

Hypertext marks in L^AT_EX

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1 Documentation overview for hyperref

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

Manual The user documentation is also available as HTML.

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

ChangeLog This file records the version history.

Options This file provides a short option summary.

Bookmark talk, slides Slides for the talk “PDF information and navigation elements with `hyperref`, `pdfTeX` and `thumbpdf`” at EuroT_EX 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 L^AT_EX”

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3 File hycheck.tex

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

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

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

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

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

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

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

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

`\HyC@checkPackage`

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

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

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

`\HyC@nc@opt` This macro scans the first optional argument of a L^AT_EX definition (number of arguments).

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

161 % *****
162 </check>
163 <*package>

```

4 Package options and setup

4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

\Hy@RestoreCatcodes

```

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

```

```

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

```

```
230 \Hy@SetCatcodes
```

It needs the December 95 release of L^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!

```

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

```

4.2 Compatibility with format dumps

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

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

```

235 \@ifundefined{AfterBeginDocument}{%
236   \def\AfterBeginDocument{\AtBeginDocument}%
237 }{}%

```

4.3 Switches

```

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

```

```

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

```

Defaults for the switches are now set.

```

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

```

```

311 \Hy@verbosefalse
312 \Hy>windowuitrue
313 \Hy@displaydoctitlefalse

```

5 Common help macros

`\Hy@StepCount`

```

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

```

`\Hy@GlobalStepCount`

```

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

```

```

316 \newdimen\@linkdim
317 \let\Hy@driver\@empty
318 \let\MaybeStopEarly\relax
319 \newcount\Hy@linkcounter
320 \newcount\Hy@pagecounter
321 \Hy@linkcounter0
322 \Hy@pagecounter0

```

5.1 Macros for recursions

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

```

323 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
324 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

```

5.2 Coordinate transformations

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

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

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

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

Example (TeX):

```

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

```

`\hypercalcbp`

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

6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

Email: oberdiek@uni-freiburg.de.

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

6.1 Description of PDF strings

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

- They are surrounded by parentheses. The hexadecimal form is not supported.

- Like PostScript language strings they use the same escaping mechanism:

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

6.2 Definition of `\pdfstringdef`

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

Important: In \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`.

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

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

```
367 \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 (vtx 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.

```
368 \escapechar'\%
```

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

```

369 \edef\0{\string\0}%
370 \edef\1{\string\1}%
371 \edef\2{\string\2}%
372 \edef\3{\string\3}%

```

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

The encoding is set by $\backslash \text{enc@update}$ for optimizing reasons.

```

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

```

Internal encoding commands. $\backslash \text{pdfstringdef}$ 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 $\backslash @\text{inmathwarn}$ will be disabled (see below).

```

382 \@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 ($\backslash \text{edef}$), so that the assignments of $\backslash @\text{changed@cmd}$ don't take place. To patch this behaviour I only found $\backslash @\text{inmathwarn}$ as a usable hook. While an $\backslash \text{edef}$ a warning message by $\backslash @\text{inmathwarn}$ or $\backslash \text{TextSymbolUnavailable}$ cannot be give out, so $\backslash @\text{inmathwarn}$ should be disabled. And with the help of it the assignments in $\backslash @\text{changed@cmd}$ can easily be caught (see below).

```

383 \let\@inmathwarn\HyPsd@inmathwarn

```

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

```

384 \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.

```

385 \let\{\textbraceleft
386 \let\}\textbraceright
387 \let\\\textbackslash
388 \let\#\textnumbersign
389 \let\$\textdollar
390 \let\%\textpercent
391 \let\&\textampersand

```



```

392 % \let\~\textasciitilde
393 \let\_ \textunderscore
394 \let\P\textparagraph
395 \let\ldots\textellipsis
396 \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.

```

397 \def\{\pdfstringdefWarn\}%
398 \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.

```

399 \def\TeX{TeX}%
400 \def\LaTeX{LaTeX}%
401 \def\LaTeXe{LaTeX2e}%
402 \def\TeXe{e-TeX}%
403 \def\MF{Metafont}%
404 \def\MP{Metapost}%

```

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

```

405 \let\emph\@firstofone
406 \let\textbf\@firstofone
407 \let\textit\@firstofone
408 \let\textmd\@firstofone
409 \let\textnormal\@firstofone
410 \let\textrm\@firstofone
411 \let\textsc\@firstofone
412 \let\textsf\@firstofone
413 \let\textsl\@firstofone
414 \let\texttt\@firstofone
415 \let\textup\@firstofone
416 \let\ttfamily\@empty
417 \let\sffamily\@empty
418 \let\itshape\@empty
419 \let\upshape\@empty
420 \let\bfseries\@empty
421 \let\rm\@empty
422 \let\Huge\@empty
423 \let\LARGE\@empty
424 \let\Large\@empty
425 \let\footnotesize\@empty
426 \let\huge\@empty
427 \let\large\@empty
428 \let\normalsize\@empty

```

```

429 \let\scriptsize\@empty
430 \let\small\@empty
431 \let\tiny\@empty

```

Package color.

```

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

```

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

```

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

```

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

```

439 \let\cyr\relax

```

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

```

440 \let\es@roman\@Roman

```

Package german.

```

441 \let\glqq\textglqq
442 \let\grqq\textgrqq
443 \let\glq\textglq
444 \let\grq\textgrq
445 \let\flqq\textflqq
446 \let\frqq\textfrqq
447 \let\flq\textflq
448 \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}

449 \let\if@mid@expandable\@firstoftwo

```

AMS classes.

```

450 \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.

```

451 \let\hspace\HyPsd@hspace

```

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

```
452 \let\label@gobble
453 \let\index@gobble
454 \let\glossary@gobble
455 \let\href@secondoftwo
```

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

```
456 \let\ref\HyPsd@ref
457 \let\pageref\HyPsd@pageref
```

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

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

Miscellaneous commands.

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

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

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

Patch for cjk bookmarks.

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

User hook. The switch $\Hy@pdfstring$ is turned on. So user commands can detect that they are processed not to be 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).

```
484 \Hy@pdfstringtrue
485 \pdfstringdefPreHook
```

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

```

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

```

Package xspace.

```

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

```

Redefinitions of miscellaneous commands. Hyphenation does not make sense.

```

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

```

```

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

```

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

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

```

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

```

6.2.2 Expansion

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

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

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

\edef This version uses this standard form for expansion. It is stronger than L^AT_EX's \protected@edef. So the font encoding mechanism works and the glyph commands are converted to the correct tokens for PDF strings with the definitions of

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

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

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

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

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

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

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

6.2.3 Postprocessing

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

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

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

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

- An argument can be a single token or a group of many tokens. And within curly braces tokens aren't find by \TeX 's argument scanning process. Third curly braces as grouping characters cannot be expanded further, so they don't vanish by the string expansion above. So these characters with catcode 1 and 2 are removed in the following and replaced by a marker for the xspace support.
- \TeX silently removes the outmost pair of braces of an argument. To prevent this on unwanted places, in the following the character | is appended to the string to make an outer brace to an inner one.

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

```

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

```

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

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

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

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

```

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

```

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

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

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

```

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

```

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

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

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

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

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

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

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

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

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

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

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

```

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

```

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

```

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

```

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

```

577     \let\HyPsd@empty\@empty

```

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

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

```

578     \ifHy@unicode
579         \HyPsd@StringSubst{\textparenleft#1%
580         \HyPsd@Subst(\textparenleft#1%
581     \else
582         \HyPsd@StringSubst({\0050}#1%
583         \HyPsd@Subst({\0050}#1%
584         \HyPsd@StringSubst{\0050}{\string\()}#1%
585     \fi

```

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

With Unicode the spaces are replaced by their octal sequences.

```

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

```


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

```
593 \ifHy@unicode
594 \HyPsd@ConvertToUnicode#1%
595 \fi
```

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

```
596 \pdfstringdefPostHook#1%
597 \endgroup
598 }
```

6.3 Encodings

6.3.1 PD1 encoding

The PD1 encoding implements the PDFDocEncoding for use with L^AT_εX 2_ε's NFSS. Because the informational strings are not set by T_EX's typesetting mechanism but for interpreting by the PDF reader, the glyphs of the PD1 encoding are implemented to be safely written to a file (PDF output file, .out file).

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

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

6.3.2 PU encoding

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

```
603 \def\HyPsd@InitUnicode{%
604 \ifundefined{T@PU}{\input{puenc.def}}{}%
605 \DeclareFontFamily{PU}{pdf}{}%
606 \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
607 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
608 \let\HyPsd@InitUnicode\relax
609 }
```

6.4 Additional user commands

6.4.1 \texorpdfstring

\texorpdfstring While expanding the string in \pdfstringdef the switch \ifHy@pdfstring is set. This is used by the full expandable macro \texorpdfstring. It expects two arguments, the first contains the string that will be set and processed by T_EX's stomach, the second contains the replacement for PDF strings.

```
610 \newcommand*{\texorpdfstring}{%
611 \ifHy@pdfstring
612 \expandafter\@secondoftwo
```

```

613   \else
614     \expandafter\@firstoftwo
615   \fi
616 }

```

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`.

```

617 \@ifundefined{pdfstringdefPreHook}{%
618   \let\pdfstringdefPreHook\@empty
619 }{}
620 \@ifundefined{pdfstringdefPostHook}{%
621   \let\pdfstringdefPostHook\@gobble
622 }{}

```

`\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`.

```

623 \def\pdfstringdefDisableCommands{%
624   \begingroup
625     \makeatletter
626     \HyPsd@DisableCommands
627 }

```

`\HyPsd@DisableCommands`

```

628 \long\def\HyPsd@DisableCommands#1{%
629   \toks0=\expandafter{\pdfstringdefPreHook}%
630   \toks1={#1}%
631   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
632   \endgroup
633 }

```

`\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`.

```

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

```

6.5 Help macros for expansion

6.5.1 Babel languages

```
637 \newif\ifHy@next
    Nothing to do for english.
638 \@ifpackagewith{babel}{danish}{%
639   \def\HyPsd@babel@danish{%
640     \declare@shorthand{danish}{"}{|}%
641     \declare@shorthand{danish}{"}{~}{-}%
642   }%
643 }{}
644 \Hy@nextfalse
645 \@ifpackagewith{babel}{dutch}{\Hy@nexttrue}{}%
646 \@ifpackagewith{babel}{afrikaans}{\Hy@nexttrue}{}%
647 \ifHy@next
648   \def\HyPsd@babel@dutch{%
649     \declare@shorthand{dutch}{"}{|}%
650     \declare@shorthand{dutch}{"}{~}{-}%
651   }%
652 \fi
653 \@ifpackagewith{babel}{finnish}{%
654   \def\HyPsd@babel@finnish{%
655     \declare@shorthand{finnish}{"}{|}%
656   }%
657 }{}
658 \Hy@nextfalse
659 \@ifpackagewith{babel}{frenchb}{\Hy@nexttrue}{%
660 \@ifpackagewith{babel}{français}{\Hy@nexttrue}{%
661 \ifHy@next
662   \def\HyPsd@babel@frenchb{%
663     \def\guill@spacing{ }%
664   }%
665 \fi
666 \Hy@nextfalse
667 \@ifpackagewith{babel}{german}{\Hy@nexttrue}{}%
668 \@ifpackagewith{babel}{germanb}{\Hy@nexttrue}{}%
669 \@ifpackagewith{babel}{austrian}{\Hy@nexttrue}{}%
670 \ifHy@next
671   \def\HyPsd@babel@german{%
672     \declare@shorthand{german}{"}{f}{f}%
673     \declare@shorthand{german}{"}{|}%
674     \declare@shorthand{german}{"}{~}{-}%
675   }%
676 \fi
677 \Hy@nextfalse
678 \@ifpackagewith{babel}{ngerman}{\Hy@nexttrue}{}%
679 \@ifpackagewith{babel}{ngermanb}{\Hy@nexttrue}{}%
680 \@ifpackagewith{babel}{naustrian}{\Hy@nexttrue}{}%
681 \ifHy@next
682   \def\HyPsd@babel@ngerman{%
683     \declare@shorthand{german}{"}{|}%
684     \declare@shorthand{german}{"}{~}{-}%
685   }%
686 \fi
687 \Hy@nextfalse
688 \@ifpackagewith{babel}{usorbian}{\Hy@nexttrue}{}%
689 \@ifpackagewith{babel}{uppersorbian}{\Hy@nexttrue}{}%
```

```

690 \ifHy@next
691   \def\HyPsd@babel@usorbian{%
692     \declare@shorthand{usorbian}{f}{f}%
693     \declare@shorthand{usorbian}{|}{|}%
694   }%
695 \fi
696 \Hy@nextfalse
697 \@ifpackagewith{babel}{brazil}{\Hy@nexttrue}{}%
698 \@ifpackagewith{babel}{brazilian}{\Hy@nexttrue}{}%
699 \@ifpackagewith{babel}{portuges}{\Hy@nexttrue}{}%
700 \@ifpackagewith{babel}{portuguese}{\Hy@nexttrue}{}%
701 \ifHy@next
702   \def\HyPsd@babel@portuges{%
703     \declare@shorthand{portuges}{|}{|}%
704   }%
705 \fi
706 \Hy@nextfalse
707 \@ifpackagewith{babel}{russian}{\Hy@nexttrue}{}%
708 \@ifpackagewith{babel}{russianb}{\Hy@nexttrue}{}%
709 \ifHy@next
710   \def\HyPsd@babel@russian{%
711     \declare@shorthand{russian}{|}{|}%
712     \declare@shorthand{russian}{~}{~}%
713   }%
714 \fi
715 \Hy@nextfalse
716 \@ifpackagewith{babel}{ukrainian}{\Hy@nexttrue}{}%
717 \@ifpackagewith{babel}{ukraineb}{\Hy@nexttrue}{}%
718 \ifHy@next
719   \def\HyPsd@babel@ukrainian{%
720     \declare@shorthand{ukrainian}{|}{|}%
721     \declare@shorthand{ukrainian}{~}{~}%
722   }%
723 \fi
724 \@ifpackagewith{babel}{macedonian}{%
725   \def\HyPsd@babel@macedonian{%
726     \declare@shorthand{macedonian}{|}{|}%
727     \declare@shorthand{macedonian}{~}{~}%
728   }%
729 }{}
730 \@ifpackagewith{babel}{slovene}{%
731   \def\HyPsd@babel@slovene{%
732     \declare@shorthand{slovene}{|}{|}%
733   }%
734 }{}
735 \@ifpackagewith{babel}{swedish}{%
736   \def\HyPsd@babel@swedish{%
737     \declare@shorthand{swedish}{|}{|}%
738     \declare@shorthand{swedish}{~}{~}%
739   }%
740 }{}

```

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 char-

acter 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 ($\geq 0x40$).

```

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

```

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

```

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

```

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

```

780 \def\HyPsd@DecimalToOctal#1{%
781   \ifcase #1 %
782     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
783     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
784     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
785     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
786     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%

```

```

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

```

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}
\gdef\TextSymbolUnavailable#1{%
\@latex@error{%
Command \protect#1 unavailable in encoding \cf@encoding%
}\@eha}
\def\@inmathwarn#1{%
\ifmode
\@latex@warning{Command \protect#1 invalid in math mode}%
\fi}

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

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

```

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.

```

836 \def\HyPsd@LetUnexpandableSpace#1{%
837 \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
838 }

```

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

```
839 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace
```

6.5.6 Marker for commands

`\HyPsd@XSPACE` `\HyPsd@ITALCORR` `\HyPsd@GLYPHERR` 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.

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

6.5.7 `\hspace` fix

`\HyPsd@hspace`

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

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

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

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

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

6.5.8 Fix for AMS classes

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

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.


```

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

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

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

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

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

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

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

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

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

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

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

```

6.5.10 Redefining the defining commands

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

Active characters cannot be defined with this trick. It is possible to define all undefined active characters (perhaps that they have the meaning of `\relax`). To avoid side

effects this should be done in `\pdfstringdef` shortly before the `\xdef` job. But checking and defining all possible active characters of the full range (0 until 255) would take a while. `\pdfstringdef` is slow enough, so this isn't done.

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

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

The difference between `\HyPsd@DefCommand` and `\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 unmached `\if...tokens`, the cases `\let\if...\iftrue` and `\let\if...\iffalse` are checked and ignored.

```
\HyPsd@DefCommand
\HyPsd@LetCommand
902 \begingroup
903   \def\x#1#2{%
904     \endgroup
905     \let#1\def
906     \def\HyPsd@DefCommand##1##2##{%
907       #1%
908       \expandafter\noexpand
909       \csname\expandafter@gobble\string##1\@empty\endcsname
910       \@gobble
911     }%
912     \let#2\let
913     \def\HyPsd@@LetCommand##1{%
914       \expandafter\ifx\csname##1\expandafter\endcsname
915         \csname iftrue\endcsname
916         \pdfstringdefWarn\let
917         \expandafter@gobble
918       \else
919         \expandafter\ifx\csname##1\expandafter\endcsname
920           \csname iffalse\endcsname
921           \pdfstringdefWarn\let
922           \expandafter\expandafter\expandafter@gobble
923         \else
924           #2%
925           \expandafter\noexpand
926           \csname##1\expandafter\expandafter\expandafter\endcsname
927         \fi
928       \fi
929     }%
930   }%
931   \expandafter\x\csname <def>-command\expandafter\endcsname
932     \csname <let>-command\endcsname
933   \def\HyPsd@LetCommand#1{%
934     \expandafter\expandafter\expandafter\HyPsd@@LetCommand
935     \expandafter\expandafter\expandafter{%
936       \expandafter@gobble\string#1\@empty
```

```

937 }%
938 }

```

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.

```

939 \def\HyPsd@ifnextchar{%
940   \pdfstringdefWarn\@ifnextchar
941   \expandafter\@gobbletwo\@gobble
942 }

```

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

```

943 \def\HyPsd@new@ifnextchar{%
944   \pdfstringdefWarn\new@ifnextchar
945   \expandafter\@gobbletwo\@gobble
946 }

```

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`.

```

947 \def\HyPsd@protected@testopt#1{%
948   \pdfstringdefWarn#1%
949   \@gobbletwo
950 }

```

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:

```

951 \def\HyPsd@Warning#1{%
952   \begingroup
953     \def\space{ }%
954     \Hy@Warning{#1}%
955   \endgroup
956 }

```

6.6.2 Protecting spaces

`\HyPsd@ProtectSpaces` `\HyPsd@ProtectSpaces` calls with the expanded string `\HyPsd@@ProtectSpaces`. The expanded string is protected by `|` at the beginning and end of the expanded string. Because of this there can be no group at the beginning or end of the string and grouping characters are not removed by the call of `\HyPsd@@ProtectSpaces`.

```

957 \def\HyPsd@ProtectSpaces#1{%
958   \expandafter\HyPsd@@ProtectSpaces
959   \expandafter|\expandafter\@empty#1| \HyPsd@End#1%

```

960 }

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

```

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

Remove mask.

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

```

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

6.6.3 Remove grouping braces

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

```

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

`\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`.

```

983 \def\HyPsd@@RemoveBraces#1#2\HyPsd@End#3{%
984   \def\Hy@temp@A{#1#2}%
985   \def\Hy@temp@B{#3}%
986   \ifx\Hy@temp@A\Hy@temp@B
987     \expandafter\def\expandafter\HyPsd@String\expandafter{%
988       \HyPsd@String#1%
989     }%
990     \Hy@ReturnAfterElseFi{%
991       \ifx\scrollmode#2\scrollmode
992       \else
993         \Hy@ReturnAfterFi{%
```

```

994         \HyPsd@RemoveBraces{#2}%
995     }%
996     \fi
997 }%
998 \else
999     \def\Hy@temp@A{#1}%
1000     \HyPsd@AppendItalcorr\HyPsd@String
1001     \Hy@ReturnAfterFi{%
1002         \ifx\Hy@temp@A\@empty
1003             \Hy@ReturnAfterElseFi{%
1004                 \HyPsd@RemoveBraces{#2}%
1005             }%
1006         \else
1007             \Hy@ReturnAfterFi{%
1008                 \HyPsd@ProtectSpaces\Hy@temp@A
1009                 \HyPsd@AppendItalcorr\Hy@temp@A
1010                 \expandafter\HyPsd@RemoveBraces\expandafter
1011                 {\Hy@temp@A#2}%
1012             }%
1013         \fi
1014     }%
1015 \fi
1016 }

```

\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.

```

1017 \def\HyPsd@AppendItalcorr#1{%
1018     \expandafter\HyPsd@@AppendItalcorr\expandafter{/}#1%
1019 }
1020 \def\HyPsd@@AppendItalcorr#1#2{%
1021     \expandafter\def\expandafter#2\expandafter{#2#1}%
1022 }

```

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).

```

1023 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1024     \global\let\HyPsd@Rest\relax
1025     \ifcat\relax\noexpand#1\relax
1026         \ifx#1\protect
1027         \else
1028             \ifx#1\penalty
1029                 \setbox\z@=\hbox{%
1030                     \afterassignment\HyPsd@AfterCountRemove
1031                     \count@=#2\HyPsd@End
1032                 }%

```

```

1033 \else
1034 \ifx#1\kern
1035 \setbox\z@=\hbox{%
1036 \afterassignment\HyPsd@AfterDimenRemove
1037 \dimen@=#2\HyPsd@End
1038 }%
1039 \else
1040 \ifx#1\hskip
1041 \setbox\z@=\hbox{%
1042 \afterassignment\HyPsd@AfterSkipRemove
1043 \skip@=#2\HyPsd@End
1044 }%
1045 \else
1046 \HyPsd@CatcodeWarning{#1}%
1047 \fi
1048 \fi
1049 \fi
1050 \fi
1051 \else
1052 \ifcat#1 %SPACE
1053 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1054 \HyPsd@String\HyPsd@SPACEOPTI
1055 }%
1056 \else
1057 \ifcat$#1%
1058 \HyPsd@CatcodeWarning{math shift}%
1059 \else
1060 \ifcat&#1%
1061 \HyPsd@CatcodeWarning{alignment tab}%
1062 \else
1063 \ifcat^#1%
1064 \HyPsd@CatcodeWarning{superscript}%
1065 \else
1066 \ifcat_#1%
1067 \HyPsd@CatcodeWarning{subscript}%
1068 \else
1069 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1070 \HyPsd@String#1%
1071 }%
1072 \fi
1073 \fi
1074 \fi
1075 \fi
1076 \fi
1077 \fi
1078 \ifx\HyPsd@Rest\relax
1079 \Hy@ReturnAfterElseFi{%
1080 \ifx\scrollmode#2\scrollmode
1081 \else
1082 \Hy@ReturnAfterFi{%
1083 \HyPsd@CheckCatcodes#2\HyPsd@End
1084 }%
1085 \fi
1086 }%
1087 \else
1088 \Hy@ReturnAfterFi{%
1089 \ifx\HyPsd@Rest\@empty

```

```

1090     \else
1091     \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1092     \fi
1093   }%
1094 \fi
1095 }

```

Remove counts, dimens, skips.

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

```

1096 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1097   \gdef\HyPsd@Rest{#1}%
1098 }

```

`\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.

```

1099 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1100   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@\fi>1ex
1101     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1102     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1103   \else
1104     \ifdim\dimen@=\z@
1105     \else
1106       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1107     \fi
1108     \gdef\HyPsd@Rest{#1}%
1109   \fi
1110 }

```

`\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).

```

1111 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1112   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@\fi>1ex
1113     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1114     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1115   \else
1116     \ifdim\skip@=\z@
1117     \else
1118       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1119     \fi
1120     \gdef\HyPsd@Rest{#1}%
1121   \fi
1122 }

```

Catcode warnings.

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

```

1123 \def\HyPsd@CatcodeWarning#1{%
1124   \HyPsd@Warning{%
1125     Token not allowed in a PDFDocEncoded string,%
1126     \MessageBreak removing ‘\HyPsd@RemoveCmdPrefix#1’%
1127   }%
1128 }
1129 \begingroup

```

```

1130 \catcode'\|=0
1131 \catcode'\|=12
1132 |gdef|HyPsd@RemoveCmdPrefix#1{%
1133     |expandafter|HyPsd@@RemoveCmdPrefix
1134     |string#1|@empty\<>-|@empty|@empty
1135 }%
1136 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1137 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

1138 \def\HyPsd@RemoveSpaceWarning#1{%
1139     \HyPsd@Warning{%
1140         Token not allowed in a PDFDocEncoded string:%
1141         \MessageBreak #1\MessageBreak
1142         removed%
1143     }%
1144 }

```

\HyPsd@ReplaceSpaceWarning

```

1145 \def\HyPsd@ReplaceSpaceWarning#1{%
1146     \HyPsd@Warning{%
1147         Token not allowed in a PDFDocEncoded string:%
1148         \MessageBreak #1\MessageBreak
1149         replaced by space%
1150     }%
1151 }

```

6.6.5 Check for wrong glyphs

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

```

1152 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1153     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1154         \HyPsd@String#1%
1155     }%
1156     \ifx\#2\%
1157     \else
1158         \Hy@ReturnAfterFi{%
1159             \HyPsd@GlyphProcessWarning#2\@empty
1160         }%
1161     \fi
1162 }
1163 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1164     \HyPsd@Warning{%
1165         Glyph not defined in %
1166         P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1167         removing '@backslashchar#1'%
1168     }%
1169     \HyPsd@GlyphProcess#2\@empty
1170 }

```

Spaces.

\HyPsd@spaceopti In the string the spaces are represented by \HyPsd@spaceopti tokens. Within an \edef it prints itself as a simple space and looks for its next argument. If another space follows, so it replaces the next \HyPsd@spaceopti by an protected space \040.


```

1171 \def\HyPsd@spaceopti#1{ % first space
1172   \ifx\HyPsd@spaceopti#1%
1173     \040%
1174   \else
1175     #1%
1176   \fi
1177 }%

```

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.

```

1178 \def\HyPsd@Subst#1#2#3{%
1179   \def\HyPsd@@Replace##1#1##2\END{%
1180     ##1%
1181     \ifx\##2\%
1182     \else
1183       #2%
1184       \Hy@ReturnAfterFi{%
1185         \HyPsd@@Replace##2\END
1186       }%
1187     \fi
1188   }%
1189   \xdef#3{%
1190     \expandafter\HyPsd@@Replace#3#1\END
1191   }%
1192 }

```

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

```

1193 \def\HyPsd@StringSubst#1{%
1194   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1195 }

```

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.

```

1196 \def\HyPsd@doxspace#1{%
1197   \ifx#1\relax\else
1198     \ifx#1.\else
1199       \ifx#1:\else
1200         \ifx#1,\else
1201         \ifx#1;\else
1202         \ifx#1!\else
1203         \ifx#1?\else
1204         \ifx#1/\else
1205         \ifx#1-\else
1206         \ifx#1'\else
1207           \HyPsd@SPACEOPTI
1208         \fi
1209       \fi

```

```

1210         \fi
1211         \fi
1212     \fi
1213     \fi
1214     \fi
1215     \fi
1216     \fi
1217     \fi
1218     #1%
1219 }%

```

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.

```

1220 \begingroup
1221   \catcode'\|=0
1222   \catcode'\=12

```

\HyPsd@ConvertToUnicode

```

1223 |gdef|HyPsd@ConvertToUnicode#1{%
1224   |xdef#1{%
1225     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1226   }%
1227   |xdef#1{%
1228     |ifx#1|@empty
1229     |else
1230       \376\377%
1231       #1%
1232     |fi
1233   }%
1234 }

```

\HyPsd@DoConvert

```

1235 |gdef|HyPsd@DoConvert#1{%
1236   |ifx#1|@empty
1237   |else
1238     |Hy@ReturnAfterFi{%
1239       |ifx#1\%
1240       \%
1241       |expandafter|HyPsd@DoEscape
1242     |else
1243       \000#1%
1244       |expandafter|HyPsd@DoConvert
1245     |fi
1246   }%
1247   |fi
1248 }

```

\HyPsd@DoEscape

```

1249 |gdef|HyPsd@DoEscape#1{%
1250   |ifx#19%
1251   |expandafter|HyPsd@GetTwoBytes
1252   |else
1253     |Hy@ReturnAfterFi{%

```

```

1254         |ifx#18%
1255         00%
1256         |expandafter|HyPsd@GetTwoBytes
1257     |else
1258         #1%
1259         |expandafter|HyPsd@GetOneByte
1260     |fi
1261 }%
1262 |fi
1263 }

```

`\HyPsd@GetTwoBytes`

```

1264 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1265     #1\#2#3#4%
1266     |HyPsd@DoConvert
1267 }

```

`\HyPsd@GetOneByte`

```

1268 |gdef|HyPsd@GetOneByte#1#2{%
1269     #1#2%
1270     |HyPsd@DoConvert
1271 }
1272 |endgroup

```

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

```

1273 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1274     \xdef#4{#4#1#2}%
1275     \HyPsd@@ConvertToUnicode#3\END#4%
1276 }

```

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`

```

1277 \begingroup\expandafter\expandafter\expandafter\endgroup
1278 \expandafter\ifx\csname numexpr\endcsname\relax
1279     \let\HyPsd@UTFviii\relax
1280 \else
1281     \def\HyPsd@UTFviii{%
1282         \let\UTFviii@two@octets\HyPsd@UTFviii@two
1283         \let\UTFviii@three@octets\HyPsd@UTFviii@three
1284         \let\unichar\HyPsd@unichar
1285     }%

```

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.

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

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

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

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

$$(5)$$

```

1286 \def\HyPsd@UTFviii@two#1#2{%
1287   \expandafter\HyPsd@UTFviii@@two
1288   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
1289   \number'#1\expandafter|
1290   \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|
1291   \number'#2 \@nil
1292 }%
1293 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
1294   \expandafter\8%
1295   \number\numexpr #1-48\expandafter\relax
1296   \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1297   \number\numexpr #3-8*%
1298   \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1299   \number\numexpr #4-8*#3\relax
1300 }%
```

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

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

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

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

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

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

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

$$(12)$$

```

1301 \def\HyPsd@UTFviii@three#1#2#3{%
1302   \expandafter\HyPsd@UTFviii@@three
1303   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
1304   \number'#1\expandafter|
1305   \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter|
1306   \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|
1307   \number'#2\expandafter|
1308   \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|
1309   \number'#3 \@nil
1310 }%
1311 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1312   \expandafter\9%
1313   \number\numexpr #1-56\expandafter\relax
1314   \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1315   \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1316   \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1317   \number\numexpr #6-16\expandafter\relax
1318   \number\numexpr #7-8*#6\relax
1319 }%
```

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

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

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

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

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

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

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

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

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

$$(21)$$

```

1320 \def\HyPsd@UTFviii@four#1{%
1321   \expandafter\HyPsd@UTFviii@@four\number'#1|%
1322 }%
1323 \def\HyPsd@UTFviii@@four#1|#2|#3|#4{%
1324   \expandafter\HyPsd@UTFviii@@@four\number#1\expandafter|%
1325   \number'#2\expandafter|
1326   \number\dimexpr.03125\dimexpr'#2sp\expandafter|%
1327   \number'#3\expandafter|%
1328   \number\dimexpr.03125\dimexpr'#3sp\expandafter|%
1329   \number'#4\expandafter|%
1330   \number\dimexpr.125\dimexpr'#4|%
1331 }%
1332 \def\HyPsd@UTFviii@@@four#1|#2|#3|#4|#5|#6|#7|{%
1333   \931%
1334   \number\numexpr\dimexpr.5\dimexpr#1sp\relax\relax -120\relax
1335   \csname\number\numexpr\ifodd#1 2\else 0\fi +#3-4\relax\endcsname
1336   \number\dimexpr.25\dimexpr #2sp - 32\dimexpr#3sp\relax\relax\relax
1337   % ...
1338 }%
```

Input encoding utf8x of package ucs uses macro \unichar. It takes a macro name as argument. Then name obeys the following structure:

\u8-<first byte as decimal number>-[continuation byte]+

```

1339 \def\HyPsd@unichar#1{%
1340   \expandafter\HyPsd@@unichar\string#1\@empty\@empty\@empty\@nil
1341 }%
1342 \def\HyPsd@@unichar #1-#2-#3#4#5#6\@nil{%
1343   \ifnum#2>191 %
1344     \ifnum#2<224 %
1345       \expandafter\HyPsd@UTFviii@@two
1346       \number\dimexpr.25\dimexpr#2sp\expandafter\relax\expandafter|%
1347       \number#2\expandafter|%
1348       \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|%
1349       \number'#3 \@nil
1350     \else
1351       \ifnum#2<240 %
1352         \expandafter\HyPsd@UTFviii@@three
1353         \number\dimexpr.25\dimexpr#2sp\expandafter\relax\expandafter|%
1354         \number#2\expandafter|%
1355         \number\ifnum\numexpr'#3-128\relax <32 0\else 1\fi\expandafter|%
```

```

1356         \number\dimexpr.25\dimexpr'#3sp\expandafter\relax\expandafter|{%
1357         \number'#3\expandafter|{%
1358         \number\dimexpr.125\dimexpr'#4sp\expandafter\relax\expandafter|{%
1359         \number'#4 \@nil
1360     \else
1361         ?% unsupported
1362     \fi
1363 \fi
1364 \fi
1365 }%
1366 \fi

```

7 Support of other packages

7.1 Package subfigure

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

```

1367 \@ifpackageloaded{subfigure}{%
1368   \@ifundefined{sub@label}{%
1369     \Hy@hypertextnamesfalse
1370   }{%
1371     \renewcommand*{\sub@label}[1]{%
1372       \@bsphack
1373       \subfig@oldlabel{#1}%
1374       \if@filesw
1375         \begingroup
1376           \edef\@currentlabstr{%
1377             \expandafter\strip@prefix\meaning\@currentlabelname
1378           }%
1379           \protected@write\@auxout{}{%
1380             \string\newlabel{sub@#1}{%
1381               {\@nameuse{@@thesub\@capttype}}%
1382               {\thepage}%
1383               {\expandafter\strip@period\@currentlabstr\relax.\relax\@@@}%
1384               {\@currentHref}%
1385             }%
1386           }%
1387         }%
1388       \endgroup
1389     \fi
1390     \@esphack
1391   }%
1392   \@ifpackagelater{subfigure}{2002/03/26}{%
1393     \providecommand*{\toclevel@subfigure}{1}%
1394     \providecommand*{\toclevel@subtable}{1}%
1395   }%
1396 }%
1397 }{}

```

7.2 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:

```

1398 \@ifundefined{XR@addURL}{%
1399 }{}

```

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.

```

1400 \def\XR@addURL#1{\XR@dURL#1{}{}{}{}}%
1401 \def\XR@dURL#1#2#3#4#5\{%
1402   {#1}{#2}%
1403   \if!#4!%
1404   \else
1405     {#3}{#4}{\XR@URL}%
1406   \fi
1407 }%
1408 }

1409 \def\Hy@true{true}
1410 \def\Hy@false{false}

```

Providing dummy definitions.

```

1411 \let\literalps@out@gobble
1412 \newcommand\pdfbookmark[3][]{ }
1413 \let\Acrobatmenu@gobble
1414 \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

```

1415 \let\HyperRaiseLinkLength\@tempdima
1416 \let\HyperRaiseLinkHook\@empty
1417 \def\HyperRaiseLinkDefault{\baselineskip}

```

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

```

1418 \def\Hy@raisedlink#1{%
1419   \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1420   \HyperRaiseLinkHook
1421   \ifvmode
1422     #1%
1423   \else
1424     \penalty\@M
1425     \smash{\raise\HyperRaiseLinkLength\hbox{#1}}%
1426   \fi
1427 }

```

<code>\Hy@SaveLastskip</code> <code>\Hy@RestoreLastskip</code>	<p>Inserting a <code>\special</code> command to set a destination destroys the <code>\lastskip</code> value.</p> <pre> 1428 \def\Hy@SaveLastskip{% 1429 \let\Hy@RestoreLastskip\relax 1430 \ifvmode 1431 \ifdim\lastskip=\z@ 1432 \let\Hy@RestoreLastskip\nobreak </pre>
---	--

```

1433 \else
1434 \begingroup
1435 \skip@=-\lastskip
1436 \edef\x{%
1437 \endgroup
1438 \def\noexpand\Hy@RestoreLastskip{%
1439 \noexpand\ifvmode
1440 \noexpand\nobreak
1441 \vskip\the\skip@
1442 \vskip\the\lastskip\relax
1443 \noexpand\fi
1444 }%
1445 }%
1446 \x
1447 \fi
1448 \else
1449 \ifhmode
1450 \ifdim\lastskip=\z@
1451 \let\Hy@RestoreLastskip\nobreak
1452 \else
1453 \begingroup
1454 \skip@=-\lastskip
1455 \edef\x{%
1456 \endgroup
1457 \def\noexpand\Hy@RestoreLastskip{%
1458 \noexpand\ifhmode
1459 \noexpand\nobreak
1460 \hskip\the\skip@
1461 \hskip\the\lastskip\relax
1462 \noexpand\fi
1463 }%
1464 }%
1465 \x
1466 \fi
1467 \fi
1468 \fi
1469 }%

```

9 Options

9.1 Help macros

\Hy@boolkey

```

1470 \def\Hy@boolkey{\@dblarg\Hy@@boolkey}
1471 \def\Hy@@boolkey[#1]#2#3{%
1472 \lowercase{\def\Hy@tempa{#3}}%
1473 \ifx\Hy@tempa\@empty
1474 \let\Hy@tempa\Hy@true
1475 \fi
1476 \ifx\Hy@tempa\Hy@true
1477 \else
1478 \ifx\Hy@tempa\Hy@false
1479 \else
1480 \let\Hy@tempa\relax
1481 \fi
1482 \fi

```



```

1483 \ifx\Hy@tempa\relax
1484   \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1485 \else
1486   \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1487   \csname Hy@#2\Hy@tempa\endcsname
1488 \fi
1489 }

```

\Hy@WarnOptionValue

```

1490 \def\Hy@WarnOptionValue#1#2#3{%
1491   \Hy@Warning{%
1492     Unexpected value ‘#1’\MessageBreak
1493     of option ‘#2’ instead of\MessageBreak
1494     #3%
1495   }
1496 }

```

\Hy@DisableOption

```

1497 \def\Hy@DisableOption#1{%
1498   \@ifundefined{KV@Hyp@#1@default}{%
1499     \define@key{Hyp}{#1}%
1500   }{%
1501     \define@key{Hyp}{#1}[]%
1502   }%
1503   {\Hy@WarnOptionDisabled{#1}}%
1504 }

```

\Hy@WarnOptionDisabled

```

1505 \def\Hy@WarnOptionDisabled#1{%
1506   \Hy@Warning{%
1507     Option ‘#1’ has already been used,\MessageBreak
1508     setting the option has no effect%
1509   }%
1510 }

```

9.2 Defining the options

```

1511 \define@key{Hyp}{implicit}[true]{%
1512   \Hy@boolkey{implicit}{#1}%
1513 }
1514 \define@key{Hyp}{draft}[true]{%
1515   \Hy@boolkey{draft}{#1}%
1516 }
1517 \define@key{Hyp}{final}[true]{%
1518   \Hy@boolkey{final}{#1}%
1519 }
1520 \let\KV@Hyp@nolinks\KV@Hyp@draft
1521 \define@key{Hyp}{a4paper}[true]{%
1522   \def\special@paper{210mm,297mm}%
1523   \def\Hy@pageheight{842}%
1524 }
1525 \define@key{Hyp}{a5paper}[true]{%
1526   \def\special@paper{148mm,210mm}%
1527   \def\Hy@pageheight{595}%
1528 }
1529 \define@key{Hyp}{b5paper}[true]{%
1530   \def\special@paper{176mm,250mm}%

```

```

1531 \def\Hy@pageheight{709}%
1532 }
1533 \define@key{Hyp}{letterpaper}[true]{%
1534 \def\special@paper{8.5in,11in}%
1535 \def\Hy@pageheight{792}%
1536 }
1537 \define@key{Hyp}{legalpaper}[true]{%
1538 \def\special@paper{8.5in,14in}%
1539 \def\Hy@pageheight{1008}%
1540 }
1541 \define@key{Hyp}{executivepaper}[true]{%
1542 \def\special@paper{7.25in,10.5in}%
1543 \def\Hy@pageheight{720}%
1544 }
1545 \define@key{Hyp}{setpagesize}[true]{%
1546 \Hy@boolkey{setpagesize}{#1}%
1547 }
1548 \define@key{Hyp}{debug}[true]{%
1549 \Hy@boolkey[debug]{verbose}{#1}%
1550 }
1551 \define@key{Hyp}{linktopage}[true]{%
1552 \Hy@boolkey{linktopage}{#1}%
1553 }
1554 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1555 \def\XR@ext{dvi}
1556 \define@key{Hyp}{verbose}[true]{%
1557 \Hy@boolkey{verbose}{#1}%
1558 }
1559 \define@key{Hyp}{typexml}[true]{%
1560 \Hy@boolkey{typexml}{#1}%
1561 }

```

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.

```

1562 \define@key{Hyp}{raiselinks}[true]{%
1563 \Hy@boolkey{raiselinks}{#1}%
1564 }

```

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

```

1565 \define@key{Hyp}{breaklinks}[true]{%
1566 \Hy@boolkey{breaklinks}{#1}%
1567 }

```

Determines whether an automatic anchor is put on each page

```

1568 \define@key{Hyp}{pageanchor}[true]{%
1569 \Hy@boolkey{pageanchor}{#1}%
1570 }

```

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.

```

1571 \define@key{Hyp}{plainpages}[true]{%
1572 \Hy@boolkey{plainpages}{#1}%
1573 }

```

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

```

1574 \define@key{Hyp}{naturalnames}[true]{%
1575 \Hy@boolkey{naturalnames}{#1}%

```

```
1576 }
```

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

```
1577 \define@key{Hyp}{hypertexnames}[true]{%
1578   \Hy@boolkey{hypertexnames}{#1}%
1579 }
```

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

```
1580 \define@key{Hyp}{nesting}[true]{%
1581   \Hy@boolkey{nesting}{#1}%
1582 }
1583 \define@key{Hyp}{unicode}[true]{%
1584   \Hy@boolkey{unicode}{#1}%
1585   \HyPsd@InitUnicode
1586 }
```

10 Options for different drivers

```
1587 \define@key{Hyp}{hyperref}[true]{%
1588 \define@key{Hyp}{tex4ht}[true]{%
1589   \def\XR@ext{html}%
1590   \Hy@texhttrue
1591   \def\Hy@raisedlink{}%
1592   \setkeys{Hyp}{colorlinks=true}%
1593   \def\BeforeTeXIVht{\usepackage{color}}%
1594   \def\Hy@driver{htex4ht}%
1595   \def\MaybeStopEarly{%
1596     \typeout{Hyperref stopped early}%
1597     \AfterBeginDocument{\PDF@FinishDoc}%
1598     \endinput
1599   }%
1600 }
1601 \define@key{Hyp}{pdftex}[true]{%
1602   \def\Hy@driver{hpdftex}%
1603   \def\XR@ext{pdf}%
1604   \PassOptionsToPackage{pdftex}{color}%
1605   \Hy@breaklinkstrue
1606 }
1607 \define@key{Hyp}{dvipdf}[true]{%
1608   \Hy@WarningNoLine{%
1609     Option 'dvipdf' is deprecated.\MessageBreak
1610     See the user manual for available driver options%
1611   }%
1612 }
1613 \define@key{Hyp}{nativepdf}[true]{%
1614   \def\Hy@driver{hdvips}%
1615   \def\Hy@raisedlink{}%
1616   \def\XR@ext{pdf}%
1617 }
1618 \define@key{Hyp}{dvipdfm}[true]{%
1619   \def\Hy@driver{hdvipdfm}%
1620   \def\XR@ext{pdf}%
1621   \Hy@breaklinkstrue
1622 }
1623 \define@key{Hyp}{pdfmark}[true]{%
1624   \def\Hy@driver{hdvips}%
1625   \def\Hy@raisedlink{}%
```

```

1626 \def\XR@ext{pdf}%
1627 }
1628 \define@key{Hyp}{dvips}[true]{%
1629 \def\Hy@driver{hdvips}%
1630 \def\Hy@raisedlink{}%
1631 \def\XR@ext{pdf}%
1632 }
1633 \define@key{Hyp}{hypertex}[true]{%
1634 \def\Hy@driver{hypertex}%
1635 }
1636 \let\Hy@MaybeStopNow\relax
1637 \define@key{Hyp}{vtex}[true]{%
1638 \begingroup\expandafter\expandafter\expandafter\endgroup
1639 \expandafter\ifx\csname OpMode\endcsname\relax
1640 \latex@error{Non-VTeX processor}{}%
1641 \global\let\Hy@MaybeStopNow\endinput
1642 \endinput
1643 \else
1644 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1645 \def\XR@ext{pdf}%
1646 \def\Hy@driver{hvtex}%
1647 \else
1648 \ifnum\OpMode=10\relax
1649 \def\XR@ext{htm}%
1650 \def\Hy@driver{hvtexhtm}%
1651 \def\MaybeStopEarly{%
1652 \typeout{Hyperref stopped early}%
1653 \AfterBeginDocument{\PDF@FinishDoc}%
1654 \endinput
1655 }%
1656 \else
1657 \latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1658 \global\let\Hy@MaybeStopNow\endinput
1659 \endinput
1660 \fi
1661 \fi
1662 \fi
1663 }
1664 \define@key{Hyp}{vtexpdfmark}[true]{%
1665 \begingroup\expandafter\expandafter\expandafter\endgroup
1666 \expandafter\ifx\csname OpMode\endcsname\relax
1667 \latex@error{Non-VTeX processor}{}%
1668 \let\Hy@MaybeStopNow\endinput
1669 \endinput
1670 \else
1671 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1672 \def\XR@ext{pdf}%
1673 \def\Hy@driver{hvtexmrk}%
1674 \def\Hy@raisedlink{}%
1675 \else
1676 \latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1677 \let\Hy@MaybeStopNow\endinput
1678 \endinput
1679 \fi
1680 \fi
1681 }
1682 \define@key{Hyp}{dviwindo}[true]{%

```

```

1683 \def\Hy@driver{hdviwind}%
1684 \setkeys{Hyp}{colorlinks}%
1685 \PassOptionsToPackage{dviwindo}{color}%
1686 }
1687 \define@key{Hyp}{dvipsone}[true]{%
1688 \def\XR@ext{pdf}%
1689 \def\Hy@driver{hdvipson}%
1690 \def\Hy@raisedlink{}%
1691 }
1692 \define@key{Hyp}{textures}[true]{%
1693 \def\XR@ext{pdf}%
1694 \def\Hy@driver{htexture}%
1695 }
1696 \define@key{Hyp}{latex2html}[true]{%
1697 \AtBeginDocument{\@latextohtmlX}%
1698 }

```

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

```

1699 \define@key{Hyp}{ps2pdf}[true]{%
1700 \def\Hy@driver{hdvips}%
1701 \def\Hy@raisedlink{}%
1702 \providecommand\@pdfborder{0 0 1}%
1703 }

```

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.

```

1704 \define@key{Hyp}{hyperfigures}[true]{%
1705 \Hy@boolkey[hyperfigures]{figures}{#1}%
1706 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

1707 \define@key{Hyp}{hyperfootnotes}[true]{%
1708 \Hy@boolkey[hyperfootnotes]{#1}%
1709 }

```

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

```

1710 \def\back@none{none}
1711 \def\back@section{section}
1712 \def\back@page{page}
1713 \def\back@slide{slide}
1714 \define@key{Hyp}{backref}[section]{%
1715 \lowercase{\def\Hy@tempa{#1}}%
1716 \ifx\Hy@tempa\@empty
1717 \let\Hy@tempa\back@section
1718 \fi
1719 \ifx\Hy@tempa\Hy@false
1720 \let\Hy@tempa\back@none
1721 \fi
1722 \ifx\Hy@tempa\back@slide
1723 \let\Hy@tempa\back@section
1724 \fi
1725 \ifx\Hy@tempa\back@page
1726 \PassOptionsToPackage{hyperpageref}{backref}%
1727 \Hy@backreftrue
1728 \else
1729 \ifx\Hy@tempa\back@section

```

```

1730     \PassOptionsToPackage{hyperref}{backref}%
1731     \Hy@backreftrue
1732   \else
1733     \ifx\Hy@tempa\back@none
1734       \Hy@backreffalse
1735     \else
1736       \Hy@WarnOptionValue{#1}{backref}{%
1737         'section', 'slide', 'page', 'none', \MessageBreak
1738         or 'false'}%
1739     \fi
1740   \fi
1741 \fi
1742 }
1743 \define@key{Hyp}{pagebackref}[true]{%
1744   \lowercase{\def\Hy@tempa{#1}}%
1745   \ifx\Hy@tempa\@empty
1746     \let\Hy@tempa\Hy@true
1747   \fi
1748   \ifx\Hy@tempa\Hy@true
1749     \PassOptionsToPackage{hyperpageref}{backref}%
1750     \Hy@backreftrue
1751   \else
1752     \ifx\Hy@tempa\Hy@false
1753       \Hy@backreffalse
1754     \else
1755       \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
1756     \fi
1757   \fi
1758 }

```

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

```

1759 \define@key{Hyp}{hyperindex}[true]{%
1760   \Hy@boolkey{hyperindex}{#1}%
1761 }

```

Configuration of encap char.

```

1762 \define@key{Hyp}{encap}[\l]{%
1763   \def\HyInd@EncapChar{#1}%
1764 }

```

12 Language options

The `\autoref` feature depends on the language.

```

1765 \def\HyLang@english{%
1766   \def\equationautorefname{Equation}%
1767   \def\footnoteautorefname{footnote}%
1768   \def\itemautorefname{item}%
1769   \def\figureautorefname{Figure}%
1770   \def\tableautorefname{Table}%
1771   \def\partautorefname{Part}%
1772   \def\appendixautorefname{Appendix}%
1773   \def\chapterautorefname{chapter}%
1774   \def\sectionautorefname{section}%
1775   \def\subsectionautorefname{subsection}%
1776   \def\subsubsectionautorefname{subsubsection}%
1777   \def\paragraphautorefname{paragraph}%

```

```

1778 \def\subparagraphautorefname{subparagraph}%
1779 \def\FancyVerbLineautorefname{line}%
1780 \def\theoremautorefname{Theorem}%
1781 }
1782 \def\HyLang@german{%
1783 \def\equationautorefname{Gleichung}%
1784 \def\footnoteautorefname{Fu\ss note}%
1785 \def\itemautorefname{Punkt}%
1786 \def\figureautorefname{Abbildung}%
1787 \def\tableautorefname{Tabelle}%
1788 \def\partautorefname{Teil}%
1789 \def\appendixautorefname{Anhang}%
1790 \def\chapterautorefname{Kapitel}%
1791 \def\sectionautorefname{Abschnitt}%
1792 \def\subsectionautorefname{Unterabschnitt}%
1793 \def\subsubsectionautorefname{Unterunterabschnitt}%
1794 \def\paragraphautorefname{Absatz}%
1795 \def\subparagraphautorefname{Unterabsatz}%
1796 \def\FancyVerbLineautorefname{Zeile}%
1797 \def\theoremautorefname{Theorem}%
1798 }
1799 \def\HyLang@portuges{%
1800 \def\equationautorefname{Equa\c c\~ao}%
1801 \def\footnoteautorefname{Nota de rodap\~e}%
1802 \def\itemautorefname{Item}%
1803 \def\figureautorefname{Figura}%
1804 \def\tableautorefname{Tabela}%
1805 \def\partautorefname{Parte}%
1806 \def\appendixautorefname{Ap\~endice}%
1807 \def\chapterautorefname{Cap\~itulo}%
1808 \def\sectionautorefname{Se\c c\~ao}%
1809 \def\subsectionautorefname{Subse\c c\~ao}%
1810 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
1811 \def\paragraphautorefname{par\~agrafo}%
1812 \def\subparagraphautorefname{subpar\~agrafo}%
1813 \def\FancyVerbLineautorefname{linha}%
1814 \def\theoremautorefname{Teorema}%
1815 }
1816 \def\HyLang@spanish{%
1817 \def\equationautorefname{Ecuaci\~on}%
1818 \def\footnoteautorefname{Nota a pie de p\~agina}%
1819 \def\itemautorefname{Elemento}%
1820 \def\figureautorefname{Figura}%
1821 \def\tableautorefname{Tabla}%
1822 \def\partautorefname{Parte}%
1823 \def\appendixautorefname{Ap\~endice}%
1824 \def\chapterautorefname{Cap\~itulo}%
1825 \def\sectionautorefname{Secci\~on}%
1826 \def\subsectionautorefname{Subsecci\~on}%
1827 \def\subsubsectionautorefname{Subsubsecci\~on}%
1828 \def\paragraphautorefname{P\~arrafo}%
1829 \def\subparagraphautorefname{Subp\~arrafo}%
1830 \def\FancyVerbLineautorefname{L\~inea}%
1831 \def\theoremautorefname{Teorema}%
1832 }
1833 \def\HyLang@afrikaans{%
1834 \def\equationautorefname{Vergelyking}%

```

```

1835 \def\footnoteautorefname{Voetnota}%
1836 \def\itemautorefname{Item}%
1837 \def\figureautorefname{Figuur}%
1838 \def\tableautorefname{Tabel}%
1839 \def\partautorefname{Deel}%
1840 \def\appendixautorefname{Bylae}%
1841 \def\chapterautorefname{Hoofstuk}%
1842 \def\sectionautorefname{Afdeling}%
1843 \def\subsectionautorefname{Subafdeling}%
1844 \def\subsubsectionautorefname{Subsubafdeling}%
1845 \def\paragraphautorefname{Paragraaf}%
1846 \def\subparagraphautorefname{Subparagraaf}%
1847 \def\FancyVerbLineautorefname{Lyn}%
1848 \def\theoremautorefname{Teorema}%
1849 }
1850 \def\HyLang@french{%
1851 \def\equationautorefname{'Equation}%
1852 \def\footnoteautorefname{note}%
1853 \def\itemautorefname{item}%
1854 \def\figureautorefname{Figure}%
1855 \def\tableautorefname{Tableau}%
1856 \def\partautorefname{Partie}%
1857 \def\appendixautorefname{Appendice}%
1858 \def\chapterautorefname{chapitre}%
1859 \def\sectionautorefname{section}%
1860 \def\subsectionautorefname{sous-section}%
1861 \def\subsubsectionautorefname{sous-sous-section}%
1862 \def\paragraphautorefname{paragraphe}%
1863 \def\subparagraphautorefname{sous-paragraphe}%
1864 \def\FancyVerbLineautorefname{ligne}%
1865 \def\theoremautorefname{Th'eor'eme}%
1866 }
1867 \def\HyLang@vietnamese{%
1868 \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr'inh}%
1869 \def\footnoteautorefname{Ch'u th'ich}%
1870 \def\itemautorefname{m\du{c}}%
1871 \def\figureautorefname{H'inh}%
1872 \def\tableautorefname{B\h{a}ng}%
1873 \def\partautorefname{Ph'\acircumflex{n}}%
1874 \def\appendixautorefname{Ph\du{ } l\du{c}}%
1875 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
1876 \def\sectionautorefname{m\du{c}}%
1877 \def\subsectionautorefname{m\du{c}}%
1878 \def\subsubsectionautorefname{m\du{c}}%
1879 \def\paragraphautorefname{dj{o\du{a}n}}%
1880 \def\subparagraphautorefname{dj{o\du{a}n}}%
1881 \def\FancyVerbLineautorefname{d'ong}%
1882 \def\theoremautorefname{DJ\du{inh} l'y}%
1883 }

```

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

```

1884 \def\HyLang@addto#1#2{%
1885 #2%
1886 \@temptokena{#2}%
1887 \ifx#1\relax
1888 \let#1\@empty
1889 \fi

```



```

1890 \ifx#1\undefined
1891   \edef#1{\the\@temptokena}%
1892 \else
1893   \toks@\expandafter{#1}%
1894   \edef#1{\the\toks@\the\@temptokena}%
1895 \fi
1896 \@temptokena{}\toks@\@temptokena
1897 }

1898 \def\HyLang@DeclareLang#1#2{%
1899   \begingroup
1900   \edef\x##1##2{%
1901     \noexpand\ifx##2\relax
1902       \errmessage{No definitions for language #2' found!}%
1903     \noexpand\fi
1904   \endgroup
1905   \noexpand\define@key{Hyp}{#1}[]{%
1906     \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
1907   }%
1908 }%
1909 \expandafter\x\csname extras#1\expandafter\endcsname
1910   \csname HyLang@#2\endcsname
1911 }

1912 \HyLang@DeclareLang{english}{english}
1913 \HyLang@DeclareLang{UKenglish}{english}
1914 \HyLang@DeclareLang{british}{english}
1915 \HyLang@DeclareLang{USenglish}{english}
1916 \HyLang@DeclareLang{american}{english}
1917 \HyLang@DeclareLang{german}{german}
1918 \HyLang@DeclareLang{austrian}{german}
1919 \HyLang@DeclareLang{ngerman}{german}
1920 \HyLang@DeclareLang{naustrian}{german}
1921 \HyLang@DeclareLang{brazil}{portuges}
1922 \HyLang@DeclareLang{brazilian}{portuges}
1923 \HyLang@DeclareLang{portuguese}{portuges}
1924 \HyLang@DeclareLang{spanish}{spanish}
1925 \HyLang@DeclareLang{afrikaans}{afrikaans}
1926 \HyLang@DeclareLang{french}{french}
1927 \HyLang@DeclareLang{frenchb}{french}
1928 \HyLang@DeclareLang{francais}{french}
1929 \HyLang@DeclareLang{acadian}{french}
1930 \HyLang@DeclareLang{canadien}{french}

```

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

```

1931 \define@key{Hyp}{vietnamese}[]{%
1932   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
1933   \AtEndOfPackage{%
1934     \ifundefined{T@PU}{-}{%
1935       \input{puvnenc.def}%
1936     }%
1937   }%
1938 }

1939 \define@key{Hyp}{vietnam}[]{%
1940   \HyLang@addto\extrasvietnam\HyLang@vietnamese
1941   \AtEndOfPackage{%
1942     \ifundefined{T@PU}{-}{%
1943       \input{puvnenc.def}%
1944     }%

```

```

1945 }%
1946 }

```

13 Options to change appearance of links

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

```

1947 \define@key{Hyp}{colorlinks}[true]{%
1948   \Hy@boolkey{colorlinks}{#1}%
1949   \ifHy@colorlinks
1950     \def\pdfborder{0 0 0}%
1951   \fi
1952 }
1953 \define@key{Hyp}{frenchlinks}[true]{%
1954   \Hy@boolkey{frenchlinks}{#1}%
1955 }

```

14 Bookmarking

```

1956 \define@key{Hyp}{bookmarks}[true]{%
1957   \Hy@boolkey{bookmarks}{#1}%
1958 }
1959 \define@key{Hyp}{bookmarksopen}[true]{%
1960   \Hy@boolkey{bookmarksopen}{#1}%
1961 }

```

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.

```

1962 \let\Hy@bookmarksdepth\c@tocdepth
1963 \define@key{Hyp}{bookmarksdepth}[]{%
1964   \begingroup
1965     \edef\x{#1}%
1966     \ifx\x\empty
1967       \global\let\Hy@bookmarksdepth\c@tocdepth
1968     \else
1969       \ifundefined{toclevel@\x}{%
1970         \@onelevel@sanitize\x
1971         \edef\y{\expandafter\@car\x\@nil}%
1972         \ifcase 0\expandafter\ifx\y-1\fi
1973           \expandafter\ifnum\expandafter'\y>47 %
1974             \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
1975           \Hy@Warning{Unknown document division name (\x)}%
1976         \else
1977           \setbox\z@=\hbox{%
1978             \count@=\x
1979             \xdef\Hy@bookmarksdepth{\the\count@}%
1980           }%

```

```

1981      \fi
1982    }{%
1983      \setbox\z@=\hbox{%
1984        \count@=\csname toplevel@\x\endcsname
1985        \xdef\Hy@bookmarksdepth{\the\count@}%
1986      }%
1987    }%
1988  \fi
1989  \endgroup
1990 }

```

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

```

1991 \define@key{Hyp}{bookmarksopenlevel}{%
1992   \def\@bookmarksopenlevel{#1}%
1993 }
1994 \def\@bookmarksopenlevel{\maxdimen}
1995 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
1996 \define@key{Hyp}{bookmarkstype}{%
1997   \def\Hy@bookmarkstype{#1}%
1998 }
1999 \def\Hy@bookmarkstype{toc}

```

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

```

2000 \define@key{Hyp}{bookmarksnumbered}[true]{%
2001   \Hy@boolkey{bookmarksnumbered}{#1}%
2002 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2003 \define@key{Hyp}{CJKbookmarks}[true]{%
2004   \Hy@boolkey{CJKbookmarks}{#1}%
2005 }
2006 \define@key{Hyp}{linkcolor}{\def\@linkcolor{#1}}
2007 \define@key{Hyp}{anchorcolor}{\def\@anchorcolor{#1}}
2008 \define@key{Hyp}{citecolor}{\def\@citecolor{#1}}
2009 \define@key{Hyp}{urlcolor}{\def\@urlcolor{#1}}
2010 \define@key{Hyp}{menucolor}{\def\@menucolor{#1}}
2011 \define@key{Hyp}{filecolor}{\def\@filecolor{#1}}
2012 \define@key{Hyp}{pagecolor}{\def\@pagecolor{#1}}

```

Default values:

```

2013 \def\@linkcolor{red}
2014 \def\@anchorcolor{black}
2015 \def\@citecolor{green}
2016 \def\@filecolor{cyan}
2017 \def\@urlcolor{magenta}
2018 \def\@menucolor{red}
2019 \def\@pagecolor{red}
2020 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2021 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2022 \let\@baseurl\empty
2023 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2024 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2025 \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.

```
2026 \let\pdfpagetransition\relax
2027 \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.

```
2028 \let\pdfpageduration\relax
2029 \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.

```
2030 \newif\ifHy@useHidKey
2031 \Hy@useHidKeyfalse
2032 \define@key{Hyp}{pdfpagehidden}[true]{%
2033   \Hy@boolkey{pdfpagehidden}{#1}%
2034   \ifHy@pdfpagehidden
2035     \global\Hy@useHidKeytrue
2036   \fi
2037 }
```

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).

```
2038 \def\Hy@ColorList{cite,file,link,menu,page,run,url}
2039 \@for\Hy@temp:=\Hy@ColorList\do{%
2040   \edef\Hy@temp{%
2041     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2042       \noexpand\Hy@bordercolor{\Hy@temp}{##1}{ }%
2043     }%
2044   }%
2045   \Hy@temp
2046 }
2047 \def\Hy@bordercolor#1#2#3{%
2048   \begingroup
2049     \csname @safe@activetrue\endcsname
2050     \@ifundefined{XC@edef}{\edef}{\XC@edef}\x{#2}%
2051     \expandafter\Hy@CheckColorSpec\x{#3}\@nil{#1}{#2}%
2052   }
2053 \def\Hy@CheckColorSpec#1 #2 #3\@nil#4#5{%
2054   \ifx\#3\%
2055     \@ifundefined{XC@bordercolor}{%
2056       \Hy@Warning{%
2057         Unsupported color specification (#4bordercolor).\MessageBreak
2058         Load package 'xcolor' (version >= 1.11) first.\MessageBreak
2059         Ignoring color specification%
2060       }%
2061     \endgroup
2062   }{%
```

```

2063     \endgroup
2064     \XC@bordercolor{#4}{#5}%
2065   }%
2066 \else
2067   \endgroup
2068   \@namedef{@#4bordercolor}{#5}%
2069 \fi
2070 }

2071 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2072 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2073 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2074 \def\Hy@setpdfborder{%
2075   \ifx\@pdfborder\@empty
2076   \else
2077     /Border[\@pdfborder]%
2078   \fi
2079   \ifx\@pdfborderstyle\@empty
2080   \else
2081     /BS<<\@pdfborderstyle>>%
2082   \fi
2083 }
2084 \define@key{Hyp}{pdfpagemode}{%
2085   \def\Hy@tempa{#1}%
2086   \ifx\Hy@tempa\@empty
2087     \let\@pdfpagemode\@empty
2088   \else
2089     \def\@pdfpagemode{/#1 }%
2090   \fi
2091 }
2092 \define@key{Hyp}{pdfnonfullscreenpagemode}{%
2093   \def\Hy@tempa{#1}%
2094   \ifx\Hy@tempa\@empty
2095     \let\@pdfnonfullscreenpagemode\@empty
2096   \else
2097     \def\@pdfnonfullscreenpagemode{/#1 }%
2098   \fi
2099 }
2100 \define@key{Hyp}{pdfusetitle}[true]{%
2101   \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2102 }
2103 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2104 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2105 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2106 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2107 \define@key{Hyp}{pdfcreationdate}{\pdfstringdef\@pdfcreationdate{#1}}
2108 \define@key{Hyp}{pdfmoddate}{\pdfstringdef\@pdfmoddate{#1}}
2109 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2110 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2111 \define@key{Hyp}{pdfview}{\calculatepdfview#1 \\\}
2112 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2113 \let\setpdflinkmargin\@gobble
2114 \def\calculatepdfview#1 #2\\{%
2115   \def\@pdfview{#1}%
2116   \ifx\@#2\\%
2117     \def\@pdfviewparams{ -32768}%
2118   \else
2119     \def\@pdfviewparams{ #2}%

```

```

2120 \fi
2121 }
2122 \define@key{Hyp}{pdfstartpage}{\def\pdfstartpage{#1}}
2123 \define@key{Hyp}{pdfstartview}{%
2124 \ifx\#1\%
2125 \def\pdfstartview{}%
2126 \else
2127 \hypercalcbpdef\pdfstartview{ /#1 }%
2128 \fi
2129 }
2130 \define@key{Hyp}{pdfpagescrop}{\edef\pdfpagescrop{#1}}
2131 \define@key{Hyp}{pdftoolbar}[true]{%
2132 \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2133 }
2134 \define@key{Hyp}{pdfmenubar}[true]{%
2135 \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2136 }
2137 \define@key{Hyp}{pdfwindowui}[true]{%
2138 \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2139 }
2140 \define@key{Hyp}{pdffitwindow}[true]{%
2141 \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2142 }
2143 \define@key{Hyp}{pdfcenterwindow}[true]{%
2144 \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2145 }
2146 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2147 \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2148 }
2149 \define@key{Hyp}{pdfnewwindow}[true]{%
2150 \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2151 }
2152 \define@key{Hyp}{pdfpagelayout}{\def\pdfpagelayout{#1}}
2153 \def\pdfpagelayout{}
2154 \define@key{Hyp}{pdfpagelabels}[true]{%
2155 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2156 }
2157 \define@key{Hyp}{pdfescapeform}[true]{%
2158 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2159 }

```

Default values:

```

2160 \def\@linkbordercolor{1 0 0}
2161 \def\@urlbordercolor{0 1 1}
2162 \def\@menubordercolor{1 0 0}
2163 \def\@filebordercolor{0 .5 .5}
2164 \def\@runbordercolor{0 .7 .7}
2165 \def\@citebordercolor{0 1 0}
2166 \def\@pagebordercolor{1 1 0}
2167 \def\@pdfhighlight{/I}
2168 \def\@pdfpagemode{}
2169 \def\@pdfnonfullscreenpagemode{}
2170 \def\@pdftitle{}
2171 \def\@pdfauthor{}
2172 \let\@pdfproducer\relax
2173 \def\@pdfcreator{LaTeX with hyperref package}
2174 \def\@pdfcreationdate{}
2175 \def\@pdfmoddate{}

```

```

2176 \def\@pdfsubject{}
2177 \def\@pdfkeywords{}
2178 \def\@pdfpagescrop{}
2179 \def\@pdfstartview{ /Fit }
2180 \def\@pdfstartpage{1}
2181 \let\PDF@SetupDoc\@empty
2182 \let\PDF@FinishDoc\@empty
2183 \let\phantomsection\@empty
2184 \@ifundefined{stockwidth}{%
2185   \edef\special@paper{\the\paperwidth,\the\paperheight}
2186 }{%
2187   \edef\special@paper{\the\stockwidth,\the\stockheight}
2188 }
2189 \begingroup
2190   \dimen@=\@ifundefined{stockheight}{\paperheight}{\stockheight}\relax
2191   \dimen@=0.99626401\dimen@
2192   \xdef\Hy@pageheight{\strip@pt\dimen@}
2193 \endgroup
2194 \def\HyInd@EncapChar{||}
2195 \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.

```

2196 \let\hyper@normalise\ExecuteOptions
2197 \let\ExecuteOptions\hypersetup
2198 \Hy@RestoreCatcodes
2199 \InputIfFileExists{hyperref.cfg}{-}{-}
2200 \Hy@SetCatcodes
2201 \let\ExecuteOptions\hyper@normalise
2202 \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`.

```

2203 \RequirePackage{kvoptions}

```

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

```

2204 \@ifpackageloaded{tex4ht}{%
2205   \@ifpackagewith{hyperref}{tex4ht}{-}{%
2206     \PassOptionsToPackage{tex4ht}{hyperref}%
2207   }%
2208 }{-}

2209 \let\ReadBookmarks\relax
2210 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2211 \AtBeginDocument{%
2212   \ifHy@draft
2213     \let\hyper@@anchor\@gobble
2214     \gdef\hyper@link#1#2#3{#3}%
2215     \let\hyper@anchorstart\@gobble
2216     \let\hyper@anchorend\@empty
2217     \let\hyper@linkstart\@gobbletwo
2218     \let\hyper@linkend\@empty
2219     \def\hyper@linkurl#1#2{#1}%

```

```

2220 \def\hyper@linkfile#1#2#3{#1}%
2221 \def\Acrobatmenu#1#2{#2}%
2222 \let\PDF@SetupDoc\@empty
2223 \let\PDF@FinishDoc\@empty
2224 \let\@fifthoffive\@secondoftwo
2225 \let\@secondoffive\@secondoftwo
2226 \let\ReadBookmarks\relax
2227 \let\WriteBookmarks\relax
2228 \Hy@WarningNoLine{ draft mode on}%
2229 \fi
2230 \Hy@DisableOption{draft}%
2231 \Hy@DisableOption{nolinks}%
2232 \Hy@DisableOption{final}%
2233 }%

```

If option unicode is already processed, then the command `\HyPsd@InitUnicode` is cleared after execution. Then the option code only sets the meaning of the switch `\ifHy@unicode`.

```

2234 \ifx\HyPsd@InitUnicode\relax
2235 \define@key{Hyp}{unicode}[true]{%
2236 \Hy@boolkey{unicode}{#1}%
2237 }
2238 \else
2239 \define@key{Hyp}{unicode}[true]{%
2240 \Hy@boolkey{unicode}{#1}%
2241 \ifHy@unicode
2242 \Hy@WarningNoLine{Set package option ‘unicode’ first\MessageBreak
2243 in order to load unicode support%
2244 }%
2245 \Hy@unicodedefalse
2246 \fi
2247 }
2248 \fi

```

The macro `\HyPsd@InitUnicode` is no longer needed.

```

2249 \let\HyPsd@InitUnicode\@undefined

```

15.1 Patch for babel’s `\texttilde`

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

```

2250 \Hy@nextfalse
2251 \@ifpackagewith{babel}{spanish}{\Hy@nexttrue}{}
2252 \@ifpackagewith{babel}{galician}{\Hy@nexttrue}{}
2253 \@ifpackagewith{babel}{estonian}{\Hy@nexttrue}{}
2254 \ifHy@next
2255 \let\texttilde\~%
2256 \fi
2257 \ifHy@figures
2258 \Hy@Info{Hyper figures ON}
2259 \else
2260 \Hy@Info{Hyper figures OFF}
2261 \fi
2262 \ifHy@nesting
2263 \Hy@Info{Link nesting ON}
2264 \else
2265 \Hy@Info{Link nesting OFF}

```



```

2266 \fi
2267 \ifHy@hyperindex
2268   \Hy@Info{Hyper index ON}
2269 \else
2270   \Hy@Info{Hyper index OFF}
2271 \fi
2272 \ifHy@plainpages
2273   \Hy@Info{Plain pages ON}
2274 \else
2275   \Hy@Info{Plain pages OFF}
2276 \fi
2277 \ifHy@backref
2278   \Hy@Info{Backreferencing ON}
2279 \else
2280   \Hy@Info{Backreferencing OFF}
2281 \fi
2282 \ifHy@typexml
2283   \AtEndOfPackage{\RequirePackage{color}\RequirePackage{nameref}}
2284 \fi
2285 \Hy@DisableOption{typexml}
2286 \ifHy@implicit
2287   \typeout{Implicit mode ON; LaTeX internals redefined}%
2288 \else
2289   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
2290   \def\MaybeStopEarly{%
2291     \typeout{Hyperref stopped early}%
2292     \AfterBeginDocument{\PDF@FinishDoc}%
2293     \endinput
2294   }%
2295   \AtBeginDocument{%
2296     \let\autoref\ref
2297     \ifx\@pdfpagemode\@empty
2298       \gdef\@pdfpagemode{/UseNone}%
2299     \fi
2300     \global\Hy@backreffalse
2301   }%
2302   \AtEndOfPackage{%
2303     \global\let\ReadBookmarks\relax
2304     \global\let\WriteBookmarks\relax
2305   }%
2306 \fi
2307 \Hy@DisableOption{implicit}

```

15.1.1 Driver loading

```

2308 \AtEndOfPackage{%
2309   \@ifpackageloaded{tex4ht}{%
2310     \def\Hy@driver{htex4ht}%
2311     \Hy@texhttrue
2312   }{}%
2313   \ifx\Hy@driver\@empty
2314     \providecommand*\Hy@defaultdriver{hypertex}%
2315     \begingroup\expandafter\expandafter\expandafter\endgroup
2316     \expandafter\ifx\csname pdfoutput\endcsname\relax
2317       \begingroup\expandafter\expandafter\expandafter\endgroup
2318       \expandafter\ifx\csname OpMode\endcsname\relax
2319         \let\Hy@driver\Hy@defaultdriver

```

```

2320 \else
2321 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2322 \def\Hy@driver{hvtex}%
2323 \def\XR@ext{pdf}%
2324 \else
2325 \ifnum\OpMode=10\relax
2326 \def\XR@ext{htm}%
2327 \def\Hy@driver{hvtexhtm}%
2328 \def\MaybeStopEarly{%
2329 \typeout{Hyperref stopped early}%
2330 \AfterBeginDocument{\PDF@FinishDoc}%
2331 \endinginput
2332 }%
2333 \else
2334 \let\Hy@driver\Hy@defaultdriver
2335 \fi
2336 \fi
2337 \fi
2338 \else
2339 \ifnum\pdfoutput<1 %
2340 \let\Hy@driver\Hy@defaultdriver
2341 \else
2342 \def\Hy@driver{hpdftex}%
2343 \def\XR@ext{pdf}%
2344 \PassOptionsToPackage{pdftex}{color}%
2345 \Hy@breaklinkstrue
2346 \fi
2347 \fi
2348 \ifx\Hy@driver\Hy@defaultdriver
2349 \def\Hy@temp{hdvips}%
2350 \ifx\Hy@temp\Hy@driver
2351 \def\Hy@raisedlink{}%
2352 \def\XR@ext{pdf}%
2353 \fi
2354 \def\Hy@temp{hdvipdfm}%
2355 \ifx\Hy@temp\Hy@driver
2356 \def\XR@ext{pdf}%
2357 \Hy@breaklinkstrue
2358 \fi
2359 \def\Hy@temp{hdviwind}%
2360 \ifx\Hy@temp\Hy@driver
2361 \setkeys{Hyp}{colorlinks}%
2362 \PassOptionsToPackage{dviwindo}{color}%
2363 \fi
2364 \def\Hy@temp{hdvipson}%
2365 \ifx\Hy@temp\Hy@driver
2366 \def\XR@ext{pdf}%
2367 \def\Hy@raisedlink{}%
2368 \fi
2369 \def\Hy@temp{textures}%
2370 \ifx\Hy@temp\Hy@driver
2371 \def\XR@ext{pdf}%
2372 \fi
2373 \fi
2374 \typeout{*hyperref using default driver \Hy@driver*}%
2375 \else
2376 \typeout{*hyperref using driver \Hy@driver*}%

```

```

2377 \fi
2378 \input{\Hy@driver.def}%
2379 \let\@unprocessedoptions\relax
2380 \Hy@RestoreCatcodes
2381 }
2382 \Hy@DisableOption{tex4ht}
2383 \Hy@DisableOption{pdftex}
2384 \Hy@DisableOption{dvipdf}
2385 \Hy@DisableOption{nativepdf}
2386 \Hy@DisableOption{dvipdfm}
2387 \Hy@DisableOption{pdfmark}
2388 \Hy@DisableOption{dvips}
2389 \Hy@DisableOption{hypertex}
2390 \Hy@DisableOption{vtex}
2391 \Hy@DisableOption{vtexpdfmark}
2392 \Hy@DisableOption{dviwindo}
2393 \Hy@DisableOption{dvipsone}
2394 \Hy@DisableOption{textures}
2395 \Hy@DisableOption{latex2html}
2396 \Hy@DisableOption{ps2pdf}

```

15.1.2 Bookmarks

```

2397 \def\WriteBookmarks{0}
2398 \def\@bookmarkopenstatus#1{%
2399   \ifHy@bookmarksopen

```

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

```

2400   \ifnum#1<\expandafter\@firstofone\expandafter
2401     {\number\@bookmarkopenlevel} % explicit space
2402   \else
2403     -%
2404   \fi
2405 \else
2406   -%
2407 \fi
2408 }
2409 \ifHy@bookmarks
2410   \Hy@Info{Bookmarks ON}%
2411   \ifx\@pdfpagemode\@empty
2412     \def\@pdfpagemode{/UseOutlines }%
2413   \fi
2414 \else
2415   \def\@bookmarkopenstatus#1{%
2416     \Hy@Info{Bookmarks OFF}%
2417     \AtEndOfPackage{%
2418       \global\let\ReadBookmarks\relax
2419       \global\let\WriteBookmarks\relax
2420     }
2421     \ifx\@pdfpagemode\@empty
2422       \def\@pdfpagemode{/UseNone}%
2423     \fi
2424   \fi
2425 \Hy@DisableOption{bookmarks}

```

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

```

2426 \AtBeginDocument{%
2427   \ifHy@colorlinks

```

```

2428 \ifHy@typexml\else\RequirePackage{color}\fi
2429 \def\Hy@colorlink#1{%
2430 \begingroup
2431 \expandafter\Hy@colorscan\expandafter#1#1\@nil%
2432 }%
2433 \def\Hy@colorscan#1{%
2434 \@ifnextchar[% ]
2435 {%
2436 \Hy@@colorscan
2437 }{%
2438 \expandafter\color\expandafter#1\@car{}}%
2439 }%
2440 }%
2441 \def\Hy@@colorscan#1\@nil{\color#1}%
2442 \def\Hy@endcolorlink{\endgroup}%
2443 \Hy@Info{Link coloring ON}%
2444 \else
2445 \ifHy@frenchlinks
2446 \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
2447 \def\Hy@endcolorlink{\endgroup}%
2448 \Hy@Info{French linking ON}%
2449 \else
for grouping consistency:
2450 \def\Hy@colorlink#1{\begingroup}%
2451 \def\Hy@endcolorlink{\endgroup}%
2452 \Hy@Info{Link coloring OFF}%
2453 \fi
2454 \fi
2455 \Hy@DisableOption{colorlinks}%
2456 \Hy@DisableOption{frenchlinks}%
2457 \ifHy@texht
2458 \long\def\@firstoffive#1#2#3#4#5{#1}%
2459 \long\def\@secondoffive#1#2#3#4#5{#2}%
2460 \long\def\@thirdoffive#1#2#3#4#5{#3}%
2461 \long\def\@fourthoffive#1#2#3#4#5{#4}%
2462 \long\def\@fifthoffive#1#2#3#4#5{#5}%
2463 \providecommand*\@safe@activestruer{}%
2464 \providecommand*\@safe@activesfalse{}%
2465 \def\T@ref#1{%
2466 \@safe@activestruer
2467 \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
2468 \@safe@activesfalse
2469 }%
2470 \def\T@pageref#1{%
2471 \@safe@activestruer
2472 \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
2473 \@safe@activesfalse
2474 }%
2475 \else
2476 \ifHy@typexml\else\RequirePackage{nameref}\fi
2477 \fi
2478 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
2479 \DeclareRobustCommand\pageref{%
2480 \@ifstar\@pagerefstar\T@pageref
2481 }%
2482 }
2483 \AfterBeginDocument{%

```

```

2484 \ifHy@texht
2485 \else
2486 \ReadBookmarks
2487 \fi
2488 }

2489 \ifHy@backref
2490 \RequirePackage{backref}
2491 \else
2492 \let\Hy@backout\@gobble
2493 \fi
2494 \Hy@DisableOption{backref}
2495 \Hy@DisableOption{pagebackref}

2496 \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.

```

2497 \begingroup
2498 \endlinechar=-1
2499 \catcode'\^M\active
2500 \catcode'\%\active
2501 \catcode'\#\active
2502 \catcode'\_\active
2503 \catcode'\$\active
2504 \gdef\hyper@normalise{
2505 \begingroup
2506 \catcode'\^M\active
2507 \def^M{ }
2508 \catcode'\%\active
2509 \let%\@percentchar
2510 \let\%\@percentchar
2511 \catcode'\#\active
2512 \def#{\hyper@hash}
2513 \def#{\hyper@hash}
2514 \@makeother\&
2515 \edef\textunderscore{\string_}
2516 \let\_ \textunderscore
2517 \catcode'\_\active
2518 \let\_ \textunderscore
2519 \let~\hyper@tilde
2520 \let~\hyper@tilde
2521 \let\textasciitilde\hyper@tilde
2522 \let\\\@backslashchar
2523 \edef$\{\string$}
2524 \ifx\@safe@activetrue\@undefined\else\@safe@activetrue\fi
2525 \hyper@n@rmalise
2526 }
2527 \catcode'\#=6
2528 \gdef\hyper@n@rmalise#1#2{
2529 \edef\Hy@tempa{
2530 \endgroup

```

```

2531 \noexpand#1{\Hy@RemovePercentCr#2%^~M\@nil}
2532 }
2533 \Hy@tempa
2534 }
2535 \gdef\Hy@RemovePercentCr#1%^~M#2\@nil{
2536 #1
2537 \ifx\limits#2\limits
2538 \else
2539 \Hy@ReturnAfterFi{
2540 \Hy@RemovePercentCr #2\@nil
2541 }
2542 \fi
2543 }
2544 \endgroup
2545 \providecommand\hyper@chars{%
2546 \let\#\hyper@hash
2547 \let%\@percentchar
2548 }

2549 \def\hyperlink#1#2{%
2550 \hyper@link{#1}{#2}%
2551 }

2552 \DeclareRobustCommand*\href{\hyper@normalise\href@}
2553 \begingroup
2554 \catcode'\$=6
2555 \catcode'\#=12
2556 \gdef\href@#1{\expandafter\href@split$1##\}
2557 \gdef\href@split$1#$2#$3\{\%
2558 \hyper@link{$1}{$2}%
2559 }
2560 \endgroup

```

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

```

2561 \RequirePackage{url}
2562 \let\HyOrg@url\url
2563 \def\Hurl{\begingroup \Url}
2564 \let\nolinkurl\Hurl
2565 \DeclareRobustCommand*\url{\hyper@normalise\url@}
2566 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

2567 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
2568 \providecommand\hyper@image[2]{#2}

2569 \def\hypertarget#1#2{%
2570 \ifHy@nesting
2571 \hyper@@anchor{#1}{#2}%
2572 \else
2573 \hyper@@anchor{#1}{\relax}#2%
2574 \fi
2575 }

```

`\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.

```

2576 \DeclareRobustCommand*\hyperref{\%
2577 \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref

```

```

2578 }
2579 \def\Hy@babelnormalise#1[#2]{%
2580   \begingroup
2581     \csname @safe@activestrue\endcsname
2582     \edef\Hy@tempa{%
2583       \endgroup
2584       \noexpand#1[#2]}%
2585   }%
2586   \Hy@tempa
2587 }
2588 \def\@hyperref{\hyper@normalise\@hyperref}
2589 \def\@hyperref#1#2#3{%
2590   \edef\ref@one{\ifx\#2\\\else#2.\fi#3}%
2591   \expandafter\tryhyper@link\ref@one\{#1}%
2592 }
2593 \def\tryhyper@link#1\#2{%
2594   \hyper@@link{#2}{#1}%
2595 }
2596 \def\hyperdef{\@ifnextchar[\{\label@hyperdef\}\@hyperdef}}
2597 \def\@hyperdef#1#2#3{%, category, name, text
2598   \ifHy@nesting
2599     \hyper@@anchor{#1.#2}{#3}%
2600   \else
2601     \hyper@@anchor{#1.#2}{\relax}#3%
2602   \fi
2603 }

```

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

```

2604 \def\label@hyperref[#1]{%
2605   \expandafter\label@\@hyperref\csname r@#1\endcsname{#1}%
2606 }%
2607 \def\label@\@hyperref#1#2#3{%
2608   \ifx#1\relax
2609     \protect\G@refundefinedtrue
2610     \@latex@warning{%
2611       Hyper reference ‘#2’ on page \thepage \space undefined%
2612     }%
2613     \hyper@@link{}{??}{#3}%
2614   \else
2615     \hyper@@link{\expandafter\@fifthoffive#1}%
2616       {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
2617   \fi
2618 }
2619 \def\label@hyperdef[#1]#2#3#4{ label name, category, name,
2620                               % anchor text
2621   \@bsphack
2622   \if@files@
2623     \protected@write\@auxout{%
2624       {\string\newlabel{#1}{\{#\}\}\}\#2.#3}}%
2625   \fi
2626   \@esphack
2627   \ifHy@nesting
2628     \hyper@@anchor{#2.#3}{#4}%
2629   \else
2630     \hyper@@anchor{#2.#3}{\relax}#4%
2631   \fi

```

2632 }

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.

```
2633 \def\hyper@@link{\let\Hy@reserved@a\relax
2634 \ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
2635 }
2636 \def\hyper@link@[#1]#2#3#4{%
2637 \begingroup
2638 \protected@edef\Hy@tempa{#2}%
2639 \csname @safe@activestrue\endcsname
2640 \edef\x{#3}%
2641 \ifx\Hy@tempa\@empty
2642 \toks0{\hyper@link{#1}}%
2643 \else
2644 \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
2645 \fi
2646 \toks1{#4}%
2647 \edef\x{\endgroup
2648 \the\toks0 \x\the\toks1 }
2649 }%
2650 \x
2651 }
```

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.

```
2652 \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.

```
2653 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
2654 }
```

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

```
2655 \def\@pdftempwordfile{file}%
2656 \def\@pdftempwordrun{run}%
2657 \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:

```

2658 \ifx\#6\%
2659 \expandafter\@hyper@linkfile file:#7\#{3}{#2}%
2660 \else
2661 \ifx\#4\%
2662 \expandafter\@hyper@linkfile file:#7\#{3}{#2}%
2663 \else

```

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

```

2664 \def\@pdftempa{#4}%
2665 \ifx\@pdftempa\@pdftempwordfile
2666 \expandafter\@hyper@linkfile#7\#{3}{#2}%
2667 \else

```

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

```

2668 \ifx\@pdftempa\@pdftempwordrun
2669 \expandafter\@hyper@launch#7\#{3}{#2}%
2670 \else

```

otherwise its a URL

```

2671 \hyper@linkurl{#3}{#7\ifx\#2\else\hyper@hash#2\fi}%
2672 \fi
2673 \fi
2674 \fi
2675 \fi
2676 }

```

By default, turn run: into file:

```

2677 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
2678 \hyper@linkurl{#2}{\Hy@linkfileprefix#1\ifx\#3\else\hyper@hash#3\fi}%
2679 }

```

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

```

2680 \def\@hyper@linkfile file:#1\#2#3{%
2681 %file url,link string, name
2682 \filename@parse{#1}%
2683 \ifx\filename@ext\relax
2684 \edef\filename@ext{\XR@ext}%
2685 \fi
2686 \def\use@file{\filename@area\filename@base.\filename@ext}%
2687 \ifx\filename@ext\XR@ext
2688 \hyper@linkfile{#2}{\use@file}{#3}%
2689 \else
2690 \ifx\@baseurl\@empty
2691 \hyper@linkurl{#2}{%
2692 \Hy@linkfileprefix\use@file\ifx\#3\else\hyper@hash#3\fi
2693 }%
2694 \else
2695 \hyper@linkurl{#2}{\use@file\ifx\#3\else\hyper@hash#3\fi}%
2696 \fi
2697 \fi
2698 }

```

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.

```

2699 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
2700 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
2701   \ifx\#1\%
2702     #2\Hy@WarningNoLine{empty link? #1: #2#3}%
2703   \else
2704     \def\anchor@spot{#2#3}%
2705     \let\put@me@back\@empty
2706     \ifx\relax#2\relax
2707     \else
2708       \ifHy@nesting
2709       \else
2710         \ifcat a\noexpand#2\relax
2711         \else
2712           \ifcat 0\noexpand#2 \relax
2713           \else
2714             \typeout{Anchor start is not alphanumeric %
2715             on input line\the\inputlineno%
2716             }%
2717             \let\anchor@spot\@empty
2718             \def\put@me@back{#2#3}%
2719           \fi
2720         \fi
2721       \fi
2722     \ifHy@activeanchor
2723     \anchor@spot
2724     \else
2725     \hyper@anchor{#1}%
2726     \fi
2727     \expandafter\put@me@back
2728   \fi
2729   \let\anchor@spot\@empty
2730 }
2731 }
```

18 Compatibility with the *LT_εX2html* 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.

```

2732 \let\htmladding\hyperimage
2733 \def\htmladdnormallink#1#2{\href{#2}{#1}}
2734 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
2735 \def\htmlref#1#2{% anchor text, label
2736   \label@hyperref[{#2}]{#1}%
2737 }
```

This is really too much. The \LaTeX 2html 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.

```

2738 \def\@@latextohtmlX{%
2739   \let\hhyperref\hyperref
2740   \def\hyperref##1##2##3##4{% anchor text for HTML
2741                               % text to print before label in print
2742                               % label
2743                               % post-label text in print
2744     ##2\ref{##4}##3%
2745   }%
2746 }
```

19 Forms creation

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

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

```

2747 \newif\ifFld@checked
2748 \newif\ifFld@hidden
2749 \newif\ifFld@multiline
2750 \newif\ifFld@readonly
2751 \newif\ifFld@disabled
2752 \newif\ifFld@password
2753 \newif\ifFld@radio
2754 \newif\ifFld@combo
2755 \newif\ifFld@popdown
2756 \Fld@multilinefalse
2757 \Fld@checkedfalse
2758 \Fld@hiddenfalse
2759 \Fld@readonlyfalse
2760 \Fld@disabledfalse
2761 \Fld@radiofalse
2762 \Fld@combofalse
2763 \Fld@popdownfalse
2764 \Fld@passwordfalse
2765 \newcount\Fld@menulength
2766 \newdimen\Fld@Width
2767 \newdimen\Fld@charsize
2768 \Fld@charsize=10\p@
2769 \def\Fld@maxlen{0}
2770 \def\Fld@align{0}
2771 \def\Fld@color{0 0 0}
2772 \def\Fld@bcolor{1 1 1}
2773 \def\Fld@bordercolor{1 0 0}
2774 \def\Fld@bordersep{1\p@}
2775 \def\Fld@borderwidth{1}
2776 \def\Fld@borderstyle{S}
2777 \def\Fld@cbsymbol{4}
2778 \newtoks\Choice@toks
2779 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
2780 \def\endForm{\@endForm}
2781 \newif\ifForm@html
2782 \Form@htmlfalse
```

```

2783 \def\Form@boolkey#1#2{%
2784   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2785 }
2786 \define@key{Form}{action}{%
2787   \hyper@normalise\Hy@DefFormAction{#1}%
2788 }
2789 \def\Hy@DefFormAction{\def\Form@action}
2790 \def\enc@html{html}
2791 \define@key{Form}{encoding}{%
2792   \def\Hy@tempa{#1}%
2793   \ifx\Hy@tempa\enc@html
2794     \Form@htmltrue
2795   \else
2796     \typeout{hyperref: form 'encoding' key set to #1 %
2797       -- unknown type%
2798     }%
2799     \Form@htmlfalse
2800   \fi
2801 }
2802 \define@key{Form}{method}{%
2803   \def\Form@method{#1}%
2804 }
2805 \def\Form@method{}
2806 \def\Field@boolkey#1#2{%
2807   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2808 }
2809 \newtoks\Field@toks
2810 \Field@toks={ }%
2811 \def\Field@addtoks#1#2{%
2812   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
2813   \@processme
2814 }
2815 \def\Fld@checkequals#1=#2=#3\\{%
2816   \def\@currDisplay{#1}%
2817   \ifx\\#2\\%
2818     \def\@currValue{#1}%
2819   \else
2820     \def\@currValue{#2}%
2821   \fi
2822 }
2823 \define@key{Field}{loc}{%
2824   \def\Fld@loc{#1}%
2825 }
2826 \define@key{Field}{multiline}[true]{%
2827   \lowercase{\Field@boolkey{#1}}{multiline}%
2828 }
2829 \define@key{Field}{checked}[true]{%
2830   \lowercase{\Field@boolkey{#1}}{checked}%
2831 }
2832 \define@key{Field}{hidden}[true]{%
2833   \lowercase{\Field@boolkey{#1}}{hidden}%
2834 }
2835 \define@key{Field}{readonly}[true]{%
2836   \lowercase{\Field@boolkey{#1}}{readonly}%
2837 }
2838 \define@key{Field}{disabled}[true]{%
2839   \lowercase{\Field@boolkey{#1}}{disabled}%

```

```

2840 }
2841 \define@key{Field}{password}[true]{%
2842   \lowercase{\Field@boolkey{#1}}{password}%
2843 }
2844 \define@key{Field}{radio}[true]{%
2845   \lowercase{\Field@boolkey{#1}}{radio}%
2846 }
2847 \define@key{Field}{combo}[true]{%
2848   \lowercase{\Field@boolkey{#1}}{combo}%
2849 }
2850 \define@key{Field}{popdown}[true]{%
2851   \lowercase{\Field@boolkey{#1}}{popdown}%
2852 }
2853 \define@key{Field}{accesskey}{%
2854   \Field@addtoks{accesskey}{#1}%
2855 }
2856 \define@key{Field}{tabkey}{%
2857   \Field@addtoks{tabkey}{#1}%
2858 }
2859 \define@key{Field}{name}{%
2860   \def\Fld@name{#1}%
2861 }
2862 \define@key{Field}{width}{%
2863   \def\Fld@width{#1}%
2864   \Field@Width#1\setbox0=\hbox{m}%
2865 }
2866 \define@key{Field}{maxlen}{%
2867   \def\Fld@maxlen{#1}%
2868 }
2869 \define@key{Field}{menulength}{%
2870   \Fld@menulength=#1\relax
2871 }
2872 \define@key{Field}{height}{%
2873   \def\Fld@height{#1}%
2874 }
2875 \define@key{Field}{charsize}{%
2876   \Fld@charsize#1%
2877 }
2878 \define@key{Field}{fillcolor}{%
2879   \def\Fld@fillcolor{#1}%
2880 }
2881 \define@key{Field}{bordercolor}{%
2882   \def\Fld@bordercolor{#1}%
2883 }
2884 \define@key{Field}{color}{%
2885   \def\Fld@color{#1}%
2886 }
2887 \define@key{Field}{borderwidth}{%
2888   \def\Fld@borderwidth{#1}%
2889 }
2890 \define@key{Field}{borderstyle}{%
2891   \def\Fld@borderstyle{#1}%
2892 }
2893 \define@key{Field}{bordersep}{%
2894   \def\Fld@bordersep{#1}%
2895 }
2896 \define@key{Field}{default}{%

```

```

2897 \def\Fld@default{#1}%
2898 }
2899 \define@key{Field}{align}{%
2900 \def\Fld@align{#1}%
2901 }
2902 \define@key{Field}{value}{%
2903 \def\Fld@value{#1}%
2904 }
2905 \define@key{Field}{backgroundcolor}{%
2906 \def\Fld@bcolor{#1}%
2907 }
2908 \define@key{Field}{checkboxsymbol}{%
2909 \def\Fld@cbsymbol{#1}%
2910 }
2911 \def\Fld@format@code{}
2912 \def\Fld@validate@code{}
2913 \def\Fld@calculate@code{}
2914 \def\Fld@keystroke@code{}
2915 \def\Fld@onfocus@code{}
2916 \def\Fld@onblur@code{}
2917 \def\Fld@onmousedown@code{}
2918 \def\Fld@onmouseup@code{}
2919 \def\Fld@onenter@code{}
2920 \def\Fld@onexit@code{}
2921 \define@key{Field}{keystroke}{%
2922 \def\Fld@keystroke@code{#1}%
2923 }
2924 \define@key{Field}{format}{%
2925 \def\Fld@format@code{#1}%
2926 }
2927 \define@key{Field}{validate}{%
2928 \def\Fld@validate@code{#1}%
2929 }
2930 \define@key{Field}{calculate}{%
2931 \def\Fld@calculate@code{#1}%
2932 }
2933 \define@key{Field}{onfocus}{%
2934 \def\Fld@onfocus@code{#1}%
2935 }
2936 \define@key{Field}{onblur}{%
2937 \def\Fld@onblur@code{#1}%
2938 }
2939 \define@key{Field}{onenter}{%
2940 \def\Fld@onenter@code{#1}%
2941 }
2942 \define@key{Field}{onexit}{%
2943 \def\Fld@onexit@code{#1}%
2944 }
2945 \define@key{Field}{onselect}{%
2946 \Field@addtoks{onselect}{#1}%
2947 }
2948 \define@key{Field}{onchange}{%
2949 \Field@addtoks{onchange}{#1}%
2950 }
2951 \define@key{Field}{onclick}{%
2952 \def\Fld@onclick{#1}%
2953 \Field@addtoks{onclick}{#1}%

```

```

2954 }
2955 \define@key{Field}{ondblclick}{%
2956   \Field@addtoks{ondblclick}{#1}%
2957 }
2958 \define@key{Field}{onmousedown}{%
2959   \Field@addtoks{onmousedown}{#1}%
2960 }
2961 \define@key{Field}{onmouseup}{%
2962   \Field@addtoks{onmouseup}{#1}%
2963 }
2964 \define@key{Field}{onmouseover}{%
2965   \Field@addtoks{onmouseover}{#1}%
2966 }
2967 \define@key{Field}{onmousemove}{%
2968   \Field@addtoks{onmousemove}{#1}%
2969 }
2970 \define@key{Field}{onmouseout}{%
2971   \Field@addtoks{onmouseout}{#1}%
2972 }
2973 \define@key{Field}{onkeypress}{%
2974   \Field@addtoks{onkeypress}{#1}%
2975 }
2976 \define@key{Field}{onkeydown}{%
2977   \Field@addtoks{onkeydown}{#1}%
2978 }
2979 \define@key{Field}{onkeyup}{%
2980   \Field@addtoks{onkeyup}{#1}%
2981 }
2982 %
2983 \DeclareRobustCommand\TextField{%
2984   \@ifnextchar[{\@TextField}{\@TextField[]}%
2985 }
2986 \DeclareRobustCommand\ChoiceMenu{%
2987   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
2988 }
2989 \DeclareRobustCommand\CheckBox{%
2990   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
2991 }
2992 \DeclareRobustCommand\PushButton{%
2993   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
2994 }
2995 \DeclareRobustCommand\Gauge{%
2996   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
2997 }
2998 \DeclareRobustCommand\Submit{%
2999   \@ifnextchar[{\@Submit}{\@Submit[]}%
3000 }
3001 \DeclareRobustCommand\Reset{%
3002   \@ifnextchar[{\@Reset}{\@Reset[]}%
3003 }
3004 \def\LayoutTextField#1#2{% label, field
3005   #1 #2%
3006 }
3007 \def\LayoutChoiceField#1#2{% label, field
3008   #1 #2%
3009 }
3010 \def\LayoutCheckField#1#2{% label, field

```

```

3011 #1 #2%
3012 }
3013 \def\LayoutPushButtonField#1{% button
3014 #1%
3015 }
3016 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3017 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3018 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3019 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3020 \def\MakeButtonField#1{%
3021 \sbox0{%
3022 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
3023 }%
3024 \@tempdima\ht0
3025 \advance\@tempdima by \Fld@borderwidth bp
3026 \advance\@tempdima by \Fld@borderwidth bp
3027 \ht0\@tempdima
3028 \@tempdima\dp0
3029 \advance\@tempdima by \Fld@borderwidth bp
3030 \advance\@tempdima by \Fld@borderwidth bp
3031 \dp0\@tempdima
3032 \box0\relax
3033 }
3034 \def\DefaultHeightofSubmit{14pt}
3035 \def\DefaultWidthofSubmit{2cm}
3036 \def\DefaultHeightofReset{14pt}
3037 \def\DefaultWidthofReset{2cm}
3038 \def\DefaultHeightofCheckBox{\baselineskip}
3039 \def\DefaultWidthofCheckBox{\baselineskip}
3040 \def\DefaultHeightofChoiceMenu{\baselineskip}
3041 \def\DefaultWidthofChoiceMenu{\baselineskip}
3042 \def\DefaultHeightofText{\baselineskip}
3043 \def\DefaultWidthofText{3cm}

```

20 Setup

```

3044 \ifHy@figures
3045 \Hy@Info{Hyper figures ON}
3046 \else
3047 \Hy@Info{Hyper figures OFF}
3048 \fi
3049 \ifHy@nesting
3050 \Hy@Info{Link nesting ON}
3051 \else
3052 \Hy@Info{Link nesting OFF}
3053 \fi
3054 \ifHy@hyperindex
3055 \Hy@Info{Hyper index ON}
3056 \else
3057 \Hy@Info{Hyper index OFF}
3058 \fi
3059 \ifHy@backref
3060 \Hy@Info{backreferencing ON}
3061 \else
3062 \Hy@Info{backreferencing OFF}
3063 \fi

```



```

3064 \ifHy@colorlinks
3065   \Hy@Info{Link coloring ON}
3066 \else
3067   \Hy@Info{Link coloring OFF}
3068 \fi

```

21 Low-level utility macros

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

```

3069 \edef\hyper@hash{\string#}
3070 \edef\hyper@tilde{\string~}
3071 \edef\hyper@quote{\string"}
3072 \let\@currentHref\@empty
3073 \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.

```

3074 \AfterBeginDocument{%
3075   \Hy@pdfstringtrue
3076   \PDF@SetupDoc
3077   \let\PDF@SetupDoc\@empty
3078   \Hy@DisableOption{pdfpagescrop}%
3079   \Hy@DisableOption{pdfpagemode}%
3080   \Hy@DisableOption{pdfnonfullscreenpagemode}%
3081   \Hy@DisableOption{pdfstartview}%
3082   \Hy@DisableOption{pdfstartpage}%
3083   \Hy@DisableOption{pdftoolbar}%
3084   \Hy@DisableOption{pdfmenubar}%
3085   \Hy@DisableOption{pdfwindowui}%
3086   \Hy@DisableOption{pdf-fit-window}%
3087   \Hy@DisableOption{pdf-center-window}%
3088   \Hy@DisableOption{pdfdisplaydoctitle}%
3089   \Hy@DisableOption{pdfpagelayout}%
3090   \Hy@DisableOption{baseurl}%
3091   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
3092   \Hy@pdfstringfalse
3093 }

```

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.

```

3094 \def\NoHyper{%
3095   \def\hyper@link@{##1}##2##3##4{##4}%
3096   \def\hyper@@anchor##1{%
3097     \global\let\hyper@livelink\hyper@link
3098     \gdef\hyper@link##1##2##3{##3}%
3099     \def\hyper@anchorstart##1{%
3100       \let\hyper@anchorend\@empty
3101       \def\hyper@linkstart##1##2{%
3102         \let\hyper@linkend\@empty
3103         \def\hyper@linkurl##1##2{##1}%
3104         \def\hyper@linkfile##1##2##3{##1}%
3105         \let\Hy@backout\@gobble

```

```

3106 }
3107 \def\stop@hyper{%
3108   \def\hyper@link@{##1}##2##3##4{##4}%
3109   \let\Hy@backout\@gobble
3110   \def\hyper@@anchor##1{%
3111     \def\hyper@link##1##2##3{##3}%
3112     \def\hyper@anchorstart##1{%
3113       \let\hyper@anchorend\@empty
3114       \def\hyper@linkstart##1##2{%
3115         \let\hyper@linkend\@empty
3116         \def\hyper@linkurl##1##2{##1}%
3117         \def\hyper@linkfile##1##2##3{##1}%
3118       }
3119       \def\endNoHyper{%
3120         \global\let\hyper@link\hyper@livelink
3121       }
3122     }/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:

```

3123 <*nohyperref>
3124 \let\hyper@@anchor\@gobble
3125 \def\hyper@link#1#2#3{##3}%
3126 \let\hyper@anchorstart\@gobble
3127 \let\hyper@anchorend\@empty
3128 \let\hyper@linkstart\@gobbletwo
3129 \let\hyper@linkend\@empty
3130 \def\hyper@linkurl#1#2{##1}%
3131 \def\hyper@linkfile#1#2#3{##1}%
3132 \let\PDF@SetupDoc\@empty
3133 \let\PDF@FinishDoc\@empty

```

Some top-level commands:

```

3134 \let\Acrobatmenu\@gobble
3135 \let\pdfstringdefDisableCommands\@gobbletwo
3136 \let\texorpdfstring\@firstoftwo
3137 \let\pdfbookmark\@undefined
3138 \newcommand\pdfbookmark[3][]{ }
3139 \let\phantomsection\@empty
3140 \let\hypersetup\@gobble
3141 \let\hyperbaseurl\@gobble
3142 \let\href\@gobble
3143 \let\hyperdef\@gobbletwo
3144 \let\hyperlink\@gobble
3145 \let\hypertarget\@gobble
3146 \def\hyperref{\@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}}
3147 \long\def\@gobbleopt[#1]{ }
3148 \let\hyperpage\@empty
3149 </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}`

```
3150 <*package>
3151 \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.

```
3152 \if@filesw
3153 \ifHy@typexml
3154 \immediate\closeout\@mainaux
3155 \immediate\openout\@mainaux\jobname.aux
3156 \immediate\write\@auxout{<relaxxml>\relax}%
3157 \fi
3158 \immediate\write\@auxout{%
3159 \string\ifx\string\hyper@anchor\string\@undefined^^J%
3160 \global\let\string\oldcontentsline\string\contentsline^^J%
3161 \gdef\string\contentsline%
3162 \string#1\string#2\string#3\string#4{%
3163 \string\oldcontentsline%
3164 {\string#1}{\string#2}{\string#3}}^^J%
3165 \global\let\string\oldnewlabel\string\newlabel^^J%
3166 \gdef\string\newlabel\string#1\string#2{%
3167 \string\newlabelxx{\string#1}\string#2^^J%
3168 \gdef\string\newlabelxx%
3169 \string#1\string#2\string#3\string#4\string#5\string#6{%
3170 \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.

```
3171 \string\AtEndDocument{%
3172 \let\string\contentsline\string\oldcontentsline^^J%
3173 \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.

```
3174 \string\else^^J%
3175 \global\let\string\hyper@last\relax^^J%
3176 \string\fi^^J%
3177 }%
3178 \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.

```
3179 \ifx\hyper@last\@undefined
3180 \def\@starttoc#1{%
3181 \begingroup
3182 \makeatletter
3183 \IfFileExists{\jobname.#1}{%
3184 \Hy@WarningNoLine{%
3185 old #1 file detected, not used; run LaTeX again%
```

```

3186         }%
3187     }{}%
3188     \if@filesw
3189         \expandafter\newwrite\csname tf@#1\endcsname
3190         \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
3191     \fi
3192     \@nobreakfalse
3193 \endgroup
3194 }%
3195 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
3196 \fi
3197 }

```

25 Title strings

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

```

3198 \ifHy@usetitle
3199   \let\HyOrg@title\title
3200   \let\HyOrg@author\author
3201   \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
3202   \def\Hy@scanopttitle[#1]{%
3203     \gdef\Hy@title{#1}%
3204     \HyOrg@title[{#1}]%
3205   }%
3206   \def\Hy@scantitle#1{%
3207     \gdef\Hy@title{#1}%
3208     \HyOrg@title{#1}%
3209   }
3210   \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
3211   \def\Hy@scanoptauthor[#1]{%
3212     \gdef\Hy@author{#1}%
3213     \HyOrg@author[{#1}]%
3214   }%
3215   \def\Hy@scanauthor#1{%
3216     \gdef\Hy@author{#1}%
3217     \HyOrg@author{#1}%
3218   }

```

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.

```

3219 \begingroup
3220   \def\process@me#1\@nil#2{%
3221     \expandafter\let\expandafter\x\csname @#2\endcsname
3222     \edef\y{\expandafter\strip@prefix\meaning\x}%
3223     \def\c##1##2\@nil{%
3224       \ifx\\##1\\%
3225         \else
3226           \expandafter\gdef\csname Hy@#2\expandafter\endcsname
3227             \expandafter{x}%
3228         \fi
3229       }%
3230       \expandafter\c\y\relax#1\@nil
3231     }%
3232     \expandafter\process@me\string\@latex@\@nil{title}%
3233     \expandafter\process@me\string\@latex@\@nil{author}%

```

```

3234 \endgroup
3235 \fi
3236 \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.

```

3237 \def\Hy@UseMaketitleString#1{%
3238   \@ifundefined{Hy@#1}{}%
3239   \begingroup
3240     \let\Hy@saved@hook\pdfstringdefPreHook
3241     \pdfstringdefDisableCommands{%
3242       \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
3243       \let\newline\\
3244     }%
3245     \expandafter\ifx\csname @pdf#1\endcsname\@empty
3246       \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
3247         \csname Hy@#1\endcsname\@empty
3248       }%
3249     \fi
3250     \global\let\pdfstringdefPreHook\Hy@saved@hook
3251   \endgroup
3252 }%
3253 }
3254 \def\Hy@newline@title#1{ #1}
3255 \def\Hy@newline@author#1{, #1}
3256 \def\Hy@UseMaketitleInfos{%
3257   \Hy@UseMaketitleString{title}%
3258   \Hy@UseMaketitleString{author}%
3259 }

```

26 Page numbers

This stuff is done by Heiko Oberdiek.

26.1 PDF /PageLabels

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

```

3260 \ifHy@pagelabels

```

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

```

3261 \def\thispdfpagelabel#1{%
3262   \gdef\HyPL@thisLabel{#1}%
3263 }
3264 \global\let\HyPL@thisLabel\relax

```

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

```

3265 \def\HyPL@Labels{}

```

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

```
3266 \newcount\Hy@abspage
3267 \Hy@abspage=0
```

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

```
3268 \def\HyPL@LastType{init}%
3269 \def\HyPL@LastNumber{0}%
3270 \def\HyPL@LastPrefix{}
```

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

```
3271 \def\HyPL@arabic{D}%
3272 \def\HyPL@Roman{R}%
3273 \def\HyPL@roman{r}%
3274 \def\HyPL@Alph{A}%
3275 \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.

```
3276 \def\HyPL@EveryPage{%
3277   \begingroup
3278   \ifx\HyPL@thisLabel\relax
3279     \let\HyPL@page\thepage
3280   \else
3281     \let\HyPL@page\HyPL@thisLabel
3282     \global\let\HyPL@thisLabel\relax
3283   \fi
3284   \let\HyPL@Type\relax
3285   \ifnum\the\c@page>0
3286     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
3287   \fi
3288   \let\Hy@temp Y%
3289   \ifx\HyPL@Type\HyPL@LastType
3290   \else
3291     \let\Hy@temp N%
3292   \fi
3293   \ifx\HyPL@Type\relax
3294     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
3295   \else
3296     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
3297   \fi
3298   \ifx\HyPL@Prefix\HyPL@LastPrefix
3299   \else
3300     \let\Hy@temp N%
3301   \fi
3302   \if Y\Hy@temp
3303     \advance\c@page by -1
3304     \ifnum\HyPL@LastNumber=\the\c@page\relax
3305     \else
3306       \let\Hy@temp N%
3307     \fi
3308     \Hy@StepCount\c@page
3309   \fi
3310   \if N\Hy@temp
3311     \ifx\HyPL@Type\relax
3312       \HyPL@StorePageLabel{/P (\HyPL@Prefix)}%
3313     \else
3314       \HyPL@StorePageLabel{%
```

```

3315         \ifx\HyPL@Prefix\@empty
3316         \else
3317             /P (\HyPL@Prefix)
3318         \fi
3319         /S /\csname HyPL\HyPL@Type\endcsname
3320         \ifnum\the\c@page=1
3321         \else
3322             \space/St \the\c@page
3323         \fi
3324     }%
3325 \fi
3326 \fi
3327 \xdef\HyPL@LastNumber{\the\c@page}%
3328 \global\let\HyPL@LastType\HyPL@Type
3329 \global\let\HyPL@LastPrefix\HyPL@Prefix
3330 \endgroup
3331 \Hy@GlobalStepCount\Hy@abspage
3332 }

```

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

```

3333 \def\HyPL@CheckThePage#1\@nil{%
3334     \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
3335 }

```

`\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`.

```

3336 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
3337     \def\Hy@tempa{#4}%
3338     \def\Hy@tempb{\csname\endcsname\c@page}%
3339     \ifx\Hy@tempa\Hy@tempb
3340         \expandafter\ifx\csname HyPL#3\endcsname\relax
3341         \else
3342             \def\HyPL@Type{#3}%
3343             \def\HyPL@Prefix{#2}%
3344         \fi
3345     \else
3346         \begingroup
3347             \let\Hy@next\endgroup
3348             \let\HyPL@found\@undefined
3349             \def\arabic{\HyPL@Format{arabic}}%
3350             \def\Roman{\HyPL@Format{Roman}}%
3351             \def\roman{\HyPL@Format{roman}}%
3352             \def\Alph{\HyPL@Format{Alph}}%
3353             \def\alph{\HyPL@Format{alph}}%
3354             \protected@edef\Hy@temp{#1}%
3355             \ifx\HyPL@found\relax
3356                 \toks@{\expandafter{\Hy@temp}}%
3357             \edef\Hy@next{\endgroup
3358                 \noexpand\HyPL@@CheckThePage\the\toks@
3359                 \noexpand\HyPL@found\relax\noexpand\@nil
3360             }%
3361         \fi
3362     \Hy@next
3363 \fi
3364 }

```

`\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`.

```

3365 \def\HyPL@Format#1#2{%
3366   \ifx\HyPL@found\@undefined
3367     \expandafter\ifx\csname c@#2\endcsname\c@page
3368       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
3369     \else
3370       \expandafter\noexpand\csname#1\endcsname{#2}%
3371     \fi
3372   \else
3373     \expandafter\noexpand\csname#1\endcsname{#2}%
3374   \fi
3375 }
```

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

```

3376 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
3377   \def\Hy@tempa{#3}%
3378   \def\Hy@tempb{\HyPL@found\relax}%
3379   \ifx\Hy@tempa\Hy@tempb
3380     \def\HyPL@Type{#2}%
3381     \def\HyPL@Prefix{#1}%
3382   \fi
3383 }
```

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

```

3384 \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`.

```

3385 \def\HyPL@Useless{0 << /S /D >> }%
3386 \@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.

```

3387 \def\HyPL@SetPageLabels{%
3388   \@onelevel@sanitize\HyPL@Labels
3389   \ifx\HyPL@Labels\@empty
3390   \else
3391     \ifx\HyPL@Labels\HyPL@Useless
3392     \else
3393       \Hy@PutCatalog{/PageLabels << /Nums [\HyPL@Labels] >>}%
3394     \fi
3395   \fi
3396 }
```

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

```

3397 \else
3398   \let\HyPL@EveryPage\@empty
3399 \fi
```

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

```

3400 \Hy@DisableOption{pdfpagelabels}
3401 </package>
```


26.1.1 pdfTeX and VTeX

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

`\Hy@PutCatalog`

```
3402 <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.

```
3403 <*vTeX>
3404 \edef\Hy@VTeXversion{%
3405   \ifx\VTeXversion\undefined
3406     \z@
3407   \else
3408     \ifx\VTeXversion\relax
3409       \z@
3410     \else
3411       \VTeXversion
3412     \fi
3413   \fi
3414 }
3415 \begingroup
3416   \ifnum\Hy@VTeXversion<660 %
3417     \gdef\Hy@PutCatalog#1{%
3418       \Hy@WarningNoLine{%
3419         VTeX 6.59g or above required for pdfpagelabels%
3420       }%
3421     }
3422   \else
3423     \gdef\Hy@PutCatalog#1{%
3424       \Hy@vt@PutCatalog#1/PageLabels <<>>\@nil
3425     }
3426     \gdef\Hy@vt@PutCatalog#1/PageLabels <<#2>>#3\@nil{%
3427       \ifx\#2\%
3428         \else
3429           \immediate\special{!pdfpagelabels #2}%
3430         \fi
3431       }
3432     \fi
3433 \endgroup
3434 </vTeX>

3435 <*pdfTeX | vTeX>
```

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

```
3436 \ifHy@pagelabels
3437   \def\HyPL@StorePageLabel#1{%
3438     \toks@\expandafter{\HyPL@Labels}%
3439     \xdef\HyPL@Labels{%
3440       \the\toks@
3441       \the\Hy@abspage\space<< #1 >> %
3442     }%
3443   }
```

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.

```
3444 \AtEndDocument{\clearpage\HyPL@SetPageLabels}
3445 \fi
3446 \pdfTeX | vtex\
```

26.1.2 pdfmarkbase, dvipdfm

`\Hy@PutCatalog`

```
3447 \dvipdfm\def\Hy@PutCatalog#1{\pdfmark{docview << #1 >>}}
3448 \pdfmarkbase
3449 \def\Hy@PutCatalog#1{%
3450 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
3451 }
3452 \pdfmarkbase
3453 \pdfmarkbase | dvipdfm
3454 \ifHy@pagelabels
```

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

```
3455 \def\HyPL@StorePageLabel#1{%
3456 \if@filesw
3457 \begingroup
3458 \edef\Hy@tempa{\the\Hy@abspage\space<< #1 >> }%
3459 \immediate\write\@mainaux{%
3460 \string\HyPL@Entry{\Hy@tempa}%
3461 }%
3462 \endgroup
3463 \fi
3464 }
```

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.

```
3465 \AfterBeginDocument{%
3466 \if@filesw
3467 \immediate\write\@mainaux{%
3468 \string\providecommand\string*\string\HyPL@Entry[1]{}%
3469 }%
3470 \fi
3471 \ifx\HyPL@Labels\@empty
3472 \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
3473 \else
3474 \HyPL@SetPageLabels
3475 \fi
3476 \let\HyPL@Entry\@gobble
3477 }%
```

`\HyPL@Entry`

```
3478 \def\HyPL@Entry#1{%
3479 \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
3480 \HyPL@Labels
3481 #1%
3482 }%
3483 }
```

```

3484 \fi
3485 </pdfmarkbase | dvipdfm>
3486 <*package>
3487 \MaybeStopEarly

```

27 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

```

3488 \newcommand\theHequation{\theHsection.\arabic{equation}}
3489 \@ifundefined{thepart}{\newcommand\theHpart{\arabic{part}}}{%
3490 \@ifundefined{thechapter}{%
3491   \newcommand\theHsection    {\arabic{section}}
3492   \newcommand\theHfigure    {\arabic{figure}}
3493   \newcommand\theHtable     {\arabic{table}}
3494 }{%
3495   \newcommand\theHchapter    {\arabic{chapter}}
3496   \newcommand\theHfigure     {\theHchapter.\arabic{figure}}
3497   \newcommand\theHtable      {\theHchapter.\arabic{table}}
3498   \newcommand\theHsection    {\theHchapter.\arabic{section}}
3499 }
3500 \newcommand\theHsubsection   {\theHsection.\arabic{subsection}}
3501 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
3502 \newcommand\theHparagraph    {\theHsubsubsection.\arabic{paragraph}}
3503 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
3504 \newcommand\theHtheorem      {\theHsection.\arabic{theorem}}
3505 \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 it's a real `\item` before incrementing counters.

```

3506 \let\H@item\item
3507 \newcounter{Item}
3508 \def\theHItem{\arabic{Item}}
3509 \def\item{%
3510   \@hyper@itemfalse
3511   \if@nmbbrlist\@hyper@itemtrue\fi
3512   \H@item
3513 }

```

```

3514 \newcommand\theHenumi      {\theHItem}
3515 \newcommand\theHenumii     {\theHItem}
3516 \newcommand\theHenumiii    {\theHItem}
3517 \newcommand\theHenumiv     {\theHItem}
3518 \newcommand\theHHfootnote  {\arabic{Hfootnote}}
3519 \newcommand\theHmpfootnote {\arabic{mpfootnote}}
3520 \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.

```

3521 \let\H@refstepcounter\refstepcounter
3522 \edef\name@of@eq{equation}%
3523 \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.

```

3524 \newif\if@hyper@item
3525 \newif\if@skiphyperref
3526 \@hyper@itemfalse
3527 \@skiphyperreffalse
3528 \def\refstepcounter#1{%
3529   \H@refstepcounter{#1}%
3530   \edef\This@name{#1}%
3531   \ifx\This@name\name@of@slide
3532     \else
3533       \if@skiphyperref
3534         \else
3535           \if@hyper@item
3536             \stepcounter{Item}%
3537             \hyper@refstepcounter{Item}%
3538           \else
3539             \hyper@refstepcounter{#1}%
3540           \fi
3541         \fi
3542       \fi
3543 }

```

AMST_{EX} processes all equations twice; we want to make sure that the hyper stuff is not executed twice, so we use the AMS `\ifmeasuring@`, initialized if AMS math is not used.

```

3544 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

3545 \def\hyper@refstepcounter#1{%
3546   \edef\This@name{#1}%
3547   \ifx\This@name\name@of@eq
3548     \make@stripped@name{\theequation}%
3549     \let\theHequation\newname
3550   \fi
3551   \@ifundefined{theH#1}{%
3552     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
3553   }{}%
3554   \hyper@makecurrent{#1}%
3555   \ifmeasuring@
3556     \else
3557     \Hy@raisedlink{%

```

```

3558      \hyper@anchorstart{\@currentHref}\hyper@anchorend
3559    }%
3560  \fi
3561 }

```

After \appendix “chapter” should be replaced by “appendix” to get \autoref work. Macro \Hy@chapapp contains the current valid name like \@chapapp, which cannot be used, because this string depends on the current language.

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

```

3562 \def\Hy@chapterstring{chapter}
3563 \def\Hy@appendixstring{appendix}
3564 \def\Hy@chapapp{\Hy@chapterstring}
3565 \let\HyOrg@appendix\appendix
3566 \def\appendix{%
3567   \@ifundefined{chapter}%
3568     {\gdef\theHsection{\Alph{section}}}%
3569     {\gdef\theHchapter{\Alph{chapter}}}%
3570   \xdef\Hy@chapapp{\Hy@appendixstring}%
3571   \HyOrg@appendix
3572 }

```

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

```

3573 \def\hyper@makecurrent#1{%
3574   \begingroup
3575     \edef\Hy@param{#1}%
3576     \ifx\Hy@param\Hy@chapterstring
3577       \let\Hy@param\Hy@chapapp
3578     \fi
3579     \ifHy@hypertextnames
3580       \let\@number\@firstofone
3581       \ifHy@naturalnames
3582         \let\textlatin\@firstofone
3583         \xdef\@currentHlabel{\csname the#1\endcsname}%
3584       \else
3585         \xdef\@currentHlabel{\csname theH#1\endcsname}%
3586       \fi
3587       \xdef\@currentHref{%
3588         \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
3589       }%
3590     \else
3591       \Hy@GlobalStepCount\Hy@linkcounter
3592       \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
3593     \fi
3594   \endgroup
3595 }

3596 \@ifpackageloaded{fancyvrb}{%
3597   \def\FV@StepLineNo{%
3598     \FV@SetLineNo
3599     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
3600     \FV@StepLineNo
3601   }%
3602 }{}

```

28 Package lastpage support

Package lastpage directly writes the `\newlabel` command to the aux file. Because package hyperref requires additional arguments, the internal command `\lastpage@putlabel` is redefined. The patch is deferred by `\AtBeginDocument`, because it is possible that package lastpage is loaded after package hyperref. The same algorithm (options `hyper-
texnames` and `plainpages`) is used to get the page anchor name as in `\@hyperfixhead` (see sec. 37). The link will not work if option `pageanchor` is set to false.

`\lastpage@putlabel`

```

3603 \AtBeginDocument{%
3604   \@ifpackageloaded{lastpage}{%
3605     \ifHy@pageanchor
3606     \else
3607       \Hy@WarningNoLine{%
3608         The \string\pageref{LastPage} link doesn't work\MessageBreak
3609         with disabled option 'pageanchor'%
3610       }%
3611     \fi
3612     \def\lastpage@putlabel{%
3613       \addtocounter{page}{-1}%
3614       \if@filesw
3615         \begingroup
3616         \let\@number\@firstofone
3617         \ifHy@pageanchor
3618           \ifHy@hypertexnames
3619             \ifHy@plainpages
3620               \def\Hy@temp{\arabic{page}}%
3621             \else
3622               \pdfstringdef\Hy@temp{\thepage}%
3623             \fi
3624           \else
3625             \def\Hy@temp{\the\Hy@pagecounter}%
3626           \fi
3627         \fi
3628         \immediate\write\@auxout{%
3629           \string\newlabel
3630           {LastPage}{\the\Hy@temp}{\thepage}{%
3631             \ifHy@pageanchor page.\Hy@temp\fi}{}}%
3632       }%
3633     \endgroup
3634   \fi
3635   \addtocounter{page}{1}%
3636 }%
3637 }{}%
3638 }
3639 \</package>
3640 \< *check>
3641 \checkpackage{lastpage}[1994/06/25]
3642 \checkcommand\def\lastpage@putlabel{%
3643   \addtocounter{page}{-1}%
3644   \immediate\write\@auxout{%
3645     \string\newlabel{LastPage}{\the\Hy@temp}{\thepage}%
3646   }%
3647   \addtocounter{page}{1}%
3648 }
3649 \</check>

```

3650 `\package`

29 Package ifthen support

Since version 6.75a this is done in package nameref.

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

```
3651 \def\hypergetref#1{\getrefbykeydefault{#1}{}}{??}}
3652 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}
```

30 Package titlesec and titletoc support

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

Package titlesec support:

```
3653 \@ifpackageloaded{titlesec}{%
3654   \def\ttl@Hy@steplink#1{%
3655     \Hy@GlobalStepCount\Hy@linkcounter
3656     \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
3657     \def\ttl@Hy@saveanchor{%
3658       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
3659     }%
3660   }%
3661   \def\ttl@Hy@refstepcounter#1{%
3662     \let\ttl@b\Hy@raisedlink
3663     \def\Hy@raisedlink##1{\def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}}%
3664     \refstepcounter{#1}%
3665     \let\Hy@raisedlink\ttl@b
3666   }%
3667 }
```

Package titletoc support:

```
3668 \@ifpackageloaded{titletoc}{%
3669   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
3670 }
```

31 Package varioref support

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

```
3671 \def\Hy@varioref@undefined{{{??}}{??}}{}}{}}
3672 \@ifpackageloaded{varioref}{%
3673   \def\vref@pagenum#1#2{%
3674     \ifundefined{r@#2}{%
3675       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
3676     }{}%
3677     \edef#1{\getpagerefnumber{#2}}%
3678   }%
3679 }
```

32 Package longtable support

Sometimes the anchor of the longtable goes to the previous page. Thus the following patch separates the anchor setting and counter incrementation by `hyperref`'s

`\refstepcounter` and the anchor setting is moved after `\vskip\LTpre`.

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

```

3680 \ifpackageloaded{longtable}{%
3681   \begingroup
3682     \def\y{\LT@array}%
3683     \ifundefined{scr@LT@array}{\def\y{\scr@LT@array}}%
3684     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
3685       \expandafter\endgroup
3686       \expandafter\def\y[#1]##2{%
3687         \H@refstepcounter{#1}%
3688         \hyper@makecurrent{table}%
3689         #2\@sharp####4%
3690       }%
3691     }%
3692   \expandafter\expandafter\expandafter\x\y[#1]{#2}\@nil

```

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

```

3693   \begingroup
3694     \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
3695       \endgroup
3696       \def\LT@start{%
3697         #1%
3698         \hyper@refstepcounter{table}%
3699         \ifvoid\LT@firsthead\copy
3700         #2%
3701       }%
3702     }%
3703   \expandafter\x\LT@start\@nil
3704 }{}

```

33 Equations

We want to make the whole equation a target anchor. Overload `equation`, temporarily reverting to original `\refstepcounter`. If, however, it is in AMS math, we do not do anything, as the tag mechanism is used there (see section 40). The exception is that we move the equation incrementation inside the `math` environment to avoid specials outside and a wrong vertical spacing of equation environments.

```

3705 \let\new@refstepcounter\refstepcounter
3706 \let\H@equation\equation
3707 \let\H@endequation\endequation
3708 \ifpackageloaded{amsmath}{%
3709   \long\def\Hy@temp{%
3710     \incr@eqnum
3711     \mathdisplay@push
3712     \st@rredfalse \global\@eqnswtrue
3713     \mathdisplay{equation}%
3714   }%
3715   \ifx\Hy@temp\equation
3716     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
3717       \csname iftrue\endcsname
3718   \else
3719     \long\def\equation{%
3720       \mathdisplay@push
3721       \st@rredfalse \global\@eqnswtrue

```



```

3722         \mathdisplay{equation}%
3723         \incr@eqnum
3724     }%
3725     \fi
3726 \fi
3727 }{%
3728 \def\equation{%
3729     \let\refstepcounter\H@refstepcounter
3730     \H@equation
3731     \make@stripped@name{\theequation}%
3732     \let\theHequation\newname
3733     \hyper@makecurrent{equation}%
3734     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
3735     \let\refstepcounter\new@refstepcounter
3736 }%
3737 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
3738 }

```

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.

```

3739 \newif@if@eqnstar
3740 \@eqnstarfalse
3741 \let\H@eqnarray\eqnarray
3742 \let\H@endeqnarray\endeqnarray
3743 \def\eqnarray{%
3744     \let\Hy@reserved@a\relax
3745     \def\@currentHref{}%
3746     \H@eqnarray
3747     \if@eqnstar
3748     \else
3749         \ifx\\\@currentHref\\%
3750         \else
3751             \make@stripped@name{\theequation}%
3752             \let\theHequation\newname
3753             \hyper@makecurrent{equation}%
3754             \hyper@anchorstart{\@currentHref}\hyper@anchorend
3755         \fi
3756     \fi
3757 }
3758 \def\endeqnarray{%
3759     \H@endeqnarray
3760 }

```

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.

```

3761 \@namedef{eqnarray*}{%
3762     \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
3763 }
3764 \@namedef{endeqnarray*}{%
3765     \nonumber\endeqnarray\@eqnstarfalse
3766 }

```

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

```

3767 \@ifundefined{subeqnarray}{}{%
3768     \let\H@subeqnarray\subeqnarray

```

```

3769 \let\H@endsubeqnarray\endsubeqnarray
3770 \def\subeqnarray{%
3771   \let\Hy@reserved@a\relax
3772   \H@subeqnarray
3773   \make@stripped@name{\theequation}%
3774   \let\theHequation\newname
3775   \hyper@makecurrent{equation}%
3776   \hyper@anchorstart{\@currentHref}{\hyper@anchorend
3777 }%
3778 \def\endsubeqnarray{%
3779   \H@endsubeqnarray
3780 }%
3781 \newcommand\theHsubequation{\theHequation\alph{subequation}}%
3782 }

```

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

```

3783 \def\make@stripped@name#1{%
3784   \begingroup
3785   \escapechar\m@ne
3786   \global\let\newname\@empty
3787   \protected@edef\Hy@tempa{#1}%
3788   \edef\@tempb{%
3789     \noexpand\@tfor\noexpand\Hy@tempa:=%
3790     \expandafter\strip@prefix\meaning\Hy@tempa
3791   }%
3792   \@tempb\do{%
3793     \if\Hy@tempa\else
3794     \if}\Hy@tempa\else
3795     \xdef\newname{\newname\Hy@tempa}%
3796     \fi
3797   \fi
3798   }%
3799 \endgroup
3800 }

```

34 Footnotes

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

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

```

3801 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{ }
3802 \ifHy@hyperfootnotes
3803   \newcounter{Hfootnote}
3804   \let\H@@footnotetext\@footnotetext
3805   \let\H@@footnotemark\@footnotemark
3806   \def\@xfootnotenext[#1]{%
3807     \begingroup
3808     \csname c@\@mpfn\endcsname #1\relax
3809     \unrestored@protected\xdef\@thefnmark{\thempfn}%
3810   \endgroup
3811   \ifx\@footnotetext\@mpfootnotetext
3812     \expandafter\H@@mpfootnotetext
3813   \else

```

```

3814     \expandafter\H@@footnotetext
3815     \fi
3816 }%
3817 \def\@xfootnotemark[#1]{%
3818     \begingroup
3819     \c@footnote #1\relax
3820     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
3821     \endgroup
3822     \H@@footnotemark
3823 }%
3824 \let\H@@mpfootnotetext\@mpfootnotetext
3825 \long\def\@mpfootnotetext#1{%
3826     \H@@mpfootnotetext{%
3827         \ifHy@nesting
3828             \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
3829         \else
3830             \Hy@raisedlink{%
3831                 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
3832             }#1%
3833         \fi
3834     }%
3835 }%
3836 \long\def\@footnotetext#1{%
3837     \H@@footnotetext{%
3838         \ifHy@nesting
3839             \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
3840         \else
3841             \Hy@raisedlink{%
3842                 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
3843             }%
3844             \let\@currentHlabel\Hy@footnote@currentHlabel
3845             \let\@currentHref\Hy@footnote@currentHref
3846             \let\@currentlabelname\@empty
3847             #1%
3848         \fi
3849     }%
3850 }%

```

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.

```

3851 \def\@footnotemark{%
3852     \leavevmode
3853     \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
3854     \stepcounter{Hfootnote}%
3855     \global\let\Hy@saved@currentHlabel\@currentHlabel
3856     \global\let\Hy@saved@currentHref\@currentHref
3857     \hyper@makecurrent{Hfootnote}%
3858     \global\let\Hy@footnote@currentHlabel\@currentHlabel
3859     \global\let\Hy@footnote@currentHref\@currentHref
3860     \global\let\@currentHlabel\Hy@saved@currentHlabel
3861     \global\let\@currentHref\Hy@saved@currentHref
3862     \hyper@linkstart{link}{\Hy@footnote@currentHref}%
3863     \@makefnmark
3864     \hyper@linkend
3865     \ifhmode\spacefactor\@x@sf\fi
3866     \relax

```

3867 }%

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.

```

3868 \@ifpackageloaded{longtable}{%
3869   \CheckCommand*{\LT@p@ftntext}[1]{%
3870     \edef\@tempa{%
3871       \the\LT@p@ftn
3872       \noexpand\footnotetext[\the\c@footnote]%
3873     }%
3874     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
3875   }%
3876   \long\def\LT@p@ftntext#1{%
3877     \edef\@tempa{%
3878       \the\LT@p@ftn
3879       \begingroup
3880         \noexpand\c@footnote=\the\c@footnote\relax
3881         \noexpand\protected@xdef
3882           \noexpand\@thefnmark{\noexpand\thempfn}%
3883         \noexpand\protected@xdef\noexpand\@thefnmark{%
3884           \noexpand\thempfn
3885         }%
3886         \expandafter\expandafter\expandafter\noexpand
3887         \expandafter\expandafter\expandafter\Hy@LT@footnotetext
3888         \expandafter\expandafter\expandafter{%
3889           \expandafter\Hy@footnote@currentHref\expandafter
3890           }\expandafter{\Hy@footnote@currentHlabel}%
3891       }%
3892       \global\LT@p@ftn\expandafter{%
3893         \@tempa{#1}%
3894       }\endgroup
3895     }%
3896   }%
3897   \long\def\Hy@LT@footnotetext#1#2#3{%
3898     \H@@footnotetext{%
3899       \ifHy@nesting
3900         \hyper@@anchor{#1}{#3}%
3901       \else
3902         \Hy@raisedlink{%
3903           \hyper@@anchor{#1}{\relax}%
3904         }%
3905         \def\@currentHlabel{#2}%
3906         \def\@currentHref{#1}%
3907         \let\@currentlabelname\@empty
3908         #3%
3909       \fi
3910     }%
3911   }%
3912 }{}%
```

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.

```

3913 \let\HyOrg@maketitle\maketitle
3914 \def\maketitle{%
3915   \let\Hy@saved@footnotemark\@footnotemark
3916   \let\Hy@saved@footnotetext\@footnotetext
```

```

3917 \let\@footnotemark\H@@footnotemark
3918 \let\@footnotetext\H@@footnotetext
3919 \@ifnextchar[\Hy@maketitle@optarg{% ]
3920 \HyOrg@maketitle
3921 \Hy@maketitle@end
3922 }%
3923 }%
3924 \def\Hy@maketitle@optarg[#1]{%
3925 \HyOrg@maketitle[#{#1}]%
3926 \Hy@maketitle@end
3927 }%
3928 \def\Hy@maketitle@end{%
3929 \ifx\@footnotemark\H@@footnotemark
3930 \let\@footnotemark\Hy@saved@footnotemark
3931 \fi
3932 \ifx\@footnotetext\H@@footnotetext
3933 \let\@footnotetext\Hy@saved@footnotetext
3934 \fi
3935 }%

```

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

```

3936 \def\realfootnote{%
3937 \@ifnextchar[\@xfootnote{%
3938 \stepcounter{\@mpfn}%
3939 \protected@xdef\@thefnmark{\thempfn}%
3940 \H@@footnotemark\H@@footnotetext
3941 }%
3942 }%
3943 \fi
3944 \Hy@DisableOption{hyperfootnotes}

3945 </package>
3946 <*check>
3947 \checklatex
3948 \checkcommand\def\@xfootnotenext[#1]{%
3949 \begingroup
3950 \csname c@\@mpfn\endcsname #1\relax
3951 \unrestored@protected@xdef\@thefnmark{\thempfn}%
3952 \endgroup
3953 \@footnotetext
3954 }
3955 \checkcommand\def\@xfootnotemark[#1]{%
3956 \begingroup
3957 \c@footnote #1\relax
3958 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
3959 \endgroup
3960 \@footnotemark
3961 }
3962 \checkcommand\def\@footnotemark{%
3963 \leavevmode
3964 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
3965 \@makefnmark
3966 \ifhmode\spacefactor\@x@sf\fi
3967 \relax
3968 }
3969 </check>
3970 <*package>

```

35 Float captions

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

```

3971 \def\caption{%
3972   \ifx\@capttype\undefined
3973     \@latex@error{\noexpand\caption outside float}\@ehd
3974     \expandafter\@gobble
3975   \else
3976     \H@refstepcounter\@capttype
3977     \@ifundefined{fst@\@capttype}{%
3978       \let\Hy@tempa\@caption
3979     }{%
3980       \let\Hy@tempa\Hy@float@caption
3981     }%
3982     \expandafter\@firstofone
3983   \fi
3984   {\@dblarg{\Hy@tempa\@capttype}}%
3985 }
3986 \long\def\@caption#1[#2]#3{%
3987   \hyper@makecurrent{\@capttype}%
3988   \def\@currentlabelname{#2}%
3989   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
3990     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
3991   }%
3992   \begingroup
3993     \@parboxrestore
3994     \if@minipage
3995       \setminipage
3996     \fi
3997     \normalsize
3998     \makecaption{\csname fnum@#1\endcsname}{%
3999       \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

4000   \ifHy@nesting
4001     \hyper@@anchor{\@currentHref}{#3}%
4002   \else
4003     \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
4004   \fi
4005 }%
4006 \par
4007 \endgroup
4008 }

```

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.

```

4009 \let\Hy@float@caption\@caption
4010 \@ifpackageloaded{float}{%
4011   \def\Hy@float@caption{%
4012     \hyper@makecurrent{\@capttype}%
4013     \float@caption
4014   }
4015   \let\HyOrg@float@makebox\float@makebox
4016   \renewcommand{\float@makebox}[1]{%
4017     \HyOrg@float@makebox{%
4018       #1\relax
4019     }

```

```

4020      \hyper@makecurrent{\@captype}%
4021      \hyper@@anchor{\@currentHref}{\relax}%
4022      \endgroup
4023    }%
4024  }%
4025 }{}

4026 \</package>
4027 \<*check>
4028 \checklatex[1999/06/01 - 2000/06/01]
4029 \checkcommand\def\caption{%
4030   \ifx\@captype\@undefined
4031     \latex@error{\noexpand\caption outside float}\@ehd
4032     \expandafter\@gobble
4033   \else
4034     \refstepcounter\@captype
4035     \expandafter\@firstofone
4036   \fi
4037   {\@dblarg{\@caption\@captype}}%
4038 }
4039 \checkcommand\long\def\@caption#1[#2]#3{%
4040   \par
4041   \addcontentsline{\csname ext@#1\endcsname}{#1}%
4042     {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
4043   \begingroup
4044     \@parboxrestore
4045     \if@minipage
4046       \setminipage
4047     \fi
4048     \normalsize
4049     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
4050   \endgroup
4051 }
4052 \</check>
4053 \<*package>

```

36 Bibliographic references

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

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

```

4054 \def\hyper@natlinkstart#1{%
4055   \Hy@backout{#1}%
4056   \hyper@linkstart{cite}{cite.#1}%
4057   \def\hyper@nat@current{#1}%
4058 }
4059 \def\hyper@natlinkend{%
4060   \hyper@linkend
4061 }
4062 \def\hyper@natlinkbreak#1#2{%
4063   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%

```

```

4064 }
4065 \def\hyper@natanchorstart#1{%
4066   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
4067 }
4068 \def\hyper@natanchorend{\hyper@anchorend}

```

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

```

4069 \ifundefined{NAT@parse}{%
4070   \def\bibcite#1#2{%
4071     \@newl@bel{b}{#1}\@extra@binfo{\hyper@@link[cite]{#1}{#2}}%
4072   }%
4073   \gdef\@extra@binfo{}%

```

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

```

4074   \let\Hy@bibcite\bibcite
4075   \begingroup
4076     \ifundefined{bbl@cite@choice}{%
4077       \g@addto@macro\bbl@cite@choice{%
4078         \let\bibcite\Hy@bibcite
4079       }%
4080     }%
4081   \endgroup

```

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

```

4082   \providecommand*{\@BIBLABEL}{\@biblabel}%
4083   \def\@lbibitem[#1]#2{%
4084     \@skiphyperreftrue
4085     \H@item[%
4086       \ifx\Hy@raisedlink\@empty
4087         \hyper@anchorstart{cite.#2}\@BIBLABEL{#1}\hyper@anchorend
4088       \else
4089         \Hy@raisedlink{\hyper@anchorstart{cite.#2}\hyper@anchorend}%
4090       \@BIBLABEL{#1}%
4091     \fi
4092     \hfill
4093   ]%
4094   \@skiphyperreffalse
4095   \if@filesw
4096     \begingroup
4097       \let\protect\noexpand
4098       \immediate\write\@auxout{%
4099         \string\bibcite{#2}{#1}%
4100       }%
4101     \endgroup
4102     \fi
4103     \ignorespaces
4104   }%

```

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

```

4105   \def\@bibitem#1{%
4106     \@skiphyperreftrue\H@item\@skiphyperreffalse
4107     \Hy@raisedlink{\hyper@anchorstart{cite.#1}\relax\hyper@anchorend}%
4108     \if@filesw
4109       \begingroup
4110         \let\protect\noexpand
4111         \immediate\write\@auxout{%

```



```

4112         \string\bibcite{#1}{\the\value{\@listctr}}}%
4113     }%
4114 \endgroup
4115 \fi
4116 \ignorespaces
4117 }%
4118 }{}

4119 </package>
4120 <*check>
4121 \checklatex
4122 \checkcommand\def\@lbibitem[#1]#2{%
4123   \item[\@biblabel{#1}\hfill]%
4124   \if@filesw
4125     {%
4126       \let\protect\noexpand
4127       \immediate\write\@auxout{%
4128         \string\bibcite{#2}{#1}%
4129       }%
4130     }%
4131   \fi
4132   \ignorespaces
4133 }
4134 \checkcommand\def\@bibitem#1{%
4135   \item
4136   \if@filesw
4137     \immediate\write\@auxout{%
4138       \string\bibcite{#1}{\the\value{\@listctr}}}%
4139     }%
4140   \fi
4141   \ignorespaces
4142 }
4143 </check>
4144 <*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.

```

4145 \@ifclassloaded{revtex}{%
4146   \Hy@Info{*** compatibility with revtex **** }%
4147   \def\revtex@checking#1#2{%
4148     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
4149     \expandafter\def\csname b@#1\endcsname{#2}%
4150     \@SetMaxRnhefLabel{#1}%
4151     \expandafter\let\csname b@#1\endcsname\T@temp
4152   }%

```

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

```

4153 \@ifundefined{CITE}{\def\CITE{\@cite}}{}%
4154 \providecommand*\@extra@b@citeb{}%
4155 \def\CITE[#1]#2{%
4156   \let\@citea\@empty
4157   \leavevmode
4158   \unskip
4159   $\sim$%
4160   \scriptstyle
4161   \@CITE{%

```

```

4162     \@for\@citeb:=#2\do{%
4163         \@citea
4164         \def\@citea{\penalty\@m\ }%
4165         \edef\@citeb{\expandafter\@firstofone\@citeb}%
4166         \if@filesw
4167             \immediate\write\@auxout{\string\citation{\@citeb}}%
4168         \fi
4169         \@ifundefined{b@\@citeb\extra@b@citeb}{%
4170             \mbox{\reset@font\bfseries ?}%
4171             \G@refundefinedtrue
4172             \@latex@warning{%
4173                 Citation ‘\@citeb’ on page \thepage \space undefined%
4174             }%
4175         }{%
4176             {\csname b@\@citeb\extra@b@citeb\endcsname}%
4177         }%
4178     }%
4179     }{\#1}%
4180     }$%
4181 }%

```

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.

```

4182 \def\@citex[#1]#2{%
4183     \let\@citea\@empty
4184     \@cite{%
4185         \@for\@citeb:=#2\do{%
4186             \@citea
4187             \def\@citea{\penalty\@m\ }%
4188             \edef\@citeb{\expandafter\@firstofone\@citeb}%
4189             \if@filesw
4190                 \immediate\write\@auxout{\string\citation{\@citeb}}%
4191             \fi
4192             \@ifundefined{b@\@citeb\extra@b@citeb}{%
4193                 \mbox{\reset@font\bfseries ?}%
4194                 \G@refundefinedtrue
4195                 \@latex@warning{%
4196                     Citation ‘\@citeb’ on page \thepage \space undefined%
4197                 }%
4198             }{%
4199                 \hbox{\csname b@\@citeb\extra@b@citeb\endcsname}%
4200             }%
4201         }%
4202     }{\#1}%
4203 }%
4204 }{}

```

36.1 Package harvard

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

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

```

4205 \@ifpackageloaded{harvard}{%
4206     \AtBeginDocument{%

```

```

4207 \Hy@Info{*** compatibility with harvard *** }%
4208 \Hy@raiselinksfalse
4209 \def\harvardcite#1#2#3#4{%
4210   \global\@namedef{HAR@fn@#1}{\hyper@@link[cite]{\cite.#1}{#2}}%
4211   \global\@namedef{HAR@an@#1}{\hyper@@link[cite]{\cite.#1}{#3}}%
4212   \global\@namedef{HAR@yr@#1}{\hyper@@link[cite]{\cite.#1}{#4}}%
4213   \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
4214 }%
4215 \def\HAR@citetoaux#1{%
4216   \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
4217   \ifHy@backref
4218     \ifx\@empty\@currentlabel
4219       \else
4220         \@bsphack
4221         \if@filesw
4222           \protected@write\@auxout{}{%
4223             \string\@writefile{brf}{%
4224               \string\backcite{#1}{%
4225                 {\thepage}{\@currentlabel}{\@currentHref}%
4226               }%
4227             }%
4228           }%
4229         \fi
4230         \@esphack
4231       \fi
4232     \fi
4233   }%
4234 \def\harvarditem{%
4235   \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
4236 }%
4237 \def\@harvarditem[#1]#2#3#4#5\par{%
4238   \item[]%
4239   \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
4240   \if@filesw
4241     \begingroup
4242       \def\protect##1{\string ##1\space}%
4243       \ifthenelse{\equal{#1}{\null}}{%
4244         {\def\next{{#4}{#2}{#3}}}%
4245         {\def\next{{#4}{#2}{#1}{#3}}}%
4246       \immediate\write\@auxout{\string\harvardcite\codeof\next}%
4247     \endgroup
4248   \fi
4249   \protect\hspace*{-\labelwidth}%
4250   \protect\hspace*{-\labelsep}%
4251   \ignorespaces
4252   #5%
4253   \ifHy@backref
4254     \newblock
4255     \backref{\csname br@#4\endcsname}%
4256   \fi
4257   \par
4258 }%

```

\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:

```

4259 \long\def\HAR@checkcitations#1#2#3#4{%

```

```

4260     \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
4261     \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
4262     \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
4263     \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
4264     \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
4265     \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
4266     \else
4267     \@tempswatrue
4268     \fi
4269     \else
4270     \@tempswatrue
4271     \fi
4272     \else
4273     \@tempswatrue
4274     \fi
4275     }%
4276     }%

4277 }{}

```

36.2 Package chicago

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

```

4278 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

4279 \def\citeN{%
4280     \def\@citesep{-1000}%
4281     \def\@cite##1##2{##1}%
4282     \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
4283     \@citedata@opt
4284 }%

```

`\shortciteN`

```

4285 \def\shortciteN{%
4286     \def\@citesep{-1000}%
4287     \def\@cite##1##2{##1}%
4288     \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
4289     \@citedata@opt
4290 }%

```

`\@citedata@opt`

```

4291 \def\@citedata@opt{%
4292     \let\@cite@opt\empty
4293     \@ifnextchar [{%
4294     \@tempswatrue
4295     \@citedatax@opt
4296     }{%
4297     \@tempswafalse
4298     \@citedatax[]%
4299     }%
4300 }%

```

`\@citedatax@opt`

```

4301 \def\@citedatax@opt[#1]{%
4302     \def\@cite@opt{, #1}%

```

```

4303 \citedatax[{\#1}]%
4304 }
4305 }{}

```

37 Page numbers

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

```

4306 \def\@beginndvi{%
4307 \unvbox \@beginndvibox
4308 \Hy@beginndvi
4309 \global\let\@beginndvi\Hy@beginndvi
4310 }
4311 \def\Hy@beginndvi{%
4312 \@hyperfixhead
4313 \HyPL@EveryPage
4314 }
4315 \def\pagenumbering#1{%
4316 \global\c@page \@ne
4317 \gdef\thepage{\csname @#1\endcsname\c@page}%
4318 }

```

This is needed for some unremembered reason...

```

4319 \let\HYPERPAGEANCHOR\hyperpageanchor

```

Macro `\@hyperfixhead` calls `\hyper@pagetransition` and `\hyper@pageduration`. Therefore empty definitions are provided for drivers that do not define these macros.

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

```

4320 \providecommand\hyper@pagetransition{}
4321 \providecommand\hyper@pageduration{}
4322 \providecommand\hyper@pagehidden{}

```

This where we supply a destination for each page. Test to see if there is some sort of header. The test used to be `\expandafter\ifx\expandafter\@empty\H@old@thehead`.

`\@hyperfixhead`

```

4323 \def\@hyperfixhead{%
4324 \Hy@DistillerDestFix
4325 \ifHy@pageanchor
4326 \ifHy@hypertextnames
4327 \ifHy@plainpages
4328 \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
4329 \else
4330 \begingroup
4331 \let\@number\@firstofone
4332 \pdfstringdef\@the@H@page{\thepage}%
4333 \endgroup
4334 \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
4335 \fi
4336 \else
4337 \Hy@GlobalStepCount\Hy@pagecounter

```

```

4338     \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}}%
4339     \fi
4340   \else
4341     \let\Hy@TempPageAnchor\@empty
4342   \fi
4343   \let\H@old@thehead\@thehead
4344   \if^\@thehead~%
4345     \def\H@old@thehead{\hfil}%
4346   \fi
4347   \ifHy@texht
4348     \def\@thehead{}%
4349   \else
4350     \ifHy@seminarslides
4351       \begingroup
4352         \let\leavevmode\relax
4353         \Hy@TempPageAnchor\relax
4354         \hyper@pagetransition
4355         \hyper@pageduration
4356         \hyper@pagehidden
4357       \endgroup
4358     \else
4359       \def\@thehead{%
4360         \Hy@TempPageAnchor\relax
4361         \hyper@pagetransition
4362         \hyper@pageduration
4363         \hyper@pagehidden
4364         \H@old@thehead
4365       }%
4366     \fi
4367   \fi
4368   \ifx\PDF@FinishDoc\@empty
4369   \else
4370     \PDF@FinishDoc
4371     \gdef\PDF@FinishDoc{}%
4372   \fi
4373 }

```

38 Table of contents

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

```

4374 \begingroup\expandafter\expandafter\expandafter\endgroup
4375 \expandafter\ifx\curname chapter\endcurname\relax
4376   \def\toclevel@part{0}
4377 \else
4378   \def\toclevel@part{-1}
4379 \fi
4380 \def\toclevel@chapter{0}
4381 \def\toclevel@section{1}
4382 \def\toclevel@subsection{2}
4383 \def\toclevel@subsubsection{3}
4384 \def\toclevel@paragraph{4}
4385 \def\toclevel@subparagraph{5}
4386 \def\toclevel@figure{0}
4387 \def\toclevel@table{0}

```

```

4388 \@ifpackageloaded{listings}{%
4389   \def\theHlstlisting{\thelstlisting}%
4390   \def\toclevel@lstlisting{0}%
4391 }{}
4392 \@ifpackageloaded{listing}{%
4393   \def\theHlisting{\thelisting}%
4394   \def\toclevel@listing{0}%
4395 }{}
4396 \def\addcontentsline#1#2#3{% toc extension, type, tag
4397   \begingroup
4398     \let\label@gobble
4399     \let\textlatin@firstofone
4400     \ifx\@currentHref\@empty
4401       \Hy@Warning{%
4402         No destination for bookmark of \string\addcontentsline,%
4403         \MessageBreak destination is added%
4404       }%
4405       \phantomsection
4406     \fi
4407     \expandafter\ifx\csname toclevel@#2\endcsname\relax
4408       \begingroup
4409         \def\Hy@tempa{#1}%
4410         \ifx\Hy@tempa\Hy@bookmarkstype
4411           \Hy@WarningNoLine{bookmark level for unknown #2 defaults to 0}%
4412         \else
4413           \Hy@Info{bookmark level for unknown #2 defaults to 0}%
4414         \fi
4415       \endgroup
4416       \expandafter\gdef\csname toclevel@#2\endcsname{0}%
4417     \fi
4418     \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
4419     \Hy@writebookmark{\csname the#2\endcsname}%
4420       {#3}%
4421       {\@currentHref}%
4422       {\Hy@toclevel}%
4423       {#1}%
4424     \ifHy@verbose
4425       \def\Hy@tempa{#3}%
4426       \@onelevel@sanitize\Hy@tempa
4427       \typeout{pdfTeX: bookmark at \the\inputlineno:
4428         {\csname the#2\endcsname}
4429         {\Hy@tempa}
4430         {\@currentHref}%
4431         {\Hy@toclevel}%
4432         {#1}%
4433       }%
4434     \fi
4435     \addtocontents{#1}{%
4436       \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
4437     }%
4438   \endgroup
4439 }
4440 \def\contentsline#1#2#3#4{%
4441   \ifx\#4\%
4442     \csname l@#1\endcsname{#2}{#3}%
4443   \else
4444     \ifHy@linktopage

```

```

4445     \csname l@#1\endcsname{#{2}}{#{%
4446       \hyper@linkstart{link}{#4}{#3}\hyper@linkend
4447     }%
4448   \else
4449     \csname l@#1\endcsname{#{%
4450       \hyper@linkstart{link}{#4}{#2}\hyper@linkend
4451     }{#3}%
4452   \fi
4453 \fi
4454 }

4455 \end{package}
4456 \end{*check}
4457 \checklatex
4458 \checkcommand\def\addcontentsline#1#2#3{#{%
4459   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}}%
4460 }
4461 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
4462 \end{check}
4463 \end{*package}

```

39 New counters

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

```

4464 \let\H@definecounter\@definecounter
4465 \def\@definecounter#1{#{%
4466   \H@definecounter{#1}%
4467   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
4468 }

```

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.

```

4469 \let\H@newctr\@newctr
4470 \def\@newctr#1[#2]{#{%
4471   \H@newctr#1[#{2}]%
4472   \expandafter\def\csname theH#1\endcsname{#{%
4473     \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}}%
4474   }%
4475 }

```

40 AMS \LaTeX compatibility

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

```

4476 \let\Hmake@df@tag@@\make@df@tag@@
4477 \def\make@df@tag@@#1{#{%
4478   \Hmake@df@tag@@{#1}%
4479   \Hy@GlobalStepCount\Hy@linkcounter
4480   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4481   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4482 }

```



```

4483 \let\Hmake@df@tag@@@make@df@tag@@@
4484 \def\make@df@tag@@@#1{%
4485   \Hmake@df@tag@@@{#1}%
4486   \Hy@GlobalStepCount\Hy@linkcounter
4487   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4488   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4489 }

```

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

```

4490 \@ifpackagewith{hyperref}{pdfTeX}{%
4491   \let\H@seteqlabel\@seteqlabel
4492   \def\@seteqlabel#1{%
4493     \H@seteqlabel{#1}%
4494     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4495     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4496   }%
4497 }{}

```

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

```

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

```

40.1 \@addtoreset and \numberwithin patches

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

```

4498 \let\HyOrg@addtoreset\@addtoreset
4499 \def\@addtoreset#1#2{%
4500   \HyOrg@addtoreset{#1}{#2}%
4501   \expandafter\xdef\csname theH#1\endcsname{%
4502     \expandafter\noexpand
4503     \csname the\@ifundefined{theH#2}{H#2\endcsname
4504     .\noexpand\the\noexpand\value{#1}%
4505   }%
4506 }

```

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

```

4507 </package>
4508 <*check>
4509 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
4510 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
4511   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
4512     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
4513       \@addtoreset{#2}{#3}%
4514       \@xp\xdef\csname the#2\endcsname{%
4515         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
4516       }%
4517     }%
4518   }%

```

```

4519 }%
4520 </check>
4521 <*package>
4522 \ifpackageloaded{amsmath}{%
4523   \ifpackagelater{amsmath}{1999/12/14}{%
4524     \renewcommand*{\numberwithin}[3][\arabic]{%
4525       \ifundefined{c@#2}{\@nocounterr{#2}}{%
4526         \ifundefined{c@#3}{\@nocnterr{#3}}{%
4527           \HyOrg@addtoreset{#2}{#3}%
4528           \xp\xdef\csname the#2\endcsname{%
4529             \xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
4530           }%
4531           \xp\xdef\csname theH#2\endcsname{%
4532             \xp\@nx
4533             \csname the\ifundefined{theH#3}{H#3\endcsname
4534             .\@nx#1{#2}%
4535           }%
4536         }%
4537       }%
4538     }%
4539   }{%
4540     \Hy@WarningNoLine{%
4541       \string\numberwithin\space of package ‘amsmath’
4542       only fixed\MessageBreak
4543       for version 2000/06/06 v2.12 or newer%
4544     }%
4545   }
4546 }{}

```

41 Included figures

Simply intercept the low level graphics package macro.

```

4547 \ifHy@figures
4548   \let\Hy@Gin@setfile\Gin@setfile
4549   \def\Gin@setfile#1#2#3{%
4550     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
4551   }
4552 \fi
4553 \Hy@DisableOption{hyperfigures}

```

42 hyperindex entries

Internal command names are prefixed with \HyInd@.

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

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

```

4554 \ifHy@hyperindex
4555   \def\HyInd@ParenLeft{(%
4556   \def\HyInd@ParenRight{)%

```

```

4557 \Hy@nextfalse
4558 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
4559 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
4560 \begin{group}
4561   \lccode'\|=\expandafter'\HyInd@EncapChar\relax
4562 \lowercase{\endgroup}
4563   \ifHy@next
4564     \let\HyInd@org@wrindex\@wrindex
4565     \def\@wrindex#1#2{\HyInd@wrindex{#1}#2||\}%
4566     \def\HyInd@wrindex#1#2|#3|#4\{\%
4567       \ifx\|#3\%
4568         \HyInd@org@wrindex{#1}{#2|hyperpage}%
4569       \else
4570         \def\Hy@temp@A{#3}%
4571         \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4572           \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4573           \relax
4574           \HyInd@org@wrindex{#1}{#2|#3}%
4575         \else
4576           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
4577         \fi
4578       \fi
4579     }%
4580   \else
4581     \def\@wrindex#1{\@wrindex#1||\}%
4582     \def\@wrindex#1|#2|#3\{\%
4583       \if@filesw
4584         \ifx\|#2\%
4585           \protected@write\@indexfile{}\%
4586             \string\indexentry{#1|hyperpage}{\thepage}%
4587           }%
4588         \else
4589           \def\Hy@temp@A{#2}%
4590           \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4591             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4592             \relax
4593             \protected@write\@indexfile{}\%
4594               \string\indexentry{#1|#2}{\thepage}%
4595             }%
4596           \else
4597             \protected@write\@indexfile{}\%
4598               \string\indexentry{#1|#2hyperpage}{\thepage}%
4599             }%
4600           \fi
4601         \fi
4602       \fi
4603     \endgroup
4604     \@esphack
4605   }%
4606 \fi
4607 }%
4608 \fi
4609 \Hy@DisableOption{hyperindex}
4610 \Hy@DisableOption{encap}

```

This again is quite flaky, but allow for the common situation of a page range separated by en-rule. We split this into two different hyperlinked pages.

```

4611 \def\hyperpage#1{\@hyperpage#1---\}

```

```

4612 \def\@hyperpage#1--#2--#3\{\%
4613   \ifx\#2\%
4614     \@commahyperpage{#1}%
4615   \else
4616     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
4617   \fi
4618 }
4619 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
4620 \def\@commahyperpage#1, #2,#3\{\%
4621   \ifx\#2\%
4622     \HyInd@pagelink{#1}%
4623   \else
4624     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
4625   \fi
4626 }

```

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

```

4627 \def\HyInd@pagelink#1{\%
4628   \begingroup
4629     \toks@={}%
4630     \HyInd@removespaces#1 \@nil
4631   \endgroup
4632 }
4633 \def\HyInd@removespaces#1 #2\@nil{\%
4634   \toks@=\expandafter{\the\toks@#1}%
4635   \ifx\#2\%
4636     \edef\x{\the\toks@}%
4637     \ifx\x\@empty
4638     \else
4639       \hyperlink{page.\the\toks@}{\the\toks@}%
4640     \fi
4641   \else
4642     \Hy@ReturnAfterFi{\%
4643       \HyInd@removespaces#2\@nil
4644     }%
4645   \fi
4646 }

```

43 Compatibility with foiltex

```

4647 \@ifclassloaded{foils}{\%
4648   \providecommand*\ext@table{lot}%
4649   \providecommand*\ext@figure{lof}%
4650 }{\}

```

44 Compatibility with seminar slide package

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

```

4651 \@ifclassloaded{seminar}{\%
4652   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}}%
4653 }{\%
4654   \Hy@seminarslidesfalse
4655 }
4656 \@ifpackageloaded{slidesec}{\%

```

```

4657 \newcommand\theHslidesection {\arabic{slidesection}}%
4658 \newcommand\theHslidesubsection{%
4659 \theHslidesection.\arabic{slidesubsection}%
4660 }%
4661 \def\slide@heading[#1]#2{%
4662 \H@refstepcounter{slidesection}%
4663 \@addtoreset{slidesubsection}{slidesection}%
4664 \addtocontents{los}{%
4665 \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
4666 {\@SCTR}{slideheading.\theslidesection}%
4667 }%
4668 \def\Hy@tempa{#2}%
4669 \ifx\Hy@tempa\@empty
4670 \else
4671 {%
4672 \edef\@currentlabel{%
4673 \csname p@slidesection\endcsname\theslidesection
4674 }%
4675 \makeslideheading{#2}%
4676 }%
4677 \fi
4678 \gdef\theslideheading{#1}%
4679 \gdef\theslidesubheading{%
4680 \ifHy@bookmarksnumbered
4681 \def\Hy@slidetitle{\theslidesection\space #1}%
4682 \else
4683 \def\Hy@slidetitle{#1}%
4684 \fi
4685 \ifHy@hypertextnames
4686 \ifHy@naturalnames
4687 \hyper@@anchor{slideheading.\theslidesection}{\relax}%
4688 \Hy@writebookmark
4689 {\theslidesection}%
4690 {\Hy@slidetitle}%
4691 {slideheading.\theslidesection}%
4692 {1}%
4693 {toc}%
4694 \else
4695 \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
4696 \Hy@writebookmark
4697 {\theslidesection}%
4698 {\Hy@slidetitle}%
4699 {slideheading.\theHslidesection}%
4700 {1}%
4701 {toc}%
4702 \fi
4703 \else
4704 \Hy@GlobalStepCount\Hy@linkcounter
4705 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
4706 \Hy@writebookmark
4707 {\theslidesection}%
4708 {\Hy@slidetitle}%
4709 {slideheading.\the\Hy@linkcounter}%
4710 {1}%
4711 {toc}%
4712 \fi
4713 }%

```

```

4714 \def\slide@subheading[#1]#2{%
4715   \H@refstepcounter{slidesubsection}%
4716   \addtocontents{los}{%
4717     \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
4718     {\@SCTR}{slideheading.\theslidesubsection}%
4719   }%
4720   \def\Hy@tempa{#2}%
4721   \ifx\Hy@tempa\@empty
4722   \else
4723   {%
4724     \edef\@currentlabel{%
4725       \csname p@slidesubsection\endcsname\theslidesubsection
4726     }%
4727     \makeslidesubheading{#2}%
4728   }%
4729   \fi
4730   \gdef\theslidesubheading{#1}%
4731   \ifHy@bookmarksnumbered
4732     \def\Hy@slidetitle{\theslidesubsection\space #1}%
4733   \else
4734     \def\Hy@slidetitle{#1}%
4735   \fi
4736   \ifHy@hypertextnames
4737     \ifHy@naturalnames
4738       \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
4739       \Hy@writebookmark
4740         {\theslidesubsection}%
4741         {\Hy@slidetitle}%
4742         {slideheading.\theslidesubsection}%
4743         {2}%
4744         {toc}%
4745     \else
4746       \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
4747       \Hy@writebookmark
4748         {\theslidesubsection}%
4749         {\Hy@slidetitle}%
4750         {slideheading.\theHslidesubsection}%
4751         {2}%
4752         {toc}%
4753     \fi
4754   \else
4755     \Hy@GlobalStepCount\Hy@linkcounter
4756     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
4757     \Hy@writebookmark
4758       {\theslidesubsection}%
4759       {\Hy@slidetitle}%
4760       {slideheading.\the\Hy@linkcounter}%
4761       {1}%
4762       {toc}%
4763   \fi
4764 }%
4765 \providecommand*\listslidenamelist{List of Slides}%
4766 \def\listofslides{%
4767   \section*{%
4768     \listslidenamelist
4769     \@mkboth{%
4770       \expandafter\MakeUppercase\listslidenamelist

```

```

4771     }{%
4772     \expandafter\MakeUppercase\listslide
4773     }%
4774 }%
4775 \def\l@slide##1##2##3##4{%
4776     \slide@undottedcline{%
4777         \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
4778     }{%}%
4779 }%
4780 \let\l@subslide\l@slide
4781 \@startlos
4782 }%
4783 \def\slide@contents{%
4784     \def\l@slide##1##2##3##4{%
4785         \slide@cline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
4786     }%
4787     \let\l@subslide\@gobblefour
4788     \@startlos
4789 }%
4790 \def\Slide@contents{%
4791     \def\l@slide##1##2##3##4{%
4792         \ifcase\lslide@flag
4793             \message{##1 ** \the\c@slidesection}%
4794             \ifnum##1>\c@slidesection
4795                 \def\lslide@flag{1}%
4796                 {%
4797                     \large
4798                     \slide@cline{%
4799                         \slidenumberline{$\Rightarrow\bullet$}%
4800                         {\hyperlink{##4}{##2}}}%
4801                     }{##3}%
4802                 }%
4803             \else
4804                 {%
4805                     \large
4806                     \slide@cline{%
4807                         \slidenumberline{$\sur\d\;\bullet$}%
4808                         {\hyperlink{##4}{##2}}}%
4809                     }{##3}%
4810                 }%
4811             \fi
4812         \or
4813             \def\lslide@flag{2}%
4814             {%
4815                 \large
4816                 \slide@cline{%
4817                     \slidenumberline{$\bullet$}%
4818                     {\hyperlink{##4}{##2}}}%
4819                 }{##3}%
4820             }%
4821         \or
4822             {%
4823                 \large
4824                 \slide@cline{%
4825                     \slidenumberline{$\bullet$}%
4826                     {\hyperlink{##4}{##2}}}%
4827                 }{##3}%

```

```

4828     }%
4829     \fi
4830 }%
4831 \def\l@subslide##1##2##3##4{%
4832     \ifnum\l@slide@flag=1
4833         \undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
4834     \fi
4835 }%
4836 \def\l@slide@flag{0}%
4837 \@startlos
4838 }%
4839 }{}

```

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.)

```

4840 \ifHy@texht
4841     \expandafter\endinput
4842 \fi
4843 \let\real@setref\@setref
4844 \def\@setref#1#2#3{% csname, extract group, refname
4845     \ifx#1\relax
4846         \protect\G@refundefinedtrue
4847         \nfss@text{\reset@font\bfseries ??}%
4848         \@latex@warning{%
4849             Reference ‘#3’ on page \thepage \space undefined%
4850         }%
4851     \else
4852         \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
4853     \fi
4854 }

```

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

```

4855 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
4856     \begingroup
4857     \toks0={\hyper@@link{#5}{#4}}%
4858     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
4859     \edef\x{\endgroup
4860         \the\toks0 {\the\toks1 }%
4861     }%
4862     \x
4863 }
4864 \def\@pagesetref#1#2#3{% csname, extract macro, ref
4865     \ifx#1\relax
4866         \protect\G@refundefinedtrue
4867         \nfss@text{\reset@font\bfseries ??}%
4868         \@latex@warning{%
4869             Reference ‘#3’ on page \thepage \space undefined%
4870         }%
4871     \else
4872         \protect\hyper@@link
4873         {\expandafter\@fifthoffive#1}%
4874         {page.\expandafter\@secondoffive#1}%
4875         {\expandafter\@secondoffive#1}%
4876     \fi
4877 }
4878 \endpackage

```



```

4879 <*check>
4880 \checklatex
4881 \checkcommand\def\@setref#1#2#3{%
4882   \ifx#1\relax
4883     \protect\G@refundefinedtrue
4884     \nfss@text{\reset@font\bfseries ??}%
4885     \@latex@warning{%
4886       Reference ‘#3’ on page \thepage\space undefined%
4887     }%
4888   \else
4889     \expandafter#2#1\null
4890   \fi
4891 }
4892 </check>
4893 <*package>

```

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

```

4894 \def\@refstar#1{%
4895   \@safe@activestru
4896   \expandafter\real@setref\csname r@#1\endcsname\@firstoffive{#1}%
4897   \@safe@activesfalse
4898 }
4899 \def\@pagerefstar#1{%
4900   \@safe@activestru
4901   \expandafter\real@setref\csname r@#1\endcsname\@secondoffive{#1}%
4902   \@safe@activesfalse
4903 }
4904 \DeclareRobustCommand\autoref[1]{%
4905   \@safe@activestru
4906   \expandafter\auto@setref\csname r@#1\endcsname\@firstoffive{#1}%
4907   \@safe@activesfalse
4908 }
4909 \def\auto@setref#1#2#3{% csname, extract group, refname
4910   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
4911     \edef\@thisref{\expandafter\@fourthoffive#1\@empty\@empty}%
4912     \expandafter\test@reftype\@thisref\%
4913     \hyper@@link
4914       {\expandafter\@fifthoffive#1}%
4915       {\expandafter\@fourthoffive#1\@empty\@empty}%
4916       {\@currentHtag\expandafter#2#1\@empty\@empty\@empty\@empty}%
4917   \else
4918     \protect\G@refundefinedtrue
4919     \nfss@text{\reset@font\bfseries ??}%
4920     \@latex@warning{%
4921       Reference ‘#3’ on page \thepage \space undefined%
4922     }%
4923   \fi
4924 }
4925 \def\test@reftype#1.#2\{%
4926   \@ifundefined{#1autorefname}{%
4927     \@ifundefined{#1name}{%
4928       \def\@currentHtag{%
4929         \@latex@warning{no tag name for #1 at \the\inputlineno}%
4930       }{%
4931         \def\@currentHtag{\csname#1name\endcsname~}%
4932       }%
4933     }%

```

```

4934 \def\@currentHtag{\csname#1autorefname\endcsname~}%
4935 }%
4936 }
4937 \def\@currentHtag{}

Defaults for the names that \autoref uses.

4938 \providecommand\AMSautorefname{\equationautorefname}
4939 \providecommand\Hfootnoteautorefname{\footnoteautorefname}
4940 \providecommand\Itemautorefname{\itemautorefname}
4941 \providecommand\itemautorefname{item}
4942 \providecommand\equationautorefname{Equation}
4943 \providecommand\footnoteautorefname{footnote}
4944 \providecommand\itemautorefname{item}
4945 \providecommand\figureautorefname{Figure}
4946 \providecommand\tableautorefname{Table}
4947 \providecommand\partautorefname{Part}
4948 \providecommand\appendixautorefname{Appendix}
4949 \providecommand\chapterautorefname{chapter}
4950 \providecommand\sectionautorefname{section}
4951 \providecommand\subsectionautorefname{subsection}
4952 \providecommand\subsubsectionautorefname{subsubsection}
4953 \providecommand\paragraphautorefname{paragraph}
4954 \providecommand\subparagraphautorefname{subparagraph}
4955 \providecommand\FancyVerbLineautorefname{line}
4956 \providecommand\theoremautorefname{Theorem}
4957 \end{package}

```

45 Configuration files

45.1 PS/PDF strings

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

`\Hy@pstringdef` Therefore such strings should be passed through `\Hy@pstringdef`. The first argument holds a macro for the result, the second argument is the string that needs protecting. Since version 1.30.0 pdf_TE_X offers `\pdfescapestring`.

```

4958 <*pdfTex | dvipdfm | vtex | pdfmarkbase | dviwindo>
4959 \begingroup\expandafter\expandafter\expandafter\endgroup
4960 \expandafter\ifx\csname pdfescapestring\endcsname\relax
4961 \begingroup
4962 \catcode'\| =0 %
4963 \@makeother\| %
4964 |@firstofone{|endgroup
4965 |def|Hy@pstringdef#1#2{%
4966 |edef#1{#2}%
4967 |@onelevel@sanitize#1%
4968 |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
4969 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
4970 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1|@nil}%
4971 }%
4972 |def|Hy@ExchangeBackslash#1\#2|@nil{%
4973 #1%
4974 |ifx|#2\| %
4975 |else

```

```

4976      \\%
4977      |Hy@ReturnAfterFi{%
4978      |Hy@ExchangeBackslash#2|@nil
4979      }%
4980      |fi
4981      }%
4982  }
4983  \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
4984      #1%
4985      \ifx\\#2\\%
4986      \else
4987      \@backslashchar(%
4988      \Hy@ReturnAfterFi{%
4989      \Hy@ExchangeLeftParenthesis#2\@nil
4990      }%
4991      \fi
4992  }
4993  \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
4994      #1%
4995      \ifx\\#2\\%
4996      \else
4997      \@backslashchar)%
4998      \Hy@ReturnAfterFi{%
4999      \Hy@ExchangeRightParenthesis#2\@nil
5000      }%
5001      \fi
5002  }
5003  \else
5004  \def\Hy@pstringdef#1#2{%
5005      \edef#1{\pdfescapestring{#2}}%
5006  }%
5007  \fi
5008  </pdfTeX | dvipdfm | vTeX | pdfmarkbase | dviwindo>

```

45.2 pdfTeX

```

5009 <*pdfTeX>

```

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

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

```

5010 \def\setpdflinkmargin#1{\pdflinkmargin#1}
5011 \ifx\pdfstartlink\@undefined% less than version 14
5012   \let\pdfstartlink\pdfannotlink
5013   \let\pdflinkmargin\@tempdima
5014   \let\pdfxform\pdfform
5015   \let\pdflastxform\pdflastform
5016   \let\pdfrefxform\pdfrefform
5017 \else
5018   \pdflinkmargin1pt
5019 \fi

```

First set up the default linking

```

5020 \providecommand\pdfview{XYZ}

```

First define the anchors:

```

5021 \def\new@pdflink#1{%
5022   \ifHy@verbose

```

```

5023 \typeout{pdftex: define anchor at line \the\inputlineno: #1}%
5024 \fi
5025 \Hy@SaveLastskip
5026 \Hy@pstringdef\Hy@pstringDest{#1}%
5027 \Hy@DestName\Hy@pstringDest\pdfview
5028 \Hy@RestoreLastskip
5029 }
5030 \let\pdf@endanchor\@empty
\Hy@DestName Wrap the call of \pdfdest name in \Hy@DestName. Then it can easier be caught by
package hypdestopt.
5031 \def\Hy@DestName#1#2{%
5032 \pdfdest name{#1}#2\relax
5033 }

```

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.

```

5034 \providecommand\pdfborder{0 0 1}
5035 \providecommand*\pdfborderstyle{}
5036 \def\Hy@undefinedname{UNDEFINED}
5037 \def\find@pdflink#1#2{%
5038 \leavevmode
5039 \protected@edef\Hy@testname{#2}%
5040 \ifx\Hy@testname\@empty
5041 \let\Hy@testname\Hy@undefinedname
5042 \else
5043 \Hy@pstringdef\Hy@testname\Hy@testname
5044 \fi
5045 \Hy@StartlinkName{%
5046 \Hy@setpdfborder
5047 /H\pdfhighlight
5048 /C[\CurrentBorderColor]%
5049 }\Hy@testname
5050 \expandafter\Hy@colorlink\csname @#1color\endcsname
5051 }
5052 \def\Hy@StartlinkName#1#2{%
5053 \pdfstartlink attr{#1}goto name{#2}\relax
5054 }
5055 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
5056 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
5057 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
5058 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
5059 \def\hyper@linkstart#1#2{%
5060 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
5061 \find@pdflink{#1}{#2}}
5062 \def\hyper@linkend{\close@pdflink}
5063 \def\hyper@link#1#2#3{%
5064 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
5065 \find@pdflink{#1}{#2}#3\close@pdflink
5066 }
5067 \def\CurrentBorderColor{\@linkbordercolor}
5068 \def\hyper@linkurl#1#2{%
5069 \begingroup
5070 \Hy@pstringdef\Hy@pstringURI{#2}%
5071 \hyper@chars

```

```

5072 \leavevmode
5073 \pdfstartlink
5074   attr{%
5075     \Hy@setpdfborder
5076     /H\pdfhighlight
5077     /C[\@urlbordercolor]%
5078   }%
5079   user{%
5080     /Subtype/Link%
5081     /A<<%
5082     /Type/Action%
5083     /S/URI%
5084     /URI(\Hy@pstringURI)%
5085   >>%
5086   }%
5087   \relax
5088   \Hy@colorlink\@urlcolor#1%
5089   \close@pdflink
5090 \endgroup
5091 }
5092 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
5093   \begin{group}
5094     \Hy@pstringdef\Hy@pstringF{#2}%
5095     \Hy@pstringdef\Hy@pstringD{#3}%
5096     \leavevmode
5097     \pdfstartlink
5098       attr{%
5099         \Hy@setpdfborder
5100         /H\pdfhighlight
5101         /C[\@filebordercolor]%
5102       }%
5103       user {%
5104         /Subtype/Link%
5105         /A<<%
5106         /F(\Hy@pstringF)%
5107         /S/GoToR%
5108         \ifHy@newwindow /NewWindow true\fi

```

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

```

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

```

```

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

```

```

5109     \ifx\#3\%
5110       /D[0 \pdfstartview]%
5111     \else
5112       /D(\Hy@pstringD)%
5113     \fi
5114   >>%
5115   }%
5116   \relax
5117   \Hy@colorlink\@filecolor#1%

```

```

5118 \close@pdflink
5119 \endgroup
5120 }
5121 \def\@hyper@launch run:#1\|#2#3{% filename, anchor text linkname
5122 \begin{group}
5123 \Hy@pstringdef\Hy@pstringF{#1}%
5124 \Hy@pstringdef\Hy@pstringP{#3}%
5125 \leavevmode
5126 \pdfstartlink
5127 attr{%
5128 \Hy@setpdfborder
5129 /H\@pdfhighlight
5130 /C[\@runbordercolor]%
5131 }%
5132 user {%
5133 /Subtype/Link%
5134 /A<<%
5135 /F(\Hy@pstringF)%
5136 /S/Launch%
5137 \ifHy@newwindow /NewWindow true\fi
5138 \ifx\|#3\|
5139 \else
5140 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
5141 \fi
5142 >>%
5143 }%
5144 \relax
5145 \Hy@colorlink\@filecolor#2%
5146 \close@pdflink
5147 \endgroup
5148 }

```

\@pdfproducer

```

5149 \ifx\@pdfproducer\relax
5150 \def\@pdfproducer{pdfTeX}
5151 \ifx\@pdfproducer\@undefined
5152 \else
5153 \ifx\@pdfproducer\relax
5154 \else
5155 \ifnum\@pdfproducer>0 %
5156 \def\@pdfproducer{pdfTeX}
5157 \fi
5158 \fi
5159 \fi
5160 \ifx\pdfversion\@undefined
5161 \else
5162 \ifnum\pdfversion<100 %
5163 \edef\@pdfproducer{%
5164 \@pdfproducer
5165 \the\pdfversion.\pdfversion}
5166 }
5167 \else
5168 \ifnum\pdfversion<130 %
5169 \edef\@pdfproducer{%
5170 \@pdfproducer-
5171 \expandafter\@car\the\pdfversion\@empty\@nil.%
5172 \expandafter\@cdr\the\pdfversion\@empty\@nil

```

```

5173         \pdfTeXrevision
5174     }
5175     \else
5176         \edef\@pdfproducer{%
5177             \@pdfproducer-
5178             \expandAfter\@car\the\pdfTeXversion\@empty\@nil.%
5179             \expandAfter\@cdr\the\pdfTeXversion\@empty\@nil.%
5180             \pdfTeXrevision
5181         }%
5182     \fi
5183 \fi
5184 \fi
5185 \fi

```

\PDF@SetupDox

```

5186 \def\PDF@SetupDoc{%
5187     \ifx\@pdfpagescrop\@empty
5188     \else
5189         \edef\process@me{%
5190             \pdfpagesattr={
5191                 /CropBox[\@pdfpagescrop]
5192                 \expandAfter\ifx\expandAfter\\the\pdfpagesattr\\
5193                 \else
5194                     ^^J\the\pdfpagesattr
5195                 \fi
5196             }%
5197         }%
5198         \process@me
5199     \fi
5200     \Hy@pstringdef\Hy@pstringB{\@baseurl}%
5201     \pdfcatalog{%
5202         /PageMode\@pdfpagemode
5203         \ifx\@baseurl\@empty
5204         \else
5205             /URI<</Base(\Hy@pstringB)>>%
5206         \fi
5207     }%
5208     \ifx\@pdfstartview\@empty
5209     \else
5210         openaction goto page \@pdfstartpage {\@pdfstartview}%
5211     \fi
5212     \edef\Hy@temp{%
5213         \ifHy@toolbar\else /HideToolbar true\fi
5214         \ifHy@menubar\else /HideMenubar true\fi
5215         \ifHy@windowui\else /HideWindowUI true\fi
5216         \ifHy@fitwindow /FitWindow true\fi
5217         \ifHy@centerwindow /CenterWindow true\fi
5218         \ifHy@displaydoctitle /DisplayDocTitle true\fi
5219         \ifx\@pdfnonfullscreenpagemode\@empty
5220         \else
5221             /NonFullScreenPageMode\@pdfnonfullscreenpagemode
5222         \fi
5223     }%
5224     \pdfcatalog{%
5225         \ifx\Hy@temp\@empty
5226         \else
5227             /ViewerPreferences<<\Hy@temp>>%

```

```

5228 \fi
5229 \ifx\pdf@pagelayout\@empty
5230 \else
5231 /PageLayout/\pdf@pagelayout
5232 \fi
5233 }%
5234 }

```

\PDF@FinishDoc

```

5235 \def\PDF@FinishDoc{%
5236 \Hy@UseMaketitleInfos
5237 \pdfinfo{%
5238 /Author(\@pdfauthor)%
5239 /Title(\@pdftitle)%
5240 /Subject(\@pdfsubject)%
5241 /Creator(\@pdfcreator)%
5242 \ifx\@pdfcreationdate\@empty
5243 \else
5244 /CreationDate(\@pdfcreationdate)%
5245 \fi
5246 \ifx\@pdfmoddate\@empty
5247 \else
5248 /ModDate(\@pdfmoddate)%
5249 \fi
5250 \ifx\@pdfproducer\relax
5251 \else
5252 /Producer(\@pdfproducer)%
5253 \fi
5254 /Keywords(\@pdfkeywords)%
5255 }%
5256 \Hy@DisableOption{pdfauthor}%
5257 \Hy@DisableOption{pdftitle}%
5258 \Hy@DisableOption{pdfsubject}%
5259 \Hy@DisableOption{pdfcreator}%
5260 \Hy@DisableOption{pdfcreationdate}%
5261 \Hy@DisableOption{pdfmoddate}%
5262 \Hy@DisableOption{pdfproducer}%
5263 \Hy@DisableOption{pdfkeywords}%
5264 }

```

\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.

```

5265 \def\hyper@pagetransition{%
5266 \ifx\@pdfpagetransition\relax
5267 \else
5268 \expandafter\Hy@RemoveTransPageAttr\the\pdfpageattr^^J/Trans{}>>\END
5269 \ifx\@pdfpagetransition\@empty
5270 \else
5271 \edef\@processme{%
5272 \global\pdfpageattr{%
5273 \the\pdfpageattr
5274 ^^J/Trans << /S /\@pdfpagetransition\space >>%
5275 }%
5276 }%
5277 \@processme
5278 \fi

```



```

5279 \fi
5280 }

```

\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.

```

5281 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
5282 \ifx\#2\%
5283 \global\pdfpageattr{#1}%
5284 \else
5285 \Hy@RemoveTransPageAttr#1#4\END
5286 \fi
5287 }

```

\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`.

```

5288 \def\hyper@pageduration{%
5289 \ifx\@pdfpageduration\relax
5290 \else
5291 \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{ } \END
5292 \ifx\@pdfpageduration\@empty
5293 \else
5294 \edef\@processme{%
5295 \global\pdfpageattr{%
5296 \the\pdfpageattr
5297 ^^J/Dur \@pdfpageduration\space
5298 }%
5299 }%
5300 \@processme
5301 \fi
5302 \fi
5303 }

```

\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.

```

5304 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
5305 \ifx\#2\%
5306 \global\pdfpageattr{#1}%
5307 \else
5308 \Hy@RemoveDurPageAttr#1#4\END
5309 \fi
5310 }

```

\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).

```

5311 \def\hyper@pagehidden{%
5312 \ifHy@useHidKey
5313 \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{ } \END
5314 \ifHy@pdfpagehidden
5315 \edef\@processme{%
5316 \global\pdfpageattr{%

```

```

5317         \the\pdfpageattr
5318         ^^J/Hid true % SPACE
5319     }%
5320 }%
5321 \processme
5322 \fi
5323 \fi
5324 }

```

`\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.

```

5325 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
5326 \ifx\#2\%
5327 \global\pdfpageattr{#1}%
5328 \else
5329 \Hy@RemoveHidPageAttr#1#4\END
5330 \fi
5331 }

```

Let us explicitly turn on PDF generation; they can reverse this decision in the document, but since we are emitting PDF links anyway, we *must* be in PDF mode.

```

5332 \pdfoutput=1
5333 \pdfcompresslevel=9
5334 \AtBeginDocument{%
5335 \ifHy@setpagesize
5336 \expandafter\@firstofone
5337 \else
5338 \expandafter\@gobble
5339 \fi
5340 {%
5341 \@ifclassloaded{seminar}{%
5342 \setlength{\pdfhorigin}{1truein}%
5343 \setlength{\pdfvorigin}{1truein}%
5344 \ifportrait
5345 \ifdim\paperwidth=\z@
5346 \else
5347 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
5348 \fi
5349 \ifdim\paperheight=\z@
5350 \else
5351 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
5352 \fi
5353 \else
5354 \ifdim\paperheight=\z@
5355 \else
5356 \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
5357 \fi
5358 \ifdim\paperwidth=\z@
5359 \else
5360 \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
5361 \fi
5362 \fi
5363 }{%
5364 \@ifundefined{stockwidth}{%
5365 \ifdim\paperwidth=\z@

```

```

5366         \else
5367             \setlength{\pdfpagewidth}{\paperwidth}%
5368         \fi
5369         \ifdim\paperheight=\z@
5370         \else
5371             \setlength{\pdfpageheight}{\paperheight}%
5372         \fi
5373     }{%
5374         \ifdim\stockwidth=\z@
5375         \else
5376             \setlength{\pdfpagewidth}{\stockwidth}%
5377         \fi
5378         \ifdim\stockheight=\z@
5379         \else
5380             \setlength{\pdfpageheight}{\stockheight}%
5381         \fi
5382     }%
5383 }%
5384 }%
5385 \Hy@DisableOption{setpagesize}%
5386 }
5387 \def\Acrobatmenu#1#2{%
5388     \leavevmode
5389     \pdfstartlink
5390     attr{%
5391         \Hy@setpdfborder
5392         /H \pdfhighlight
5393         /C[\@menubordercolor]%
5394     }%
5395     user{
5396         /Subtype /Link
5397         /A<<%
5398         /S/Named/N/#1%
5399         >>%
5400     }%
5401     \relax
5402     \Hy@colorlink\@menucolor#2\close@pdflink
5403 }
5404 </pdfTeX>
5405 <*hypertex>

```

45.3 hypertex

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

href: `html:`

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

The `href` and `name` commands must be paired with an `end` command later in the T_EX file — the T_EX commands between the two ends of a pair form an *anchor* in the document. In the case of an `href` command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by `href_string`. The *anchor* associated with a `name` command represents a possible location to which other hypertext links may refer, either as local references (of the form `href="#name_string"` with the `name_string` identical to the one in the `name` command) or as part of a URL (of the form `URL#name_string`). Here `href_string` is a valid URL or local identifier, while `name_string` could be any string at all: the only caveat is that ‘’ characters should be escaped with a backslash (\), and if it looks like a URL name it may cause problems.

```

5406 \def\PDF@FinishDoc{}
5407 \def\PDF@SetupDoc{%
5408   \ifx\@baseurl\@empty
5409   \else
5410     \special{html:<base href="\@baseurl">}%
5411   \fi
5412 }
5413 \def\hyper@anchor#1{%
5414   \Hy@SaveLastskip
5415   \begingroup
5416     \let\protect=\string
5417     \hyper@chars
5418     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
5419   \endgroup
5420   \Hy@activeanchortrue
5421   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5422   \special{html:</a>}%
5423   \Hy@activeanchorfalse
5424   \Hy@RestoreLastskip
5425 }
5426 \def\hyper@anchorstart#1{%
5427   \Hy@SaveLastskip
5428   \begingroup
5429     \hyper@chars
5430     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
5431   \endgroup
5432   \Hy@activeanchortrue
5433 }
5434 \def\hyper@anchorend{%
5435   \special{html:</a>}%
5436   \Hy@activeanchorfalse
5437   \Hy@RestoreLastskip
5438 }
5439 \def\@urltype{url}
5440 \def\hyper@linkstart#1#2{%
5441   \expandafter\Hy@colorlink\csname @#1color\endcsname
5442   \def\Hy@tempa{#1}%
5443   \ifx\Hy@tempa\@urltype
5444     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
5445   \else
5446     \begingroup

```

```

5447     \hyper@chars
5448     \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
5449     \endgroup
5450 \fi
5451 }
5452 \def\hyper@linkend{%
5453   \special{html:</a>}%
5454   \Hy@endcolorlink
5455 }
5456 \def\hyper@linkfile#1#2#3{%
5457   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
5458 }
5459 \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.

```

5460 \leavevmode
5461 \ifHy@raiselinks
5462   \setbox\@tempboxa=\color@hbox #1\color@endbox
5463   \@linkdim\dp\@tempboxa
5464   \lower\@linkdim\hbox{%
5465     \hyper@chars
5466     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
5467     }%
5468   \Hy@colorlink\@urlcolor#1%
5469   \@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).

```

5470   \advance\@linkdim by -6.5\p@
5471   \raise\@linkdim\hbox{\special{html:</a>}}%
5472   \Hy@endcolorlink
5473 \else
5474   \begingroup
5475     \hyper@chars
5476     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
5477     \Hy@colorlink\@urlcolor#1%
5478     \special{html:</a>}%
5479     \Hy@endcolorlink
5480   \endgroup
5481 \fi
5482 }
5483 \def\hyper@link#1#2#3{%
5484   \hyper@linkurl{#3}{\##2}%
5485 }
5486 \def\hyper@image#1#2{%
5487   \begingroup
5488     \hyper@chars
5489     \special{html:<img src=\hyper@quote#1\hyper@quote>}%
5490   \endgroup
5491 }
5492 </hypertex>
5493 <*dviwindo>

```

45.4 dviwindo

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

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

```
5494 \providecommand\wwwbrowser{c:\string\netscape\string\netscape}
5495 \def\hyper@anchor#1{%
5496   \Hy@SaveLastskip
5497   \begingroup
5498     \let\protect=\string
5499     \special{mark: #1}%
5500   \endgroup
5501   \Hy@activeanchortrue
5502   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5503   \Hy@activeanchorfalse
5504   \Hy@RestoreLastskip
5505 }
5506 \def\hyper@anchorstart#1{%
5507   \Hy@SaveLastskip
5508   \special{mark: #1}%
5509   \Hy@activeanchortrue
5510 }
5511 \def\hyper@anchorend{%
5512   \Hy@activeanchorfalse
5513   \Hy@RestoreLastskip
5514 }
5515 \def\hyper@linkstart#1#2{%
5516   \expandafter\Hy@colorlink\csname @#1color\endcsname
5517   \special{button:
5518     10000000
5519     \number\baselineskip\space
5520     #2%
5521   }%
5522 }
5523 \def\hyper@linkend{%
5524   \Hy@endcolorlink
5525 }
5526 \def\hyper@link#1#2#3{%
5527   \setbox\@tempboxa=\color@hbox #3\color@endbox
5528   \leavevmode
5529   \ifHy@raiselinks
5530     \@linkdim\dp\@tempboxa
5531     \lower\@linkdim\hbox{%
5532       \special{button:
5533         \number\wd\@tempboxa\space
5534         \number\ht\@tempboxa\space
5535         #2%
5536       }%
5537       \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
5538       \Hy@endcolorlink
```

```

5539 }%
5540 \@linkdim\ht\@tempboxa
5541 \advance\@linkdim by -6.5\p@
5542 \raise\@linkdim\hbox{}%
5543 \else
5544 \special{button:
5545 \number\wd\@tempboxa\space
5546 \number\ht\@tempboxa\space
5547 #2%
5548 }%
5549 \exandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
5550 \fi
5551 }
5552 \def\hyper@linkurl#1#2{%
5553 \begingroup
5554 \hyper@chars
5555 \leavevmode
5556 \setbox\@tempboxa=\color@hbox #1\color@endbox
5557 \ifHy@raiselinks
5558 \@linkdim\dp\@tempboxa
5559 \lower\@linkdim\hbox{%
5560 \special{button:
5561 \number\wd\@tempboxa\space
5562 \number\ht\@tempboxa\space
5563 launch: \wwwbrowser\space
5564 #2%
5565 }%
5566 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5567 }%
5568 \@linkdim\ht\@tempboxa
5569 \advance\@linkdim by -6.5\p@
5570 \raise\@linkdim\hbox{}%
5571 \else
5572 \special{button:
5573 \number\wd\@tempboxa\space
5574 \number\ht\@tempboxa\space
5575 launch: \wwwbrowser\space
5576 #2%
5577 }%
5578 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5579 \fi
5580 \endgroup
5581 }
5582 \def\hyper@linkfile#1#2#3{%
5583 \begingroup
5584 \hyper@chars
5585 \leavevmode
5586 \setbox\@tempboxa=\color@hbox #1\color@endbox
5587 \ifHy@raiselinks
5588 \@linkdim\dp\@tempboxa
5589 \lower\@linkdim\hbox{%
5590 \special{button:
5591 \number\wd\@tempboxa\space
5592 \number\ht\@tempboxa\space
5593 #3,
5594 file: #2%
5595 }%

```

```

5596      \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5597    }%
5598    \@linkdim\ht\@tempboxa
5599    \advance\@linkdim by -6.5\p@
5600    \raise\@linkdim\hbox{}}%
5601  \else
5602    \special{button:
5603      \number\wd\@tempboxa\space
5604      \number\ht\@tempboxa\space
5605      #3,
5606      file: #2
5607    }%
5608    \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5609  \fi
5610 \endgroup
5611 }
5612 \ifx\@pdfproducer\relax
5613   \def\@pdfproducer{dviwindo + Distiller}
5614 \fi
5615 \def\PDF@FinishDoc{%
5616   \Hy@UseMaketitleInfos
5617   \special{PDF: Keywords \@pdfkeywords}%
5618   \special{PDF: Title \@pdftitle}%
5619   \special{PDF: Creator \@pdfcreator}%
5620   \ifx\@pdfcreationdate\@empty
5621   \else
5622     \special{PDF: CreationDate \@pdfcreationdate}%
5623   \fi
5624   \ifx\@pdfmoddate\@empty
5625   \else
5626     \special{PDF: ModDate \@pdfmoddate}%
5627   \fi
5628   \special{PDF: Author \@pdfauthor}%
5629   \ifx\@pdfproducer\relax
5630   \else
5631     \special{PDF: Producer \@pdfproducer}%
5632   \fi
5633   \special{PDF: Subject \@pdfsubject}%
5634   \Hy@DisableOption{pdfauthor}%
5635   \Hy@DisableOption{pdftitle}%
5636   \Hy@DisableOption{pdfsubject}%
5637   \Hy@DisableOption{pdfcreator}%
5638   \Hy@DisableOption{pdfcreationdate}%
5639   \Hy@DisableOption{pdfmoddate}%
5640   \Hy@DisableOption{pdfproducer}%
5641   \Hy@DisableOption{pdfkeywords}%
5642 }
5643 \def\PDF@SetupDoc{%
5644   \ifx\@baseurl\@empty
5645   \else
5646     \special{PDF: Base \@baseurl}%
5647   \fi
5648   \ifx\@pdfpagescrop\@empty\else
5649     \special{PDF: BBox \@pdfpagescrop}%
5650   \fi
5651   \pdfmark{pdfmark=/DOCVIEW,
5652     Page=\@pdfstartpage,

```



```

5653     View=\@pdfstartview,
5654     PageMode=\@pdfpagemode
5655 }%
5656 \ifx\@pdfpagescrop\@empty
5657 \else
5658     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
5659 \fi
5660 \edef\Hy@temp{%
5661     \ifHy@toolbar\else /HideToolbar true\fi
5662     \ifHy@menubar\else /HideMenubar true\fi
5663     \ifHy>windowui\else /HideWindowUI true\fi
5664     \ifHy@fitwindow /FitWindow true\fi
5665     \ifHy@centerwindow /CenterWindow true\fi
5666     \ifHy@displaydoctitle /DisplayDocTitle true\fi
5667     \ifx\@pdfnonfullscreenpagemode\@empty
5668     \else
5669         /NonFullScreenPageMode\@pdfnonfullscreenpagemode
5670     \fi
5671 }%
5672 \pdfmark{pdfmark=/PUT,
5673     Raw={%
5674         \string{Catalog\string} <<
5675         \ifx\Hy@temp\@empty
5676         \else
5677             /ViewerPreferences<<\Hy@temp>>%
5678         \fi
5679         \ifx\pdf@pagelayout\@empty
5680         \else
5681             /PageLayout /\pdf@pagelayout\space
5682         \fi
5683     >>%
5684 }%
5685 }%
5686 }
5687 </dviwindo>
5688 < *dvipdfm>

```

45.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

5689 \newsavebox{\pdfm@box}
5690 \def\@pdfm@mark#1{\special{pdf:#1}}
5691 \def\@pdfm@dest#1{%
5692     \Hy@SaveLastskip
5693     \Hy@pstringdef\Hy@pstringDest{#1}%
5694     \@pdfm@mark{dest (\Hy@pstringDest) [thispage /\@pdfview\space @xpos @ypos]}%
5695     \Hy@RestoreLastskip
5696 }
5697 \providecommand\@pdfview{XYZ}
5698 \providecommand\@pdfborder{0 0 1}
5699 \providecommand*\@pdfborderstyle{}
5700 \def\hyper@anchor#1{%
5701     \@pdfm@dest{#1}%
5702 }
5703 \def\hyper@anchorstart#1{%
5704     \Hy@activeanchortrue
5705     \@pdfm@dest{#1}%

```

```

5706 }
5707 \def\hyper@anchorend{%
5708   \Hy@activeanchorfalse
5709 }
5710 \def\Hy@undefinedname{UNDEFINED}
5711 \def\hyper@linkstart#1#2{%
5712   \protected@edef\Hy@testname{#2}%
5713   \ifx\Hy@testname\empty
5714     \let\Hy@testname\Hy@undefinedname
5715   \else
5716     \Hy@pstringdef\Hy@testname\Hy@testname
5717   \fi
5718   \@pdfm@mark{%
5719     bann <<
5720     /Type /Annot
5721     /Subtype /Link
5722     \Hy@setpdfborder
5723     /C [\csname @#1bordercolor\endcsname]
5724     /A <<
5725     /S /GoTo
5726     /D (\Hy@testname)
5727     >>
5728     >>
5729   }%
5730   \expandafter\Hy@colorlink\csname @#1color\endcsname
5731 }
5732 \def\hyper@linkend{%
5733   \Hy@endcolorlink
5734   \@pdfm@mark{eann}%
5735 }
5736 \def\hyper@link#1#2#3{%
5737   \hyper@linkstart{#1}{#2}#3\hyper@linkend
5738 }
5739 \def\hyper@linkfile#1#2#3{%
5740   \Hy@pstringdef\Hy@pstringF{#2}%
5741   \Hy@pstringdef\Hy@pstringD{#3}%
5742   \@pdfm@mark{%
5743     bann <<
5744     /Type /Annot
5745     /Subtype /Link
5746     \Hy@setpdfborder
5747     /C [\@filebordercolor]
5748     /A <<
5749     /S /GoToR
5750     /F (\Hy@pstringF)
5751     /D \ifx\#3\[\[0 \pdfstartview]\else(\Hy@pstringD)\fi\space
5752     \ifHy@newwindow /NewWindow true \fi
5753     >>
5754     >>%
5755   }%
5756   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5757   \@pdfm@mark{eann}%
5758 }
5759 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
5760   \Hy@pstringdef\Hy@pstringF{#1}%
5761   \Hy@pstringdef\Hy@pstringP{#3}%
5762   \@pdfm@mark{%

```

```

5763     bann <<
5764         /Type /Annot
5765         /Subtype /Link
5766         \Hy@setpdfborder
5767         /C [\@filebordercolor]
5768         /A <<
5769             /S /Launch
5770             /F (\Hy@pstringF)
5771             \ifHy@newwindow /NewWindow true \fi
5772             \ifx\#3\%
5773             \else
5774                 /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
5775             \fi
5776         >>
5777     >>%
5778 }%
5779 \Hy@colorlink\@filecolor#2\Hy@endcolorlink
5780 \@pdfm@mark{eann}%
5781 }
5782 \def\hyper@linkurl#1#2{%
5783     \Hy@pstringdef\Hy@pstringURI{#2}%
5784     \@pdfm@mark{%
5785         bann <<
5786             /Type /Annot
5787             /Subtype /Link
5788             \Hy@setpdfborder
5789             /C [\@urlbordercolor]
5790             /A <<
5791                 /S /URI
5792                 /URI (\Hy@pstringURI)
5793             >>
5794         >>%
5795     }%
5796     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5797     \@pdfm@mark{eann}%
5798 }
5799 \def\Acrobatmenu#1#2{%
5800     \@pdfm@mark{%
5801         bann <<
5802             /Type /Annot
5803             /Subtype /Link
5804             /A <<
5805                 /S /Named
5806                 /N /#1
5807             >>
5808             \Hy@setpdfborder
5809             /C [\@menubordercolor]
5810         >>%
5811     }%
5812     \Hy@colorlink\@menucolor#2\Hy@endcolorlink
5813     \@pdfm@mark{eann}%
5814 }
5815 \ifx\@pdfproducer\relax
5816     \def\@pdfproducer{dvipdfm}
5817 \fi
5818 \def\PDF@FinishDoc{%
5819     \Hy@UseMaketitleInfos

```

```

5820 \@pdfm@mark{%
5821     docinfo <<
5822         /Title (\@pdftitle)
5823         /Subject (\@pdfsubject)
5824         /Creator (\@pdfcreator)
5825         \ifx\@pdfcreationdate\@empty
5826         \else
5827             /CreationDate(\@pdfcreationdate) %
5828         \fi
5829         \ifx\@pdfmoddate\@empty
5830         \else
5831             /ModDate(\@pdfmoddate) %
5832         \fi
5833         /Author (\@pdfauthor)
5834         \ifx\@pdfproducer\relax
5835         \else
5836             /Producer (\@pdfproducer)
5837         \fi
5838         /Keywords (\@pdfkeywords)
5839     >>%
5840 }%
5841 \Hy@DisableOption{pdfauthor}%
5842 \Hy@DisableOption{pdftitle}%
5843 \Hy@DisableOption{pdfsubject}%
5844 \Hy@DisableOption{pdfcreator}%
5845 \Hy@DisableOption{pdfcreationdate}%
5846 \Hy@DisableOption{pdfmoddate}%
5847 \Hy@DisableOption{pdfproducer}%
5848 \Hy@DisableOption{pdfkeywords}%
5849 }
5850 \def\PDF@SetupDoc{%
5851     \edef\Hy@temp{%
5852         \ifHy@toolbar\else /HideToolbar true\fi
5853         \ifHy@menubar\else /HideMenubar true\fi
5854         \ifHy>windowui\else /HideWindowUI true\fi
5855         \ifHy@fitwindow /FitWindow true\fi
5856         \ifHy@centerwindow /CenterWindow true\fi
5857         \ifHy@displaydoctitle /DisplayDocTitle true\fi
5858         \ifx\@pdfnonfullscreenpagemode\@empty
5859         \else
5860             /NonFullScreenPageMode\@pdfnonfullscreenpagemode
5861         \fi
5862     }%
5863     \Hy@pstringdef\Hy@pstringB{\@baseurl}%
5864     \@pdfm@mark{%
5865         docview <<%
5866             \ifx\@pdfstartview\@empty
5867             \else
5868                 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
5869             \fi
5870             \ifx\@baseurl\@empty
5871             \else
5872                 /URI<</Base(\Hy@pstringB)>>%
5873             \fi
5874             /PageMode \@pdfpagemode
5875             \ifx\Hy@temp\@empty
5876             \else

```

```

5877         /ViewerPreferences<<\Hy@temp>>%
5878     \fi
5879     \ifx\pdf@pagelayout\@empty
5880     \else
5881         /PageLayout/\pdf@pagelayout\space
5882     \fi
5883     >>%
5884 }%
5885 \ifx\@pdfpagescrop\@empty
5886 \else
5887     \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}
5888 \fi
5889 }
5890 \</dvipdfm>

```

45.6 VTeX typesetting system

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

```

5891 \< *vtexhtml>
5892 \RequirePackage{vtexhtml}
5893 \newif\if@Localurl
5894 \def\PDF@FinishDoc{}
5895 \def\PDF@SetupDoc{%
5896     \ifx\@baseurl\@empty
5897     \else
5898         \special{!direct <base href="\@baseurl">}%
5899     \fi
5900 }
5901 \def\@urltype{url}
5902 \def\hyper@link#1#2#3{%
5903     \leavevmode
5904     \special{!direct <a href=\hyper@quote\hyper@hash#2\hyper@quote>}%
5905     #3%
5906     \special{!direct </a>}%
5907 }
5908 \def\hyper@linkurl#1#2{%
5909     \begingroup
5910         \hyper@chars
5911         \leavevmode
5912         \MathBSuppress=1\relax
5913         \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
5914         #1%
5915         \MathBSuppress=0\relax
5916         \special{!direct </a>}%
5917     \endgroup
5918 }
5919 \def\hyper@linkfile#1#2#3{%
5920     \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
5921 }
5922 \def\hyper@linkstart#1#2{%
5923     \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
5924         \@Localurltrue
5925         \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
5926     \else
5927         \@Localurlfalse
5928     \begingroup

```

```

5929     \hyper@chars
5930     \special{!aref #2}%
5931   \endgroup
5932 \fi
5933 }
5934 \def\hyper@linkend{%
5935   \if@Localurl
5936     \special{!endaref}%
5937   \else
5938     \special{!direct </a>}%
5939   \fi
5940 }
5941 \def\hyper@anchorstart#1{%
5942   \Hy@SaveLastskip
5943   \begingroup
5944     \hyper@chars
5945     \special{!aname #1}%
5946     \special{!direct <a name=\hyper@quote#1\hyper@quote>}%
5947   \endgroup
5948   \Hy@activeanchortrue
5949 }
5950 \def\hyper@anchorend{%
5951   \special{!direct </a>}%
5952   \Hy@activeanchorfalse
5953   \Hy@RestoreLastskip
5954 }
5955 \def\hyper@anchor#1{%
5956   \Hy@SaveLastskip
5957   \begingroup
5958     \let\protect=\string
5959     \hyper@chars
5960     \leavevmode
5961     \special{!aname #1}%
5962     \special{!direct <a name=\hyper@quote #1\hyper@quote>}%
5963   \endgroup
5964   \Hy@activeanchortrue
5965   \bgroup\anchor@spot\egroup
5966   \special{!direct </a>}%
5967   \Hy@activeanchorfalse
5968   \Hy@RestoreLastskip
5969 }
5970 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
5971 \def\@endForm{}
5972 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
5973   \typeout{Sorry, TeXpider does not yet support FORM gauges}%
5974 }
5975 \def\@TextField[#1]#2{% parameters, label
5976   \typeout{Sorry, TeXpider does not yet support FORM text fields}%
5977 }
5978 \def\@CheckBox[#1]#2{% parameters, label
5979   \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
5980 }
5981 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
5982   \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
5983 }
5984 \def\@PushButton[#1]#2{% parameters, label
5985   \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%

```

```

5986 }
5987 \def\@Reset[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
5988 \def\@Submit[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
5989 </vtexhtml>
5990 <*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.

```

5991 \ifx\mediaheight\@undefined
5992 \else
5993   \ifx\mediaheight\relax
5994   \else
5995     \ifHy@setpagesize
5996       \providecommand*\VTeXInitMediaSize{%
5997         \ifundefined{stockwidth}{%
5998           \ifdim\paperheight>0pt %
5999             \setlength\mediaheight\paperheight
6000           \fi
6001           \ifdim\paperheight>0pt %
6002             \setlength\mediawidth\paperwidth
6003           \fi
6004         }{%
6005           \ifdim\stockheight>0pt %
6006             \setlength\mediaheight\stockheight
6007           \fi
6008           \ifdim\stockwidth>0pt %
6009             \setlength\mediawidth\stockwidth
6010           \fi
6011         }%
6012       }%
6013       \AtBeginDocument{\VTeXInitMediaSize}%
6014     \fi
6015     \Hy@DisableOption{setpagesize}%
6016   \fi
6017 \fi

```

Older versions of VTeX require xyz in lower case.

```

6018 \providecommand\@pdfview{xyz}
6019 \providecommand\@pdfborder{0 0 1}
6020 \providecommand*\@pdfborderstyle{}
6021 \def\CurrentBorderColor{\@linkbordercolor}
6022 \def\hyper@anchor#1{%
6023   \Hy@SaveLastskip
6024   \begingroup
6025     \let\protect=\string
6026     \hyper@chars
6027     \special{!aname #1;\@pdfview}%
6028   \endgroup
6029   \Hy@activeanchortrue
6030   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6031   \Hy@activeanchorfalse
6032   \Hy@RestoreLastskip
6033 }
6034 \def\hyper@anchorstart#1{%
6035   \Hy@SaveLastskip
6036   \begingroup
6037     \hyper@chars

```

```

6038 \special{!aname #1;\@pdfview}%
6039 \endgroup
6040 \Hy@activeanchortrue
6041 }
6042 \def\hyper@anchorend{%
6043 \Hy@activeanchorfalse
6044 \Hy@RestoreLastskip
6045 }
6046 \def\@urltype{url}
6047 \def\Hy@undefinedname{UNDEFINED}
6048 \def\hyper@linkstart#1#2{%
6049 \Hy@pstringdef\Hy@pstringURI{#2}%
6050 \expandafter\Hy@colorlink\csname @#1color\endcsname
6051 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6052 \def\Hy@tempa{#1}%
6053 \ifx\Hy@tempa\@urltype
6054 \special{!%
6055 \a href <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6056 \a <\Hy@setpdfborder /C [\CurrentBorderColor]>%
6057 }%
6058 \else
6059 \protected@edef\Hy@testname{#2}%
6060 \ifx\Hy@testname\@empty
6061 \let\Hy@testname\Hy@undefinedname
6062 \fi
6063 \special{!%
6064 \a href \Hy@testname;%
6065 \a <\Hy@setpdfborder /C [\CurrentBorderColor]>%
6066 }%
6067 \fi
6068 }
6069 \def\hyper@linkend{%
6070 \special{!endaref}%
6071 \Hy@endcolorlink
6072 }
6073 \def\hyper@linkfile#1#2#3{%
6074 \leavevmode
6075 \special{!%
6076 \a href <%
6077 \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
6078 f=#2>#3;%
6079 \a <\Hy@setpdfborder /C [\@filebordercolor]>%
6080 }%
6081 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6082 \special{!endaref}%
6083 }
6084 \def\hyper@linkurl#1#2{%
6085 \begingroup
6086 \Hy@pstringdef\Hy@pstringURI{#2}%
6087 \hyper@chars
6088 \leavevmode
6089 \special{!%
6090 \a href <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6091 \a <\Hy@setpdfborder /C [\@urlbordercolor]>%
6092 }%
6093 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6094 \special{!endaref}%

```



```

6095 \endgroup
6096 }
6097 \def\hyper@link#1#2#3{%
6098 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6099 \leavevmode
6100 \protected@edef\Hy@testname{#2}%
6101 \ifx\Hy@testname\empty
6102 \let\Hy@testname\Hy@undefinedname
6103 \fi
6104 \special{!%
6105   aref \Hy@testname;%
6106   a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6107 }%
6108 \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
6109 \special{!endaref}%
6110 }
6111 \def\hyper@image#1#2{%
6112 \hyper@linkurl{#2}{#1}%
6113 }
6114 \def\@hyper@launch run:#1\#2#3{%
6115 \Hy@pstringdef\Hy@pstringF{#1}%
6116 \Hy@pstringdef\Hy@pstringP{#3}%
6117 \leavevmode
6118 \special{!aref
6119   <u=%
6120     /Type /Action
6121     /S /Launch
6122     /F (\Hy@pstringF)
6123     \ifHy@newwindow /NewWindow true \fi
6124     \ifx\#3\else /Win << /F (\Hy@pstringF) /P (\Hy@pstringP) >> \fi%
6125   >;%
6126   a=<\Hy@setpdfborder /C [\@runbordercolor]>%
6127 }%
6128 \Hy@colorlink\@filecolor#2\Hy@endcolorlink
6129 \special{!endaref}%
6130 }
6131 \def\Acrobatmenu#1#2{%
6132 \leavevmode
6133 \special{!%
6134   aref <u=/S /Named /N /#1>;%
6135   a=<\Hy@setpdfborder /C [\@menubordercolor]>%
6136 }%
6137 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
6138 \special{!endaref}%
6139 }

```

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

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

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

```

6140 \ifnum\Hy@TeXversion<702 %
6141 \else
6142 \def\hyper@pagetransition{%
6143 \ifx\@pdfpagetransition\relax
6144 \else
6145 \ifx\@pdfpagetransition\empty

```

Standard incantation.

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

```

6146     \else
6147         \hvtex@parse@trans\@pdfpagetransition
6148     \fi
6149 \fi
6150 }

```

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:

```

6151 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}
6152 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}
6153 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}
6154 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}
6155 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}
6156 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}
6157 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}

```

Optional parameters:

```

6158 \def\hvtex@par@dimension{/Dm}
6159 \def\hvtex@par@direction{/Di}
6160 \def\hvtex@par@duration{/D}
6161 \def\hvtex@par@motion{/M}

```

Tokenizer:

```

6162 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}

```

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

```

6163 \def\hvtex@gettoken@#1 #2\@nil{%
6164     \edef\hvtex@token{#1}%
6165     \edef\hvtex@buffer{#2}%
6166 }
6167 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

6168 \let\hvtex@trans@code\@empty
6169 \let\hvtex@param@dimension\@empty
6170 \let\hvtex@param@direction\@empty
6171 \let\hvtex@param@duration\@empty
6172 \let\hvtex@param@motion\@empty
6173 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```
6174 \hvtex@gettoken
6175 \ifx\hvtex@token\@empty
```

Leading space(s)?

```
6176 \ifx\hvtex@buffer\@empty
```

The buffer is empty, nothing to do.

```
6177 \else
6178 \hvtex@gettoken
6179 \fi
6180 \fi
6181 \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
6182 \hvtex@trans@params
6183 }
```

Reentrant macro to parse optional parameters.

```
6184 \def\hvtex@trans@params{%
6185 \ifx\hvtex@buffer\@empty
6186 \else
6187 \hvtex@gettoken
6188 \let\hvtex@trans@par\hvtex@token
6189 \ifx\hvtex@buffer\@empty
6190 \else
6191 \hvtex@gettoken
6192 \ifx\hvtex@trans@par\hvtex@par@duration
```

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

```
6193 \let\hvtex@param@duration\hvtex@token
6194 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
6195 \expandafter\edef\expandafter\hvtex@param@motion
6196 \expandafter{\expandafter\@gobble\hvtex@token}%
6197 \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
6198 \expandafter\edef\expandafter\hvtex@param@dimension
6199 \expandafter{\expandafter\@gobble\hvtex@token}%
6200 \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).

```
6201 \let\hvtex@param@direction\hvtex@token
6202 \fi\fi\fi\fi
6203 \fi
6204 \fi
6205 \ifx\hvtex@buffer\@empty
6206 \let\next\hvtex@produce@trans
6207 \else
6208 \let\next\hvtex@trans@params
6209 \fi
6210 \next
6211 }
```

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

```
6212 \def\hvtex@produce@trans{%
```

```

6213 \let\vtex@trans@special\@empty
6214 \if S\hvtex@trans@code
6215 \edef\vtex@trans@special{\hvtex@trans@code
6216 \hvtex@param@dimension\hvtex@param@motion}%
6217 \else \if B\hvtex@trans@code
6218 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@dimension}%
6219 \else \if X\hvtex@trans@code
6220 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@motion}%
6221 \else \if W\hvtex@trans@code
6222 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6223 \else \if D\hvtex@trans@code
6224 \let\vtex@trans@special\hvtex@trans@code
6225 \else \if R\hvtex@trans@code
6226 \let\vtex@trans@special\hvtex@trans@code
6227 \else \if G\hvtex@trans@code
6228 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6229 \fi\fi\fi\fi\fi\fi\fi
6230 \ifx\vtex@trans@special\@empty
6231 \else
6232 \ifx\hvtex@param@duration\@empty
6233 \else
6234 \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

6235 \multiply\dimen@\@m
6236 \edef\vtex@trans@special{\vtex@trans@special,\strip@pt\dimen@}%
6237 \fi

```

And all the mess is just for this.

```

6238 \special{!trans \vtex@trans@special}%
6239 \fi
6240 }

6241 \def\hyper@pageduration{%
6242 \ifx\@pdfpageduration\relax
6243 \else
6244 \ifx\@pdfpageduration\@empty
6245 \special{!duration-}%
6246 \else
6247 \special{!duration \@pdfpageduration}%
6248 \fi
6249 \fi
6250 }
6251 \def\hyper@pagehidden{%
6252 \ifHy@useHidKey
6253 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
6254 \fi
6255 }
6256 \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

```

6257 \ifx\@pdfproducer\relax
6258   \def\@pdfproducer{VTeX}
6259   \ifnum\Hy@VTeXversion>\z@
6260     \count@\VTeXversion
6261     \divide\count@ 100
6262     \edef\@pdfproducer{\@pdfproducer\space v\the\count@}
6263     \multiply\count@ -100
6264     \advance\count@\VTeXversion
6265     \edef\@pdfproducer{%
6266       \@pdfproducer
6267       .\ifnum\count@<10 0\fi\the\count@
6268       \ifx\VTeXOS\@undefined\else
6269         \ifnum\VTeXOS>0 %
6270           \ifnum\VTeXOS<6 %
6271             \space(
6272             \ifcase\VTeXOS
6273             \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
6274             \fi
6275             )%
6276           \fi
6277         \fi
6278       \fi
6279       ,\space
6280       \ifnum\OpMode=\@ne PDF\else PS\fi
6281       \space backend%
6282       \ifx\gexmode\@undefined\else
6283         \ifnum\gexmode>\z@\space with GeX\fi
6284       \fi
6285     }
6286   \fi
6287 \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).

```

6288 \def\PDF@SetupDoc{%
6289   \ifx\@pdfpagescrop\@empty
6290   \else
6291     \special{!pdfinfo b=<\@pdfpagescrop>}%
6292   \fi

```

```

6293 \special{!onopen Page\@pdfstartpage}%
6294 \special{!pdfinfo p=<\@pdfpagemode>}%
6295 \ifx\@baseurl\@empty
6296 \else
6297   \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
6298 \fi
6299 \special{!pdfinfo v=<<<%
6300   \ifHy@toolbar\else /HideToolbar true\fi
6301   \ifHy@menubar\else /HideMenubar true\fi
6302   \ifHy>windowui\else /HideWindowUI true\fi
6303   \ifHy@fitwindow /FitWindow true\fi
6304   \ifHy@centerwindow /CenterWindow true\fi
6305   \ifHy@displaydoctitle /DisplayDocTitle true\fi
6306   \ifx\@pdfnonfullscreenpagemode\@empty
6307   \else
6308     /NonFullScreenPageMode\@pdfnonfullscreenpagemode
6309   \fi
6310 >>>}%
6311 \ifx\pdf@pagelayout\@empty
6312 \else
6313   \special{!pdfinfo l=</\pdf@pagelayout\space>}%
6314 \fi
6315 }%
6316 \def\PDF@FinishDoc{%
6317   \Hy@UseMaketitleInfos
6318   \special{!pdfinfo a=<\@pdfauthor>}%
6319   \special{!pdfinfo t=<\@pdftitle>}%
6320   \special{!pdfinfo s=<\@pdfsubject>}%
6321   \special{!pdfinfo c=<\@pdfcreator>}%
6322   \ifx\@pdfproducer\relax
6323   \else
6324     \special{!pdfinfo r=<\@pdfproducer>}%
6325   \fi
6326   \special{!pdfinfo k=<\@pdfkeywords>}%
6327   \Hy@DisableOption{pdfauthor}%
6328   \Hy@DisableOption{pdftitle}%
6329   \Hy@DisableOption{pdfsubject}%
6330   \Hy@DisableOption{pdfcreator}%
6331   \Hy@DisableOption{pdfcreationdate}%
6332   \Hy@DisableOption{pdfmoddate}%
6333   \Hy@DisableOption{pdfproducer}%
6334   \Hy@DisableOption{pdfkeywords}%
6335 }
6336 \</vtex>

```

45.7 Fix for Adobe bug number 466320

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

```

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

```

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

```

6337 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
6338 <package>\providecommand*{\Hy@DistillerDestFix}{}
6339 <*pdfmark | dviwindo>
6340 \def\Hy@DistillerDestFix{%
6341   \begingroup
6342     \let\x\literalps@out

```

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

```

6343   \ifnum \@ifundefined{OpMode}{0}{%
6344     \@ifundefined{gexmode}{0}{%
6345       \ifnum\gexmode>0 \OpMode\else 0\fi
6346     }>1 %
6347   \def\x##1{%
6348     \immediate\special{!=##1}%
6349   }%
6350 \fi
6351 \x{%
6352   /product where{%
6353     pop %
6354     product(Distiller)search{%
6355       pop pop pop %
6356       version(.)search{%
6357         exch pop exch pop%
6358         (3011)eq{%
6359           gsave %
6360           newpath 0 0 moveto closepath clip%
6361           /Courier findfont 10 scalefont setfont %
6362           72 72 moveto(.)show %
6363           grestore%
6364         }if%
6365       }{pop}ifelse%
6366     }{pop}ifelse%
6367   }if%
6368 }%
6369 \endgroup
6370 }
6371 </pdfmark | dviwindo>

```

45.8 Direct pdfmark support (dvipdf and pdfmark)

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

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

and the correct definitions of the following PostScript procedures:

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

```

6372 <*pdfmark | dvipdf>
6373 \def\hyper@anchor#1{%
6374   \Hy@SaveLastskip

```

```

6375 \begingroup
6376   \pdfmark[\anchor@spot]{%
6377     pdfmark=/DEST,%
6378     linktype=anchor,%
6379     View=/\@pdfview \@pdfviewparams,%
6380     DestAnchor={#1}%
6381   }%
6382 \endgroup
6383 \Hy@RestoreLastskip
6384 }
6385 <*/dvipdf>
6386 \def\hyper@anchorstart#1{\Hy@activeanchortrue}
6387 \def\hyper@anchorend{\Hy@activeanchorfalse}
6388 \def\hyper@linkstart#1#2{%
6389   \expandafter\Hy@colorlink\csname @#1color\endcsname
6390   \xdef\hyper@currentanchor{#2}%
6391 }
6392 \def\hyper@linkend{%
6393   \Hy@endcolorlink
6394 }
6395 </dvipdf>
6396 <*pdfmark>
6397 \ifundefined{hyper@anchorstart}{\endinput}
6398 \def\hyper@anchorstart#1{%
6399   \Hy@SaveLastskip
6400   \literalps@out{H.S}%
6401   \xdef\hyper@currentanchor{#1}%
6402   \Hy@activeanchortrue
6403 }
6404 \def\hyper@anchorend{%
6405   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
6406   \pdfmark{%
6407     pdfmark=/DEST,%
6408     linktype=anchor,%
6409     View=/\@pdfview \@pdfviewparams,%
6410     DestAnchor=\hyper@currentanchor,%
6411     Raw=H.B%
6412   }%
6413   \Hy@activeanchorfalse
6414   \Hy@RestoreLastskip
6415 }
6416 \def\hyper@linkstart#1#2{%
6417   \ifHy@breaklinks
6418   \else
6419     \leavevmode\hbox\bgroup
6420     \fi
6421     \expandafter\Hy@colorlink\csname @#1color\endcsname
6422     \literalps@out{H.S}%
6423     \xdef\hyper@currentanchor{#2}%
6424     \gdef\hyper@currentlinktype{#1}%
6425 }
6426 \def\hyper@linkend{%
6427   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
6428   \edef\Hy@temp{\csname @\hyper@currentlinktype bordercolor\endcsname}%
6429   \pdfmark{%
6430     pdfmark=/ANN,%
6431     linktype=link,%

```



```

6432 Subtype=/Link,%
6433 Dest=\hyper@currentanchor,%
6434 AcroHighlight=\@pdfhighlight,%
6435 Border=\@pdfborder,%
6436 BorderStyle=\@pdfborderstyle,%
6437 Color=\Hy@temp,%
6438 Raw=H.B%
6439 }%
6440 \Hy@endcolorlink
6441 \ifHy@breaklinks
6442 \else
6443 \egroup
6444 \fi
6445 }
6446 \pdfmark>

```

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

```

6447 \begingroup
6448 \catcode'P=12
6449 \catcode'T=12
6450 \lowercase{\endgroup
6451 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
6452 }
6453 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
6454 \pdfmark>

```

\hyper@pagetransition

```

6455 \def\hyper@pagetransition{%
6456 \ifx\@pdfpagetransition\relax
6457 \else
6458 \ifx\@pdfpagetransition\@empty
6459 % 1. Does an old entry have to be deleted?
6460 % 2. If 1=yes, how to delete?
6461 \else
6462 \pdfmark{%
6463 pdfmark=/PUT,%
6464 Raw={%
6465 \string{ThisPage\string}%
6466 <</Trans << /S /\@pdfpagetransition\space >> >>%
6467 }%
6468 }%
6469 \fi
6470 \fi
6471 }

```

\hyper@pageduration

```

6472 \def\hyper@pageduration{%
6473 \ifx\@pdfpageduration\relax
6474 \else
6475 \ifx\@pdfpageduration\@empty
6476 % 1. Does an old entry have to be deleted?
6477 % 2. If 1=yes, how to delete?
6478 \else
6479 \pdfmark{%
6480 pdfmark=/PUT,%

```

```

6481      Raw={%
6482          \string{ThisPage\string}%
6483          <</Dur \@pdfpageduration>>%
6484      }%
6485  }%
6486  \fi
6487  \fi
6488 }

```

\hyper@pagehidden

```

6489 \def\hyper@pagehidden{%
6490   \ifHy@useHidKey
6491     \pdfmark{%
6492       pdfmark=/PUT,%
6493       Raw={%
6494         \string{ThisPage\string}%
6495         <</Hid \@pdfpagehidden true\else false\fi>>%
6496       }%
6497     }%
6498   \fi
6499 }

6500 \pdfmark{
6501 \def\hyper@image#1#2{%
6502   \hyper@linkurl{#2}{#1}}
6503 \def\Hy@undefinedname{UNDEFINED}
6504 \def\hyper@link#1#2#3{%
6505   \edef\Hy@temp{\csname @#1bordercolor\endcsname}%
6506   \begingroup
6507     \protected@edef\Hy@testname{#2}%
6508     \ifx\Hy@testname\@empty
6509       \let\Hy@testname\Hy@undefinedname
6510     \fi
6511 \dvipdf)
6512   \pdfmark[{#3}]{%
6513     pdfmark=/LNK,%
6514     {},{%
6515       linktype={#1},%
6516       AcroHighlight=\@pdfhighlight,%
6517       Border=\@pdfborder,%
6518       BorderStyle=\@pdfborderstyle,%
6519       Color=\Hy@temp,%
6520       Dest=\Hy@testname
6521     }%
6522 \dvipdf)
6523 \pdfmarkbase)
6524   \pdfmark[{#3}]{%
6525     Color=\Hy@temp,%
6526     linktype={#1},%
6527     AcroHighlight=\@pdfhighlight,%
6528     Border=\@pdfborder,%
6529     BorderStyle=\@pdfborderstyle,%
6530     pdfmark=/ANN,%
6531     Subtype=/Link,%
6532     Dest=\Hy@testname
6533   }%
6534 \pdfmarkbase)
6535 \endgroup

```

```

6536 }
6537 \newtoks\pdf@docset
6538 \def\PDF@FinishDoc{%
6539   \Hy@UseMaketitleInfos
6540   \let\Hy@temp\@empty
6541   \ifx\@pdfcreationdate\@empty
6542   \else
6543     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
6544   \fi
6545   \ifx\@pdfmoddate\@empty
6546   \else
6547     \expandafter\def\expandafter\Hy@temp\expandafter{%
6548       \Hy@temp
6549       ModDate=\@pdfmoddate,%
6550     }%
6551   \fi
6552   \ifx\@pdfproducer\relax
6553   \else
6554     \expandafter\def\expandafter\Hy@temp\expandafter{%
6555       \Hy@temp
6556       Producer=\@pdfproducer,%
6557     }%
6558   \fi
6559   \expandafter
6560   \pdfmark\expandafter{%
6561     \Hy@temp
6562     pdfmark=/DOCINFO,%
6563     Title=\@pdftitle,%
6564     Subject=\@pdfsubject,%
6565     Creator=\@pdfcreator,%
6566     Author=\@pdfauthor,%
6567     Keywords=\@pdfkeywords
6568   }%
6569   \Hy@DisableOption{pdfauthor}%
6570   \Hy@DisableOption{pdftitle}%
6571   \Hy@DisableOption{pdfsubject}%
6572   \Hy@DisableOption{pdfcreator}%
6573   \Hy@DisableOption{pdfcreationdate}%
6574   \Hy@DisableOption{pdfmoddate}%
6575   \Hy@DisableOption{pdfproducer}%
6576   \Hy@DisableOption{pdfkeywords}%
6577 }
6578 \def\PDF@SetupDoc{%
6579   \pdfmark{%
6580     pdfmark=/DOCVIEW,%
6581     Page=\@pdfstartpage,%
6582     View=\@pdfstartview,%
6583     PageMode=\@pdfpagemode
6584   }%
6585   \ifx\@pdfpagescrop\@empty
6586   \else
6587     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
6588   \fi
6589   \edef\Hy@temp{%
6590     \ifHy@toolbar\else /HideToolbar true\fi
6591     \ifHy@menubar\else /HideMenubar true\fi
6592     \ifHy>windowui\else /HideWindowUI true\fi

```

```

6593 \ifHy@fitwindow /FitWindow true\fi
6594 \ifHy@centerwindow /CenterWindow true\fi
6595 \ifHy@displaydoctitle /DisplayDocTitle true\fi
6596 \ifx\@pdfnonfullscreenpagemode\@empty
6597 \else
6598 /NonFullScreenPageMode\@pdfnonfullscreenpagemode
6599 \fi
6600 }%
6601 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6602 \pdfmark{%
6603 pdfmark=/PUT,%
6604 Raw={%
6605 \string{Catalog\string} <<
6606 \ifx\Hy@temp\@empty
6607 \else
6608 /ViewerPreferences<<\Hy@temp>>%
6609 \fi
6610 \ifx\pdf@pagelayout\@empty
6611 \else
6612 /PageLayout /\pdf@pagelayout\space
6613 \fi
6614 \ifx\@baseurl\@empty
6615 \else
6616 /URI << /Base (\Hy@pstringB) >>%
6617 \fi
6618 >>%
6619 }%
6620 }%
6621 }
6622 </pdfmark | dvipdf>
6623 <*pdfmarkbase | dvipdf>

```

We define a single macro, pdfmark, which uses the ‘keyval’ system to define the various allowable keys; these are *exactly* as listed in the pdfmark reference for Acrobat 3.0. The only addition is pdfmark which specifies the type of pdfmark to create (like ANN, LINK etc). The surrounding round and square brackets in the pdfmark commands are supplied, but you have to put in / characters as needed for the values.

```

6624 \newif\ifHy@pdfmarkerror
6625 \def\pdfmark{\@ifnextchar [{\pdfmark@}{\pdfmark@[]}}
6626 \def\pdfmark@[#1]#2{%
6627 \Hy@pdfmarkerrorfalse
6628 \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
6629 \@processme
6630 \let\pdf@type\relax
6631 \setkeys{PDF}{#2}%
6632 \ifHy@pdfmarkerror
6633 \else
6634 \ifx\pdf@type\relax
6635 \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
6636 \ifx\#1\\\relax\else\pdf@rect{#1}\fi
6637 \else
6638 \ifx\#1\\\relax
6639 <pdfmarkbase> \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark]}%
6640 <dvipdf> \literalps@out{/ANN >>}%
6641 \else
6642 \ifundefined{@pdf@linktype color}{%
6643 \Hy@colorlink\@linkcolor

```

```

6644      }{%
6645      \expandafter\Hy@colorlink
6646      \csname @\pdf@linktype color\endcsname
6647      }%
6648      \pdf@rect{#1}%
6649 \pdfmarkbase) \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark}%
6650 \dvipdf) \literalps@out{/ANN >>}%
6651      \Hy@endcolorlink
6652      \fi
6653      \fi
6654      \fi
6655 }

```

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}

6656 \newsavebox{\pdf@box}
6657 \providecommand{\Hy@setouterhbox}{\sbox}
6658 \providecommand{\Hy@breaklinksunhbox}{\unhbox}
6659 \def\pdf@rect#1{%
6660 \dvipdf) \literalps@out{/ANN \pdf@type\space\the\pdf@toks\space <<}>#1%
6661 \leavevmode
6662 \ifHy@breaklinks
6663   \Hy@setouterhbox\pdf@box{#1}%
6664 \else
6665   \sbox\pdf@box{#1}%
6666 \fi
6667 \dimen@ \ht\pdf@box
6668 \ifdim\dp\pdf@box=\z@
6669   \literalps@out{H.S}%
6670 \else
6671   \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
6672 \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...).

```

6673 \ifHy@breaklinks
6674   \expandafter\Hy@breaklinksunhbox
6675 \else
6676   \expandafter\box
6677 \fi
6678 \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

6679 \ifdim\dimen@=\z@
6680   \literalps@out{H.R}%

```

```

6681 \else
6682   \raise\dimen@{hbox{\literalps@out{H.R}}}%
6683 \fi
6684 \pdf@addtoksx{H.B}%
6685 }

```

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.

```

6686 \newtoks\pdf@toks
6687 \newtoks\pdf@defaulttoks
6688 \pdf@defaulttoks={}
6689 \def\pdf@addtoks#1#2{%
6690   \edef\@processme{\pdf@toks{\the\pdf@toks\space /#2 #1}}%
6691   \@processme
6692 }
6693 \def\pdf@addtoksx#1{%
6694   \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
6695   \@processme
6696 }
6697 \def\PDFdefaults#1{%
6698   \pdf@defaulttoks={#1}%
6699 }

```

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

```

6700 % what is the type of pdfmark?
6701 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
6702 % what is the link type?
6703 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
6704 \def\pdf@linktype{link}
6705 % parameter is a stream of PDF
6706 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
6707 % parameter is a name
6708 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
6709 % parameter is a array
6710 \define@key{PDF}{Border}{%
6711   \edef\Hy@temp{#1}%
6712   \ifx\Hy@temp\@empty
6713   \else
6714     \pdf@addtoks{[#1]}{Border}%
6715   \fi
6716 }
6717 % parameter is a dictionary
6718 \define@key{PDF}{BorderStyle}{%
6719   \edef\Hy@temp{#1}%
6720   \ifx\Hy@temp\@empty
6721   \else
6722     \pdf@addtoks{<<#1>>}{BS}%
6723   \fi
6724 }
6725 % parameter is a array
6726 \define@key{PDF}{Color}{\pdf@addtoks{[#1]}{Color}}
6727 % parameter is a string
6728 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
6729 % parameter is a integer
6730 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
6731 % parameter is a array
6732 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}
6733 % parameter is a string

```

```

6734 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
6735 % parameter is a string or file
6736 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
6737 % parameter is a destination
6738 \define@key{PDF}{Dest}{%
6739   \Hy@pstringdef\Hy@pstringDest{#1}%
6740   \ifx\Hy@pstringDest\@empty
6741     \Hy@pdfmarkerrortrue
6742     \Hy@Warning{Destination with empty name ignored}%
6743   \else
6744     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
6745   \fi
6746 }
6747 \define@key{PDF}{DestAnchor}{%
6748   \Hy@pstringdef\Hy@pstringDest{#1}%
6749   \ifx\Hy@pstringDest\@empty
6750     \Hy@pdfmarkerrortrue
6751     \Hy@Warning{Destination with empty name ignored}%
6752   \else
6753     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
6754   \fi
6755 }
6756 % parameter is a string
6757 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
6758 % parameter is a string
6759 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
6760 % parameter is a int
6761 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
6762 % parameter is a name
6763 \define@key{PDF}{AcroHighlight}{\pdf@addtoks{#1}{H}}
6764 % parameter is a string
6765 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}
6766 % parameter is a string
6767 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
6768 % parameter is a string
6769 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
6770 % parameter is a string
6771 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
6772 % parameter is a Boolean
6773 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
6774 % parameter is a integer or name
6775 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
6776 % parameter is a name
6777 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
6778 % parameter is a string
6779 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
6780 % parameter is a array
6781 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}
6782 % parameter is a integer
6783 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
6784 % parameter is a name
6785 \pdfmarkbase\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
6786 \dvipdf\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{}}
6787 % parameter is a string
6788 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
6789 % parameter is a string
6790 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}

```

```

6791 % parameter is a string
6792 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
6793 % parameter is an array
6794 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}
6795 % parameter is a string
6796 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

6797 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
6798 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
6799 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
6800 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
6801 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
6802 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
6803 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
6804 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
6805 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
6806 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
6807 </pdfmarkbase | dvipdf>
6808 <*pdfmark | dvipdf>
6809 \def\Acrobatmenu#1#2{%
6810   \pdfmark[#{#2}] {%
6811     linktype=menu,%
6812     pdfmark=/ANN,%
6813     AcroHighlight=\pdfhighlight,%
6814     Border=\pdfborder,%
6815     BorderStyle=\pdfborderstyle,%
6816     Action={<< /Subtype /Named /N /#1 >>},%
6817     Subtype=/Link%
6818   }%
6819 }

```

And now for some useful examples:

```

6820 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
6821 \def\PDFNextPage@[#1]#2{%
6822   \pdfmark[#{#2}] {%
6823     #1,%
6824     Border=\pdfborder,%
6825     BorderStyle=\pdfborderstyle,%
6826     Color=.2 .1 .5,%
6827     pdfmark=/ANN,%
6828     Subtype=/Link,%
6829     Page=/Next%
6830   }%
6831 }
6832 \def\PDFPreviousPage{%
6833   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
6834 }
6835 \def\PDFPreviousPage@[#1]#2{%
6836   \pdfmark[#{#2}] {%
6837     #1,%
6838     Border=\pdfborder,%
6839     BorderStyle=\pdfborderstyle,%
6840     Color=.4 .4 .1,%
6841     pdfmark=/ANN,%
6842     Subtype=/Link,%
6843     Page=/Prev%
6844   }%

```



```

6845 }
6846 \def\PDFOpen#1{%
6847   \pdfmark{#1,pdfmark=/DOCVIEW}%
6848 }

```

This is not as simple as it looks; if we make the argument of this macro eg `\pageref{foo}` and expect it to expand to ‘3’, we need a special version of `\pageref` which does *not* produce ‘3’... David Carlisle looked at this bit and provided the solution, as ever!

```

6849 \def\PDFPage{\@ifnextchar [{\PDFPage@}{\PDFPage@[]}}
6850 \def\PDFPage@[#1]#2#3{%
6851   \let\pageref\simple@pageref
6852   \pdfmark[{#3}] {%
6853     #1,%
6854     Page={#2},%
6855     AcroHighlight=\@pdfhighlight,%
6856     Border=\@pdfborder,%
6857     BorderStyle=\@pdfborderstyle,%
6858     Color=\@pagebordercolor,%
6859     pdfmark=/ANN,%
6860     Subtype=/Link%
6861   }%
6862 }
6863 \def\simple@pageref#1{%
6864   \expandafter\ifx\csname r@#1\endcsname\relax
6865     0%
6866   \else
6867     \expandafter\expandafter\expandafter
6868       \@secondoffive\csname r@#1\endcsname
6869   \fi}

```

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

```

6870 \def\hyper@linkurl#1#2{%
6871   \begingroup
6872     \Hy@pstringdef\Hy@pstringURI{#2}%
6873     \hyper@chars
6874     \leavevmode
6875     \pdfmarkbase>
6876     \pdfmark[{#1}] {%
6877       pdfmark=/ANN,%
6878       linktype=url,%
6879       AcroHighlight=\@pdfhighlight,%
6880       Border=\@pdfborder,%
6881       BorderStyle=\@pdfborderstyle,%
6882       Color=\@urlbordercolor,%
6883       Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
6884       Subtype=/Link%
6885     }%
6886     \pdfmarkbase<
6887     \dvipdf>
6888     \pdfmark[{#1}] {%
6889       pdfmark=/LNK,%
6890       linktype=url,%
6891       AcroHighlight=\@pdfhighlight,%
6892       Border=\@pdfborder,%
6893       BorderStyle=\@pdfborderstyle,%
6894       Color=\@urlbordercolor,%
6895       Action={URI /URI <\Hy@hstringURI>}%
6896     }%

```

```

6897 </dvipdf>
6898   \endgroup
6899 }
6900 \def\hyper@linkfile#1#2#3{%
6901   \begingroup
6902     \Hy@pstringdef\Hy@pstringF{#2}%
6903     \Hy@pstringdef\Hy@pstringD{#3}%
6904     \leavevmode
6905 <*pdfmark>
6906   \pdfmark[#{1}]{%
6907     pdfmark=/ANN,%
6908     Subtype=/Link,%
6909     AcroHighlight=\@pdfhighlight,%
6910     Border=\@pdfborder,%
6911     BorderStyle=\@pdfborderstyle,%
6912     linktype=file,%
6913     Color=\@filebordercolor,%
6914     Action={<<
6915       /S /GoToR
6916       \ifHy@newwindow /NewWindow true \fi
6917       /F (\Hy@pstringF)
6918       /D \ifx\#3\[\[0 \@pdfstartview]\else(\Hy@pstringD) cvn\fi
6919     >>}%
6920   }%
6921 </pdfmark>
6922 <*dvipdf>
6923   \pdfmark[#{1}]{%
6924     pdfmark=/LNK,%
6925     linktype=file,%
6926     AcroHighlight=\@pdfhighlight,%
6927     Border=\@pdfborder,%
6928     BorderStyle=\@pdfborderstyle,%
6929     Color=\@filebordercolor,%
6930     Action={<<
6931       /S /GoToR
6932       \ifHy@newwindow /NewWindow true \fi
6933       /F (\Hy@pstringF)
6934       /D \ifx\#3\[\[0 \@pdfstartview]\else(\Hy@pstringD) cvn\fi
6935     >>}%
6936   }%
6937 </dvipdf>
6938   \endgroup
6939 }
6940 \def\@hyper@launch run:#1\#2#3{%
6941   \begingroup
6942     \Hy@pstringdef\Hy@pstringF{#1}%
6943     \Hy@pstringdef\Hy@pstringP{#3}%
6944     \leavevmode
6945 <*pdfmark>
6946   \pdfmark[#{2}]{%
6947     pdfmark=/ANN,%
6948     Subtype=/Link,%
6949     AcroHighlight=\@pdfhighlight,%
6950     Border=\@pdfborder,%
6951     BorderStyle=\@pdfborderstyle,%
6952     linktype=file,%
6953     Color=\@filebordercolor,%

```

```

6954     Action={<<
6955         /S /Launch
6956         \ifHy@newwindow /NewWindow true \fi
6957         /F (\Hy@pstringF)
6958         \ifx\#3\%
6959         \else
6960             /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
6961         \fi
6962     >>}%
6963 }%
6964 </pdfmark>
6965 <*dvipdf>
6966     \pdfmark[{#2}]{%
6967         pdfmark=/LNK,%
6968         linktype=file,%
6969         AcroHighlight=@pdfhighlight,%
6970         Border=@pdfborder,%
6971         BorderStyle=@pdfborderstyle,%
6972         Color=@filebordercolor,%
6973         Action={<<
6974             /S /GoToR
6975             \ifHy@newwindow /NewWindow true \fi
6976             /F (\Hy@pstringF)
6977             \ifx\#3\%
6978             \else
6979                 /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
6980             \fi
6981             >>}%
6982     }%
6983 </dvipdf>
6984 \endgroup
6985 }
6986 </pdfmark | dvipdf>

```

Unfortunately, some parts of the pdfmark PostScript code depend on vagaries of the dvi driver. We isolate here all the problems.

45.9 Rokicki's dvips

dvips thinks in 10ths of a big point, its coordinate space is resolution dependent, and its *y* axis starts at the top of the page. Other drivers can and will be different!

The work is done in SDict, because we add in some header definitions in a moment.

```

6987 <*dvips>
6988 \input{pdfmark.def}%
6989 \ifx\@pdfproducer\relax
6990     \def\@pdfproducer{dvips + Distiller}
6991 \fi
6992 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
6993 \def\headerps@out#1{\special{! #1}}%
6994 \providecommand\@pdfborder{0 0 12}
6995 \providecommand*\@pdfborderstyle{}
6996 \providecommand\@pdfview{XYZ}
6997 \providecommand\@pdfviewparams{ H.V}
6998 \AtBeginDvi{%
6999     \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.

```
7000 /DvipsToPDF { 72.27 mul Resolution div } def
7001 /PDFToDvips { 72.27 div Resolution mul } def
```

The rectangle around the links starts off *exactly* the size of the box; we will to make it slightly bigger, 1 point on all sides.

```
7002 /HyperBorder { 1 PDFToDvips } def
7003 /H.V {pdf@hoff pdf@voff null} def
7004 /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

```
7005 /H.S {
7006   currentpoint
7007   HyperBorder add /pdf@lly exch def
7008   dup DvipsToPDF /pdf@hoff exch def
7009   HyperBorder sub /pdf@llx exch def
7010 } 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`

```
7011 /H.L {
7012   2 sub dup
7013   /HyperBasePt exch def
7014   PDFToDvips /HyperBaseDvips exch def
7015   currentpoint
7016   HyperBaseDvips sub /pdf@ury exch def
7017   /pdf@urx exch def
7018 } def
7019 /H.A {
7020   H.L
7021 % |pdf@voff| = the distance from the top of the page to a point
7022 % |\baselineskip| above the current point in PDF coordinates
7023   currentpoint exch pop
7024   vsize 72 sub exch DvipsToPDF
7025   HyperBasePt sub % baseline skip
7026   sub /pdf@voff exch def
7027 } def
7028 /H.R {
7029   currentpoint
7030   HyperBorder sub /pdf@ury exch def
```

```

7031      HyperBorder add /pdf@urx exch def
7032 % | /pdf@voff| = the distance from the top of the page to the current point, in
7033 % PDF coordinates
7034      currentpoint exch pop vsize 72 sub
7035      exch DvipsToPDF sub /pdf@voff exch def
7036    } def
7037    systemdict /pdfmark known
7038    {
7039      userdict /?pdfmark systemdict /exec get put
7040    }{
7041      userdict /?pdfmark systemdict /pop get put
7042      userdict /pdfmark systemdict /cleartomark get put
7043    }
7044    ifelse
7045  }%
7046 }
7047 \AfterBeginDocument{%
7048   \ifx\special@paper\@empty\else
7049     \ifHy@setpagesize
7050       \special{papersize=\special@paper}%
7051     \fi
7052     \Hy@DisableOption{setpagesize}%
7053   \fi
7054 }
7055 </dvips>

```

45.10 VTeX's vtexpdfmark driver

This part is derived from the dvips (many names reflect this).

The origin seems to be the same as TeX's origin, 1 in from the left and 1 in downwards from the top. The direction of the y axis is downwards, the opposite of the dvips case. Units seems to be pt or bp.

```

7056 <*vtexpdfmark>
7057 \input{pdfmark.def}%
7058 \ifx\@pdfproducer\relax
7059   \ifnum\OpMode=\@one
7060     \def\@pdfproducer{VTeX}
7061   \else
7062     \def\@pdfproducer{VTeX + Distiller}
7063   \fi
7064 \fi
7065 \def\literalps@out#1{\special{pS:#1}}%
7066 \def\headerps@out#1{\immediate\special{pS:#1}}%
7067 \providecommand\@pdfborder{0 0 1}
7068 \providecommand*\@pdfborderstyle{}
7069 \providecommand\@pdfview{XYZ}
7070 \providecommand\@pdfviewparams{ H.V}
7071 \AtBeginDvi{%
7072   \headerps@out{%
7073     /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.

```

7074   /HyperBorder {1} def
7075   /H.V {pdf@hoff pdf@voff null} def
7076   /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: $\text{pdf@lly} = Y_c - \text{HyperBorder}$, $\text{pdf@hoff} = X_c + 72$, $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

7077 /H.S {
7078     currentpoint
7079     HyperBorder sub
7080     /pdf@lly exch def
7081     dup 72 add /pdf@hoff exch def
7082     HyperBorder sub
7083     /pdf@llx exch def
7084 } def

```

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

```

7085 /H.L {
7086     2 sub
7087     /HyperBasePt exch def
7088     currentpoint
7089     HyperBasePt add HyperBorder add
7090     /pdf@ury exch def
7091     HyperBorder add
7092     /pdf@urx exch def
7093 } def
7094 /H.A {
7095     H.L
7096     currentpoint exch pop
7097     vsize 72 sub exch
7098     HyperBasePt add add
7099     /pdf@voff exch def
7100 } def

```

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

```

7101 /H.R {
7102     currentpoint
7103     HyperBorder add
7104     /pdf@ury exch def
7105     HyperBorder add
7106     /pdf@urx exch def
7107     currentpoint exch pop vsize 72 sub add
7108     /pdf@voff exch def
7109 } def
7110 systemdict /pdfmark known
7111 {
7112     userdict /?pdfmark systemdict /exec get put
7113 }{
7114     userdict /?pdfmark systemdict /pop get put
7115     userdict /pdfmark systemdict /cleartomark get put
7116 }
7117 ifelse
7118 }%
7119 }
7120 </vtxpdfmark>

```

45.11 Textures

At the suggestion of Jacques Distler (distler@golem.ph.utexas.edu), try to derive a suitable driver for Textures. This was initially a copy of dvips, with some guesses about

Textures behaviour. Ross Moore (ross@maths.mq.edu.au) has added modifications for better compatibility, and to support use of pdfmark.

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

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

```

7121 <*textures>
7122 \begingroup
7123   \obeylines %
7124   \gdef\Hy@ps@CR{\noexpand
7125     }%
7126 \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`.

```

7127 \def\literalps@out#1{%
7128   \special{postscript 0 0 transform}%
7129   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
7130 }%
7131 %

```

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.

```

7132 \def\headerps@out#1{%
7133   \special{%
7134     prepostscript TeXdict begin\Hy@ps@CR
7135       #1\Hy@ps@CR
7136     end%
7137   }%
7138 }%
7139 %

```

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.

```

7140 \AtBeginDvi{%
7141   \headerps@out{%
7142     /betterpdfmark {%
7143       systemdict begin
7144         dup /BP eq
7145         {cleartomark gsave nulldevice []}
7146         {dup /EP eq
7147           {cleartomark cleartomark grestore}
7148           {cleartomark}
7149         }ifelse
7150       }ifelse
7151     end
7152   }def\Hy@ps@CR

```

```

7153 __pdfmark__ not{/pdfmark /betterpdfmark load def}if
7154 systemdict /pdfmark known
7155 {
7156     userdict /?pdfmark systemdict /load get put
7157 }{
7158     userdict /?pdfmark systemdict /pop get put
7159 }
7160 ifelse
7161 }% end of \headerps@out
7162}% end of \AtBeginDvi
7163%
7164\input{pdfmark.def}%
7165%
7166\ifx\@pdfproducer\relax
7167 \def\@pdfproducer{Textures + Distiller}%
7168\fi
7169\providecommand\@pdfborder{0 0 1}
7170\providecommand*\@pdfborderstyle{}
7171\providecommand\@pdfview{XYZ}
7172\providecommand\@pdfviewparams{ H.V}
7173%

```

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 .

```

7174 \headerps@out{%

```

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

```

7175 /vsize {\Hy@pageheight} def
7176 /DvipsToPDF {} def
7177 /PDFToDvips {} def
7178 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
7179 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
7180 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
7181 /H.S {
7182     currentpoint
7183     HyperBorder add /pdf@lly exch def
7184     dup DvipsToPDF /pdf@hoff exch def
7185     HyperBorder sub /pdf@llx exch def
7186 } def\Hy@ps@CR
7187 /H.L {
7188     2 sub
7189     PDFToDvips /HyperBase exch def
7190     currentpoint
7191     HyperBase sub /pdf@ury exch def
7192     /pdf@urx exch def
7193 } def\Hy@ps@CR
7194 /H.A {
7195     H.L
7196     currentpoint exch pop
7197     vsize 72 sub exch DvipsToPDF
7198     HyperBase sub % baseline skip
7199     sub /pdf@voff exch def
7200 } def\Hy@ps@CR
7201 /H.R {
7202     currentpoint

```



```

7203   HyperBorder sub /pdf@ury exch def
7204   HyperBorder add /pdf@urx exch def
7205   currentpoint exch pop vsize 72 sub
7206   exch DvipsToPDF sub /pdf@voff exch def
7207 } def\Hy@ps@CR
7208 }

7209 \AfterBeginDocument{%
7210   \ifHy@colorlinks
7211     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
7212   \fi
7213 }

```

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.

```

7214 \expandafter\let\expandafter\keepPDF@SetupDoc
7215   \csname PDF@SetupDoc\endcsname
7216 \def\PDF@SetupDoc{%
7217   \ifx\@baseurl\@empty
7218   \else
7219     \special{html:<base href="\@baseurl">}%
7220   \fi
7221   \keepPDF@SetupDoc
7222 }

7223 \def\hyper@anchor#1{%
7224   \Hy@SaveLastskip
7225   \begingroup
7226     \let\protect=\string
7227     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
7228   \endgroup
7229   \Hy@activeanchortrue
7230   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7231   \special{html:</a>}%
7232   \Hy@activeanchorfalse
7233   \Hy@RestoreLastskip
7234 }

7235 \def\hyper@anchorstart#1{%
7236   \Hy@SaveLastskip
7237   \begingroup
7238     \hyper@chars
7239     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
7240   \endgroup
7241   \Hy@activeanchortrue
7242 }

7243 \def\hyper@anchorend{%
7244   \special{html:</a>}%
7245   \Hy@activeanchorfalse
7246   \Hy@RestoreLastskip
7247 }

7248 \def\@urltype{url}
7249 \def\hyper@linkstart#1#2{%
7250   \expandafter\Hy@colorlink\csname @#1color\endcsname
7251   \def\Hy@tempa{#1}%
7252   \ifx\Hy@tempa\@urltype
7253     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7254   \else
7255     \begingroup
7256     \hyper@chars

```

```

7257     \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
7258   \endgroup
7259   \fi
7260 }
7261 \def\hyper@linkend{%
7262   \special{html:</a>}%
7263   \Hy@endcolorlink
7264 }
7265 \def\hyper@linkfile#1#2#3{%
7266   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
7267 }
7268 \def\hyper@linkurl#1#2{%
7269   \leavevmode
7270   \ifHy@raiselinks
7271     \setbox\@tempboxa=\color@hbox #1\color@endbox
7272     \@linkdim\dp\@tempboxa
7273     \lower\@linkdim\hbox{%
7274       \hyper@chars
7275       \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
7276     }%
7277     \Hy@colorlink\@urlcolor#1%
7278     \@linkdim\ht\@tempboxa
7279     \advance\@linkdim by -6.5\p@
7280     \raise\@linkdim\hbox{\special{html:</a>}}%
7281     \Hy@endcolorlink
7282   \else
7283     \begingroup
7284     \hyper@chars
7285     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
7286     \Hy@colorlink\@urlcolor#1%
7287     \special{html:</a>}}%
7288     \Hy@endcolorlink
7289   \endgroup
7290   \fi
7291 }
7292 \def\hyper@link#1#2#3{%
7293   \hyper@linkurl{#3}{\##2}%
7294 }
7295 \def\hyper@image#1#2{%
7296   \begingroup
7297   \hyper@chars
7298   \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
7299   \endgroup
7300 }
7301 </textures>

```

45.12 dvipsone

```

7302 % \subsection{dvipsone driver}
7303 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
7304 % |\special| commands.
7305 <*dvipsone>
7306 \providecommand\@pdfborder{0 0 65781}
7307 \providecommand*\@pdfborderstyle{}
7308 \input{pdfmark.def}%
7309 \ifx\@pdfproducer\relax
7310   \def\@pdfproducer{dvipsone + Distiller}

```

```

7311 \fi
7312 \def\literalps@out#1{\special{ps:#1}}%
7313 \def\headerps@out#1{\special{! #1}}%
7314 \def\PDF@FinishDoc{%
7315   \Hy@UseMaketitleInfos
7316   \special{PDF: Keywords \@pdfkeywords}%
7317   \special{PDF: Title \@pdftitle}%
7318   \special{PDF: Creator \@pdfcreator}%
7319   \ifx\@pdfcreationdate\@empty
7320   \else
7321     \special{PDF: CreationDate \@pdfcreationdate}%
7322   \fi
7323   \ifx\@pdfmoddate\@empty
7324   \else
7325     \special{PDF: ModDate \@pdfmoddate}%
7326   \fi
7327   \special{PDF: Author \@pdfauthor}%
7328   \ifx\@pdfproducer\relax
7329   \else
7330     \special{PDF: Producer \@pdfproducer}%
7331   \fi
7332   \special{PDF: Subject \@pdfsubject}%
7333   \Hy@DisableOption{pdfauthor}%
7334   \Hy@DisableOption{pdftitle}%
7335   \Hy@DisableOption{pdfsubject}%
7336   \Hy@DisableOption{pdfcreator}%
7337   \Hy@DisableOption{pdfcreationdate}%
7338   \Hy@DisableOption{pdfmoddate}%
7339   \Hy@DisableOption{pdfproducer}%
7340   \Hy@DisableOption{pdfkeywords}%
7341 }
7342 \def\PDF@SetupDoc{%
7343   \pdfmark{%
7344     pdfmark=/DOCVIEW,
7345     Page=\@pdfstartpage,
7346     View=\@pdfstartview,
7347     PageMode=\@pdfpagemode
7348   }%
7349   \ifx\@pdfpagescrop\@empty
7350   \else
7351     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7352   \fi
7353   \edef\Hy@temp{%
7354     \ifHy@toolbar\else /HideToolbar true\fi
7355     \ifHy@menubar\else /HideMenubar true\fi
7356     \ifHy>windowui\else /HideWindowUI true\fi
7357     \ifHy@fitwindow /FitWindow true\fi
7358     \ifHy@centerwindow /CenterWindow true\fi
7359     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7360     \ifx\@pdfnonfullscreenpagemode\@empty
7361     \else
7362       /NonFullScreenPageMode\@pdfnonfullscreenpagemode
7363     \fi
7364   }%
7365   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7366   \pdfmark{%
7367     pdfmark=/PUT,%

```

```

7368 Raw={%
7369   \string{Catalog\string} <<
7370   \ifx\Hy@temp\@empty
7371   \else
7372     /ViewerPreferences<<\Hy@temp>>%
7373   \fi
7374   \ifx\pdf@pagelayout\@empty
7375   \else
7376     /PageLayout /\pdf@pagelayout\space
7377   \fi
7378   \ifx\@baseurl\@empty
7379   \else
7380     /URI << /Base (\Hy@pstringB) >>%
7381   \fi
7382   >>%
7383 }%
7384 }%
7385 }
7386 \providecommand\@pdfview{XYZ}
7387 \providecommand\@pdfviewparams{ %
7388   gsave revscl currentpoint grestore
7389   72 add exch pop null exch null
7390 }

```

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

```
7391 \special{headertext=
```

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

```

7392 /DvipsToPDF { 65781 div } def
7393 /PDFToDvips { 65781 mul } def
7394 /HyperBorder { 1 PDFToDvips } def
7395 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def
7396 /H.S {
7397   currentpoint
7398   HyperBorder add /pdf@lly exch def
7399   dup DvipsToPDF /pdf@hoff exch def
7400   HyperBorder sub /pdf@llx exch def
7401 } def
7402 /H.L {
7403   2 sub
7404   PDFToDvips /HyperBase exch def
7405   currentpoint
7406   HyperBase sub /pdf@ury exch def
7407   /pdf@urx exch def
7408 } def
7409 /H.A {
7410   H.L
7411   currentpoint exch pop
7412   HyperBase sub % baseline skip
7413   DvipsToPDF /pdf@voff exch def
7414 } def
7415 /H.R {
7416   currentpoint
7417   HyperBorder sub /pdf@ury exch def

```

```

7418   HyperBorder add /pdf@urx exch def
7419   currentpoint exch pop DvipsToPDF /pdf@voff exch def
7420 } def
7421 systemdict
7422 /pdfmark known
7423 {
7424   userdict /?pdfmark /exec load put
7425 }{
7426   userdict /?pdfmark /pop load put
7427   userdict /pdfmark systemdict /cleartomark get put
7428 }
7429 ifelse
7430 }
7431 (/dvipsone)
7432 (*dvipdf)
7433 \def\literalps@out#1{\special{pdf: #1}}%
7434 \providecommand\@pdfborder{0 0 1}
7435 \providecommand*\@pdfborderstyle{}
7436 (/dvipdf)

```

45.13 TeX4ht

```

7437 (*tex4ht)
7438 \@ifpackageloaded{tex4ht}
7439 {\typeout{hyperref tex4ht: tex4ht already loaded}}%
7440 {\RequirePackage[hTeX4ht]{tex4ht}}
7441 \def\PDF@FinishDoc{}
7442 \def\PDF@SetupDoc{%
7443   \ifx\@baseurl\@empty
7444   \else
7445     \special{t4ht=<base href="\@baseurl">}%
7446   \fi
7447 }
7448 \def\hyper@anchor#1{%
7449   \Hy@SaveLastskip
7450   \begingroup
7451     \let\protect=\string
7452     \special{t4ht=<a name=\hyper@quote #1\hyper@quote>}%
7453   \endgroup
7454   \Hy@activeanchortrue
7455   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7456   \special{t4ht=</a>}%
7457   \Hy@activeanchorfalse
7458   \Hy@RestoreLastskip
7459 }
7460 \def\hyper@anchorstart#1{%
7461   \Hy@SaveLastskip
7462   \begingroup
7463     \hyper@chars\special{t4ht=<a name=\hyper@quote#1\hyper@quote>}%
7464   \endgroup
7465   \Hy@activeanchortrue
7466 }
7467 \def\hyper@anchorend{%
7468   \special{t4ht=</a>}%
7469   \Hy@activeanchorfalse
7470   \Hy@RestoreLastskip
7471 }
7472 \def\@urltype{url}

```

```

7473 \def\hyper@linkstart#1#2{%
7474   \expandafter\Hy@colorlink\csname @#1color\endcsname
7475   \def\Hy@tempa{#1}%
7476   \ifx\Hy@tempa\@urltype
7477     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7478   \else
7479     {\hyper@chars\special{t4ht=<a href=\hyper@quote\##2\hyper@quote>}}%
7480   \fi
7481 }
7482 \def\hyper@linkend{%
7483   \special{t4ht=</a>}%
7484   \Hy@endcolorlink
7485 }
7486 \def\hyper@linkfile#1#2#3{%
7487   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
7488 }
7489 \def\hyper@linkurl#1#2{%
7490   \leavevmode
7491   \ifHy@raiselinks
7492     \setbox\@tempboxa=\color@hbox #1\color@endbox
7493     \@linkdim\dp\@tempboxa
7494     \lower\@linkdim\hbox{%
7495       \begingroup
7496         \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7497       \endgroup
7498     }%
7499     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7500     \@linkdim\ht\@tempboxa
7501     \advance\@linkdim by -6.5\p@
7502     \raise\@linkdim\hbox{\special{t4ht=</a>}}%
7503   \else
7504     \begingroup
7505       \hyper@chars
7506       \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7507       \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7508       \special{t4ht=</a>}%
7509     \endgroup
7510   \fi
7511 }
7512 \def\hyper@link#1#2#3{%
7513   \hyper@linkurl{#3}{\##2}%
7514 }
7515 \def\hyper@image#1#2{%
7516   \begingroup
7517     \hyper@chars
7518     \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
7519   \endgroup
7520 }
7521 \let\autoref\ref
7522 \ifx \rEfLiNK \UnDef
7523   \def\rEfLiNK #1#2{#2}%
7524 \fi
7525 \def\backref#1{}
7526 </tex4ht>
7527 <*tex4htcfg>
7528 \IfFileExists{\jobname.cfg}{\endinput}{}
7529 \Preamble{html}

```

```

7530 \begin{document}
7531 \EndPreamble
7532 \def\TeX{\TeX}
7533 \def\OMEGA{\Omega}
7534 \def\LaTeX{\LaTeX}
7535 \def\LaTeXe{\LaTeX2e}
7536 \def\eTeX{e-TeX}
7537 \def\MF{Metafont}
7538 \def\MP{Metapost}
7539 </tex4htcfg>

```

46 Driver-specific form support

46.1 pdfmarks

```

7540 <*pdfmark>
7541 \long\def\@Form[#1]{%
7542 \AtBeginDvi{%
7543 \headerps@out{%
7544 [ /_objdef {pdfDocEncoding}
7545 /type /dict
7546 /OBJ pdfmark
7547 [ {pdfDocEncoding}
7548 << /Type /Encoding
7549 /Differences [ 24 /breve /caron /circumflex /dotaccent
7550 /hungarumlaut /ogonek /ring /tilde 39 /quotesingle 96 /grave 128
7551 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin /fraction
7552 /guilsinglleft /guilsinglright /minus /perthousand /quotedblbase
7553 /quotedblleft /quotedblright /quoteleft /quoteright /quotesinglbase
7554 /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis /Zcaron /dotlessi
7555 /lslash /oe /scaron /zcaron 164 /currency 166 /brokenbar 168 /dieresis
7556 /copyright /ordfeminine 172 /logicalnot /.notdef /registered /macron
7557 /degree /plusminus /twosuperior /threesuperior /acute /mu 183
7558 /periodcentered /cedilla /onesuperior /ordmasculine 188 /onequarter
7559 /onehalf /threequarters 192 /Agrave /Aacute /Acircumflex /Atilde
7560 /Adieresis /Aring /AE /Ccedilla /Egrave /Eacute /Ecircumflex
7561 /Edieresis /Igrave /Iacute /Icircumflex /Idieresis /Eth /Ntilde
7562 /Ograve /Oacute /Ocircumflex /Otilde /Odieresis /multiply /Oslash
7563 /Ugrave /Uacute /Ucircumflex /Udieresis /Yacute /Thorn /germandbls
7564 /agrave /aacute /acircumflex /atilde /adieresis /aring /ae /ccedilla
7565 /egrave /eacute /ecircumflex /edieresis /igrave /iacute /icircumflex
7566 /idieresis /eth /ntilde /ograve /oacute /ocircumflex /otilde
7567 /odieresis /divide /oslash /ugrave /uacute /ucircumflex /udieresis
7568 /yacute /thorn /ydieresis ]
7569 >>
7570 /PUT pdfmark
7571 [ /_objdef {ZaDb}
7572 /type /dict
7573 /OBJ pdfmark
7574 [ {ZaDb}
7575 <<
7576 /Type /Font
7577 /Subtype /Type1
7578 /Name /ZaDb
7579 /BaseFont /ZapfDingbats
7580 >>
7581 /PUT pdfmark
7582 [ /_objdef {Helv}

```

```

7583 /type /dict
7584 /OBJ pdfmark
7585 [ {Helv}
7586 <<
7587 /Type /Font
7588 /Subtype /Type1
7589 /Name /Helv
7590 /BaseFont /Helvetica
7591 /Encoding {pdfDocEncoding}
7592 >>
7593 /PUT pdfmark
7594 [ /_objdef {aform}
7595 /type /dict
7596 /OBJ pdfmark
7597 [ /_objdef {afields}
7598 /type /array
7599 /OBJ pdfmark
7600 {
7601 [/BBox [0 0 100 100] /_objdef {Check} /BP pdfmark
7602 1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (4) show
7603 [/EP pdfmark
7604 [/BBox [0 0 100 100] /_objdef {Cross} /BP pdfmark
7605 1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (8) show
7606 [/EP pdfmark
7607 [/BBox [0 0 250 100] /_objdef {Submit} /BP pdfmark 0.6 setgray 0 0 250
7608 100 rectfill 1 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246 96
7609 lineto 4 96 lineto 4 4 lineto fill 0.34 setgray 248 98 moveto 248 2
7610 lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
7611 /Helvetica 76 selectfont 0 setgray 8 22.5 moveto (Submit) show
7612 [/EP pdfmark
7613 [/BBox [0 0 250 100] /_objdef {SubmitP} /BP pdfmark 0.6 setgray 0 0
7614 250 100 rectfill 0.34 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246
7615 96 lineto 4 96 lineto 4 4 lineto fill 1 setgray 248 98 moveto 248 2
7616 lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
7617 /Helvetica 76 selectfont 0 setgray 10 20.5 moveto (Submit) show
7618 [/EP pdfmark
7619 } ?pdfmark
7620 [ {aform}
7621 <<
7622 /Fields {afields}
7623 /DR << /Font << /ZaDb {ZaDb} /Helv {Helv} >> >>
7624 /DA (/Helv 10 Tf 0 g )
7625 /CO {corder}
7626 /NeedAppearances true
7627 >>
7628 /PUT pdfmark
7629 [ \string{Catalog\string}
7630 <<
7631 /AcroForm {aform}
7632 >>
7633 /PUT pdfmark
7634 [ /_objdef {corder} /type /array /OBJ pdfmark % dps
7635 }}%
7636 \setkeys{Form}{#1}%
7637 }
7638 \def\@endForm{}
7639 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum

```



```

7640 \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
7641 }
7642 \def\@TextField[#1]#2{% parameters, label
7643   \def\Fld@name{#2}%
7644   \def\Fld@default{}%
7645   \let\Fld@value\@empty
7646   \def\Fld@width{\DefaultWidthofText}%
7647   \def\Fld@height{\DefaultHeightofText}%
7648   \ifFld@multiline
7649     \begingroup
7650       \dimen@=\DefaultHeightofText
7651       \dimen@=4\dimen@
7652       \edef\x{\endgroup
7653         \def\noexpand\Fld@height{\the\dimen@}%
7654       }%
7655     \x
7656   \fi
7657   \bgroup
7658   \Field@toks={ }%
7659   \setkeys{Field}{#1}%
7660   \ifFld@hidden\def\Fld@width{1sp}\fi
7661   \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
7662   \LayoutTextField{#2}{%
7663     \Hy@escapeform\PDFForm@Text
7664     \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
7665       pdfmark=/ANN,Raw={\PDFForm@Text}%
7666     }%
7667   }%
7668   \egroup
7669 }
7670 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7671   \def\Fld@name{#2}%
7672   \def\Fld@default{}%
7673   \def\Fld@width{\DefaultWidthofChoiceMenu}%
7674   \def\Fld@height{\DefaultHeightofChoiceMenu}%
7675   \bgroup
7676   \Fld@menulength=0
7677   \@tempdima\z@
7678   \@for\@curropt:=#3\do{%
7679     \expandafter\Fld@checkequals\@curropt==\%
7680     \Hy@StepCount\Fld@menulength
7681     \settowidth{\@tempdimb}{\@currDisplay}%
7682     \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
7683   }%
7684   \advance\@tempdima by 15\p@
7685   \Field@toks={ }%
7686   \setkeys{Field}{#1}%
7687   \ifFld@hidden\def\Fld@width{1sp}\fi
7688   \LayoutChoiceField{#2}{%
7689     \ifFld@radio
7690       \@@Radio{#3}%
7691     \else
7692       {%
7693         \ifdim\Fld@width<\@tempdima
7694           \ifdim\@tempdima<1cm\@tempdima1cm\fi
7695           \edef\Fld@width{\the\@tempdima}%
7696         \fi

```

```

7697         \def\Fld@flags{}%
7698         \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
7699         \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
7700         \ifx\Fld@flags\@empty
7701             \@tempdima=\the\Fld@menulength\Fld@charsize
7702             \advance\@tempdima by \Fld@borderwidth bp
7703             \advance\@tempdima by \Fld@borderwidth bp
7704             \edef\Fld@height{\the\@tempdima}%
7705         \fi
7706         \@@ListBox{#3}%
7707     }%
7708 \fi
7709 }%
7710 \egroup
7711 }
7712 \def\@@Radio#1{%
7713     \Fld@listcount=0
7714     \@for\@curropt:=#1\do{%
7715         \expandafter\Fld@checkequals\@curropt==\%
7716         \Hy@StepCount\Fld@listcount
7717         \@currDisplay\space
7718         \Hy@escapeform\PDFForm@Radio
7719         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
7720             pdfmark=/ANN,%
7721             Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
7722         } % deliberate space between radio buttons
7723     }%
7724 }
7725 \newcount\Fld@listcount
7726 \def\@@ListBox#1{%
7727     \Choice@toks={ }%
7728     \Fld@listcount=0
7729     \@for\@curropt:=#1\do{%
7730         \expandafter\Fld@checkequals\@curropt==\%
7731         \Hy@StepCount\Fld@listcount
7732         \edef\@processme{%
7733             \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
7734         }\@processme
7735     }%
7736     \Hy@escapeform\PDFForm@List
7737     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
7738         pdfmark=/ANN,Raw={\PDFForm@List}%
7739     }%
7740 }
7741 \def\@PushButton[#1]#2{% parameters, label
7742     \def\Fld@name{#2}%
7743     \bgroup
7744         \Field@toks={ }%
7745         \setkeys{Field}{#1}%
7746         \ifFld@hidden\def\Fld@width{1sp}\fi
7747         \LayoutPushButtonField{%
7748             \Hy@escapeform\PDFForm@Push
7749             \pdfmark[\MakeButtonField{#2}]{%
7750                 pdfmark=/ANN,Raw={\PDFForm@Push}%
7751             }%
7752         }%
7753     \egroup

```

```

7754 }
7755 \def\@Submit[#1]#2{%
7756   \Field@toks={ }%
7757   \def\Fld@width{\DefaultWidthofSubmit}%
7758   \def\Fld@height{\DefaultHeightofSubmit}%
7759   \bgroup
7760     \def\Fld@name{Submit}%
7761     \setkeys{Field}{#1}%
7762     \ifFld@hidden\def\Fld@width{1sp}\fi
7763     \Hy@escapeform\PDFForm@Submit
7764     \pdfmark[\MakeButtonField{#2}]{%
7765       pdfmark=/ANN,%
7766       Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}}%
7767     }%
7768   \egroup
7769 }
7770 \def\@Reset[#1]#2{%
7771   \Field@toks={ }%
7772   \def\Fld@width{\DefaultWidthofReset}%
7773   \def\Fld@height{\DefaultHeightofReset}%
7774   \bgroup
7775     \def\Fld@name{Reset}%
7776     \setkeys{Field}{#1}%
7777     \ifFld@hidden\def\Fld@width{1sp}\fi
7778     \Hy@escapeform\PDFForm@Reset
7779     \pdfmark[\MakeButtonField{#2}]{%
7780       pdfmark=/ANN,Raw={\PDFForm@Reset}%
7781     }%
7782   \egroup
7783 }
7784 \def\@CheckBox[#1]#2{% parameters, label
7785   \def\Fld@name{#2}%
7786   \def\Fld@default{0}%
7787   \bgroup
7788     \def\Fld@width{\DefaultWidthofCheckBox}%
7789     \def\Fld@height{\DefaultHeightofCheckBox}%
7790     \Field@toks={ }%
7791     \setkeys{Field}{#1}%
7792     \ifFld@hidden\def\Fld@width{1sp}\fi
7793     \LayoutCheckField{#2}{%
7794       \Hy@escapeform\PDFForm@Check
7795       \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
7796         pdfmark=/ANN,Raw={\PDFForm@Check}%
7797       }%
7798     }%
7799   \egroup
7800 }
7801 \pdfmark

```

46.2 dvipdf

```

7802 \dvipdf
7803 \def\@Form[#1]{\typeout{Sorry, I do not support FORMs}}
7804 \def\@endForm{}
7805 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7806   \typeout{Sorry, dvipdf does not support FORM gauges}%
7807 }
7808 \def\@TextField[#1]#2{% parameters, label

```

```

7809 \typeout{Sorry, dvipdf does not support FORM text fields}%
7810 }
7811 \def\@CheckBox[#1]#2{% parameters, label
7812 \typeout{Sorry, dvipdf does not support FORM checkboxes}%
7813 }
7814 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7815 \typeout{Sorry, dvipdf does not support FORM choice menus}%
7816 }
7817 \def\@PushButton[#1]#2{% parameters, label
7818 \typeout{Sorry, dvipdf does not support FORM pushbuttons}%
7819 }
7820 \def\@Reset[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
7821 \def\@Submit[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
7822 \end{dvipdf}

```

46.3 HyperTeX

```

7823 \hypertex
7824 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
7825 \def\@endForm{}
7826 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7827 \typeout{Sorry, HyperTeX does not support FORM gauges}%
7828 }
7829 \def\@TextField[#1]#2{% parameters, label
7830 \typeout{Sorry, HyperTeX does not support FORM text fields}%
7831 }
7832 \def\@CheckBox[#1]#2{% parameters, label
7833 \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
7834 }
7835 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7836 \typeout{Sorry, HyperTeX does not support FORM choice menus}%
7837 }
7838 \def\@PushButton[#1]#2{% parameters, label
7839 \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
7840 }
7841 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
7842 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
7843 \end{hypertex}

```

46.4 TeX4ht

```

7844 \tex4ht
7845 \def\@Form[#1]{%
7846 \setkeys{Form}{#1}%
7847 \HCode{<form action="\Form@action" method="\Form@method">}%
7848 }
7849 \def\@endForm{\HCode{</form>}}
7850 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7851 \typeout{Sorry, TeX4ht does not support gauges}%
7852 }
7853 \def\@TextField[#1]#2{% parameters, label
7854 \let\Hy@reserved@a\@empty
7855 \def\Fld@name{#2}%
7856 \def\Fld@default{}%
7857 \bgroup
7858 \Field@toks={ }%
7859 \setkeys{Field}{#1}%
7860 \HCode{<label for="\Fld@name">#2</label>}%
7861 \ifFld@password

```

```

7862     \@@PasswordField
7863     \else
7864     \@@TextField
7865     \fi
7866 \egroup
7867 }
7868 \def\@@PasswordField{%
7869   \HCode{%
7870     <input type="password"
7871       id="\Fld@name"
7872       name="\Fld@name"
7873       \ifFld@hidden type="hidden"\fi
7874       value="\Fld@default"
7875       \the\Field@toks
7876     >%
7877   }%
7878 }
7879 \def\@@TextField{%
7880   \ifFld@multiline
7881     \HCode{<textarea
7882       \ifFld@readonly readonly \fi
7883       id="\Fld@name"
7884       name="\Fld@name"
7885       \ifFld@hidden type="hidden"\fi
7886       \the\Field@toks>%
7887     }%
7888     \Fld@default
7889     \HCode{</textarea>}%
7890   \else
7891     \HCode{<input type="textbox"
7892       \ifFld@readonly readonly \fi
7893       id="\Fld@name"
7894       name="\Fld@name"
7895       \ifFld@hidden type="hidden"\fi
7896       value="\Fld@default" \the\Field@toks>
7897     }%
7898   \fi
7899 }
7900 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7901   \def\Fld@name{#2}%
7902   \def\Fld@default{}%
7903   \let\Hy@reserved@a\relax
7904   \bgroup
7905   \expandafter\Fld@findlength#3\\%
7906   \Field@toks={ }%
7907   \setkeys{Field}{#1}%
7908   #2%
7909   \ifFld@radio
7910     \expandafter\@@Radio#3\\%
7911   \else
7912     \expandafter\@@Menu#3\\%
7913   \fi
7914 \egroup
7915 }
7916 \def\Fld@findlength#1\\{%
7917   \Fld@menulength=0
7918   \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%

```

```

7919 }
7920 \def\@@Menu#1\{\%
7921   \HCode{<select size="\the\Fld@menulength"
7922     name="\Fld@name" \the\Field@toks>}%
7923   \@for\@curropt:=#1\do{%
7924     \expandafter\Fld@checkequals\@curropt==\%
7925     \HCode{<option
7926       \ifx\@curropt\Fld@default selected \fi
7927       value="\@currValue">\@currDisplay</option>%
7928     }%
7929   }%
7930   \HCode{</select>}%
7931 }
7932 \def\@@Radio#1\{\%
7933   \@for\@curropt:=#1\do{%
7934     \expandafter\Fld@checkequals\@curropt==\%
7935     \HCode{<input type="radio"
7936       \ifx\@curropt\Fld@default checked \fi
7937       name="\Fld@name"
7938       value="\@currValue"
7939       \the\Field@toks>%
7940     }%
7941     \@currDisplay
7942   }%
7943 }
7944 \def\@PushButton[#1]#2{% parameters, label
7945   \def\Fld@name{#2}%
7946   \bgroup
7947     \Field@toks={ }%
7948     \setkeys{Field}{#1}%
7949     \HCode{<input type="button"
7950       name="\Fld@name"
7951       value="#2"
7952       \the\Field@toks>%
7953     }%
7954     \HCode{</button>}%
7955   \egroup
7956 }
7957 \def\@Submit[#1]#2{%
7958   \HCode{<button type="submit">#2</button>}%
7959 }
7960 \def\@Reset[#1]#2{%
7961   \HCode{<button type="reset">#2</button>}%
7962 }
7963 \def\@CheckBox[#1]#2{% parameters, label
7964   \let\Hy@reserved@a\@empty
7965   \def\Fld@name{#2}%
7966   \def\Fld@default{0}%
7967   \bgroup
7968     \Field@toks={ }%
7969     \setkeys{Field}{#1}%
7970     \HCode{<input type="checkbox"
7971       \ifFld@checked checked \fi
7972       \ifFld@disabled disabled \fi
7973       \ifFld@readonly readonly \fi
7974       name="\Fld@name"
7975       \ifFld@hidden type="hidden"\fi

```

```

7976     value="\Fld@default"
7977     \the\Fld@toks>%
7978     #2%
7979   }%
7980 \egroup
7981 }
7982 </tex4ht>

```

46.5 pdfTeX

```

7983 <*pdfTeX>
7984 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7985   \typeout{Sorry, pdfTeX does not support FORM gauges}%
7986 }
7987 \def\MakeFieldObject#1#2{\sbox0{#1}%
7988   \immediate\pdfxform0 %
7989   \expandafter\edef\csname #2Object\endcsname{%
7990     \the\pdflastxform\space 0 R%
7991   }%
7992 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
7993 }%
7994 \def\@Form[#1]{%
7995   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
7996   \setkeys{Form}{#1}%
7997   \ifnum\pdfTeXversion>13
7998     \pdfrefobj\OBJ@pdfdocencoding
7999     \pdfrefobj\OBJ@ZaDb
8000     \pdfrefobj\OBJ@Helv
8001     \pdfrefobj\OBJ@acroform
8002   \fi
8003   \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
8004   \MakeFieldObject%

```

Same as \ding{123} of package pifont.

```

8005   \begingroup
8006     \fontfamily{pzd}%
8007     \fontencoding{U}%
8008     \fontseries{m}%
8009     \fontshape{n}%
8010     \selectfont
8011     \char123 %
8012   \endgroup
8013 }{Ding}%
8014 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{Submit}}}}{Submit}%
8015 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{SubmitP}}}}{SubmitP}%
8016 }
8017 \def\@EndForm{}
8018 \def\@TextField[#1]#2{% parameters, label
8019   \def\Fld@name{#2}%
8020   \def\Fld@default{}%
8021   \let\Fld@value\@empty
8022   \def\Fld@width{\DefaultWidthofText}%
8023   \def\Fld@height{\DefaultHeightofText}%
8024   \ifFld@multiline
8025     \begingroup
8026       \dimen@=\DefaultHeightofText
8027       \dimen@=4\dimen@
8028       \edef\x{\endgroup
8029         \def\noexpand\Fld@height{\the\dimen@}%

```

```

8030     }%
8031     \x
8032 \fi
8033 \bgroup
8034   \Field@toks={ }%
8035   \setkeys{Field}{#1}%
8036   \ifFld@hidden\def\Fld@width{1sp}\fi
8037   \ifx\Fld@value\empty\def\Fld@value{\Fld@default}\fi
8038   \LayoutTextField{#2}{%
8039     \Hy@escapeform\PDFForm@Text
8040     \pdfstartlink user {\PDFForm@Text}\relax
8041     \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
8042   }%
8043 \egroup
8044 }
8045 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8046   \def\Fld@name{#2}%
8047   \def\Fld@default{}%
8048   \def\Fld@width{\DefaultWidthofChoiceMenu}%
8049   \def\Fld@height{\DefaultHeightofChoiceMenu}%
8050   \bgroup
8051     \Fld@menulength=0
8052     \@tempdima\z@
8053     \@for\@curropt:=#3\do{%
8054       \expandafter\Fld@checkequals\@curropt==\%
8055       \Hy@StepCount\Fld@menulength
8056       \settowidth{\@tempdimb}{\@currDisplay}%
8057       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8058     }%
8059     \advance\@tempdima by 15\p@
8060     \Field@toks={ }%
8061     \setkeys{Field}{#1}%
8062     \ifFld@hidden\def\Fld@width{1sp}\fi
8063     \LayoutChoiceField{#2}{%
8064       \ifFld@radio
8065         \@@Radio{#3}%
8066       \else
8067         {%
8068           \ifdim\Fld@width<\@tempdima
8069             \ifdim\@tempdima<1cm\@tempdima1cm\fi
8070             \edef\Fld@width{\the\@tempdima}%
8071           \fi
8072           \def\Fld@flags{}%
8073           \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8074           \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8075           \ifx\Fld@flags\empty
8076             \@tempdima=\the\Fld@menulength\Fld@charsize
8077             \advance\@tempdima by \Fld@borderwidth bp
8078             \advance\@tempdima by \Fld@borderwidth bp
8079             \edef\Fld@height{\the\@tempdima}%
8080           \fi
8081           \@@ListBox{#3}%
8082         }%
8083       \fi
8084     }%
8085 \egroup
8086 }

```



```

8087 \def\@@Radio#1{%
8088   \Fld@listcount=0
8089   \@for\@curropt:=#1\do{%
8090     \expandafter\Fld@checkequals\@curropt==\\%
8091     \Hy@StepCount\Fld@listcount
8092     \@currDisplay\space
8093     \leavevmode
8094     \Hy@escapeform\PDFForm@Radio
8095     \pdfstartlink user {%
8096       \PDFForm@Radio
8097       /AP <<
8098       /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.

```

8099       /\@currValue\space \DingObject
8100       >>
8101     }%
8102   \relax
8103   \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
8104   \space% deliberate space between radio buttons
8105 }%
8106 }
8107 }
8108 \newcount\Fld@listcount
8109 \def\@@Listbox#1{%
8110   \Choice@toks={ }%
8111   \Fld@listcount=0
8112   \@for\@curropt:=#1\do{%
8113     \expandafter\Fld@checkequals\@curropt==\\%
8114     \Hy@StepCount\Fld@listcount
8115     \edef\@processme{%
8116       \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8117     }\@processme
8118   }%
8119   \leavevmode
8120   \Hy@escapeform\PDFForm@List
8121   \pdfstartlink user {\PDFForm@List}\relax
8122   \MakeChoiceField{\Fld@width}{\Fld@height}%
8123   \pdfendlink
8124 }
8125 \def\@PushButton[#1]#2{% parameters, label
8126   \def\Fld@name{#2}%
8127   \bgroup
8128     \Field@toks={ }%
8129     \setkeys{Field}{#1}%
8130     \ifFld@hidden\def\Fld@width{1sp}\fi
8131     \LayoutPushButtonField{%
8132       \leavevmode
8133       \Hy@escapeform\PDFForm@Push
8134       \pdfstartlink user {\PDFForm@Push}\relax
8135       \MakeButtonField{#2}%
8136       \pdfendlink
8137     }%
8138   \egroup
8139 }
8140 \def\@Submit[#1]#2{%

```

```

8141 \Field@toks={ }%
8142 \def\Fld@width{\DefaultWidthofSubmit}%
8143 \def\Fld@height{\DefaultHeightofSubmit}%
8144 \bgroup
8145 \def\Fld@name{Submit}%
8146 \setkeys{Field}{#1}%
8147 \ifFld@hidden\def\Fld@width{1sp}\fi
8148 \leavevmode
8149 \Hy@escapeform\PDFForm@Submit
8150 \pdfstartlink user {%
8151 \PDFForm@Submit
8152 /AP << /N \SubmitObject\space /D \SubmitPObject >>
8153 }%
8154 \relax
8155 \MakeButtonField{#2}%
8156 \pdfendlink
8157 \egroup
8158 }
8159 \def\@Reset[#1]#2{%
8160 \Field@toks={ }%
8161 \def\Fld@width{\DefaultWidthofReset}%
8162 \def\Fld@height{\DefaultHeightofReset}%
8163 \bgroup
8164 \def\Fld@name{Reset}%
8165 \setkeys{Field}{#1}%
8166 \ifFld@hidden\def\Fld@width{1sp}\fi
8167 \leavevmode
8168 \Hy@escapeform\PDFForm@Reset
8169 \pdfstartlink user {\PDFForm@Reset}\relax
8170 \MakeButtonField{#2}%
8171 \pdfendlink
8172 \egroup
8173 }
8174 \def\@CheckBox[#1]#2{% parameters, label
8175 \def\Fld@name{#2}%
8176 \def\Fld@default{0}%
8177 \bgroup
8178 \def\Fld@width{\DefaultWidthofCheckBox}%
8179 \def\Fld@height{\DefaultHeightofCheckBox}%
8180 \Field@toks={ }%
8181 \setkeys{Field}{#1}%
8182 \ifFld@hidden\def\Fld@width{1sp}\fi
8183 \LayoutCheckField{#2}{%
8184 \Hy@escapeform\PDFForm@Check
8185 \pdfstartlink user {\PDFForm@Check}\relax
8186 \MakeCheckField{\Fld@width}{\Fld@height}%
8187 \pdfendlink
8188 }%
8189 \egroup
8190 }
8191 \pdfobj { << /Type /Encoding /Differences [ 24 /breve /caron
8192 /circumflex /dotaccent /hungarumlaut /ogonek /ring /tilde 39
8193 /quotesingle 96 /grave 128 /bullet /dagger /daggerdbl /ellipsis
8194 /emdash /endash /florin /fraction /guilsinglleft /guilsinglright
8195 /minus /perthousand /quotedblbase /quotedblleft /quotedblright
8196 /quoteleft /quoteright /quotesinglbase /trademark /fi /fl /Lslash /OE
8197 /Scaron /Ydieresis /Zcaron /dotlessi /lslash /oe /scaron /zcaron 164

```

```

8198 /currency 166 /brokenbar 168 /dieresis /copyright /ordfeminine 172
8199 /logicalnot /.notdef /registered /macron /degree /plusminus
8200 /twosuperior /threesuperior /acute /mu 183 /periodcentered /cedilla
8201 /onesuperior /ordmasculine 188 /onequarter /onehalf /threequarters 192
8202 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE /Ccedilla
8203 /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute /Icircumflex
8204 /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex /Otilde
8205 /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex /Udieresis
8206 /Yacute /Thorn /germandbls /agrave /aacute /acircumflex /atilde
8207 /adieresis /aring /ae /ccedilla /egrave /eacute /ecircumflex
8208 /edieresis /igrave /iacute /icircumflex /idieresis /eth /ntilde
8209 /ograde /oacute /ocircumflex /otilde /odieresis /divide /oslash
8210 /ugrave /uacute /ucircumflex /udieresis /yacute /thorn /ydieresis ] >>
8211 }
8212 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
8213 \pdfobj {
8214   <<
8215     /Type /Font
8216     /Subtype /Type1
8217     /Name /ZaDb
8218     /BaseFont /ZapfDingbats
8219   >>
8220 }
8221 \edef\OBJ@ZaDb{\the\pdflastobj}
8222 \pdfobj { <<
8223   /Type /Font
8224   /Subtype /Type1
8225   /Name /Helv
8226   /BaseFont /Helvetica
8227   /Encoding \OBJ@pdfdocencoding\space 0 R
8228   >>
8229 }
8230 \edef\OBJ@Helv{\the\pdflastobj}
8231 \pdfobj {
8232   <<
8233     /Fields []
8234     /DR <<
8235       /Font << /ZaDb \OBJ@ZaDb\space 0 R /Helv \OBJ@Helv\space 0 R >>
8236     >>
8237     /DA (/Helv 10 Tf 0 g )
8238     /NeedAppearances true
8239   >>
8240 }
8241 \edef\OBJ@acroform{\the\pdflastobj}
8242 </pdfx>

```

46.6 dvipdfm

D. P. Story adapted the pdf_T_EX forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```
8243 <*dvipdfm>
```

\@Gauge

```

8244 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8245   \typeout{Sorry, dvipdfm does not support FORM gauges}%
8246 }

```

\@Form

```

8247 \def \@Form[#1]{%
8248   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
8249   \setkeys{Form}{#1}%
8250   \@pdfm@mark{obj @afields [ ]}%
8251   \@pdfm@mark{obj @corder [ ]}%
8252   \@pdfm@mark{%
8253     obj @aform <<
8254       /Fields @afields
8255       /DR << /Font << /ZaDb @OBJZaDb /Helv @OBJHelv >> >>
8256       /DA (/Helv 10 Tf 0 g )
8257       /CO @corder
8258       /NeedAppearances true
8259     >>%
8260   }%
8261   \@pdfm@mark{put @catalog << /AcroForm @aform >>}%
8262 }

\@endForm

8263 \def \@endForm{}

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

8264 \def \dvipdfm@setdim{%
8265   height \the\ht\pdfm@box\space
8266   width \the\wd\pdfm@box\space
8267   depth \the\dp\pdfm@box\space
8268 }

\@TextField

8269 \def \@TextField[#1]#2{% parameters, label
8270   \def \Fld@name{#2}%
8271   \def \Fld@default{}%
8272   \let \Fld@value\@empty
8273   \def \Fld@width{\DefaultWidthofText}%
8274   \def \Fld@height{\DefaultHeightofText}%
8275   \ifFld@multiline
8276     \begingroup
8277       \dimen@=\DefaultHeightofText
8278       \dimen@=4\dimen@
8279       \edef\x{\endgroup
8280         \def\noexpand\Fld@height{\the\dimen@}%
8281       }%
8282     \x
8283   \fi
8284   \bgroup
8285     \Field@toks={ }%
8286     \setkeys{Field}{#1}%
8287     \ifFld@hidden\def\Fld@width{1sp}\fi
8288     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
8289     \setbox\pdfm@box=\hbox{%
8290       \MakeTextField{\Fld@width}{\Fld@height}%
8291     }%
8292     \LayoutTextField{#2}{%
8293       \Hy@escapeform\PDFForm@Text
8294       \@pdfm@mark{%
8295         ann @\Fld@name\space \dvipdfm@setdim << \PDFForm@Text >>%
8296       }%
8297     }%

```

```

8298 \unhbox\pdfm@box
8299 \@pdfm@mark{put \@fields \@Fld@name}% record in \@fields array
8300 \egroup
8301 }

```

\@ChoiceMenu

```

8302 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8303 \def\Fld@name{#2}%
8304 \def\Fld@default{}%
8305 \def\Fld@width{\DefaultWidthofChoiceMenu}%
8306 \def\Fld@height{\DefaultHeightofChoiceMenu}%
8307 \bgroup
8308 \Fld@menulength=0
8309 \@tempdima\z@
8310 \@for\@curropt:=#3\do{%
8311 \expandafter\Fld@checkequals\@curropt==\%
8312 \Hy@StepCount\Fld@menulength
8313 \settowidth{\@tempdimb}{\@currDisplay}%
8314 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8315 }%
8316 \advance\@tempdima by 15\p@
8317 \Field@toks={ }%
8318 \setkeys{Field}{#1}%
8319 \ifFld@hidden\def\Fld@width{1sp}\fi
8320 \LayoutChoiceField{#2}{%
8321 \ifFld@radio
8322 \@@Radio{#3}%
8323 \else
8324 {%
8325 \ifdim\Fld@width<\@tempdima
8326 \ifdim\@tempdima<1cm\@tempdima1cm\fi
8327 \edef\Fld@width{\the\@tempdima}%
8328 \fi
8329 \def\Fld@flags{}%
8330 \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8331 \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8332 \ifx\Fld@flags\@empty
8333 \@tempdima=\the\Fld@menulength\Fld@charsize
8334 \advance\@tempdima by \Fld@borderwidth bp
8335 \advance\@tempdima by \Fld@borderwidth bp
8336 \edef\Fld@height{\the\@tempdima}%
8337 \fi
8338 \@@Listbox{#3}%
8339 }%
8340 \fi
8341 }%
8342 \egroup
8343 }

```

\@@Radio

```

8344 \def\@@Radio#1{%
8345 \Fld@listcount=0
8346 \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
8347 \@for\@curropt:=#1\do{%
8348 \expandafter\Fld@checkequals\@curropt==\%
8349 \Hy@StepCount\Fld@listcount
8350 \@currDisplay\space

```

```

8351 \leavevmode
8352 \Hy@escapeform\PDFForm@Radio
8353 \@pdfm@mark{%
8354   ann \ifnum\Fld@listcount=1 @\Fld@name\space\fi
8355   \dvipdfm@setdim
8356   <<
8357   \PDFForm@Radio\space
8358   /AP << /N << /\@currValue /null >> >>
8359   >>%
8360 }%
8361 \unhcopy\pdfm@box\space% deliberate space between radio buttons
8362 \ifnum\Fld@listcount=1\@pdfm@mark{put @afields @\Fld@name}\fi
8363 }%
8364 }

```

\Fld@listcount

```

8365 \newcount\Fld@listcount

```

\@@ListBox

```

8366 \def\@@ListBox#1{%
8367   \Choice@toks={ }%
8368   \Fld@listcount=0
8369   \@for\@curropt:=#1\do{%
8370     \expandafter\Fld@checkequals\@curropt==\%
8371     \Hy@StepCount\Fld@listcount
8372     \edef\@processme{%
8373       \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8374     }\@processme
8375   }%
8376   \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
8377   \leavevmode
8378   \Hy@escapeform\PDFForm@List
8379   \@pdfm@mark{%
8380     ann @\Fld@name\space\dvipdfm@setdim
8381     << \PDFForm@List >>%
8382   }%
8383   \unhbox\pdfm@box
8384   \@pdfm@mark{put @afields @\Fld@name}%
8385 }

```

\@PushButton

```

8386 \def\@PushButton[#1]#2{% parameters, label
8387   \def\Fld@name{#2}%
8388   \bgroup
8389   \Field@toks={ }%
8390   \setkeys{Field}{#1}%
8391   \ifFld@hidden\def\Fld@width{1sp}\fi
8392   \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8393   \LayoutPushButtonField{%
8394     \leavevmode
8395     \Hy@escapeform\PDFForm@Push
8396     \@pdfm@mark{%
8397       ann @\Fld@name\space\dvipdfm@setdim
8398       << \PDFForm@Push >>%
8399     }%
8400   }%
8401   \unhbox\pdfm@box

```

```

8402 \pdfmark{put @afields @\Fld@name}%
8403 \egroup
8404 }

\@Submit
8405 \def\@Submit[#1]#2{%
8406 \Field@toks={ }%
8407 \def\Fld@width{\DefaultWidthofSubmit}%
8408 \def\Fld@height{\DefaultHeightofSubmit}%
8409 \bgroup
8410 \def\Fld@name{Submit}%
8411 \setkeys{Field}{#1}%
8412 \ifFld@hidden\def\Fld@width{1sp}\fi
8413 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8414 \leavevmode
8415 \Hy@escapeform\PDFForm@Submit
8416 \pdfmark{%
8417 ann @\Fld@name\space\dvipdfm@setdim
8418 << \PDFForm@Submit >>%
8419 }%
8420 \unhbox\pdfm@box%
8421 \pdfmark{put @afields @\Fld@name}%
8422 \egroup
8423 }

\@Reset
8424 \def\@Reset[#1]#2{%
8425 \Field@toks={ }%
8426 \def\Fld@width{\DefaultWidthofReset}%
8427 \def\Fld@height{\DefaultHeightofReset}%
8428 \bgroup
8429 \def\Fld@name{Reset}%
8430 \setkeys{Field}{#1}%
8431 \ifFld@hidden\def\Fld@width{1sp}\fi
8432 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8433 \leavevmode
8434 \Hy@escapeform\PDFForm@Reset
8435 \pdfmark{%
8436 ann @\Fld@name\space\dvipdfm@setdim
8437 << \PDFForm@Reset >>%
8438 }%
8439 \unhbox\pdfm@box
8440 \pdfmark{put @afields @\Fld@name}%
8441 \egroup
8442 }

\@CheckBox
8443 \def\@CheckBox[#1]#2{% parameters, label
8444 \def\Fld@name{#2}%
8445 \def\Fld@default{0}%
8446 \bgroup
8447 \def\Fld@width{\DefaultWidthofCheckBox}%
8448 \def\Fld@height{\DefaultHeightofCheckBox}%
8449 \Field@toks={ }%
8450 \setkeys{Field}{#1}%
8451 \ifFld@hidden\def\Fld@width{1sp}\fi
8452 \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%

```

```

8453 \LayoutCheckField{#2}{%
8454 \Hy@escapeform\PDFForm@Check
8455 \@pdfm@mark{%
8456 ann @\Fld@name\space\dvipdfm@setdim
8457 << \PDFForm@Check >>%
8458 }%
8459 \unhbox\pdfm@box
8460 \@pdfm@mark{put @afields @\Fld@name}%
8461 }%
8462 \egroup
8463 }

8464 \@pdfm@mark{obj @OBJpdfdocencoding << /Type /Encoding /Differences [%
8465 24 /breve /caron /circumflex /dotaccent /hungarumlaut /ogonek /ring
8466 /tilde
8467 39 /quotesingle
8468 96 /grave
8469 128 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin
8470 /fraction /guilsinglleft /guilsinglright /minus /perthousand
8471 /quotedblbase /quotedblleft /quotedblright /quoteleft /quoteright
8472 /quotesinglbase /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis
8473 /Zcaron /dotlessi /lslash /oe /scaron /zcaron
8474 164 /currency
8475 166 /brokenbar
8476 168 /dieresis /copyright /ordfeminine
8477 172 /logicalnot /.notdef /registered /macron /degree /plusminus
8478 /twosuperior /threesuperior /acute /mu
8479 183 /periodcentered /cedilla /onesuperior /ordmasculine
8480 188 /onequarter /onehalf /threequarters
8481 192 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE
8482 /Ccedilla /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute
8483 /Icircumflex /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex
8484 /Otilde /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex
8485 /Udieresis /Yacute /Thorn /germandbls /agrave /aacute /acircumflex
8486 /atilde /adieresis /aring /ae /ccedilla /egrave /eacute
8487 /ecircumflex /edieresis /igrave /iacute /icircumflex /idieresis
8488 /eth /ntilde /ograde /oacute /ocircumflex /otilde /odieresis
8489 /divide /oslash /ugrave /uacute /ucircumflex /udieresis /yacute
8490 /thorn /ydieresis%
8491 ] >>
8492 }
8493 \@pdfm@mark{obj @OBJZaDb
8494 <<
8495 /Type /Font
8496 /Subtype /Type1
8497 /Name /ZaDb
8498 /BaseFont /ZapfDingbats
8499 >>
8500 }
8501 \@pdfm@mark{obj @OBJHelv
8502 <<
8503 /Type /Font
8504 /Subtype /Type1
8505 /Name /Helv
8506 /BaseFont /Helvetica
8507 /Encoding @OBJpdfdocencoding
8508 >>
8509 }

```


8510 \langle /dvipdfm \rangle

46.7 Common forms part

8511 \langle *pdfform \rangle

\Hy@escapestring

```
8512 \begingroup\expandafter\expandafter\expandafter\endgroup
8513 \expandafter\ifx\csname pdfescapestring\endcsname\relax
8514   \let\Hy@escapestring\@firstofone
8515   \def\Hy@escapeform#1{%
8516     \ifHy@escapeform
8517       \def\Hy@escapestring##1{%
8518         \noexpand\Hy@escapestring{\noexpand##1}%
8519       }%
8520     \edef\Hy@temp{#1}%
8521     \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
8522     \def\Hy@escapestring##1{%
8523       \@ifundefined{Hy@esc@\string##1}{%
8524         ##1%
8525         \ThisShouldNotHappen
8526       }{%
8527         \csname Hy@esc@\string##1\endcsname
8528       }%
8529     }%
8530   \else
8531     \let\Hy@escapestring\@firstofone
8532   \fi
8533 }%
8534 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
8535   \ifx\#3\%
8536   \else
8537     \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
8538     \Hy@ReturnAfterFi{%
8539       \Hy@@@escapeform#3\@nil
8540     }%
8541   \fi
8542 }%
8543 \else
8544   \def\Hy@escapeform#1{%
8545     \ifHy@escapeform
8546       \let\Hy@escapestring\pdfescapestring
8547     \else
8548       \let\Hy@escapestring\@firstofone
8549     \fi
8550   }%
8551   \Hy@escapeform{}}%
8552 \fi
```

\PDFForm@Check

```
8553 \def\PDFForm@Check{%
8554   /Subtype /Widget
8555   \ifFld@hidden /F 6 \else /F 4 \fi
8556   /T (\Hy@escapestring{Fld@name})
8557   /Q \Fld@align\space
8558   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8559   /MK <<
```

```

8560      /BC [\Fld@bordercolor]
8561      \ifx\Fld@bcolor\@empty
8562      \else
8563          /BG [\Fld@bcolor]
8564      \fi
8565      /CA (\Hy@escapestring{\Fld@cbsymbol})
8566  >>
8567  /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
8568  /FT /Btn
8569  /H /P
8570  \ifFld@checked /V /Yes \else /V /Off \fi
8571 }

```

\PDFForm@Push

```

8572 \def\PDFForm@Push{%
8573   /Subtype /Widget
8574   \ifFld@hidden /F 6 \else /F 4 \fi
8575   /T (\Hy@escapestring{\Fld@name})
8576   /FT /Btn
8577   /Ff 65540
8578   /H /P
8579   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8580   /MK <<
8581     /BC [\Fld@bordercolor]
8582   >>
8583   /A << /S /JavaScript /JS (\Hy@escapestring{\Fld@onclick}) >>
8584 }

```

\Fld@additionalactions

```

8585 \def\Fld@additionalactions{%
8586   /AA <<

```

K input (keystroke) format

```

8587     \ifx\Fld@keystroke@code\@empty
8588     \else
8589       /K << /S /JavaScript /JS (\Hy@escapestring{\Fld@keystroke@code}) >>
8590     \fi

```

F display format

```

8591     \ifx\Fld@format@code\@empty
8592     \else
8593       /F << /S /JavaScript /JS (\Hy@escapestring{\Fld@format@code}) >>
8594     \fi

```

V validation

```

8595     \ifx\Fld@validate@code\@empty
8596     \else
8597       /V << /S /JavaScript /JS (\Hy@escapestring{\Fld@validate@code}) >>
8598     \fi

```

C calculation

```

8599     \ifx\Fld@calculate@code\@empty
8600     \else
8601       /C << /S /JavaScript /JS (\Hy@escapestring{\Fld@calculate@code}) >>
8602     \fi

```

Fo receiving the input focus

```

8603     \ifx\Fld@onfocus@code\@empty
8604     \else

```

```

8605      /Fo << /S /JavaScript /JS (\Hy@escapestring{\Fld@onfocus@code}) >>
8606      \fi

```

Bl loosing the input focus (blurred)

```

8607      \ifx\Fld@onblur@code\@empty
8608      \else
8609      /Bl << /S /JavaScript /JS (\Hy@escapestring{\Fld@onblur@code}) >>
8610      \fi

```

D pressing the mouse button (down)

```

8611      \ifx\Fld@onmousedown@code\@empty
8612      \else
8613      /D << /S /JavaScript /JS (\Hy@escapestring{\Fld@onmousedown@code}) >>
8614      \fi

```

U releasing the mouse button (up)

```

8615      \ifx\Fld@onmouseup@code\@empty
8616      \else
8617      /U << /S /JavaScript /JS (\Hy@escapestring{\Fld@onmouseup@code}) >>
8618      \fi

```

E cursor enters the annotation's active area.

```

8619      \ifx\Fld@onenter@code\@empty
8620      \else
8621      /E << /S /JavaScript /JS (\Hy@escapestring{\Fld@onenter@code}) >>
8622      \fi

```

X cursor exits the annotation's active area.

```

8623      \ifx\Fld@onexit@code\@empty
8624      \else
8625      /X << /S /JavaScript /JS (\Hy@escapestring{\Fld@onexit@code}) >>
8626      \fi
8627      >>
8628  }

```

\PDFForm@List

```

8629 \def\PDFForm@List{%
8630   /Subtype /Widget
8631   \ifFld@hidden /F 6 \else /F 4 \fi
8632   /T (\Hy@escapestring{\Fld@name})
8633   /FT /Ch
8634   /Q \Fld@align\space
8635   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8636   /MK <<
8637     /BC [\Fld@bordercolor]
8638     \ifx\Fld@bcolor\@empty
8639     \else
8640     /BG [\Fld@bcolor]
8641     \fi
8642   >>
8643   /DA (/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg )
8644   /Opt [\the\Choice@toks]
8645   /DV (\Hy@escapestring{\Fld@default})
8646   \Fld@additionalactions
8647   \Fld@flags
8648 }

```

\PDFForm@Radio

```

8649 \def\PDFForm@Radio{%

```

```

8650 /Subtype /Widget
8651 \ifFld@hidden /F 6 \else /F 4 \fi
8652 /T (\Hy@escapestring{\Fld@name})
8653 /FT /Btn
8654 /Ff 49152
8655 /H /P
8656 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8657 /MK <<
8658 /BC [\Fld@bordercolor]
8659 \ifx\Fld@bcolor\@empty
8660 \else
8661 /BG [\Fld@bcolor]
8662 \fi
8663 /CA (H)
8664 >>
8665 /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
8666 \ifx\@currValue\Fld@default
8667 /V /\Fld@default\space
8668 \else
8669 /V /Off
8670 \fi
8671 \Fld@additionalactions
8672 }

```

\PDFForm@Text

```

8673 \def\PDFForm@Text{%
8674 /Subtype /Widget
8675 \ifFld@hidden /F 6 \else /F 4 \fi
8676 /T (\Hy@escapestring{\Fld@name})
8677 /Q \Fld@align\space
8678 /FT /Tx
8679 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8680 /MK <<
8681 /BC [\Fld@bordercolor]
8682 \ifx\Fld@bcolor\@empty
8683 \else
8684 /BG [\Fld@bcolor]
8685 \fi
8686 >>
8687 /DA (/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg )
8688 /DV (\Hy@escapestring{\Fld@default})
8689 /V (\Hy@escapestring{\Fld@value})
8690 \Fld@additionalactions
8691 \ifFld@multiline
8692 \ifFld@readonly /Ff 4097 \else /Ff 4096 \fi
8693 \else
8694 \ifFld@password
8695 \ifFld@readonly /Ff 8193 \else /Ff 8192 \fi
8696 \else
8697 \ifFld@readonly /Ff 1 \fi
8698 \fi
8699 \fi
8700 \ifnum\Fld@maxlen>0/MaxLen \Fld@maxlen \fi
8701 }

```

\PDFForm@Submit

```

8702 \def\PDFForm@Submit{%

```

```

8703 /Subtype /Widget
8704 \ifFld@hidden /F 6 \else /F 4 \fi
8705 /T (\Hy@escapestring{\Fld@name})
8706 /FT /Btn
8707 /Ff 65540
8708 /H /P
8709 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8710 /MK <<
8711 /BC [\Fld@bordercolor]
8712 >>
8713 /A <<
8714 /S /SubmitForm
8715 /F <<
8716 /FS /URL
8717 /F (\Hy@escapestring{\Form@action})
8718 >>
8719 \ifForm@html /Flags 4 \fi
8720 >>
8721 }

```

\PDFForm@Reset

```

8722 \def\PDFForm@Reset{%
8723 /Subtype /Widget
8724 \ifFld@hidden /F 6 \else /F 4 \fi
8725 /T (\Hy@escapestring{\Fld@name})
8726 /FT /Btn
8727 /H /P
8728 /DA (/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)
8729 /Ff 65540
8730 /MK <<
8731 /BC [\Fld@bordercolor]
8732 % /CA (Clear)
8733 % /AC (Done)
8734 >>
8735 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8736 /A << /S /ResetForm >>
8737 }

8738 </pdfform>
8739 <*package>

```

47 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `reper.sty`); it needed the `reper` 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`

```

8740 \def\phantomsection{%
8741 \Hy@GlobalStepCount\Hy@linkcounter
8742 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
8743 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%

```

```
8744 }
8745 \>/package
```

47.1 Bookmarks

```
8746 \<*outlines
```

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

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

```
8747 \def\Hy@writebookmark#1#2#3#4#5{% section number, text, label, level, file
8748 \ifx\WriteBookmarks\relax%
8749 \else
8750 \ifnum#4>\Hy@bookmarksdepth\relax
8751 \else
8752 \@@writetorep{#1}{#2}{#3}{#4}{#5}%
8753 \fi
8754 \fi}
8755 \def\Hy@currentbookmarklevel{0}
8756 \def\Hy@numberline#1{#1 }
8757 \def\@@writetorep#1#2#3#4#5{%
8758 \begingroup
8759 \edef\Hy@tempa{#5}%
8760 \ifx\Hy@tempa\Hy@bookmarkstype
8761 \edef\Hy@level{#4}%
8762 \ifx\Hy@levelcheck Y%
8763 \@tempcnta\Hy@level\relax
8764 \advance\@tempcnta by -1
8765 \ifnum\Hy@currentbookmarklevel<\@tempcnta
8766 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
8767 \advance\@tempcnta by 1
8768 \Hy@Warning{%
8769 Difference (\the\@tempcnta) between bookmark levels is %
8770 greater \MessageBreak than one, level fixed%
8771 }%
8772 \@tempcnta\Hy@currentbookmarklevel
8773 \advance\@tempcnta by 1
8774 \edef\Hy@level{\the\@tempcnta}%
8775 \fi
8776 \else
8777 \global\let\Hy@levelcheck Y%
8778 \fi
8779 \global\let\Hy@currentbookmarklevel\Hy@level
8780 \@tempcnta\Hy@level\relax
8781 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
8782 \advance\@tempcnta by -1
8783 \edef\Hy@tempa{#3}%
8784 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
8785 \ifx\Hy@tempa\Hy@tempb
8786 \Hy@Warning{%
8787 The anchor of a bookmark and its parent's must not%
8788 \MessageBreak be the same. Added a new anchor%
8789 }%
8790 \phantomsection
8791 \fi
```

```

8792 \ifHy@bookmarksnumbered
8793 \let\numberline\Hy@numberline
8794 \else
8795 \let\numberline\@gobble
8796 \fi
8797 \pdfstringdef\Hy@tempa{#2}%
8798 \if@files
8799 \protected@write\@outlinefile{}\{%
8800 \protect\BOOKMARK
8801 [\Hy@level] [\@bookmarkopenstatus{\Hy@level}]{#3}%
8802 {\Hy@tempa}{\Hy@tempb}%
8803 }%
8804 \fi
8805 \fi
8806 \endgroup
8807 }

```

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

```

8808 \newcommand{\currentpdfbookmark}{\%
8809 \pdfbookmark[\Hy@currentbookmarklevel]%
8810 }
8811 \newcommand{\subpdfbookmark}{\%
8812 \@tempcnta\Hy@currentbookmarklevel
8813 \Hy@StepCount\@tempcnta
8814 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
8815 }
8816 \newcommand{\belowpdfbookmark}[2]{\%
8817 \@tempcnta\Hy@currentbookmarklevel
8818 \Hy@StepCount\@tempcnta
8819 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
8820 \advance\@tempcnta by -1
8821 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
8822 }

```

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.

```

8823 \renewcommand\pdfbookmark[3][0]{\%
8824 \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
8825 \hyper@anchorstart{#3.#1}\hyper@anchorend
8826 }
8827 \def\BOOKMARK{\@ifnextchar[{\@BOOKMARK[1][-]}
8828 \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.

```

8829 <*vtex>
8830 \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.

```

8831 \begingroup

```

```

8832 \catcode'\'=12
8833 \ifnum\Hy@VTeXversion<650 %
8834 \catcode\'=12
8835 \gdef\hv@pdf@char#1#2#3{%
8836 \char
8837 \ifcase'#1#2#3
8838 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
8839 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
8840 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
8841 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
8842 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
8843 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
8844 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
8845 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
8846 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
8847 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
8848 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
8849 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
8850 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
8851 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
8852 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
8853 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
8854 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
8855 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
8856 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
8857 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
8858 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
8859 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
8860 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
8861 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
8862 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
8863 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
8864 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
8865 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
8866 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
8867 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
8868 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
8869 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
8870 \fi
8871 }
8872 \else
8873 \gdef\hv@pdf@char{\char'}
8874 \fi
8875 \endgroup

```

\@@BOOKMARK

```

8876 \def\@@BOOKMARK[#1][#2]#3#4#5{%
8877 \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
8878 \edef\@mycount{\the\@serial@counter}%
8879 \Hy@StepCount\@serial@counter
8880 \edef\@parcount{%
8881 \expandafter\ifx\csname @count@#5\endcsname\relax
8882 0%
8883 \else
8884 \csname @count@#5\endcsname
8885 \fi
8886 }%

```



```

8887 \immediate\special{!outline #3;p=\@parcount,i=\@mycount,s=\ifx#2-c\else
8888 o\fi,t=#4}%
8889 }%

```

\ReadBookmarks

```

8890 \def\ReadBookmarks{%
8891   \begingroup
8892     \def\O{\hv@pdf@char 0}%
8893     \def\1{\hv@pdf@char 1}%
8894     \def\2{\hv@pdf@char 2}%
8895     \def\3{\hv@pdf@char 3}%
8896     \def\({}%
8897     \def\)}%
8898     \def\do##1{%
8899       \ifnum\the\catcode'##1=\active
8900         \makeother##1%
8901       \fi
8902     }%
8903     \dospecials
8904     \InputIfFileExists{\jobname.out}{\}{}%
8905   \endgroup
8906   \ifx\WriteBookmarks\relax
8907   \else
8908     \if@filesw
8909       \newwrite\@outlinefile
8910       \immediate\openout\@outlinefile=\jobname.out
8911       \ifHy@typexml
8912         \immediate\write\@outlinefile{<relaxxml>\relax}%
8913       \fi
8914     \fi
8915   \fi
8916 }

8917 </vtex>

8918 <!*vtex>
8919 \def\ReadBookmarks{%
8920   \begingroup
8921     \escapechar='\\%
8922     \let\escapechar\@gobble %
8923     \def\@@BOOKMARK [##1][##2]##3##4##5{\calc@bm@number{##5}}%
8924     \InputIfFileExists{\jobname.out}{\}{}%
8925     \ifx\WriteBookmarks\relax
8926       \global\let\WriteBookmarks\relax
8927     \fi
8928     \def\@@BOOKMARK [##1][##2]##3##4##5{%
8929       \def\Hy@temp{##4}%
8930 <*pdftex>
8931       \Hy@pstringdef\Hy@pstringName{##3}%
8932       \Hy@OutlineName{\Hy@pstringName{
8933         ##2\check@bm@number{##3}%
8934       }}%
8935       \expandafter\strip@prefix\meaning\Hy@temp
8936     }%
8937 </pdftex>
8938 <*pdfmark>
8939       \Hy@pstringdef\Hy@pstringName{##3}%
8940       \pdfmark{%

```

```

8941      pdfmark=/OUT,%
8942      Count={##2\check@bm@number{##3}},%
8943      Dest={\Hy@pstringName},%
8944      Title=\expandafter\strip@prefix\meaning\Hy@temp
8945      }%
8946 \pdfmark>
8947 \*dvipdfm>
8948   \Hy@pstringdef\Hy@pstringName{##3}%
8949   \@pdfm@mark{%
8950     outline ##1 <<
8951       /Title (\expandafter\strip@prefix\meaning\Hy@temp)
8952       /A <<
8953       /S /GoTo
8954       /D (\Hy@pstringName)
8955     >>
8956   >>
8957   }%
8958 \dvipdfm>
8959 }%
8960 {%
8961   \def\WriteBookmarks{0}%
8962   \InputIfFileExists{\jobname.out}{-}{-}%
8963 }%
8964 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
8965 \ifx\WriteBookmarks\relax
8966 \else
8967   \if@files
8968     \newwrite\@outlinefile
8969     \immediate\openout\@outlinefile=\jobname.out
8970     \ifHy@typexml
8971       \immediate\write\@outlinefile{<relaxxml>\relax}%
8972     \fi
8973   \fi
8974 \fi
8975 \endgroup
8976 }
8977 \*pdfTeX>
8978 \def\Hy@OutlineName#1#2#3#4{%
8979   \pdfoutline goto name{#2}count#3{#4}%
8980 }
8981 \pdfTeX>
8982 \def\check@bm@number#1{%
8983   \expandafter\ifx\csname B_#1\endcsname\relax
8984     0%
8985   \else
8986     \csname B_#1\endcsname
8987   \fi
8988 }
8989 \def\calc@bm@number#1{%
8990   \@tempcnta=\check@bm@number{#1}\relax
8991   \advance\@tempcnta by1
8992   \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
8993 }
8994 \!vTeX>

```

This code is added, so that option ‘pdfpagenumbers’ works with option ‘implicit’ (suggestion of Sebastian Rahtz).

```
8995 \ifHy@implicit
```

```

8996 \else
8997   \def\@begindvi{%
8998     \unvbox\@begindvibox
8999     \HyPL@EveryPage
9000     \global\let\@begindvi\HyPL@EveryPage
9001   }%
9002   \expandafter\endinput
9003 \fi

9004 </outlines>
9005 <*outlines | hypertex>

9006 \let\H@old@ssect\@ssect
9007 \def\@ssect#1#2#3#4#5{%
9008   \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
9009   \phantomsection
9010 }
9011 \let\H@old@schapter\@schapter
9012 \def\@schapter#1{%
9013   \H@old@schapter{#1}%
9014   \begingroup
9015     \let\@mkboth\@gobbletwo
9016     \Hy@GlobalStepCount\Hy@linkcounter
9017     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9018     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9019   \endgroup
9020 }

```

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:

```

9021 \@ifundefined{chapter}{%
9022   \let\Hy@org@chapter\@chapter
9023   \def\@chapter{%
9024     \def\Hy@next{%
9025       \Hy@GlobalStepCount\Hy@linkcounter
9026       \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9027       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9028     }%
9029     \ifnum\c@secnumdepth>\m@ne
9030       \@ifundefined{if@mainmatter}%
9031       \iftrue{\csname if@mainmatter\endcsname}
9032       \let\Hy@next\relax
9033     \fi
9034     \fi
9035     \Hy@next
9036     \Hy@org@chapter
9037   }%
9038 }

9039 \let\H@old@part\@part
9040 \begingroup\expandafter\expandafter\expandafter\endgroup
9041 \expandafter\ifx\csname chapter\endcsname\relax
9042   \let\Hy@secnum@part\z@
9043 \else
9044   \let\Hy@secnum@part\m@ne
9045 \fi
9046 \def\@part{%
9047   \ifnum\Hy@secnum@part>\c@secnumdepth

```

```

9048 \phantomsection
9049 \fi
9050 \H@old@part
9051 }

9052 \let\H@old@spart\@spart
9053 \def\@spart#1{%
9054 \H@old@spart{#1}%
9055 \Hy@GlobalStepCount\Hy@linkcounter
9056 \xdef\@currentHref{part*.\the\Hy@linkcounter}%
9057 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9058 }

9059 \let\H@old@sect\@sect
9060 \def\@sect#1#2#3#4#5#6[#7]#8{%
9061 \ifnum #2>\c@secnumdepth
9062 \Hy@GlobalStepCount\Hy@linkcounter
9063 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
9064 \fi
9065 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}%
9066 \ifnum #2>\c@secnumdepth
9067 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9068 \fi
9069 }

9070 </outlines | hypertex>
9071 <*outlines>

9072 \expandafter\def\csname Parent-4\endcsname{}
9073 \expandafter\def\csname Parent-3\endcsname{}
9074 \expandafter\def\csname Parent-2\endcsname{}
9075 \expandafter\def\csname Parent-1\endcsname{}
9076 \expandafter\def\csname Parent0\endcsname{}
9077 \expandafter\def\csname Parent1\endcsname{}
9078 \expandafter\def\csname Parent2\endcsname{}
9079 \expandafter\def\csname Parent3\endcsname{}
9080 \expandafter\def\csname Parent4\endcsname{}

9081 </outlines>

```

48 Compatibility with koma-script classes

```
9082 <*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.

```

9083 \def\Hy@tempa{%
9084 \def\@addchap[##1]##2{%
9085 \typeout{##2}%
9086 \if@twoside
9087 \@mkboth{##1}{}%
9088 \else
9089 \@mkboth{}{##1}%
9090 \fi
9091 \addtocontents{lof}{\protect\addvspace{10\p@}}%
9092 \addtocontents{lot}{\protect\addvspace{10\p@}}%
9093 \Hy@GlobalStepCount\Hy@linkcounter
9094 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9095 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%

```

```

9096 \if@twocolumn
9097 \topnewpage[\@makeschapterhead{##2}]%
9098 \else
9099 \@makeschapterhead{##2}%
9100 \afterheading
9101 \fi
9102 \addcontentsline{toc}{chapter}{##1}%
9103 }%
9104 }
9105 \@ifclassloaded{scrbook}{%
9106 \ifclasslater{scrbook}{2001/01/01}{%
9107 \let\Hy@tempa\@empty
9108 }{}%
9109 }{%
9110 \@ifclassloaded{scrreprt}{%
9111 \ifclasslater{scrreprt}{2001/01/01}{%
9112 \let\Hy@tempa\@empty
9113 }{}%
9114 }{%
9115 \let\Hy@tempa\@empty
9116 }%
9117 }%
9118 \Hy@tempa
9119 </outlines | hypertext>

```

49 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek oberdiek@ruf.uni-freiburg.de

49.1 PD1 encoding

```

9120 <*pd1enc>
9121 \DeclareFontEncoding{PD1}{}{}

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

9122 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
9123 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
9124 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
9125 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
9126 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed

```

Accents

```

9127 \DeclareTextAccent{\`}{PD1}{\textgrave}
9128 \DeclareTextAccent{\'}{PD1}{\textacute}
9129 \DeclareTextAccent{\`}{PD1}{\textcircumflex}
9130 \DeclareTextAccent{\~}{PD1}{\texttilde}
9131 \DeclareTextAccent{\"}{PD1}{\textdieresis}
9132 \DeclareTextAccent{\r}{PD1}{\textring}
9133 \DeclareTextAccent{\v}{PD1}{\textcaron}
9134 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
9135 \DeclareTextAccent{\c}{PD1}{\textcedilla}
9136 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textgrave}
9137 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
9138 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textcircumflex}
9139 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
9140 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textdieresis}
9141 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
9142 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}

```

```

9143 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
9144 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
9145 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}

Accent glyph names
9146 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve
9147 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
9148 \DeclareTextCommand{\textcirc{}}{PD1}{\032} % circumflex
9149 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
9150 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
9151 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
9152 \DeclareTextCommand{\textring}{PD1}{\036} % ring
9153 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde

\040: space
\041: exclam
9154 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042
9155 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign
9156 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar
9157 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent
9158 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand

\047: quotesingle
9159 \DeclareTextCommand{\textparenleft}{PD1}{\string\()} % parenleft \050
9160 \DeclareTextCommand{\textparenright}{PD1}{\string\)} % parenright \051

\052: asterisk
\053: plus
\054: comma
\055: hyphen
\056: period
\057: slash
\060... \071: 0...9
\072: colon
\073: semicolon
9161 \DeclareTextCommand{\textless}{PD1}{<} % less \074

\075: equal
9162 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076

\077: question
\100: at
\101... \132: A...Z
\133: bracketleft
9163 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash

\135: bracketright
9164 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum
9165 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
9166 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave

\141... \172: a...z
9167 \DeclareTextCompositeCommand{\.}{PD1}{i}{i} % i
9168 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
9169 \DeclareTextCommand{\textbar}{PD1}{|} % bar
9170 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
9171 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde

No glyph \177 in PDFDocEncoding.
9172 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
9173 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
9174 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl

```

```

9175 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis
9176 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
9177 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
9178 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
9179 \DeclareTextCommand{\textfractionmark}{PD1}{/} % fraction, \207
9180 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft
9181 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
9182 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
9183 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
9184 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
9185 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
9186 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright
9187 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
9188 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
9189 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
9190 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark
9191 \DeclareTextCommand{\textfi}{PD1}{fi} % fi ?? \223
9192 \DeclareTextCommand{\textfl}{PD1}{fl} % fl ?? \224
9193 \DeclareTextCommand{\L}{PD1}{L} % Lslash, \225
9194 \DeclareTextCommand{\OE}{PD1}{\226} % OE
9195 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron
9196 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230} % Ydieresis
9197 \DeclareTextCommand{\IJ}{PD1}{\230}
9198 \DeclareTextCompositeCommand{\v}{PD1}{Z}{Z} % Zcaron, \231
9199 \DeclareTextCommand{\i}{PD1}{i} % dotlessi, \232
9200 \DeclareTextCommand{\l}{PD1}{l} % lslash, \233
9201 \DeclareTextCommand{\oe}{PD1}{\234} % oe
9202 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
9203 \DeclareTextCompositeCommand{\v}{PD1}{z}{z} % zcaron, 236

```

No glyph \237 in PDFDocEncoding.

The euro \240 is inserted in version 1.3 of the pdf specification.

```

9204 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
9205 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown
9206 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
9207 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
9208 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
9209 \DeclareTextCommand{\textyen}{PD1}{\245} % yen
9210 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
9211 \DeclareTextCommand{\textsection}{PD1}{\247} % section
9212 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
9213 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
9214 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
9215 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
9216 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

```

No glyph \255 in PDFDocEncoding.

```

9217 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
9218 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
9219 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
9220 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
9221 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
9222 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
9223 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
9224 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
9225 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
9226 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
9227 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
9228 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior

```

9229 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine
 9230 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright
 9231 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter
 9232 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf
 9233 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters
 9234 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown
 9235 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300} % Agrave
 9236 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301} % Aacute
 9237 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302} % Acircumflex
 9238 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303} % Atilde
 9239 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304} % Adieresis
 9240 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring
 9241 \DeclareTextCommand{\AE}{PD1}{\306} % AE
 9242 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla
 9243 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310} % Egrave
 9244 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311} % Eacute
 9245 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312} % Ecircumflex
 9246 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313} % Edieresis
 9247 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314} % Igrave
 9248 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315} % Iacute
 9249 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316} % Icircumflex
 9250 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317} % Idieresis
 9251 \DeclareTextCommand{\DH}{PD1}{\320} % Eth
 9252 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth
 9253 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321} % Ntilde
 9254 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322} % Ograve
 9255 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323} % Oacute
 9256 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324} % Ocircumflex
 9257 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325} % Otilde
 9258 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326} % Odieresis
 9259 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply
 9260 \DeclareTextCommand{\O}{PD1}{\330} % Oslash
 9261 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331} % Ugrave
 9262 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute
 9263 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333} % Ucircumflex
 9264 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis
 9265 \DeclareTextCompositeCommand{\`}{PD1}{Y}{\335} % Yacute
 9266 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn
 9267 \DeclareTextCommand{\ss}{PD1}{\337} % germandbls
 9268 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340} % agrave
 9269 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute
 9270 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342} % acircumflex
 9271 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343} % atilde
 9272 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344} % adieresis
 9273 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring
 9274 \DeclareTextCommand{\ae}{PD1}{\346} % ae
 9275 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla
 9276 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350} % egrave
 9277 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute
 9278 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352} % ecircumflex
 9279 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353} % edieresis
 9280 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354} % igrave
 9281 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
 9282 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
 9283 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
 9284 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356} % icircumflex
 9285 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356} % icircumflex


```

9286 \DeclareTextCompositeCommand{"}{PD1}{i}{\357} % idieresis
9287 \DeclareTextCompositeCommand{"}{PD1}{\i}{\357} % idieresis
9288 \DeclareTextCommand{\dh}{PD1}{\360} % eth
9289 \DeclareTextCompositeCommand{`}{PD1}{n}{\361} % ntilde
9290 \DeclareTextCompositeCommand{'}{PD1}{o}{\362} % ograve
9291 \DeclareTextCompositeCommand{'}{PD1}{o}{\363} % oacute
9292 \DeclareTextCompositeCommand{^}{PD1}{o}{\364} % ocircumflex
9293 \DeclareTextCompositeCommand{~}{PD1}{o}{\365} % otilde
9294 \DeclareTextCompositeCommand{"}{PD1}{o}{\366} % odieresis
9295 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
9296 \DeclareTextCommand{\o}{PD1}{\370} % oslash
9297 \DeclareTextCompositeCommand{'}{PD1}{u}{\371} % ugrave
9298 \DeclareTextCompositeCommand{'}{PD1}{u}{\372} % uacute
9299 \DeclareTextCompositeCommand{^}{PD1}{u}{\373} % ucircumflex
9300 \DeclareTextCompositeCommand{"}{PD1}{u}{\374} % udieresis
9301 \DeclareTextCompositeCommand{'}{PD1}{y}{\375} % yacute
9302 \DeclareTextCommand{\th}{PD1}{\376} % thorn
9303 \DeclareTextCompositeCommand{"}{PD1}{y}{\377} % ydieresis
9304 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

9305 \DeclareTextCommand{\SS}{PD1}{SS}
9306 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

9307 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
9308 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
9309 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
9310 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
9311 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
9312 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
9313 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
9314 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

9315 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
9316 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
9317 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
9318 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
9319 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
9320 \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;

```

9321 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
9322 \DeclareTextCompositeCommand{'}{PD1}{c}{c} % cacute
9323 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
9324 \DeclareTextCompositeCommand{'}{PD1}{n}{n} % nacute
9325 \DeclareTextCompositeCommand{'}{PD1}{s}{s} % sacute
9326 \DeclareTextCompositeCommand{'}{PD1}{z}{z} % zacute
9327 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot

9328 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
9329 \DeclareTextCompositeCommand{'}{PD1}{C}{C} % Cacute
9330 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
9331 \DeclareTextCompositeCommand{'}{PD1}{N}{N} % Nacute
9332 \DeclareTextCompositeCommand{'}{PD1}{S}{S} % Sacute
9333 \DeclareTextCompositeCommand{'}{PD1}{Z}{Z} % Zacute
9334 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot

```

```

9335 \end{pd1enc}

```

49.2 PU encoding

```
9336 (*puenc)
9337 \DeclareFontEncoding{PU}{-}{-}
```

49.2.1 Basic Latin

Special white space escape characters not for use in bookmarks but for other PDF strings.

```
9338 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
9339 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
9340 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
9341 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
9342 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed
```

Accents

```
9343 \DeclareTextAccent{\`}{PU}{\textgrave}
9344 \DeclareTextAccent{\'}{PU}{\textacute}
9345 \DeclareTextAccent{\~}{PU}{\textcircumflex}
9346 \DeclareTextAccent{\~}{PU}{\texttilde}
9347 \DeclareTextAccent{\"}{PU}{\textdieresis}
9348 \DeclareTextAccent{\r}{PU}{\textring}
9349 \DeclareTextAccent{\v}{PU}{\textcaron}
9350 \DeclareTextAccent{\.}{PU}{\textdotaccent}
9351 \DeclareTextAccent{\c}{PU}{\textcedilla}
9352 \DeclareTextAccent{\U}{PU}{\textbreve}
9353 \DeclareTextAccent{\C}{PU}{\textdoublegrave}
9354 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textgrave}
9355 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
9356 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textcircumflex}
9357 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
9358 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textdieresis}
9359 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
9360 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
9361 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
9362 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
9363 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
9364 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}
9365 \DeclareTextCommand{=}{PU}[1]{\TextSymbolUnavailable{=#1}}#1
9366 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
9367 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
9368 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}
```

Accent glyph names

```
9369 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
9370 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
9371 \DeclareTextCommand{\textcircumflex}{PU}{\80\032} % circumflex
9372 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
9373 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
9374 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
9375 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
9376 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
9377 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave
```

\040: space

\041: exclam

```
9378 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
9379 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
9380 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
9381 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
9382 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand
```

\047: quotesingle
 9383 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft
 9384 \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
 9385 \DeclareTextCommand{\textless}{PU}{<} % less \80\074
 \075: equal
 9386 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076
 \077: question
 \100: at
 \101... \132: A...Z
 \133: bracketleft
 9387 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash
 \135: bracketright
 9388 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum
 9389 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore
 9390 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave
 \141... \172: a...z
 9391 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % i
 9392 \DeclareTextCommand{\j}{PU}{j} % jdotless
 9393 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft
 9394 \DeclareTextCommand{\textbar}{PU}{|} % bar
 9395 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright
 9396 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde
 \141... \172: a...z
 9391 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % i
 9392 \DeclareTextCommand{\j}{PU}{j} % jdotless
 9393 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft
 9394 \DeclareTextCommand{\textbar}{PU}{|} % bar
 9395 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright
 9396 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde
 No glyph \177 in PDFDocEncoding.

49.2.2 Latin-1 Supplement

9397 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212
 9398 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223
 9399 \DeclareTextCommand{\textfl}{PU}{fl} % fl ?? \80\224

There are two positions for the glyphs from \80\225 until \80\236. See the test files testbmoe., testbml, testbmse, testbmzc, and testbmyi for details. Problematic are all positions, but especially \OE, \oe, and \i.

9400 %\DeclareTextCommand{\OE}{PU}{OE} % OE
 9401 %\DeclareTextCommand{\oe}{PU}{oe} % oe

The euro \240 is inserted in version 1.3 of the pdf specification.

9402 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown
 9403 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent
 9404 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling
 9405 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency
 9406 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen
 9407 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar
 9408 \DeclareTextCommand{\textsection}{PU}{\80\247} % section
 9409 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis

9410 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright
 9411 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine
 9412 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft
 9413 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot

No glyph \255 in PDFDocEncoding.

9414 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered
 9415 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron
 9416 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree
 9417 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus
 9418 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior
 9419 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior
 9420 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute
 9421 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu
 9422 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph
 9423 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered
 9424 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla
 9425 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior
 9426 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine
 9427 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright
 9428 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter
 9429 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf
 9430 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters
 9431 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown
 9432 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300} % Agrave
 9433 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\301} % Aacute
 9434 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\302} % Acircumflex
 9435 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\303} % Atilde
 9436 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\304} % Adieresis
 9437 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring
 9438 \DeclareTextCommand{\AE}{PU}{\80\306} % AE
 9439 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla
 9440 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310} % Egrave
 9441 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\311} % Eacute
 9442 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\312} % Ecircumflex
 9443 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\313} % Edieresis
 9444 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314} % Igrave
 9445 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\315} % Iacute
 9446 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\316} % Icircumflex
 9447 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\317} % Idieresis
 9448 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth
 9449 \DeclareTextCompositeCommand{\`}{PU}{N}{\80\321} % Ntilde
 9450 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322} % Ograve
 9451 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\323} % Oacute
 9452 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\324} % Ocircumflex
 9453 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\325} % Otilde
 9454 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\326} % Odieresis
 9455 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply
 9456 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash
 9457 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331} % Ugrave
 9458 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\332} % Uacute
 9459 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\333} % Ucircumflex
 9460 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\334} % Udieresis
 9461 \DeclareTextCompositeCommand{\`}{PU}{Y}{\80\335} % Yacute
 9462 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn
 9463 \DeclareTextCommand{\ss}{PU}{\80\337} % germandbls
 9464 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340} % agrave
 9465 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\341} % aacute

```

9466 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\342} % acircumflex
9467 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343} % atilde
9468 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344} % adieresis
9469 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
9470 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
9471 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
9472 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350} % egrave
9473 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351} % eacute
9474 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352} % ecircumflex
9475 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353} % edieresis
9476 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354} % igrave
9477 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave
9478 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
9479 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
9480 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
9481 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356} % icircumflex
9482 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
9483 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
9484 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
9485 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361} % ntilde
9486 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362} % ograve
9487 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363} % oacute
9488 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364} % ocircumflex
9489 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365} % otilde
9490 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366} % odieresis
9491 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
9492 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
9493 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371} % ugrave
9494 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372} % uacute
9495 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373} % ucircumflex
9496 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374} % udieresis
9497 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375} % yacute
9498 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
9499 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377} % ydieresis
9500 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```
9501 \DeclareTextCommand{\SS}{PU}{SS}
```

Aliases (german.sty)

```

9502 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
9503 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
9504 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
9505 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
9506 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
9507 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
9508 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
9509 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

9510 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
9511 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
9512 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
9513 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
9514 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

49.2.3 Latin Extended-A

```

9515 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% Amacron
9516 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% amacron

```

```

9517 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% Abreve
9518 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% abreve
9519 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% Aogonek
9520 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% aogonek
9521 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% Cacute
9522 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% cacute
9523 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% Ccircumflex
9524 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% ccircumflex
9525 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% Cdot
9526 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% cdot
9527 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% Ccaron
9528 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% ccaron
9529 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% Dcaron
9530 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% dcaron
9531 \DeclareTextCommand{\DJ}{PU}{\81\020}% Dslash
9532 \DeclareTextCommand{\dj}{PU}{\81\021}% dslash
9533 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% Emacron
9534 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% emacron
9535 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% Ebreve
9536 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% ebreve
9537 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% Edot
9538 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% edot
9539 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% Eogonek
9540 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% eogonek
9541 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% Ecaron
9542 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% ecaron
9543 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% Gcircumflex
9544 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% gcircumflex
9545 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% Gbreve
9546 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% gbreve
9547 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% Gdot
9548 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% gdot
9549 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% Gcedilla
9550 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% gcedilla
9551 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% Hcircumflex
9552 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% hcircumflex
9553 \DeclareTextCommand{\textHslash}{PU}{\81\046}% Hslash
9554 \DeclareTextCommand{\texthslash}{PU}{\81\047}% hslash
9555 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% Itilde
9556 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% itilde
9557 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% itilde
9558 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% Imacron
9559 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% imacron
9560 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% imacron
9561 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% Ibreve
9562 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% ibreve
9563 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% ibreve
9564 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% Iogonek
9565 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% iogonek
9566 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% iogonek
9567 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% Idot
9568 \DeclareTextCommand{\i}{PU}{\81\061}% idotless
9569 % IJlig
9570 % ijlig
9571 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% Jcircumflex
9572 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% jcircumflex
9573 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% jcircumflex

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9574 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
9575 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
9576 % kgreen
9577 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
9578 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
9579 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
9580 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
9581 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
9582 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
9583 % L middle dot
9584 % l middle dot
9585 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
9586 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
9587 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute
9588 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
9589 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
9590 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
9591 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
9592 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
9593 % n apostrophe
9594 \DeclareTextCommand{\NG}{PU}{\81\112} % NG
9595 \DeclareTextCommand{\ng}{PU}{\81\113} % ng
9596 \DeclareTextCompositeCommand{=}{PU}{O}{\81\114} % Omacron
9597 \DeclareTextCompositeCommand{=}{PU}{o}{\81\115} % omacron
9598 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve
9599 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
9600 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
9601 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
9602 \DeclareTextCommand{\OE}{PU}{\81\122} % OE
9603 \DeclareTextCommand{\oe}{PU}{\81\123} % oe
9604 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
9605 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
9606 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
9607 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
9608 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
9609 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
9610 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
9611 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
9612 \DeclareTextCompositeCommand{\`}{PU}{S}{\81\134} % Scircumflex
9613 \DeclareTextCompositeCommand{\`}{PU}{s}{\81\135} % scircumflex
9614 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
9615 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
9616 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
9617 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
9618 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
9619 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
9620 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
9621 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
9622 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
9623 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
9624 \DeclareTextCompositeCommand{\`}{PU}{U}{\81\150} % Utilde
9625 \DeclareTextCompositeCommand{\`}{PU}{u}{\81\151} % utilde
9626 \DeclareTextCompositeCommand{=}{PU}{U}{\81\152} % Umacron
9627 \DeclareTextCompositeCommand{=}{PU}{u}{\81\153} % umacron
9628 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
9629 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
9630 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring

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9631 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
9632 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
9633 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute
9634 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Uogonek
9635 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % uogonek
9636 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164} % Wcircumflex
9637 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165} % wcircumflex
9638 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166} % Ycircumflex
9639 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167} % ycircumflex
9640 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170} % Ydieresis
9641 \DeclareTextCommand{\IJ}{PU}{\81\170}
9642 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
9643 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
9644 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
9645 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
9646 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
9647 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

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49.2.4 Latin Extended-B

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9648 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
9649 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
9650 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
9651 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
9652 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
9653 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
9654 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
9655 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
9656 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
9657 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
9658 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
9659 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
9660 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
9661 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
9662 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
9663 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
9664 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Oogonek
9665 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

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49.2.5 Greek

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9666 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
9667 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
9668 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}
9669 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
9670 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
9671 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
9672 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
9673 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
9674 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}
9675 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
9676 \DeclareTextCommand{\textBeta}{PU}{\83\222}
9677 \DeclareTextCommand{\textGamma}{PU}{\83\223}
9678 \DeclareTextCommand{\textDelta}{PU}{\83\224}
9679 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
9680 \DeclareTextCommand{\textZeta}{PU}{\83\226}
9681 \DeclareTextCommand{\textEta}{PU}{\83\227}
9682 \DeclareTextCommand{\textTheta}{PU}{\83\230}
9683 \DeclareTextCommand{\textIota}{PU}{\83\231}

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9684 \DeclareTextCommand{\textKappa}{PU}{\83\232}
 9685 \DeclareTextCommand{\textLambda}{PU}{\83\233}
 9686 \DeclareTextCommand{\textMu}{PU}{\83\234}
 9687 \DeclareTextCommand{\textNu}{PU}{\83\235}
 9688 \DeclareTextCommand{\textXi}{PU}{\83\236}
 9689 \DeclareTextCommand{\textOmicron}{PU}{\83\237}
 9690 \DeclareTextCommand{\textPi}{PU}{\83\240}
 9691 \DeclareTextCommand{\textRho}{PU}{\83\241}
 9692 \DeclareTextCommand{\textSigma}{PU}{\83\243}
 9693 \DeclareTextCommand{\textTau}{PU}{\83\244}
 9694 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}
 9695 \DeclareTextCommand{\textPhi}{PU}{\83\246}
 9696 \DeclareTextCommand{\textChi}{PU}{\83\247}
 9697 \DeclareTextCommand{\textPsi}{PU}{\83\250}
 9698 \DeclareTextCommand{\textOmega}{PU}{\83\251}
 9699 \DeclareTextCompositeCommand{\"}{PU}{\textIota}{\83\252}
 9700 \DeclareTextCompositeCommand{\"}{PU}{\textUpsilon}{\83\253}
 9701 \DeclareTextCompositeCommand{\'}{PU}{\textalpha}{\83\254}
 9702 \DeclareTextCompositeCommand{\'}{PU}{\textepsilon}{\83\255}
 9703 \DeclareTextCompositeCommand{\'}{PU}{\texteta}{\83\256}
 9704 \DeclareTextCompositeCommand{\'}{PU}{\textiota}{\83\257}
 9705 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}
 9706 \DeclareTextCompositeCommand{\"}{PU}{\textupsilonacute}{\83\260}
 9707 \DeclareTextCommand{\textalpha}{PU}{\83\261}
 9708 \DeclareTextCommand{\textbeta}{PU}{\83\262}
 9709 \DeclareTextCommand{\textgamma}{PU}{\83\263}
 9710 \DeclareTextCommand{\textdelta}{PU}{\83\264}
 9711 \DeclareTextCommand{\textepsilon}{PU}{\83\265}
 9712 \DeclareTextCommand{\textzeta}{PU}{\83\266}
 9713 \DeclareTextCommand{\texteta}{PU}{\83\267}
 9714 \DeclareTextCommand{\texttheta}{PU}{\83\270}
 9715 \DeclareTextCommand{\textiota}{PU}{\83\271}
 9716 \DeclareTextCommand{\textkappa}{PU}{\83\272}
 9717 \DeclareTextCommand{\textlambda}{PU}{\83\273}
 9718 \DeclareTextCommand{\textmu}{PU}{\83\274}
 9719 \DeclareTextCommand{\textnu}{PU}{\83\275}
 9720 \DeclareTextCommand{\textxi}{PU}{\83\276}
 9721 \DeclareTextCommand{\textomicron}{PU}{\83\277}
 9722 \DeclareTextCommand{\textpi}{PU}{\83\300}
 9723 \DeclareTextCommand{\textrho}{PU}{\83\301}
 9724 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
 9725 \DeclareTextCommand{\textsigma}{PU}{\83\303}
 9726 \DeclareTextCommand{\texttau}{PU}{\83\304}
 9727 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
 9728 \DeclareTextCommand{\textphi}{PU}{\83\306}
 9729 \DeclareTextCommand{\textchi}{PU}{\83\307}
 9730 \DeclareTextCommand{\textpsi}{PU}{\83\310}
 9731 \DeclareTextCommand{\textomega}{PU}{\83\311}
 9732 \DeclareTextCompositeCommand{\"}{PU}{\textiota}{\83\312}
 9733 \DeclareTextCompositeCommand{\"}{PU}{\textupsilon}{\83\313}
 9734 \DeclareTextCompositeCommand{\'}{PU}{\textomicron}{\83\314}
 9735 \DeclareTextCompositeCommand{\'}{PU}{\textupsilon}{\83\315}
 9736 \DeclareTextCompositeCommand{\'}{PU}{\textomega}{\83\316}
 9737 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}
 9738 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}
 9739 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}
 9740 %\DeclareTextCommand{\textdigamma}{PU}{\83\334}

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9741 \DeclareTextCommand{\textvarkappa}{PU}{\83\360}
9742 \DeclareTextCommand{\textvarrho}{PU}{\83\361}

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49.2.6 Cyrillic

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names.

```

9743 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
9744 \DeclareTextCompositeCommand{\}{PU}{\CYRE}{\84\001}%
9745 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
9746 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% GJE
9747 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
9748 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
9749 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
9750 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI
9751 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
9752 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
9753 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE
9754 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
9755 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% KJE
9756 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
9757 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
9758 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A
9759 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
9760 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
9761 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
9762 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
9763 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
9764 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
9765 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
9766 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I
9767 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
9768 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}%
9769 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
9770 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
9771 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM
9772 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN
9773 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O
9774 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE
9775 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER
9776 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES
9777 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE
9778 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U
9779 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF
9780 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA
9781 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE
9782 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE
9783 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA
9784 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA
9785 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN
9786 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU
9787 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN
9788 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E
9789 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU
9790 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA
9791 \DeclareTextCommand{\cyra}{PU}{\84\060}% a
9792 \DeclareTextCommand{\cyrb}{PU}{\84\061}% be
9793 \DeclareTextCommand{\cyrv}{PU}{\84\062}% ve

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9794 \DeclareTextCommand{\cyrg}{PU}{\84\063}% ghe
 9795 \DeclareTextCommand{\cyrd}{PU}{\84\064}% de
 9796 \DeclareTextCommand{\cyre}{PU}{\84\065}% ie
 9797 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% zhe
 9798 \DeclareTextCommand{\cyrz}{PU}{\84\067}% ze
 9799 \DeclareTextCommand{\cyri}{PU}{\84\070}% i
 9800 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i
 9801 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}%
 9802 \DeclareTextCommand{\cyrk}{PU}{\84\072}% ka
 9803 \DeclareTextCommand{\cyrk}{PU}{\84\073}% el
 9804 \DeclareTextCommand{\cyrml}{PU}{\84\074}% em
 9805 \DeclareTextCommand{\cyrn}{PU}{\84\075}% en
 9806 \DeclareTextCommand{\cyro}{PU}{\84\076}% o
 9807 \DeclareTextCommand{\cyrp}{PU}{\84\077}% pe
 9808 \DeclareTextCommand{\cyrr}{PU}{\84\100}% er
 9809 \DeclareTextCommand{\cyrsl}{PU}{\84\101}% es
 9810 \DeclareTextCommand{\cyrst}{PU}{\84\102}% te
 9811 \DeclareTextCommand{\cyrul}{PU}{\84\103}% u
 9812 \DeclareTextCommand{\cyrfl}{PU}{\84\104}% ef
 9813 \DeclareTextCommand{\cyrh}{PU}{\84\105}% ha
 9814 \DeclareTextCommand{\cyrcl}{PU}{\84\106}% tse
 9815 \DeclareTextCommand{\cyrch}{PU}{\84\107}% che
 9816 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% sha
 9817 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% shcha
 9818 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% hard sign
 9819 \DeclareTextCommand{\cyrery}{PU}{\84\113}% yeru
 9820 \DeclareTextCommand{\cyrsltsn}{PU}{\84\114}% soft sign
 9821 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% e
 9822 \DeclareTextCommand{\cyrul}{PU}{\84\116}% yu
 9823 \DeclareTextCommand{\cyrul}{PU}{\84\117}% ya
 9824 \DeclareTextCommand{\cyrul}{PU}{\84\121}% io
 9825 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\121}%
 9826 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% dje
 9827 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% gje
 9828 \DeclareTextCommand{\cyrie}{PU}{\84\124}% ukrainian ie
 9829 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% dze
 9830 \DeclareTextCommand{\cyril}{PU}{\84\126}% byelorussian-ukrainian i
 9831 \DeclareTextCommand{\cyril}{PU}{\84\127}% yi
 9832 \DeclareTextCommand{\cyrje}{PU}{\84\130}% je
 9833 \DeclareTextCommand{\cyrle}{PU}{\84\131}% lje
 9834 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% nje
 9835 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% tshe
 9836 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% kje
 9837 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% short u
 9838 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% dzhe
 9839 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA
 9840 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega
 9841 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT
 9842 \DeclareTextCommand{\cyryat}{PU}{\84\143}% yat
 9843 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E
 9844 \DeclareTextCommand{\cyriote}{PU}{\84\145}% iotified e
 9845 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS
 9846 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% little yus
 9847 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS
 9848 \DeclareTextCommand{\cyrliotlyus}{PU}{\84\151}% iotified little yus
 9849 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS
 9850 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% big yus

9851 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS
 9852 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% iotified big yus
 9853 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI
 9854 \DeclareTextCommand{\cyrkxi}{PU}{\84\157}% ksi
 9855 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI
 9856 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi
 9857 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA
 9858 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita
 9859 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA
 9860 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa
 9861 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave
 9862 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave
 9863 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK
 9864 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk
 9865 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA
 9866 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega
 9867 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo
 9868 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo
 9869 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT
 9870 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot
 9871 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA
 9872 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa
 9873 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign
 9874 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO
 9875 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION
 9876 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA
 9877 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA
 9878 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn
 9879 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn
 9880 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke
 9881 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke
 9882 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook
 9883 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook
 9884 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender
 9885 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender
 9886 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender
 9887 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender
 9888 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender
 9889 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% ka descender
 9890 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke
 9891 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke
 9892 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke
 9893 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% ka stroke
 9894 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA
 9895 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka
 9896 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender
 9897 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender
 9898 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE
 9899 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe
 9900 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook
 9901 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook
 9902 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA
 9903 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha
 9904 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender
 9905 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% es descender
 9906 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender
 9907 \DeclareTextCommand{\cyrtddsc}{PU}{\84\255}% te descender

9908 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U
 9909 \DeclareTextCommand{\cyry}{PU}{\84\257}% straight u
 9910 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke
 9911 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% straight u stroke
 9912 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender
 9913 \DeclareTextCommand{\cyrhds}{PU}{\84\263}% ha descender
 9914 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE
 9915 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% ligature te tse
 9916 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender
 9917 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender
 9918 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke
 9919 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% che vertical stroke
 9920 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA
 9921 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha
 9922 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhasian CHE
 9923 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhasian che
 9924 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% abkhasian CHE descender
 9925 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhasian che descender
 9926 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% palochka
 9927 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve
 9928 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% zhe breve
 9929 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook
 9930 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% ka hook
 9931 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook
 9932 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% en hook
 9933 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE
 9934 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che
 9935 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve
 9936 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve
 9937 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% A diaeresis
 9938 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% a diaeresis
 9939 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE
 9940 \DeclareTextCommand{\cyrae}{PU}{\84\325}% ligature a ie
 9941 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve
 9942 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve
 9943 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA
 9944 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% schwa
 9945 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis
 9946 \DeclareTextCompositeCommand{"}{PU}{\cyrswa}{\84\333}% schwa diaeresis
 9947 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% ZHE diaeresis
 9948 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% zhe diaeresis
 9949 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% ZE diaeresis
 9950 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% ze diaeresis
 9951 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhasian DZE
 9952 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhasian dze
 9953 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% I macron
 9954 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% i macron
 9955 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% I diaeresis
 9956 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% i diaeresis
 9957 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% O diaeresis
 9958 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% o diaeresis
 9959 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O
 9960 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% barred o
 9961 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% barred O diaeresis
 9962 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% barred o diaeresis
 9963 \DeclareTextCompositeCommand{\=}{PU}{\CYRU}{\84\356}% U macron
 9964 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% u macron

```

9965 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U diaeresis
9966 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% u diaeresis
9967 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U double acute
9968 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% u double acute
9969 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% CHE diaeresis
9970 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% che diaeresis
9971 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% YERU diaeresis
9972 \DeclareTextCompositeCommand{"}{PU}{\cyrery}{\84\371}% yeru diaeresis

```

49.2.7 Symbols

```

9973 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash
9974 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash
9975 \DeclareTextCommand{\textquotelleft}{PU}{\9040\030} % quoteleft
9976 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright
9977 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase
9978 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
9979 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
9980 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
9981 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
9982 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
9983 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet
9984 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
9985 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
9986 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
9987 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
9988 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
9989 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
9990 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
9991 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}
9992 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
9993 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
9994 %\DeclareTextCommand{\cyrlangle}{PU}{\9043\051}
9995 %\DeclareTextCommand{\cyrangle}{PU}{\9043\052}

9996 </puenc>

```

49.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

9997 < *puvnenc >

9998 \DeclareTextCommand{\abreve}{PU}{\81\003}
9999 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
10000 \DeclareTextCommand{\dj}{PU}{\81\021}
10001 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
10002 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
10003 \DeclareTextCommand{\ohorn}{PU}{\81\241}
10004 \DeclareTextCommand{\uhorn}{PU}{\81\260}
10005 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
10006 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
10007 \DeclareTextCommand{\DJ}{PU}{\81\020}
10008 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
10009 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
10010 \DeclareTextCommand{\OHORN}{PU}{\81\240}
10011 \DeclareTextCommand{\UHORN}{PU}{\81\257}

10012 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
10013 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}

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10014 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
10015 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
10016 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
10017 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
10018 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
10019 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
10020 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
10021 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
10022 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
10023 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
10024 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
10025 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}
10026 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}
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10035 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}
10036 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}
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10059 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}
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10071 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}
10072 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}
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10082 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}
10083 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}
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10125 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
10126 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
10127 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}


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10128 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
10129 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
10130 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
10131 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}

10132 </puvnenc>

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50 End of file hycheck.tex

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10133 < *check>
10134 \typeout{}
10135 \begin{document}
10136 \end{document}
10137 </check>

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