
12183 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026} % Edot
12184 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027} % edot
12185 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030} % Eogonek

```



```

12186 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031} % eogonek
12187 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032} % Ecaron
12188 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033} % ecaron
12189 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034} % Gcircumflex
12190 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035} % gcircumflex
12191 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036} % Gbreve
12192 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037} % gbreve
12193 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040} % Gdot
12194 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041} % gdot
12195 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042} % Gcedilla
12196 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043} % gcedilla
12197 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044} % Hcircumflex
12198 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045} % hcircumflex
12199 \DeclareTextCommand{\textHslash}{PU}{\81\046} % Hslash
12200 \DeclareTextCommand{\texthslash}{PU}{\81\047} % hslash
12201 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050} % Itilde
12202 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde
12203 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde
12204 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052} % Imacron
12205 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053} % imacron
12206 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053} % imacron
12207 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054} % Ibreve
12208 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
12209 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
12210 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056} % Iogonek
12211 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
12212 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
12213 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060} % Idot
12214 \DeclareTextCommand{\i}{PU}{\81\061} % idotless
12215 % IJlig
12216 % ijlig
12217 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064} % Jcircumflex
12218 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
12219 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
12220 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
12221 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
12222 % kgreen
12223 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
12224 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
12225 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
12226 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
12227 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
12228 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
12229 % L middle dot
12230 % l middle dot
12231 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
12232 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
12233 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute
12234 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
12235 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
12236 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
12237 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
12238 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
12239 % n apostrophe
12240 \DeclareTextCommand{\NG}{PU}{\81\112} % NG
12241 \DeclareTextCommand{\ng}{PU}{\81\113} % ng
12242 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114} % Omacron

```

```

12243 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115} % omacron
12244 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve
12245 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
12246 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
12247 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
12248 \DeclareTextCommand{\OE}{PU}{\81\122} % OE
12249 \DeclareTextCommand{\oe}{PU}{\81\123} % oe
12250 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
12251 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
12252 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
12253 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
12254 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
12255 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
12256 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
12257 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
12258 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134} % Scircumflex
12259 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135} % scircumflex
12260 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
12261 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
12262 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
12263 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
12264 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
12265 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
12266 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
12267 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
12268 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
12269 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
12270 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150} % Utilde
12271 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151} % utilde
12272 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152} % Umacron
12273 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153} % umacron
12274 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
12275 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
12276 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring
12277 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
12278 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
12279 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute
12280 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Uogonek
12281 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % uogonek
12282 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164} % Wcircumflex
12283 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165} % wcircumflex
12284 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166} % Ycircumflex
12285 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167} % ycircumflex
12286 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170} % Ydieresis
12287 \DeclareTextCommand{\IJ}{PU}{\81\170}
12288 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
12289 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
12290 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
12291 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
12292 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
12293 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

```

50.2.4 Latin Extended-B

```

12294 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
12295 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
12296 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
12297 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron

```

```

12298 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
12299 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
12300 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
12301 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
12302 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
12303 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
12304 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
12305 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
12306 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
12307 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
12308 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
12309 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
12310 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Oogonek
12311 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

```

50.2.5 Greek

```

12312 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}
12313 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}
12314 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
12315 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
12316 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}
12317 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
12318 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
12319 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
12320 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
12321 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
12322 \DeclareTextCommand{\'}{PU}{\textIotadieresis}{\83\220}
12323 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
12324 \DeclareTextCommand{\textBeta}{PU}{\83\222}
12325 \DeclareTextCommand{\textGamma}{PU}{\83\223}
12326 \DeclareTextCommand{\textDelta}{PU}{\83\224}
12327 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
12328 \DeclareTextCommand{\textZeta}{PU}{\83\226}
12329 \DeclareTextCommand{\textEta}{PU}{\83\227}
12330 \DeclareTextCommand{\textTheta}{PU}{\83\230}
12331 \DeclareTextCommand{\textIota}{PU}{\83\231}
12332 \DeclareTextCommand{\textKappa}{PU}{\83\232}
12333 \DeclareTextCommand{\textLambda}{PU}{\83\233}
12334 \DeclareTextCommand{\textMu}{PU}{\83\234}
12335 \DeclareTextCommand{\textNu}{PU}{\83\235}
12336 \DeclareTextCommand{\textXi}{PU}{\83\236}
12337 \DeclareTextCommand{\textOmicron}{PU}{\83\237}
12338 \DeclareTextCommand{\textPi}{PU}{\83\240}
12339 \DeclareTextCommand{\textRho}{PU}{\83\241}
12340 \DeclareTextCommand{\textSigma}{PU}{\83\243}
12341 \DeclareTextCommand{\textTau}{PU}{\83\244}
12342 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}
12343 \DeclareTextCommand{\textPhi}{PU}{\83\246}
12344 \DeclareTextCommand{\textChi}{PU}{\83\247}
12345 \DeclareTextCommand{\textPsi}{PU}{\83\250}
12346 \DeclareTextCommand{\textOmega}{PU}{\83\251}
12347 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}
12348 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}
12349 \DeclareTextCompositeCommand{\'}{PU}{\textalpha}{\83\254}
12350 \DeclareTextCompositeCommand{\'}{PU}{\textepsilon}{\83\255}
12351 \DeclareTextCompositeCommand{\'}{PU}{\texteta}{\83\256}
12352 \DeclareTextCompositeCommand{\'}{PU}{\textiota}{\83\257}

```

```

12353 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}
12354 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}
12355 \DeclareTextCommand{\textalpha}{PU}{\83\261}
12356 \DeclareTextCommand{\textbeta}{PU}{\83\262}
12357 \DeclareTextCommand{\textgamma}{PU}{\83\263}
12358 \DeclareTextCommand{\textdelta}{PU}{\83\264}
12359 \DeclareTextCommand{\textepsilon}{PU}{\83\265}
12360 \DeclareTextCommand{\textzeta}{PU}{\83\266}
12361 \DeclareTextCommand{\texteta}{PU}{\83\267}
12362 \DeclareTextCommand{\texttheta}{PU}{\83\270}
12363 \DeclareTextCommand{\textiota}{PU}{\83\271}
12364 \DeclareTextCommand{\textkappa}{PU}{\83\272}
12365 \DeclareTextCommand{\textlambda}{PU}{\83\273}
12366 \DeclareTextCommand{\textmu}{PU}{\83\274}
12367 \DeclareTextCommand{\textnu}{PU}{\83\275}
12368 \DeclareTextCommand{\textxi}{PU}{\83\276}
12369 \DeclareTextCommand{\textomicron}{PU}{\83\277}
12370 \DeclareTextCommand{\textpi}{PU}{\83\300}
12371 \DeclareTextCommand{\textrho}{PU}{\83\301}
12372 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
12373 \DeclareTextCommand{\textsigma}{PU}{\83\303}
12374 \DeclareTextCommand{\texttau}{PU}{\83\304}
12375 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
12376 \DeclareTextCommand{\textphi}{PU}{\83\306}
12377 \DeclareTextCommand{\textchi}{PU}{\83\307}
12378 \DeclareTextCommand{\textpsi}{PU}{\83\310}
12379 \DeclareTextCommand{\textomega}{PU}{\83\311}
12380 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}
12381 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}
12382 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}
12383 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}
12384 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}
12385 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}
12386 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}
12387 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}
12388 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}
12389 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}
12390 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}
12391 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}
12392 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}
12393 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}
12394 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}
12395 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}
12396 %\DeclareTextCommand{\textvarkappa}{PU}{\83\360}
12397 %\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.

```

12398 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
12399 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}%
12400 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
12401 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% GJE
12402 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
12403 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
12404 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
12405 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI

```

12406 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
12407 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
12408 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE
12409 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
12410 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% KJE
12411 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
12412 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
12413 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A
12414 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
12415 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
12416 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
12417 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
12418 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
12419 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
12420 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
12421 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I
12422 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
12423 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}%
12424 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
12425 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
12426 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM
12427 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN
12428 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O
12429 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE
12430 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER
12431 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES
12432 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE
12433 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U
12434 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF
12435 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA
12436 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE
12437 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE
12438 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA
12439 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA
12440 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN
12441 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU
12442 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN
12443 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E
12444 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU
12445 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA
12446 \DeclareTextCommand{\cyra}{PU}{\84\060}% a
12447 \DeclareTextCommand{\cyrb}{PU}{\84\061}% be
12448 \DeclareTextCommand{\cyrv}{PU}{\84\062}% ve
12449 \DeclareTextCommand{\cyrg}{PU}{\84\063}% ghe
12450 \DeclareTextCommand{\cyrd}{PU}{\84\064}% de
12451 \DeclareTextCommand{\cyre}{PU}{\84\065}% ie
12452 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% zhe
12453 \DeclareTextCommand{\cyrz}{PU}{\84\067}% ze
12454 \DeclareTextCommand{\cyri}{PU}{\84\070}% i
12455 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i
12456 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}%
12457 \DeclareTextCommand{\cyrk}{PU}{\84\072}% ka
12458 \DeclareTextCommand{\cyr1}{PU}{\84\073}% el
12459 \DeclareTextCommand{\cyrm}{PU}{\84\074}% em
12460 \DeclareTextCommand{\cyrn}{PU}{\84\075}% en
12461 \DeclareTextCommand{\cyro}{PU}{\84\076}% o
12462 \DeclareTextCommand{\cyrp}{PU}{\84\077}% pe

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12463 \DeclareTextCommand{\cyrr}{PU}{\84\100}% er
12464 \DeclareTextCommand{\cyrS}{PU}{\84\101}% es
12465 \DeclareTextCommand{\cyrT}{PU}{\84\102}% te
12466 \DeclareTextCommand{\cyru}{PU}{\84\103}% u
12467 \DeclareTextCommand{\cyrf}{PU}{\84\104}% ef
12468 \DeclareTextCommand{\cyrh}{PU}{\84\105}% ha
12469 \DeclareTextCommand{\cyrC}{PU}{\84\106}% tse
12470 \DeclareTextCommand{\cyrch}{PU}{\84\107}% che
12471 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% sha
12472 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% shcha
12473 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% hard sign
12474 \DeclareTextCommand{\cyrery}{PU}{\84\113}% yeru
12475 \DeclareTextCommand{\cyrSftsn}{PU}{\84\114}% soft sign
12476 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% e
12477 \DeclareTextCommand{\cyrYu}{PU}{\84\116}% yu
12478 \DeclareTextCommand{\cyrYa}{PU}{\84\117}% ya
12479 \DeclareTextCommand{\cyrYo}{PU}{\84\121}% io
12480 \DeclareTextCompositeCommand{"}{PU}{\cyrC}{\84\121}%
12481 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% dje
12482 \DeclareTextCompositeCommand{\'}{PU}{\cyrG}{\84\123}% gje
12483 \DeclareTextCommand{\cyrIe}{PU}{\84\124}% ukrainian ie
12484 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% dze
12485 \DeclareTextCommand{\cyrIi}{PU}{\84\126}% byelorussian-ukrainian i
12486 \DeclareTextCommand{\cyrYi}{PU}{\84\127}% yi
12487 \DeclareTextCommand{\cyrJe}{PU}{\84\130}% je
12488 \DeclareTextCommand{\cyrLje}{PU}{\84\131}% lje
12489 \DeclareTextCommand{\cyrNje}{PU}{\84\132}% nje
12490 \DeclareTextCommand{\cyrTshe}{PU}{\84\133}% tshe
12491 \DeclareTextCompositeCommand{\'}{PU}{\cyrK}{\84\134}% kje
12492 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% short u
12493 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% dzhe
12494 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA
12495 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega
12496 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT
12497 \DeclareTextCommand{\cyrYat}{PU}{\84\143}% yat
12498 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E
12499 \DeclareTextCommand{\cyrIote}{PU}{\84\145}% iotified e
12500 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS
12501 \DeclareTextCommand{\cyrLyus}{PU}{\84\147}% little yus
12502 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS
12503 \DeclareTextCommand{\cyrIotlyus}{PU}{\84\151}% iotified little yus
12504 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS
12505 \DeclareTextCommand{\cyrByus}{PU}{\84\153}% big yus
12506 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS
12507 \DeclareTextCommand{\cyrIotbyus}{PU}{\84\155}% iotified big yus
12508 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI
12509 \DeclareTextCommand{\cyrKsi}{PU}{\84\157}% ksi
12510 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI
12511 \DeclareTextCommand{\cyrPsi}{PU}{\84\161}% psi
12512 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA
12513 \DeclareTextCommand{\cyrFita}{PU}{\84\163}% fita
12514 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA
12515 \DeclareTextCommand{\cyrIzh}{PU}{\84\165}% izhitsa
12516 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave
12517 \DeclareTextCompositeCommand{\C}{PU}{\cyrIzh}{\84\167}% izhitsa double grave
12518 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK
12519 \DeclareTextCommand{\cyrUk}{PU}{\84\171}% uk

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12520 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA
12521 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega
12522 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo
12523 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo
12524 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT
12525 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot
12526 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA
12527 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa
12528 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign
12529 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO
12530 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION
12531 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA
12532 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA
12533 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn
12534 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn
12535 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke
12536 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke
12537 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook
12538 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook
12539 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender
12540 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender
12541 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender
12542 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender
12543 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender
12544 \DeclareTextCommand{\cyrkds}{PU}{\84\233}% ka descender
12545 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke
12546 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke
12547 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke
12548 \DeclareTextCommand{\cyrkhrs}{PU}{\84\237}% ka stroke
12549 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA
12550 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka
12551 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender
12552 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender
12553 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE
12554 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe
12555 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook
12556 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook
12557 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA
12558 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha
12559 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender
12560 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% es descender
12561 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender
12562 \DeclareTextCommand{\cyrtddsc}{PU}{\84\255}% te descender
12563 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U
12564 \DeclareTextCommand{\cyry}{PU}{\84\257}% straight u
12565 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke
12566 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% straight u stroke
12567 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender
12568 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% ha descender
12569 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE
12570 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% ligature te tse
12571 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender
12572 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender
12573 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke
12574 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% che vertical stroke
12575 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA
12576 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha

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12577 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhasian CHE
12578 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhasian che
12579 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% abkhasian CHE descender
12580 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhasian che descender
12581 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% palochka
12582 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve
12583 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% zhe breve
12584 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook
12585 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% ka hook
12586 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook
12587 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% en hook
12588 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE
12589 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che
12590 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve
12591 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve
12592 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% A diaeresis
12593 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% a diaeresis
12594 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE
12595 \DeclareTextCommand{\cyrae}{PU}{\84\325}% ligature a ie
12596 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve
12597 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve
12598 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA
12599 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% schwa
12600 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis
12601 \DeclareTextCompositeCommand{"}{PU}{\cyrschwa}{\84\333}% schwa diaeresis
12602 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% ZHE diaeresis
12603 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% zhe diaeresis
12604 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% ZE diaeresis
12605 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% ze diaeresis
12606 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhasian DZE
12607 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhasian dze
12608 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% I macron
12609 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% i macron
12610 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% I diaeresis
12611 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% i diaeresis
12612 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% O diaeresis
12613 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% o diaeresis
12614 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O
12615 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% barred o
12616 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% barred O diaeresis
12617 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% barred o diaeresis
12618 \DeclareTextCompositeCommand{\=}{PU}{\CYRU}{\84\356}% U macron
12619 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% u macron
12620 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U diaeresis
12621 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% u diaeresis
12622 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U double acute
12623 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% u double acute
12624 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% CHE diaeresis
12625 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% che diaeresis
12626 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% YERU diaeresis
12627 \DeclareTextCompositeCommand{"}{PU}{\cyrery}{\84\371}% yeru diaeresis

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50.2.7 Symbols

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12628 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash
12629 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash
12630 \DeclareTextCommand{\textquotelleft}{PU}{\9040\030} % quoteleft

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12631 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright
12632 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase
12633 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
12634 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
12635 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
12636 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
12637 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
12638 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet
12639 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
12640 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
12641 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
12642 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
12643 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
12644 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
12645 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160} % superscript zero
12646 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164} % superscript four
12647 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165} % superscript five
12648 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166} % superscript six
12649 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167} % superscript seven
12650 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170} % superscript eight
12651 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171} % superscript nine
12652 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200} % subscript zero
12653 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201} % subscript one
12654 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202} % subscript two
12655 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203} % subscript three
12656 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204} % subscript four
12657 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205} % subscript five
12658 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206} % subscript six
12659 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207} % subscript seven
12660 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210} % subscript eight
12661 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211} % subscript nine
12662 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
12663 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}
12664 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
12665 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
12666 %\DeclareTextCommand{\cyrrangle}{PU}{\9043\051}
12667 %\DeclareTextCommand{\cyrangle}{PU}{\9043\052}

12668 \puenc)

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50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

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12669 \*puvnenc)

12670 \DeclareTextCommand{\abreve}{PU}{\81\003}
12671 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
12672 \DeclareTextCommand{\dj}{PU}{\81\021}
12673 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
12674 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
12675 \DeclareTextCommand{\ohorn}{PU}{\81\241}
12676 \DeclareTextCommand{\uhorn}{PU}{\81\260}
12677 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
12678 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
12679 \DeclareTextCommand{\DJ}{PU}{\81\020}
12680 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
12681 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
12682 \DeclareTextCommand{\OHORN}{PU}{\81\240}
12683 \DeclareTextCommand{\UHORN}{PU}{\81\257}

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12684 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
12685 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
12686 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
12687 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
12688 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
12689 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
12690 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
12691 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
12692 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
12693 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
12694 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
12695 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
12696 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
12697 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}
12698 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}
12699 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}
12700 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}
12701 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}
12702 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}
12703 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}
12704 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}
12705 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}
12706 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}
12707 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}
12708 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}
12709 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}
12710 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}
12711 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}
12712 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}
12713 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}
12714 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}
12715 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}
12716 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}
12717 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}
12718 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}
12719 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}
12720 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}
12721 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}
12722 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}
12723 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}
12724 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}
12725 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}
12726 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}
12727 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}
12728 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}
12729 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}
12730 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}
12731 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}
12732 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}
12733 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}
12734 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}
12735 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}
12736 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}
12737 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}
12738 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}
12739 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}
12740 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}

12741 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}
12742 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}
12743 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}
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12804 </puvnc>

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50.4 PU encoding, additions for Arabi

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12807 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADDA A
12808 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA A
12809 \DeclareTextCommand{\wawhamza}{PU}{\86\044} % 0624;afii57412;ARABIC LETTER WAW WITH HAMZA AE
12810 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HA
12811 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
12812 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF
12813 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH
12814 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA
12815 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH
12816 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH
12817 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM
12818 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH
12819 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH
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12821 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL
12822 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH
12823 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN
12824 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN
12825 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN
12826 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD
12827 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD
12828 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH
12829 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH
12830 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN
12831 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN
12832 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEL
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12834 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF
12835 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF
12836 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM
12837 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LETTER MEEM
12838 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON
12839 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH
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12848 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA
12849 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA

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Farsi

12851 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afii57506;ARABIC LETTER PEH
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12855 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF
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12858 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ

12859 </puarenc>

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51 End of file hycheck.tex

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12863 \end{document}
12864 </check>

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