

Hypertext marks in \LaTeX

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1 Documentation overview for `hyperref`

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

Manual The user documentation is also available as HTML.

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

ChangeLog This file records the version history.

Options This file provides a short option summary.

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

Bookmark talk, paper The paper version of the talk.

Source code documentation:

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

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

`nameref.dtx` “Section name references in \LaTeX ”

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3 File hycheck.tex

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

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

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

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

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

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

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

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

`\HyC@checkPackage`

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

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

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

`\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@unicodetrue
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).

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

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

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

Example (TeX):

```

\usepackage{calc}
\usepackage[...]{hyperref}
\hypersetup{
  pdfstartview={FitBH \hypercalcbp{\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{La\TeX}%
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. Whereever “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{!'}\texttexclamdown#1%
576 %     \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

577     \let\HyPsd@empty\@empty

```

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

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

```

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

```

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

With Unicode the spaces are replaced by their octal sequences.

```

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

```


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

```
593 \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 $\text{\LaTeX} 2_{\epsilon}$ versions [1998/06/01] and [1998/12/01]. I expect that versions below [1995/12/01] don't work.

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

```

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

```

```

\csname ?\string#1\endcsname
\fi
\csname\cf@encoding\string#1%
\expandafter\endcsname
\else
\noexpand#1%
\fi}
\gdef\TextSymbolUnavailable#1{%
\@latex@error{%
Command \protect#1 unavailable in encoding \cf@encoding%
}\@eha}
\def\@inmathwarn#1{%
\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 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 10eeefff (C). The result is \9abc\def (with a, ..., f as octal numbers). The conversion equations:

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

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

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

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

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

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

$$(12)$$

```

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 11001eeeffggghh, 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 }

```

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

```

\Hy@RestoreLastskip
1428 \def\Hy@SaveLastskip{%
1429   \let\Hy@RestoreLastskip\relax
1430   \ifvmode
1431     \ifdim\lastskip=\z@
1432       \let\Hy@RestoreLastskip\nobreak

```

```

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}{dvipdfmx}[true]{%
1624   \def\Hy@driver{hdvipdfm}%
1625   \def\XR@ext{pdf}%

```

```

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

```

```

1683     \endinput
1684     \fi
1685     \fi
1686 }
1687 \define@key{Hyp}{dviwindo}[true]{%
1688   \def\Hy@driver{hdvwind}%
1689   \setkeys{Hyp}{colorlinks}%
1690   \PassOptionsToPackage{dviwindo}{color}%
1691 }
1692 \define@key{Hyp}{dvipsone}[true]{%
1693   \def\XR@ext{pdf}%
1694   \def\Hy@driver{hdvipson}%
1695   \def\Hy@raisedlink{}%
1696 }
1697 \define@key{Hyp}{textures}[true]{%
1698   \def\XR@ext{pdf}%
1699   \def\Hy@driver{htexture}%
1700 }
1701 \define@key{Hyp}{latex2html}[true]{%
1702   \AtBeginDocument{\@@latextohtmlX}%
1703 }

```

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

```

1704 \define@key{Hyp}{ps2pdf}[true]{%
1705   \def\Hy@driver{hdvips}%
1706   \def\Hy@raisedlink{}%
1707   \providecommand\@pdfborder{0 0 1}%
1708 }

```

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.

```

1709 \define@key{Hyp}{hyperfigures}[true]{%
1710   \Hy@boolkey[hyperfigures]{figures}{#1}%
1711 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

1712 \define@key{Hyp}{hyperfootnotes}[true]{%
1713   \Hy@boolkey[hyperfootnotes]{#1}%
1714 }

```

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

```

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

```

```

1730 \ifx\Hy@tempa\back@page
1731   \PassOptionsToPackage{hyperpageref}{backref}%
1732   \Hy@backreftrue
1733 \else
1734   \ifx\Hy@tempa\back@section
1735     \PassOptionsToPackage{hyperref}{backref}%
1736     \Hy@backreftrue
1737   \else
1738     \ifx\Hy@tempa\back@none
1739       \Hy@backreffalse
1740     \else
1741       \Hy@WarnOptionValue{#1}{backref}{%
1742         'section', 'slide', 'page', 'none', \MessageBreak
1743         or 'false'}%
1744     \fi
1745   \fi
1746 \fi
1747 }
1748 \define@key{Hyp}{pagebackref}[true]{%
1749   \lowercase{\def\Hy@tempa{#1}}%
1750   \ifx\Hy@tempa\@empty
1751     \let\Hy@tempa\Hy@true
1752   \fi
1753   \ifx\Hy@tempa\Hy@true
1754     \PassOptionsToPackage{hyperpageref}{backref}%
1755     \Hy@backreftrue
1756   \else
1757     \ifx\Hy@tempa\Hy@false
1758       \Hy@backreffalse
1759     \else
1760       \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
1761     \fi
1762   \fi
1763 }

```

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

```

1764 \define@key{Hyp}{hyperindex}[true]{%
1765   \Hy@boolkey{hyperindex}{#1}%
1766 }

```

Configuration of encap char.

```

1767 \define@key{Hyp}{encap}[\\]{%
1768   \def\HyInd@EncapChar{#1}%
1769 }

```

12 Language options

The `\autoref` feature depends on the language.

```

1770 \def\HyLang@english{%
1771   \def\equationautorefname{Equation}%
1772   \def\footnoteautorefname{footnote}%
1773   \def\itemautorefname{item}%
1774   \def\figureautorefname{Figure}%
1775   \def\tableautorefname{Table}%
1776   \def\partautorefname{Part}%
1777   \def\appendixautorefname{Appendix}%

```

```

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

```

```

1835 \def\FancyVerbLineautorefname{L\'ine}%
1836 \def\theoremautorefname{Teorema}%
1837 }
1838 \def\HyLang@afrikaans{%
1839 \def\equationautorefname{Vergelyking}%
1840 \def\footnoteautorefname{Voetnota}%
1841 \def\itemautorefname{Item}%
1842 \def\figureautorefname{Figuur}%
1843 \def\tableautorefname{Tabel}%
1844 \def\partautorefname{Deel}%
1845 \def\appendixautorefname{Bylae}%
1846 \def\chapterautorefname{Hoofstuk}%
1847 \def\sectionautorefname{Afdeling}%
1848 \def\subsectionautorefname{Subafdeling}%
1849 \def\subsubsectionautorefname{Subsubafdeling}%
1850 \def\paragraphautorefname{Paragraaf}%
1851 \def\subparagraphautorefname{Subparagraaf}%
1852 \def\FancyVerbLineautorefname{Lyn}%
1853 \def\theoremautorefname{Teorema}%
1854 }
1855 \def\HyLang@french{%
1856 \def\equationautorefname{\'Equation}%
1857 \def\footnoteautorefname{note}%
1858 \def\itemautorefname{item}%
1859 \def\figureautorefname{Figure}%
1860 \def\tableautorefname{Tableau}%
1861 \def\partautorefname{Partie}%
1862 \def\appendixautorefname{Appendice}%
1863 \def\chapterautorefname{chapitre}%
1864 \def\sectionautorefname{section}%
1865 \def\subsectionautorefname{sous-section}%
1866 \def\subsubsectionautorefname{sous-sous-section}%
1867 \def\paragraphautorefname{paragraphe}%
1868 \def\subparagraphautorefname{sous-paragraphe}%
1869 \def\FancyVerbLineautorefname{ligne}%
1870 \def\theoremautorefname{Th\'eor\'eme}%
1871 }
1872 \def\HyLang@vietnamese{%
1873 \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr\'inh}%
1874 \def\footnoteautorefname{Ch\'u th\'ich}%
1875 \def\itemautorefname{m\d{u}c}%
1876 \def\figureautorefname{H\'inh}%
1877 \def\tableautorefname{B\h{a}ng}%
1878 \def\partautorefname{Ph\'acircumflex{n}%
1879 \def\appendixautorefname{Ph\d{u} l\d{u}c}%
1880 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
1881 \def\sectionautorefname{m\d{u}c}%
1882 \def\subsectionautorefname{m\d{u}c}%
1883 \def\subsubsectionautorefname{m\d{u}c}%
1884 \def\paragraphautorefname{\dj{}o\d{a}n}%
1885 \def\subparagraphautorefname{\dj{}o\d{a}n}%
1886 \def\FancyVerbLineautorefname{d\'ong}%
1887 \def\theoremautorefname{\DJ{}\d{i}nh l\'y}%
1888 }

```

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

```

1889 \def\HyLang@addto#1#2{%

```



```

1890 #2%
1891 \@temptokena{#2}%
1892 \ifx#1\relax
1893   \let#1\@empty
1894 \fi
1895 \ifx#1\undefined
1896   \edef#1{\the\@temptokena}%
1897 \else
1898   \toks@\expandafter{#1}%
1899   \edef#1{\the\toks@\the\@temptokena}%
1900 \fi
1901 \@temptokena{}\toks@\@temptokena
1902 }

1903 \def\HyLang@DeclareLang#1#2{%
1904   \begingroup
1905     \edef\x##1##2{%
1906       \noexpand\ifx##2\relax
1907         \errmessage{No definitions for language #2' found!}%
1908       \noexpand\fi
1909     \endgroup
1910     \noexpand\define@key{Hyp}{#1}[]{%
1911       \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
1912     }%
1913   }%
1914   \expandafter\x\csname extras#1\expandafter\endcsname
1915     \csname HyLang@#2\endcsname
1916 }

1917 \HyLang@DeclareLang{english}{english}
1918 \HyLang@DeclareLang{UKenglish}{english}
1919 \HyLang@DeclareLang{british}{english}
1920 \HyLang@DeclareLang{USenglish}{english}
1921 \HyLang@DeclareLang{american}{english}
1922 \HyLang@DeclareLang{german}{german}
1923 \HyLang@DeclareLang{austrian}{german}
1924 \HyLang@DeclareLang{ngerman}{german}
1925 \HyLang@DeclareLang{naustrian}{german}
1926 \HyLang@DeclareLang{brazil}{portuges}
1927 \HyLang@DeclareLang{brazilian}{portuges}
1928 \HyLang@DeclareLang{portuguese}{portuges}
1929 \HyLang@DeclareLang{spanish}{spanish}
1930 \HyLang@DeclareLang{afrikaans}{afrikaans}
1931 \HyLang@DeclareLang{french}{french}
1932 \HyLang@DeclareLang{frenchb}{french}
1933 \HyLang@DeclareLang{français}{french}
1934 \HyLang@DeclareLang{acadian}{french}
1935 \HyLang@DeclareLang{canadien}{french}

```

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

```

1936 \define@key{Hyp}{vietnamese}[]{%
1937   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
1938   \AtEndOfPackage{%
1939     \ifundefined{T@PU}{-}{%
1940       \input{pvnenc.def}%
1941     }%
1942   }%
1943 }
1944 \define@key{Hyp}{vietnam}[]{%

```

```

1945 \HyLang@addto\extrasvietnam\HyLang@vietnamese
1946 \AtEndOfPackage{%
1947   \@ifundefined{T@PU}{-}{%
1948     \input{puvnenc.def}%
1949   }%
1950 }%
1951 }

```

13 Options to change appearance of links

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

```

1952 \define@key{Hyp}{colorlinks}[true]{%
1953   \Hy@boolkey{colorlinks}{#1}%
1954   \ifHy@colorlinks
1955     \def\pdfborder{0 0 0}%
1956   \fi
1957 }
1958 \define@key{Hyp}{frenchlinks}[true]{%
1959   \Hy@boolkey{frenchlinks}{#1}%
1960 }

```

14 Bookmarking

```

1961 \define@key{Hyp}{bookmarks}[true]{%
1962   \Hy@boolkey{bookmarks}{#1}%
1963 }
1964 \define@key{Hyp}{bookmarksopen}[true]{%
1965   \Hy@boolkey{bookmarksopen}{#1}%
1966 }

```

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.

```

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

```

```

1981         \else
1982             \setbox\z@=\hbox{%
1983                 \count@=\x
1984                 \xdef\Hy@bookmarksdepth{\the\count@}%
1985             }%
1986         \fi
1987     }{%
1988         \setbox\z@=\hbox{%
1989             \count@=\csname toplevel@\x\endcsname
1990             \xdef\Hy@bookmarksdepth{\the\count@}%
1991         }%
1992     }%
1993 \fi
1994 \endgroup
1995 }

```

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

```

1996 \define@key{Hyp}{bookmarksopenlevel}{%
1997   \def\@bookmarksopenlevel{#1}%
1998 }
1999 \def\@bookmarksopenlevel{\maxdimen}
2000 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
2001 \define@key{Hyp}{bookmarkstype}{%
2002   \def\Hy@bookmarkstype{#1}%
2003 }
2004 \def\Hy@bookmarkstype{toc}

```

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

```

2005 \define@key{Hyp}{bookmarksnumbered}[true]{%
2006   \Hy@boolkey{bookmarksnumbered}{#1}%
2007 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2008 \define@key{Hyp}{CJKbookmarks}[true]{%
2009   \Hy@boolkey{CJKbookmarks}{#1}%
2010 }
2011 \define@key{Hyp}{linkcolor}{\def\@linkcolor{#1}}
2012 \define@key{Hyp}{anchorcolor}{\def\@anchorcolor{#1}}
2013 \define@key{Hyp}{citecolor}{\def\@citecolor{#1}}
2014 \define@key{Hyp}{urlcolor}{\def\@urlcolor{#1}}
2015 \define@key{Hyp}{menucolor}{\def\@menucolor{#1}}
2016 \define@key{Hyp}{filecolor}{\def\@filecolor{#1}}
2017 \define@key{Hyp}{pagecolor}{\def\@pagecolor{#1}}

```

Default values:

```

2018 \def\@linkcolor{red}
2019 \def\@anchorcolor{black}
2020 \def\@citecolor{green}
2021 \def\@filecolor{cyan}
2022 \def\@urlcolor{magenta}
2023 \def\@menucolor{red}
2024 \def\@pagecolor{red}
2025 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2026 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2027 \let\@baseurl\empty
2028 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2029 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2030 \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.

```
2031 \let\pdfpagetransition\relax
2032 \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.

```
2033 \let\pdfpageduration\relax
2034 \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.

```
2035 \newif\ifHy@useHidKey
2036 \Hy@useHidKeyfalse
2037 \define@key{Hyp}{pdfpagehidden}[true]{%
2038   \Hy@boolkey{pdfpagehidden}{#1}%
2039   \ifHy@pdfpagehidden
2040     \global\Hy@useHidKeytrue
2041   \fi
2042 }
```

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).

```
2043 \def\Hy@ColorList{cite,file,link,menu,page,run,url}
2044 \@for\Hy@temp:=\Hy@ColorList\do{%
2045   \edef\Hy@temp{%
2046     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2047       \noexpand\Hy@bordercolor{\Hy@temp}{##1}{ }%
2048     }%
2049   }%
2050   \Hy@temp
2051 }
2052 \def\Hy@bordercolor#1#2#3{%
2053   \begingroup
2054     \csname @safe@activetrue\endcsname
2055     \@ifundefined{XC@edef}{\edef}{\XC@edef}\x{#2}%
2056     \expandafter\Hy@CheckColorSpec\x{#3}\@nil{#1}{#2}%
2057   }
2058 \def\Hy@CheckColorSpec#1 #2 #3\@nil#4#5{%
2059   \ifx\#3\%
2060     \@ifundefined{XC@bordercolor}{%
2061       \Hy@Warning{%
2062         Unsupported color specification (#4bordercolor).\MessageBreak
2063         Load package 'xcolor' (version >= 1.11) first.\MessageBreak
2064         Ignoring color specification%
2065       }%
2066     }
2067   }
```

```

2068     \endgroup
2069     \XC@bordercolor{#4}{#5}%
2070 }%
2071 \else
2072     \endgroup
2073     \@namedef{@#4bordercolor}{#5}%
2074 \fi
2075 }

2076 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2077 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2078 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2079 \def\Hy@setpdfborder{%
2080     \ifx\@pdfborder\@empty
2081     \else
2082         /Border[\@pdfborder]%
2083     \fi
2084     \ifx\@pdfborderstyle\@empty
2085     \else
2086         /BS<<\@pdfborderstyle>>%
2087     \fi
2088 }
2089 \define@key{Hyp}{pdfpagemode}{%
2090     \def\Hy@tempa{#1}%
2091     \ifx\Hy@tempa\@empty
2092         \let\@pdfpagemode\@empty
2093     \else
2094         \def\@pdfpagemode{/#1 }%
2095     \fi
2096 }
2097 \define@key{Hyp}{pdfnonfullscreenpagemode}{%
2098     \def\Hy@tempa{#1}%
2099     \ifx\Hy@tempa\@empty
2100         \let\@pdfnonfullscreenpagemode\@empty
2101     \else
2102         \def\@pdfnonfullscreenpagemode{/#1 }%
2103     \fi
2104 }
2105 \define@key{Hyp}{pdfusetitle}[true]{%
2106     \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2107 }
2108 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2109 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2110 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2111 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2112 \define@key{Hyp}{pdfcreationdate}{\pdfstringdef\@pdfcreationdate{#1}}
2113 \define@key{Hyp}{pdfmoddate}{\pdfstringdef\@pdfmoddate{#1}}
2114 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2115 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2116 \define@key{Hyp}{pdfview}{\calculatepdfview#1 \\\}
2117 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2118 \let\setpdflinkmargin\@gobble
2119 \def\calculatepdfview#1 #2\\{%
2120     \def\@pdfview{#1}%
2121     \ifx\@#2\\%
2122         \def\@pdfviewparams{ -32768}%
2123     \else
2124         \def\@pdfviewparams{ #2}%

```

```

2125 \fi
2126 }
2127 \define@key{Hyp}{pdfstartpage}{\def\pdfstartpage{#1}}
2128 \define@key{Hyp}{pdfstartview}{%
2129 \ifx\#1\%
2130 \def\pdfstartview{}%
2131 \else
2132 \hypercalcbpdef\pdfstartview{ /#1 }%
2133 \fi
2134 }
2135 \define@key{Hyp}{pdfpagescrop}{\edef\pdfpagescrop{#1}}
2136 \define@key{Hyp}{pdftoolbar}[true]{%
2137 \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2138 }
2139 \define@key{Hyp}{pdfmenubar}[true]{%
2140 \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2141 }
2142 \define@key{Hyp}{pdfwindowui}[true]{%
2143 \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2144 }
2145 \define@key{Hyp}{pdffitwindow}[true]{%
2146 \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2147 }
2148 \define@key{Hyp}{pdfcenterwindow}[true]{%
2149 \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2150 }
2151 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2152 \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2153 }
2154 \define@key{Hyp}{pdfnewwindow}[true]{%
2155 \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2156 }
2157 \define@key{Hyp}{pdfpagelayout}{\def\pdf@pagelayout{#1}}
2158 \def\pdf@pagelayout{}
2159 \define@key{Hyp}{pdfpagelabels}[true]{%
2160 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2161 }
2162 \define@key{Hyp}{pdfescapeform}[true]{%
2163 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2164 }

```

Default values:

```

2165 \def\@linkbordercolor{1 0 0}
2166 \def\@urlbordercolor{0 1 1}
2167 \def\@menubordercolor{1 0 0}
2168 \def\@filebordercolor{0 .5 .5}
2169 \def\@runbordercolor{0 .7 .7}
2170 \def\@citebordercolor{0 1 0}
2171 \def\@pagebordercolor{1 1 0}
2172 \def\@pdfhighlight{/I}
2173 \def\@pdfpagemode{}
2174 \def\@pdfnonfullscreenpagemode{}
2175 \def\@pdftitle{}
2176 \def\@pdfauthor{}
2177 \let\@pdfproducer\relax
2178 \def\@pdfcreator{LaTeX with hyperref package}
2179 \def\@pdfcreationdate{}
2180 \def\@pdfmoddate{}

```

```

2181 \def\@pdfsubject{}
2182 \def\@pdfkeywords{}
2183 \def\@pdfpagescrop{}
2184 \def\@pdfstartview{ /Fit }
2185 \def\@pdfstartpage{1}
2186 \let\PDF@SetupDoc\@empty
2187 \let\PDF@FinishDoc\@empty
2188 \let\phantomsection\@empty
2189 \@ifundefined{stockwidth}{%
2190   \edef\special@paper{\the\paperwidth,\the\paperheight}
2191 }{%
2192   \edef\special@paper{\the\stockwidth,\the\stockheight}
2193 }
2194 \begingroup
2195   \dimen@=\@ifundefined{stockheight}{\paperheight}{\stockheight}\relax
2196   \dimen@=0.99626401\dimen@
2197   \xdef\Hy@pageheight{\strip@pt\dimen@}
2198 \endgroup
2199 \def\HyInd@EncapChar{||}
2200 \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.

```

2201 \let\hyper@normalise\ExecuteOptions
2202 \let\ExecuteOptions\hypersetup
2203 \Hy@RestoreCatcodes
2204 \InputIfFileExists{hyperref.cfg}{-}{-}
2205 \Hy@SetCatcodes
2206 \let\ExecuteOptions\hyper@normalise
2207 \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`.

```

2208 \RequirePackage{kvoptions}[2006/08/17]

```

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

```

2209 \@ifpackageloaded{tex4ht}{%
2210   \@ifpackagewith{hyperref}{tex4ht}{-}{%
2211     \PassOptionsToPackage{tex4ht}{hyperref}%
2212   }%
2213 }{-}

2214 \let\ReadBookmarks\relax
2215 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2216 \AtBeginDocument{%
2217   \ifHy@draft
2218     \let\hyper@@anchor\@gobble
2219     \gdef\hyper@link#1#2#3{#3}%
2220     \let\hyper@anchorstart\@gobble
2221     \let\hyper@anchorend\@empty
2222     \let\hyper@linkstart\@gobbletwo
2223     \let\hyper@linkend\@empty
2224     \def\hyper@linkurl#1#2{#1}%

```

```

2225 \def\hyper@linkfile#1#2#3{#1}%
2226 \def\Acrobatmenu#1#2{#2}%
2227 \let\PDF@SetupDoc\@empty
2228 \let\PDF@FinishDoc\@empty
2229 \let\@fifthoffive\@secondoftwo
2230 \let\@secondoffive\@secondoftwo
2231 \let\ReadBookmarks\relax
2232 \let\WriteBookmarks\relax
2233 \Hy@WarningNoLine{ draft mode on}%
2234 \fi
2235 \Hy@DisableOption{draft}%
2236 \Hy@DisableOption{nolinks}%
2237 \Hy@DisableOption{final}%
2238 }%

```

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`.

```

2239 \ifx\HyPsd@InitUnicode\relax
2240 \define@key{Hyp}{unicode}[true]{%
2241 \Hy@boolkey{unicode}{#1}%
2242 }
2243 \else
2244 \define@key{Hyp}{unicode}[true]{%
2245 \Hy@boolkey{unicode}{#1}%
2246 \ifHy@unicode
2247 \Hy@WarningNoLine{Set package option 'unicode' first\MessageBreak
2248 in order to load unicode support%
2249 }%
2250 \Hy@unicodedefalse
2251 \fi
2252 }
2253 \fi

```

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

```

2254 \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.

```

2255 \Hy@nextfalse
2256 \@ifpackagewith{babel}{spanish}{\Hy@nexttrue}{}
2257 \@ifpackagewith{babel}{galician}{\Hy@nexttrue}{}
2258 \@ifpackagewith{babel}{estonian}{\Hy@nexttrue}{}
2259 \ifHy@next
2260 \let\texttilde\~%
2261 \fi
2262 \ifHy@figures
2263 \Hy@Info{Hyper figures ON}
2264 \else
2265 \Hy@Info{Hyper figures OFF}
2266 \fi
2267 \ifHy@nesting
2268 \Hy@Info{Link nesting ON}
2269 \else
2270 \Hy@Info{Link nesting OFF}

```



```

2271 \fi
2272 \ifHy@hyperindex
2273   \Hy@Info{Hyper index ON}
2274 \else
2275   \Hy@Info{Hyper index OFF}
2276 \fi
2277 \ifHy@plainpages
2278   \Hy@Info{Plain pages ON}
2279 \else
2280   \Hy@Info{Plain pages OFF}
2281 \fi
2282 \ifHy@backref
2283   \Hy@Info{Backreferencing ON}
2284 \else
2285   \Hy@Info{Backreferencing OFF}
2286 \fi
2287 \ifHy@typexml
2288   \AtEndOfPackage{\RequirePackage{color}\RequirePackage{nameref}}
2289 \fi
2290 \Hy@DisableOption{typexml}
2291 \ifHy@implicit
2292   \typeout{Implicit mode ON; LaTeX internals redefined}%
2293 \else
2294   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
2295   \def\MaybeStopEarly{%
2296     \typeout{Hyperref stopped early}%
2297     \AfterBeginDocument{\PDF@FinishDoc}%
2298     \endinput
2299   }%
2300   \AtBeginDocument{%
2301     \let\autoref\ref
2302     \ifx\@pdfpagemode\@empty
2303       \gdef\@pdfpagemode{/UseNone}%
2304     \fi
2305     \global\Hy@backreffalse
2306   }%
2307   \AtEndOfPackage{%
2308     \global\let\ReadBookmarks\relax
2309     \global\let\WriteBookmarks\relax
2310   }%
2311 \fi
2312 \Hy@DisableOption{implicit}

```

15.1.1 Driver loading

```

2313 \AtEndOfPackage{%
2314   \@ifpackageloaded{tex4ht}{%
2315     \def\Hy@driver{htex4ht}%
2316     \Hy@texhttrue
2317   }{}%
2318   \ifx\Hy@driver\@empty
2319     \providecommand*\Hy@defaultdriver{hypertex}%
2320     \begingroup\expandafter\expandafter\expandafter\endgroup
2321     \expandafter\ifx\csname pdfoutput\endcsname\relax
2322       \begingroup\expandafter\expandafter\expandafter\endgroup
2323       \expandafter\ifx\csname OpMode\endcsname\relax
2324         \let\Hy@driver\Hy@defaultdriver

```

```

2325 \else
2326 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2327 \def\Hy@driver{hvtex}%
2328 \def\XR@ext{pdf}%
2329 \else
2330 \ifnum\OpMode=10\relax
2331 \def\XR@ext{htm}%
2332 \def\Hy@driver{hvtexhtm}%
2333 \def\MaybeStopEarly{%
2334 \typeout{Hyperref stopped early}%
2335 \AfterBeginDocument{\PDF@FinishDoc}%
2336 \endinginput
2337 }%
2338 \else
2339 \let\Hy@driver\Hy@defaultdriver
2340 \fi
2341 \fi
2342 \fi
2343 \else
2344 \ifnum\pdfoutput<1 %
2345 \let\Hy@driver\Hy@defaultdriver
2346 \else
2347 \def\Hy@driver{hpdftex}%
2348 \def\XR@ext{pdf}%
2349 \PassOptionsToPackage{pdftex}{color}%
2350 \Hy@breaklinkstrue
2351 \fi
2352 \fi
2353 \ifx\Hy@driver\Hy@defaultdriver
2354 \def\Hy@temp{hdvips}%
2355 \ifx\Hy@temp\Hy@driver
2356 \def\Hy@raisedlink{}%
2357 \def\XR@ext{pdf}%
2358 \fi
2359 \def\Hy@temp{hdvipdfm}%
2360 \ifx\Hy@temp\Hy@driver
2361 \def\XR@ext{pdf}%
2362 \Hy@breaklinkstrue
2363 \fi
2364 \def\Hy@temp{hdviwind}%
2365 \ifx\Hy@temp\Hy@driver
2366 \setkeys{Hyp}{colorlinks}%
2367 \PassOptionsToPackage{dviwindo}{color}%
2368 \fi
2369 \def\Hy@temp{hdvipson}%
2370 \ifx\Hy@temp\Hy@driver
2371 \def\XR@ext{pdf}%
2372 \def\Hy@raisedlink{}%
2373 \fi
2374 \def\Hy@temp{textures}%
2375 \ifx\Hy@temp\Hy@driver
2376 \def\XR@ext{pdf}%
2377 \fi
2378 \fi
2379 \typeout{*hyperref using default driver \Hy@driver*}%
2380 \else
2381 \typeout{*hyperref using driver \Hy@driver*}%

```

```

2382 \fi
2383 \input{\Hy@driver.def}%
2384 \let\@unprocessedoptions\relax
2385 \Hy@RestoreCatcodes
2386 }
2387 \Hy@DisableOption{tex4ht}
2388 \Hy@DisableOption{pdftex}
2389 \Hy@DisableOption{dvipdf}
2390 \Hy@DisableOption{nativepdf}
2391 \Hy@DisableOption{dvipdfm}
2392 \Hy@DisableOption{pdfmark}
2393 \Hy@DisableOption{dvips}
2394 \Hy@DisableOption{hypertex}
2395 \Hy@DisableOption{vtex}
2396 \Hy@DisableOption{vtexpdfmark}
2397 \Hy@DisableOption{dviwindo}
2398 \Hy@DisableOption{dvipsone}
2399 \Hy@DisableOption{textures}
2400 \Hy@DisableOption{latex2html}
2401 \Hy@DisableOption{ps2pdf}

```

15.1.2 Bookmarks

```

2402 \def\WriteBookmarks{0}
2403 \def\@bookmarkopenstatus#1{%
2404   \ifHy@bookmarksopen

```

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

```

2405   \ifnum#1<\expandafter\@firstofone\expandafter
2406     {\number\@bookmarkopenlevel} % explicit space
2407   \else
2408     -%
2409   \fi
2410 \else
2411   -%
2412 \fi
2413 }
2414 \ifHy@bookmarks
2415   \Hy@Info{Bookmarks ON}%
2416   \ifx\@pdfpagemode\@empty
2417     \def\@pdfpagemode{/UseOutlines }%
2418   \fi
2419 \else
2420   \def\@bookmarkopenstatus#1{%
2421     \Hy@Info{Bookmarks OFF}%
2422     \AtEndOfPackage{%
2423       \global\let\ReadBookmarks\relax
2424       \global\let\WriteBookmarks\relax
2425     }
2426   \ifx\@pdfpagemode\@empty
2427     \def\@pdfpagemode{/UseNone}%
2428   \fi
2429 \fi
2430 \Hy@DisableOption{bookmarks}

```

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

```

2431 \AtBeginDocument{%
2432   \ifHy@colorlinks

```

```

2433 \ifHy@typexml\else\RequirePackage{color}\fi
2434 \def\Hy@colorlink#1{%
2435 \begingroup
2436 \expandafter\Hy@colorscan\expandafter#1#1\@nil%
2437 }%
2438 \def\Hy@colorscan#1{%
2439 \@ifnextchar[% ]
2440 {%
2441 \Hy@@colorscan
2442 }{%
2443 \expandafter\color\expandafter#1\@car{}}%
2444 }%
2445 }%
2446 \def\Hy@@colorscan#1\@nil{\color#1}%
2447 \def\Hy@endcolorlink{\endgroup}%
2448 \Hy@Info{Link coloring ON}%
2449 \else
2450 \ifHy@frenchlinks
2451 \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
2452 \def\Hy@endcolorlink{\endgroup}%
2453 \Hy@Info{French linking ON}%
2454 \else
for grouping consistency:
2455 \def\Hy@colorlink#1{\begingroup}%
2456 \def\Hy@endcolorlink{\endgroup}%
2457 \Hy@Info{Link coloring OFF}%
2458 \fi
2459 \fi
2460 \Hy@DisableOption{colorlinks}%
2461 \Hy@DisableOption{frenchlinks}%
2462 \ifHy@texht
2463 \long\def\@firstoffive#1#2#3#4#5{#1}%
2464 \long\def\@secondoffive#1#2#3#4#5{#2}%
2465 \long\def\@thirdoffive#1#2#3#4#5{#3}%
2466 \long\def\@fourthoffive#1#2#3#4#5{#4}%
2467 \long\def\@fifthoffive#1#2#3#4#5{#5}%
2468 \providecommand*\@safe@activestruer{}%
2469 \providecommand*\@safe@activesfalse{}%
2470 \def\T@ref#1{%
2471 \@safe@activestruer
2472 \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
2473 \@safe@activesfalse
2474 }%
2475 \def\T@pageref#1{%
2476 \@safe@activestruer
2477 \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
2478 \@safe@activesfalse
2479 }%
2480 \else
2481 \ifHy@typexml\else\RequirePackage{nameref}\fi
2482 \fi
2483 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
2484 \DeclareRobustCommand\pageref{%
2485 \@ifstar\@pagerefstar\T@pageref
2486 }%
2487 }
2488 \AfterBeginDocument{%

```

```

2489 \ifHy@texht
2490 \else
2491   \ReadBookmarks
2492 \fi
2493 }

2494 \ifHy@backref
2495   \RequirePackage{backref}
2496 \else
2497   \let\Hy@backout\@gobble
2498 \fi
2499 \Hy@DisableOption{backref}
2500 \Hy@DisableOption{pagebackref}

2501 \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.

```

2502 \begingroup
2503   \endlinechar=-1
2504   \catcode'\^M\active
2505   \catcode'\%\active
2506   \catcode'\#\active
2507   \catcode'\_\active
2508   \catcode'\$\active
2509   \gdef\hyper@normalise{
2510     \begingroup
2511     \catcode'\^M\active
2512     \def^M{ }
2513     \catcode'\%\active
2514     \let%\@percentchar
2515     \let\%\@percentchar
2516     \catcode'\#\active
2517     \def#{\hyper@hash}
2518     \def#{\hyper@hash}
2519     \@makeother\&
2520     \edef\textunderscore{\string_}
2521     \let\_ \textunderscore
2522     \catcode'\_\active
2523     \let\_ \textunderscore
2524     \let~\hyper@tilde
2525     \let~\hyper@tilde
2526     \let\textasciitilde\hyper@tilde
2527     \let\\\@backslashchar
2528     \edef$\{\string$}
2529     \ifx\@safe@activetrue\@undefined\else\@safe@activetrue\fi
2530     \hyper@n@rmalise
2531   }
2532   \catcode'\#=6
2533   \gdef\hyper@n@rmalise#1#2{
2534     \edef\Hy@tempa{
2535       \endgroup

```

```

2536     \noexpand#1{\Hy@RemovePercentCr#2%^~M\@nil}
2537   }
2538   \Hy@tempa
2539 }
2540 \gdef\Hy@RemovePercentCr#1%^~M#2\@nil{
2541   #1
2542   \ifx\limits#2\limits
2543   \else
2544     \Hy@ReturnAfterFi{
2545       \Hy@RemovePercentCr #2\@nil
2546     }
2547   \fi
2548 }
2549 \endgroup
2550 \providecommand\hyper@chars{%
2551   \let\#\hyper@hash
2552   \let%\@percentchar
2553 }
2554 \def\hyperlink#1#2{%
2555   \hyper@@link{#1}{#2}%
2556 }
2557 \DeclareRobustCommand*\href{\hyper@normalise\href@}
2558 \begingroup
2559   \catcode'\$=6
2560   \catcode'\#=12
2561   \gdef\href@#1{\expandafter\href@split$1##\}
2562   \gdef\href@split$1#$2#$3\{\%
2563     \hyper@@link{$1}{$2}%
2564   }
2565 \endgroup

```

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

```

2566 \RequirePackage{url}
2567 \let\HyOrg@url\url
2568 \def\Hurl{\begingroup \Url}
2569 \let\nolinkurl\Hurl
2570 \DeclareRobustCommand*\url{\hyper@normalise\url@}
2571 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}
2572 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
2573 \providecommand\hyper@image[2]{#2}
2574 \def\hypertarget#1#2{%
2575   \ifHy@nesting
2576     \hyper@@anchor{#1}{#2}%
2577   \else
2578     \hyper@@anchor{#1}{\relax}#2%
2579   \fi
2580 }

```

`\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.

```

2581 \DeclareRobustCommand*\hyperref{\%
2582   \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref

```

```

2583 }
2584 \def\Hy@babelnormalise#1[#2]{%
2585   \begingroup
2586     \csname @safe@activestrue\endcsname
2587     \edef\Hy@tempa{%
2588       \endgroup
2589       \noexpand#1[#2]}%
2590   }%
2591   \Hy@tempa
2592 }
2593 \def\@hyperref{\hyper@normalise\@hyperref}
2594 \def\@hyperref#1#2#3{%
2595   \edef\ref@one{\ifx\#2\\\else#2.\fi#3}%
2596   \expandafter\tryhyper@link\ref@one\{#1}%
2597 }
2598 \def\tryhyper@link#1\#2{%
2599   \hyper@@link{#2}{#1}%
2600 }
2601 \def\hyperdef{\@ifnextchar[\{\label@hyperdef\}\@hyperdef}}
2602 \def\@hyperdef#1#2#3{%, category, name, text
2603   \ifHy@nesting
2604     \hyper@@anchor{#1.#2}{#3}%
2605   \else
2606     \hyper@@anchor{#1.#2}{\relax}#3%
2607   \fi
2608 }

```

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

```

2609 \def\label@hyperref[#1]{%
2610   \expandafter\label@\@hyperref\csname r@#1\endcsname{#1}%
2611 }%
2612 \def\label@\@hyperref#1#2#3{%
2613   \ifx#1\relax
2614     \protect\G@refundefinedtrue
2615     \@latex@warning{%
2616       Hyper reference ‘#2’ on page \thepage \space undefined%
2617     }%
2618     \hyper@@link{}{??}{#3}%
2619   \else
2620     \hyper@@link{\expandafter\@fifthoffive#1}%
2621     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
2622   \fi
2623 }
2624 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
2625                               % anchor text
2626   \@bsphack
2627   \if@files
2628     \protected@write\@auxout{%
2629       {\string\newlabel{#1}{\{#\}\}\}\#2.#3}}%
2630   \fi
2631   \@esphack
2632   \ifHy@nesting
2633     \hyper@@anchor{#2.#3}{#4}%
2634   \else
2635     \hyper@@anchor{#2.#3}{\relax}#4%
2636   \fi

```

2637 }

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.

```
2638 \def\hyper@link{\let\Hy@reserved@a\relax
2639 \ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
2640 }
2641 \def\hyper@link@[#1]#2#3#4{%
2642   \begingroup
2643     \protected@edef\Hy@tempa{#2}%
2644     \csname @safe@activestrue\endcsname
2645     \edef\x{#3}%
2646     \ifx\Hy@tempa\@empty
2647       \toks0{\hyper@link{#1}}%
2648     \else
2649       \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
2650     \fi
2651     \toks1{#4}%
2652     \edef\x{\endgroup
2653       \the\toks0 \x\the\toks1 }
2654   }%
2655   \x
2656 }
```

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.

```
2657 \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.

```
2658   \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
2659 }
```

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

```
2660 \def\@pdftempwordfile{file}%
2661 \def\@pdftempwordrun{run}%
2662 \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:

```

2663 \ifx\#6\%
2664 \expandafter\@hyper@linkfile file:#7\#{#3}{#2}%
2665 \else
2666 \ifx\#4\%
2667 \expandafter\@hyper@linkfile file:#7\#{#3}{#2}%
2668 \else

```

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

```

2669 \def\@pdftempa{#4}%
2670 \ifx\@pdftempa\@pdftempwordfile
2671 \expandafter\@hyper@linkfile#7\#{#3}{#2}%
2672 \else

```

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

```

2673 \ifx\@pdftempa\@pdftempwordrun
2674 \expandafter\@hyper@launch#7\#{#3}{#2}%
2675 \else

```

otherwise its a URL

```

2676 \hyper@linkurl{#3}{#7\ifx\#2\\\else\hyper@hash#2\fi}%
2677 \fi
2678 \fi
2679 \fi
2680 \fi
2681 }

```

By default, turn run: into file:

```

2682 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
2683 \hyper@linkurl{#2}{\Hy@linkfileprefix#1\ifx\#3\\\else\hyper@hash#3\fi}%
2684 }

```

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

```

2685 \def\@hyper@linkfile file:#1\#2#3{%
2686 %file url,link string, name
2687 \filename@parse{#1}%
2688 \ifx\filename@ext\relax
2689 \edef\filename@ext{\XR@ext}%
2690 \fi
2691 \def\use@file{\filename@area\filename@base.\filename@ext}%
2692 \ifx\filename@ext\XR@ext
2693 \hyper@linkfile{#2}{\use@file}{#3}%
2694 \else
2695 \ifx\@baseurl\@empty
2696 \hyper@linkurl{#2}{%
2697 \Hy@linkfileprefix\use@file\ifx\#3\\\else\hyper@hash#3\fi
2698 }%
2699 \else
2700 \hyper@linkurl{#2}{\use@file\ifx\#3\\\else\hyper@hash#3\fi}%
2701 \fi
2702 \fi
2703 }

```

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.

```

2704 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
2705 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
2706   \ifx\#1\%
2707     #2\Hy@WarningNoLine{empty link? #1: #2#3}%
2708   \else
2709     \def\anchor@spot{#2#3}%
2710     \let\put@me@back\@empty
2711     \ifx\relax#2\relax
2712     \else
2713       \ifHy@nesting
2714       \else
2715         \ifcat a\noexpand#2\relax
2716         \else
2717           \ifcat 0\noexpand#2 \relax
2718           \else
2719             \typeout{Anchor start is not alphanumeric %
2720             on input line\the\inputlineno%
2721             }%
2722             \let\anchor@spot\@empty
2723             \def\put@me@back{#2#3}%
2724           \fi
2725         \fi
2726       \fi
2727     \fi
2728     \ifHy@activeanchor
2729     \anchor@spot
2730   \else
2731     \hyper@anchor{#1}%
2732   \fi
2733   \expandafter\put@me@back
2734 \fi
2735 \let\anchor@spot\@empty
2736 }

```

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.

```

2737 \let\htmladding\hyperimage
2738 \def\htmladdnormallink#1#2{\href{#2}{#1}}
2739 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
2740 \def\htmlref#1#2{% anchor text, label
2741   \label@hyperref[{#2}]{#1}%
2742 }

```

This is really too much. The \LaTeX html 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.

```

2743 \def\@@latextohtmlX{%
2744   \let\hhyperref\hyperref
2745   \def\hyperref##1##2##3##4{% anchor text for HTML
2746                                   % text to print before label in print
2747                                   % label
2748                                   % post-label text in print
2749     ##2\ref{##4}##3%
2750   }%
2751 }
```

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.

```

2752 \newif\ifFld@checked
2753 \newif\ifFld@hidden
2754 \newif\ifFld@multiline
2755 \newif\ifFld@readonly
2756 \newif\ifFld@disabled
2757 \newif\ifFld@password
2758 \newif\ifFld@radio
2759 \newif\ifFld@combo
2760 \newif\ifFld@popdown
2761 \Fld@multilinefalse
2762 \Fld@checkedfalse
2763 \Fld@hiddenfalse
2764 \Fld@readonlyfalse
2765 \Fld@disabledfalse
2766 \Fld@radiofalse
2767 \Fld@combofalse
2768 \Fld@popdownfalse
2769 \Fld@passwordfalse
2770 \newcount\Fld@menulength
2771 \newdimen\Fld@Width
2772 \newdimen\Fld@charsize
2773 \Fld@charsize=10\p@
2774 \def\Fld@maxlen{0}
2775 \def\Fld@align{0}
2776 \def\Fld@color{0 0 0}
2777 \def\Fld@bcolor{1 1 1}
2778 \def\Fld@bordercolor{1 0 0}
2779 \def\Fld@bordersep{1\p@}
2780 \def\Fld@borderwidth{1}
2781 \def\Fld@borderstyle{S}
2782 \def\Fld@cbsymbol{4}
2783 \newtoks\Choice@toks
2784 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
2785 \def\endForm{\@endForm}
2786 \newif\ifForm@html
2787 \Form@htmlfalse
```

```

2788 \def\Form@boolkey#1#2{%
2789   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2790 }
2791 \define@key{Form}{action}{%
2792   \hyper@normalise\Hy@DefFormAction{#1}%
2793 }
2794 \def\Hy@DefFormAction{\def\Form@action}
2795 \def\enc@html{html}
2796 \define@key{Form}{encoding}{%
2797   \def\Hy@tempa{#1}%
2798   \ifx\Hy@tempa\enc@html
2799     \Form@htmltrue
2800   \else
2801     \typeout{hyperref: form 'encoding' key set to #1 %
2802       -- unknown type%
2803     }%
2804     \Form@htmlfalse
2805   \fi
2806 }
2807 \define@key{Form}{method}{%
2808   \def\Form@method{#1}%
2809 }
2810 \def\Form@method{}
2811 \def\Field@boolkey#1#2{%
2812   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2813 }
2814 \newtoks\Field@toks
2815 \Field@toks={ }%
2816 \def\Field@addtoks#1#2{%
2817   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
2818   \@processme
2819 }
2820 \def\Fld@checkequals#1=#2=#3\\{%
2821   \def\@currDisplay{#1}%
2822   \ifx\\#2\\%
2823     \def\@currValue{#1}%
2824   \else
2825     \def\@currValue{#2}%
2826   \fi
2827 }
2828 \define@key{Field}{loc}{%
2829   \def\Fld@loc{#1}%
2830 }
2831 \define@key{Field}{multiline}[true]{%
2832   \lowercase{\Field@boolkey{#1}}{multiline}%
2833 }
2834 \define@key{Field}{checked}[true]{%
2835   \lowercase{\Field@boolkey{#1}}{checked}%
2836 }
2837 \define@key{Field}{hidden}[true]{%
2838   \lowercase{\Field@boolkey{#1}}{hidden}%
2839 }
2840 \define@key{Field}{readonly}[true]{%
2841   \lowercase{\Field@boolkey{#1}}{readonly}%
2842 }
2843 \define@key{Field}{disabled}[true]{%
2844   \lowercase{\Field@boolkey{#1}}{disabled}%

```

```

2845 }
2846 \define@key{Field}{password}[true]{%
2847   \lowercase{\Field@boolkey{#1}}{password}%
2848 }
2849 \define@key{Field}{radio}[true]{%
2850   \lowercase{\Field@boolkey{#1}}{radio}%
2851 }
2852 \define@key{Field}{combo}[true]{%
2853   \lowercase{\Field@boolkey{#1}}{combo}%
2854 }
2855 \define@key{Field}{popdown}[true]{%
2856   \lowercase{\Field@boolkey{#1}}{popdown}%
2857 }
2858 \define@key{Field}{accesskey}{%
2859   \Field@addtoks{accesskey}{#1}%
2860 }
2861 \define@key{Field}{tabkey}{%
2862   \Field@addtoks{tabkey}{#1}%
2863 }
2864 \define@key{Field}{name}{%
2865   \def\Fld@name{#1}%
2866 }
2867 \define@key{Field}{width}{%
2868   \def\Fld@width{#1}%
2869   \Field@Width#1\setbox0=\hbox{m}%
2870 }
2871 \define@key{Field}{maxlen}{%
2872   \def\Fld@maxlen{#1}%
2873 }
2874 \define@key{Field}{menulength}{%
2875   \Fld@menulength=#1\relax
2876 }
2877 \define@key{Field}{height}{%
2878   \def\Fld@height{#1}%
2879 }
2880 \define@key{Field}{charsize}{%
2881   \Fld@charsize#1%
2882 }
2883 \define@key{Field}{fillcolor}{%
2884   \def\Fld@fillcolor{#1}%
2885 }
2886 \define@key{Field}{bordercolor}{%
2887   \def\Fld@bordercolor{#1}%
2888 }
2889 \define@key{Field}{color}{%
2890   \def\Fld@color{#1}%
2891 }
2892 \define@key{Field}{borderwidth}{%
2893   \def\Fld@borderwidth{#1}%
2894 }
2895 \define@key{Field}{borderstyle}{%
2896   \def\Fld@borderstyle{#1}%
2897 }
2898 \define@key{Field}{bordersep}{%
2899   \def\Fld@bordersep{#1}%
2900 }
2901 \define@key{Field}{default}{%

```

```

2902 \def\Fld@default{#1}%
2903 }
2904 \define@key{Field}{align}{%
2905 \def\Fld@align{#1}%
2906 }
2907 \define@key{Field}{value}{%
2908 \def\Fld@value{#1}%
2909 }
2910 \define@key{Field}{backgroundcolor}{%
2911 \def\Fld@bcolor{#1}%
2912 }
2913 \define@key{Field}{checkboxsymbol}{%
2914 \def\Fld@cbsymbol{#1}%
2915 }
2916 \def\Fld@format@code{}
2917 \def\Fld@validate@code{}
2918 \def\Fld@calculate@code{}
2919 \def\Fld@keystroke@code{}
2920 \def\Fld@onfocus@code{}
2921 \def\Fld@onblur@code{}
2922 \def\Fld@onmousedown@code{}
2923 \def\Fld@onmouseup@code{}
2924 \def\Fld@onenter@code{}
2925 \def\Fld@onexit@code{}
2926 \define@key{Field}{keystroke}{%
2927 \def\Fld@keystroke@code{#1}%
2928 }
2929 \define@key{Field}{format}{%
2930 \def\Fld@format@code{#1}%
2931 }
2932 \define@key{Field}{validate}{%
2933 \def\Fld@validate@code{#1}%
2934 }
2935 \define@key{Field}{calculate}{%
2936 \def\Fld@calculate@code{#1}%
2937 }
2938 \define@key{Field}{onfocus}{%
2939 \def\Fld@onfocus@code{#1}%
2940 }
2941 \define@key{Field}{onblur}{%
2942 \def\Fld@onblur@code{#1}%
2943 }
2944 \define@key{Field}{onenter}{%
2945 \def\Fld@onenter@code{#1}%
2946 }
2947 \define@key{Field}{onexit}{%
2948 \def\Fld@onexit@code{#1}%
2949 }
2950 \define@key{Field}{onselect}{%
2951 \Field@addtoks{onselect}{#1}%
2952 }
2953 \define@key{Field}{onchange}{%
2954 \Field@addtoks{onchange}{#1}%
2955 }
2956 \define@key{Field}{onclick}{%
2957 \def\Fld@onclick{#1}%
2958 \Field@addtoks{onclick}{#1}%

```

```

2959 }
2960 \define@key{Field}{ondblclick}{%
2961   \Field@addtoks{ondblclick}{#1}%
2962 }
2963 \define@key{Field}{onmousedown}{%
2964   \Field@addtoks{onmousedown}{#1}%
2965 }
2966 \define@key{Field}{onmouseup}{%
2967   \Field@addtoks{onmouseup}{#1}%
2968 }
2969 \define@key{Field}{onmouseover}{%
2970   \Field@addtoks{onmouseover}{#1}%
2971 }
2972 \define@key{Field}{onmousemove}{%
2973   \Field@addtoks{onmousemove}{#1}%
2974 }
2975 \define@key{Field}{onmouseout}{%
2976   \Field@addtoks{onmouseout}{#1}%
2977 }
2978 \define@key{Field}{onkeypress}{%
2979   \Field@addtoks{onkeypress}{#1}%
2980 }
2981 \define@key{Field}{onkeydown}{%
2982   \Field@addtoks{onkeydown}{#1}%
2983 }
2984 \define@key{Field}{onkeyup}{%
2985   \Field@addtoks{onkeyup}{#1}%
2986 }
2987 %
2988 \DeclareRobustCommand\TextField{%
2989   \@ifnextchar[{\@TextField}{\@TextField[]}%
2990 }
2991 \DeclareRobustCommand\ChoiceMenu{%
2992   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
2993 }
2994 \DeclareRobustCommand\CheckBox{%
2995   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
2996 }
2997 \DeclareRobustCommand\PushButton{%
2998   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
2999 }
3000 \DeclareRobustCommand\Gauge{%
3001   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
3002 }
3003 \DeclareRobustCommand\Submit{%
3004   \@ifnextchar[{\@Submit}{\@Submit[]}%
3005 }
3006 \DeclareRobustCommand\Reset{%
3007   \@ifnextchar[{\@Reset}{\@Reset[]}%
3008 }
3009 \def\LayoutTextField#1#2{% label, field
3010   #1 #2%
3011 }
3012 \def\LayoutChoiceField#1#2{% label, field
3013   #1 #2%
3014 }
3015 \def\LayoutCheckField#1#2{% label, field

```

```

3016 #1 #2%
3017 }
3018 \def\LayoutPushButtonField#1{% button
3019 #1%
3020 }
3021 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3022 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3023 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3024 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3025 \def\MakeButtonField#1{%
3026 \sbox0{%
3027 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
3028 }%
3029 \@tempdima\ht0
3030 \advance\@tempdima by \Fld@borderwidth bp
3031 \advance\@tempdima by \Fld@borderwidth bp
3032 \ht0\@tempdima
3033 \@tempdima\dp0
3034 \advance\@tempdima by \Fld@borderwidth bp
3035 \advance\@tempdima by \Fld@borderwidth bp
3036 \dp0\@tempdima
3037 \box0\relax
3038 }
3039 \def\DefaultHeightofSubmit{14pt}
3040 \def\DefaultWidthofSubmit{2cm}
3041 \def\DefaultHeightofReset{14pt}
3042 \def\DefaultWidthofReset{2cm}
3043 \def\DefaultHeightofCheckBox{\baselineskip}
3044 \def\DefaultWidthofCheckBox{\baselineskip}
3045 \def\DefaultHeightofChoiceMenu{\baselineskip}
3046 \def\DefaultWidthofChoiceMenu{\baselineskip}
3047 \def\DefaultHeightofText{\baselineskip}
3048 \def\DefaultWidthofText{3cm}

```

20 Setup

```

3049 \ifHy@figures
3050 \Hy@Info{Hyper figures ON}
3051 \else
3052 \Hy@Info{Hyper figures OFF}
3053 \fi
3054 \ifHy@nesting
3055 \Hy@Info{Link nesting ON}
3056 \else
3057 \Hy@Info{Link nesting OFF}
3058 \fi
3059 \ifHy@hyperindex
3060 \Hy@Info{Hyper index ON}
3061 \else
3062 \Hy@Info{Hyper index OFF}
3063 \fi
3064 \ifHy@backref
3065 \Hy@Info{backreferencing ON}
3066 \else
3067 \Hy@Info{backreferencing OFF}
3068 \fi

```



```

3069 \ifHy@colorlinks
3070   \Hy@Info{Link coloring ON}
3071 \else
3072   \Hy@Info{Link coloring OFF}
3073 \fi

```

21 Low-level utility macros

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

```

3074 \edef\hyper@hash{\string#}
3075 \edef\hyper@tilde{\string~}
3076 \edef\hyper@quote{\string"}
3077 \let\@currentHref\@empty
3078 \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.

```

3079 \AfterBeginDocument{%
3080   \Hy@pdfstringtrue
3081   \PDF@SetupDoc
3082   \let\PDF@SetupDoc\@empty
3083   \Hy@DisableOption{pdfpagescrop}%
3084   \Hy@DisableOption{pdfpagemode}%
3085   \Hy@DisableOption{pdfnonfullscreenpagemode}%
3086   \Hy@DisableOption{pdfstartview}%
3087   \Hy@DisableOption{pdfstartpage}%
3088   \Hy@DisableOption{pdftoolbar}%
3089   \Hy@DisableOption{pdfmenubar}%
3090   \Hy@DisableOption{pdfwindowui}%
3091   \Hy@DisableOption{pdf-fit-window}%
3092   \Hy@DisableOption{pdf-center-window}%
3093   \Hy@DisableOption{pdf-display-doctitle}%
3094   \Hy@DisableOption{pdf-page-layout}%
3095   \Hy@DisableOption{baseurl}%
3096   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
3097   \Hy@pdfstringfalse
3098 }

```

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.

```

3099 \def\NoHyper{%
3100   \def\hyper@link@{##1}##2##3##4{##4}%
3101   \def\hyper@@anchor##1{%
3102     \global\let\hyper@livelink\hyper@link
3103     \gdef\hyper@link##1##2##3{##3}%
3104     \def\hyper@anchorstart##1{%
3105       \let\hyper@anchorend\@empty
3106       \def\hyper@linkstart##1##2{%
3107         \let\hyper@linkend\@empty
3108         \def\hyper@linkurl##1##2{##1}%
3109         \def\hyper@linkfile##1##2##3{##1}%
3110         \let\Hy@backout\@gobble

```

```

3111 }
3112 \def\stop@hyper{%
3113   \def\hyper@link@{##1}##2##3##4{##4}%
3114   \let\Hy@backout\@gobble
3115   \def\hyper@@anchor##1{%
3116     \def\hyper@link##1##2##3{##3}%
3117     \def\hyper@anchorstart##1{%
3118       \let\hyper@anchorend\@empty
3119       \def\hyper@linkstart##1##2{%
3120         \let\hyper@linkend\@empty
3121         \def\hyper@linkurl##1##2{##1}%
3122         \def\hyper@linkfile##1##2##3{##1}%
3123       }
3124       \def\endNoHyper{%
3125         \global\let\hyper@link\hyper@livelink
3126       }
3127     }/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:

```

3128 <*nohyperref>
3129 \let\hyper@@anchor\@gobble
3130 \def\hyper@link#1#2#3{##3}%
3131 \let\hyper@anchorstart\@gobble
3132 \let\hyper@anchorend\@empty
3133 \let\hyper@linkstart\@gobbletwo
3134 \let\hyper@linkend\@empty
3135 \def\hyper@linkurl#1#2{##1}%
3136 \def\hyper@linkfile#1#2#3{##1}%
3137 \let\PDF@SetupDoc\@empty
3138 \let\PDF@FinishDoc\@empty

```

Some top-level commands:

```

3139 \let\Acrobatmenu\@gobble
3140 \let\pdfstringdefDisableCommands\@gobbletwo
3141 \let\texorpdfstring\@firstoftwo
3142 \let\pdfbookmark\@undefined
3143 \newcommand\pdfbookmark[3][]{ }
3144 \let\phantomsection\@empty
3145 \let\hypersetup\@gobble
3146 \let\hyperbaseurl\@gobble
3147 \let\href\@gobble
3148 \let\hyperdef\@gobbletwo
3149 \let\hyperlink\@gobble
3150 \let\hypertarget\@gobble
3151 \def\hyperref{\@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}}
3152 \long\def\@gobbleopt[#1]{ }
3153 \let\hyperpage\@empty
3154 </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}`

```
3155 \*package>
3156 \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.

```
3157 \if@filesw
3158   \ifHy@typexml
3159     \immediate\closeout\@mainaux
3160     \immediate\openout\@mainaux\jobname.aux
3161     \immediate\write\@auxout{<relaxxml>\relax}%
3162   \fi
3163   \immediate\write\@auxout{%
3164     \string\ifx\string\hyper@anchor\string\@undefined^^J%
3165     \global\let\string\oldcontentsline\string\contentsline^^J%
3166     \gdef\string\contentsline%
3167       \string#1\string#2\string#3\string#4{%
3168       \string\oldcontentsline%
3169       {\string#1}{\string#2}{\string#3}}^^J%
3170     \global\let\string\oldnewlabel\string\newlabel^^J%
3171     \gdef\string\newlabel\string#1\string#2{%
3172     \string\newlabelxx{\string#1}\string#2^^J%
3173     \gdef\string\newlabelxx%
3174     \string#1\string#2\string#3\string#4\string#5\string#6{%
3175     \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.

```
3176   \string\AtEndDocument{%
3177     \let\string\contentsline\string\oldcontentsline^^J%
3178     \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.

```
3179   \string\else^^J%
3180   \global\let\string\hyper@last\relax^^J%
3181   \string\fi^^J%
3182 }%
3183 \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.

```
3184 \ifx\hyper@last\@undefined
3185   \def\@starttoc#1{%
3186     \begingroup
3187     \makeatletter
3188     \IfFileExists{\jobname.#1}{%
3189       \Hy@WarningNoLine{%
3190         old #1 file detected, not used; run LaTeX again%
```

```

3191         }%
3192     }{}%
3193     \if@filesw
3194         \expandafter\newwrite\csname tf@#1\endcsname
3195         \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
3196     \fi
3197     \@nobreakfalse
3198 \endgroup
3199 }%
3200 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
3201 \fi
3202 }

```

25 Title strings

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

```

3203 \ifHy@usetitle
3204   \let\HyOrg@title\title
3205   \let\HyOrg@author\author
3206   \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
3207   \def\Hy@scanopttitle[#1]{%
3208     \gdef\Hy@title{#1}%
3209     \HyOrg@title[{#1}]%
3210   }%
3211   \def\Hy@scantitle#1{%
3212     \gdef\Hy@title{#1}%
3213     \HyOrg@title{#1}%
3214   }
3215   \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
3216   \def\Hy@scanoptauthor[#1]{%
3217     \gdef\Hy@author{#1}%
3218     \HyOrg@author[{#1}]%
3219   }%
3220   \def\Hy@scanauthor#1{%
3221     \gdef\Hy@author{#1}%
3222     \HyOrg@author{#1}%
3223   }

```

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.

```

3224 \begingroup
3225   \def\process@me#1\@nil#2{%
3226     \expandafter\let\expandafter\x\csname @#2\endcsname
3227     \edef\y{\expandafter\strip@prefix\meaning\x}%
3228     \def\c##1##2\@nil{%
3229       \ifx\\##1\\%
3230         \else
3231           \expandafter\gdef\csname Hy@#2\endcsname
3232             \expandafter{\x}%
3233         \fi
3234       }%
3235       \expandafter\c\y\relax#1\@nil
3236     }%
3237     \expandafter\process@me\string\@latex@\@nil{title}%
3238     \expandafter\process@me\string\@latex@\@nil{author}%

```

```

3239 \endgroup
3240 \fi
3241 \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.

```

3242 \def\Hy@UseMaketitleString#1{%
3243   \@ifundefined{Hy@#1}{}%
3244   \begingroup
3245     \let\Hy@saved@hook\pdfstringdefPreHook
3246     \pdfstringdefDisableCommands{%
3247       \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
3248       \let\newline\\%
3249     }%
3250     \expandafter\ifx\csname @pdf#1\endcsname\@empty
3251       \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
3252         \csname Hy@#1\endcsname\@empty
3253       }%
3254     \fi
3255     \global\let\pdfstringdefPreHook\Hy@saved@hook
3256   \endgroup
3257 }%
3258 }
3259 \def\Hy@newline@title#1{ #1}
3260 \def\Hy@newline@author#1{, #1}
3261 \def\Hy@UseMaketitleInfos{%
3262   \Hy@UseMaketitleString{title}%
3263   \Hy@UseMaketitleString{author}%
3264 }

```

26 Page numbers

This stuff is done by Heiko Oberdiek.

26.1 PDF /PageLabels

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

```

3265 \ifHy@pagelabels

```

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

```

3266 \def\thispdfpagelabel#1{%
3267   \gdef\HyPL@thisLabel{#1}%
3268 }
3269 \global\let\HyPL@thisLabel\relax

```

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

```

3270 \def\HyPL@Labels{}

```

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

```
3271 \newcount\Hy@abspage
3272 \Hy@abspage=0
```

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

```
3273 \def\HyPL@LastType{init}%
3274 \def\HyPL@LastNumber{0}%
3275 \def\HyPL@LastPrefix{}%
```

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

```
3276 \def\HyPL@arabic{D}%
3277 \def\HyPL@Roman{R}%
3278 \def\HyPL@roman{r}%
3279 \def\HyPL@Alph{A}%
3280 \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.

```
3281 \def\HyPL@EveryPage{%
3282   \begingroup
3283   \ifx\HyPL@thisLabel\relax
3284     \let\HyPL@page\thepage
3285   \else
3286     \let\HyPL@page\HyPL@thisLabel
3287     \global\let\HyPL@thisLabel\relax
3288   \fi
3289   \let\HyPL@Type\relax
3290   \ifnum\the\c@page>0
3291     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
3292   \fi
3293   \let\Hy@temp Y%
3294   \ifx\HyPL@Type\HyPL@LastType
3295   \else
3296     \let\Hy@temp N%
3297   \fi
3298   \ifx\HyPL@Type\relax
3299     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
3300   \else
3301     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
3302   \fi
3303   \ifx\HyPL@Prefix\HyPL@LastPrefix
3304   \else
3305     \let\Hy@temp N%
3306   \fi
3307   \if Y\Hy@temp
3308     \advance\c@page by -1
3309     \ifnum\HyPL@LastNumber=\the\c@page\relax
3310     \else
3311       \let\Hy@temp N%
3312     \fi
3313     \Hy@StepCount\c@page
3314   \fi
3315   \if N\Hy@temp
3316     \ifx\HyPL@Type\relax
3317       \HyPL@storePageLabel{/P (\HyPL@Prefix)}%
3318     \else
3319       \HyPL@storePageLabel{%
```

```

3320         \ifx\HyPL@Prefix\@empty
3321         \else
3322             /P (\HyPL@Prefix)
3323         \fi
3324         /S /\csname HyPL\HyPL@Type\endcsname
3325         \ifnum\the\c@page=1
3326         \else
3327             \space/St \the\c@page
3328         \fi
3329     }%
3330 \fi
3331 \fi
3332 \xdef\HyPL@LastNumber{\the\c@page}%
3333 \global\let\HyPL@LastType\HyPL@Type
3334 \global\let\HyPL@LastPrefix\HyPL@Prefix
3335 \endgroup
3336 \Hy@GlobalStepCount\Hy@abspage
3337 }

```

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

```

3338 \def\HyPL@CheckThePage#1\@nil{%
3339     \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
3340 }

```

`\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`.

```

3341 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
3342     \def\Hy@tempa{#4}%
3343     \def\Hy@tempb{\csname\endcsname\c@page}%
3344     \ifx\Hy@tempa\Hy@tempb
3345         \expandafter\ifx\csname HyPL#3\endcsname\relax
3346         \else
3347             \def\HyPL@Type{#3}%
3348             \def\HyPL@Prefix{#2}%
3349         \fi
3350     \else
3351         \begingroup
3352         \let\Hy@next\endgroup
3353         \let\HyPL@found\@undefined
3354         \def\arabic{\HyPL@Format{arabic}}%
3355         \def\Roman{\HyPL@Format{Roman}}%
3356         \def\roman{\HyPL@Format{roman}}%
3357         \def\Alph{\HyPL@Format{Alph}}%
3358         \def\alph{\HyPL@Format{alph}}%
3359         \protected@edef\Hy@temp{#1}%
3360         \ifx\HyPL@found\relax
3361             \toks@{\expandafter{\Hy@temp}}%
3362             \edef\Hy@next{\endgroup
3363                 \noexpand\HyPL@@CheckThePage\the\toks@
3364                 \noexpand\HyPL@found\relax\noexpand\@nil
3365             }%
3366         \fi
3367         \Hy@next
3368     \fi
3369 }

```

`\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`.

```

3370 \def\HyPL@Format#1#2{%
3371   \ifx\HyPL@found\@undefined
3372     \expandafter\ifx\csname c@#2\endcsname\c@page
3373     \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
3374   \else
3375     \expandafter\noexpand\csname#1\endcsname{#2}%
3376   \fi
3377 \else
3378   \expandafter\noexpand\csname#1\endcsname{#2}%
3379 \fi
3380 }
```

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

```

3381 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
3382   \def\Hy@tempa{#3}%
3383   \def\Hy@tempb{\HyPL@found\relax}%
3384   \ifx\Hy@tempa\Hy@tempb
3385     \def\HyPL@Type{#2}%
3386     \def\HyPL@Prefix{#1}%
3387   \fi
3388 }
```

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

```

3389 \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`.

```

3390 \def\HyPL@Useless{0 << /S /D >> }%
3391 \@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.

```

3392 \def\HyPL@SetPageLabels{%
3393   \@onelevel@sanitize\HyPL@Labels
3394   \ifx\HyPL@Labels\@empty
3395   \else
3396     \ifx\HyPL@Labels\HyPL@Useless
3397     \else
3398       \Hy@PutCatalog{/PageLabels << /Nums [\HyPL@Labels] >>}%
3399     \fi
3400   \fi
3401 }
```

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

```

3402 \else
3403   \let\HyPL@EveryPage\@empty
3404 \fi
```

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

```

3405 \Hy@DisableOption{pdfpagelabels}
3406 </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`

```
3407 <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.

```
3408 <*vTeX>
3409 \edef\Hy@VTeXversion{%
3410   \ifx\VTeXversion\undefined
3411     \z@
3412   \else
3413     \ifx\VTeXversion\relax
3414       \z@
3415     \else
3416       \VTeXversion
3417     \fi
3418   \fi
3419 }
3420 \begingroup
3421   \ifnum\Hy@VTeXversion<660 %
3422     \gdef\Hy@PutCatalog#1{%
3423       \Hy@WarningNoLine{%
3424         VTeX 6.59g or above required for pdfpagelabels%
3425       }%
3426     }
3427   \else
3428     \gdef\Hy@PutCatalog#1{%
3429       \Hy@vt@PutCatalog#1/PageLabels <<>>\@nil
3430     }
3431     \gdef\Hy@vt@PutCatalog#1/PageLabels <<#2>>#3\@nil{%
3432       \ifx\#2\%
3433         \else
3434           \immediate\special{!pdfpagelabels #2}%
3435         \fi
3436       }
3437     \fi
3438 \endgroup
3439 </vTeX>

3440 <*pdfTeX | vTeX>
```

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

```
3441 \ifHy@pagelabels
3442   \def\HyPL@StorePageLabel#1{%
3443     \toks@\expandafter{\HyPL@Labels}%
3444     \xdef\HyPL@Labels{%
3445       \the\toks@
3446       \the\Hy@abspage\space<< #1 >> %
3447     }%
3448   }
```

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.

```
3449 \AtEndDocument{\clearpage\HyPL@SetPageLabels}
3450 \fi
3451 \</pdfTeX | vTeX>
```

26.1.2 pdfmarkbase, dvipdfm

`\Hy@PutCatalog`

```
3452 <dvipdfm>\def\Hy@PutCatalog#1{\@pdfmark{docview << #1 >>}}
3453 <*pdfmarkbase>
3454 \def\Hy@PutCatalog#1{%
3455 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
3456 }
3457 </pdfmarkbase>

3458 <*pdfmarkbase | dvipdfm>
3459 \ifHy@pagelabels
```

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

```
3460 \def\HyPL@StorePageLabel#1{%
3461 \if@filesw
3462 \begingroup
3463 \edef\Hy@tempa{\the\Hy@abspage\space<< #1 >> }%
3464 \immediate\write\@mainaux{%
3465 \string\HyPL@Entry{\Hy@tempa}%
3466 }%
3467 \endgroup
3468 \fi
3469 }
```

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.

```
3470 \AfterBeginDocument{%
3471 \if@filesw
3472 \immediate\write\@mainaux{%
3473 \string\providecommand\string*\string\HyPL@Entry[1]{}%
3474 }%
3475 \fi
3476 \ifx\HyPL@Labels\@empty
3477 \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
3478 \else
3479 \HyPL@SetPageLabels
3480 \fi
3481 \let\HyPL@Entry\@gobble
3482 }%
```

`\HyPL@Entry`

```
3483 \def\HyPL@Entry#1{%
3484 \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
3485 \HyPL@Labels
3486 #1%
3487 }%
3488 }
```

```

3489 \fi
3490 </pdfmarkbase | dvipdfm>
3491 <*package>
3492 \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

```

3493 \newcommand\theHequation{\theHsection.\arabic{equation}}
3494 \@ifundefined{thepart}{\newcommand\theHpart{\arabic{part}}}{%
3495 \@ifundefined{thechapter}{%
3496   \newcommand\theHsection    {\arabic{section}}
3497   \newcommand\theHfigure     {\arabic{figure}}
3498   \newcommand\theHtable      {\arabic{table}}
3499 }{%
3500   \newcommand\theHchapter    {\arabic{chapter}}
3501   \newcommand\theHfigure     {\theHchapter.\arabic{figure}}
3502   \newcommand\theHtable      {\theHchapter.\arabic{table}}
3503   \newcommand\theHsection    {\theHchapter.\arabic{section}}
3504 }
3505 \newcommand\theHsubsection   {\theHsection.\arabic{subsection}}
3506 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
3507 \newcommand\theHparagraph    {\theHsubsubsection.\arabic{paragraph}}
3508 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
3509 \newcommand\theHtheorem      {\theHsection.\arabic{theorem}}
3510 \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.

```

3511 \let\H@item\item
3512 \newcounter{Item}
3513 \def\theHItem{\arabic{Item}}
3514 \def\item{%
3515   \@hyper@itemfalse
3516   \if@nmbbrlist\@hyper@itemtrue\fi
3517   \H@item
3518 }

```

```

3519 \newcommand\theHenumi      {\theHItem}
3520 \newcommand\theHenumii     {\theHItem}
3521 \newcommand\theHenumiii     {\theHItem}
3522 \newcommand\theHenumiv      {\theHItem}
3523 \newcommand\theHHfootnote   {\arabic{Hfootnote}}
3524 \newcommand\theHmpfootnote {\arabic{mpfootnote}}
3525 \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.

```

3526 \let\H@refstepcounter\refstepcounter
3527 \edef\name@of@eq{equation}%
3528 \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.

```

3529 \newif\if@hyper@item
3530 \newif\if@skiphyperref
3531 \@hyper@itemfalse
3532 \@skiphyperreffalse
3533 \def\refstepcounter#1{%
3534   \H@refstepcounter{#1}%
3535   \edef\This@name{#1}%
3536   \ifx\This@name\name@of@slide
3537     \else
3538       \if@skiphyperref
3539         \else
3540           \if@hyper@item
3541             \stepcounter{Item}%
3542             \hyper@refstepcounter{Item}%
3543           \else
3544             \hyper@refstepcounter{#1}%
3545           \fi
3546         \fi
3547       \fi
3548 }

```

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.

```

3549 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

3550 \def\hyper@refstepcounter#1{%
3551   \edef\This@name{#1}%
3552   \ifx\This@name\name@of@eq
3553     \make@stripped@name{\theequation}%
3554     \let\theHequation\newname
3555   \fi
3556   \@ifundefined{theH#1}{%
3557     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
3558   }{}%
3559   \hyper@makecurrent{#1}%
3560   \ifmeasuring@
3561     \else
3562     \Hy@raisedlink{%

```

```

3563     \hyper@anchorstart{\@currentHref}\hyper@anchorend
3564   }%
3565   \fi
3566 }

```

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.

```

3567 \def\Hy@chapterstring{chapter}
3568 \def\Hy@appendixstring{appendix}
3569 \def\Hy@chapapp{\Hy@chapterstring}
3570 \let\HyOrg@appendix\appendix
3571 \def\appendix{%
3572   \@ifundefined{chapter}%
3573     {\gdef\theHsection{\Alph{section}}}%
3574     {\gdef\theHchapter{\Alph{chapter}}}%
3575   \xdef\Hy@chapapp{\Hy@appendixstring}%
3576   \HyOrg@appendix
3577 }

```

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

```

3578 \def\hyper@makecurrent#1{%
3579   \begingroup
3580     \edef\Hy@param{#1}%
3581     \ifx\Hy@param\Hy@chapterstring
3582       \let\Hy@param\Hy@chapapp
3583     \fi
3584     \ifHy@hypertextnames
3585       \let\@number\@firstofone
3586       \ifHy@naturalnames
3587         \let\textlatin\@firstofone
3588         \xdef\@currentHlabel{\csname the#1\endcsname}%
3589       \else
3590         \xdef\@currentHlabel{\csname theH#1\endcsname}%
3591       \fi
3592       \xdef\@currentHref{%
3593         \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
3594       }%
3595     \else
3596       \Hy@GlobalStepCount\Hy@linkcounter
3597       \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
3598     \fi
3599   \endgroup
3600 }

3601 \@ifpackageloaded{fancyvrb}{%
3602   \def\FV@StepLineNo{%
3603     \FV@SetLineNo
3604     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
3605     \FV@StepLineNo
3606   }%
3607 }{}

```

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`

```

3608 \AtBeginDocument{%
3609   \@ifpackageloaded{lastpage}{%
3610     \ifHy@pageanchor
3611     \else
3612       \Hy@WarningNoLine{%
3613         The \string\pageref{LastPage} link doesn't work\MessageBreak
3614         with disabled option 'pageanchor'%
3615       }%
3616     \fi
3617     \def\lastpage@putlabel{%
3618       \addtocounter{page}{-1}%
3619       \if@filesw
3620         \begingroup
3621           \let\@number\@firstofone
3622           \ifHy@pageanchor
3623             \ifHy@hypertexnames
3624               \ifHy@plainpages
3625                 \def\Hy@temp{\arabic{page}}%
3626               \else
3627                 \Hy@unicodedefalse
3628                 \pdfstringdef\Hy@temp{\thepage}%
3629               \fi
3630             \else
3631               \def\Hy@temp{\the\Hy@pagecounter}%
3632             \fi
3633           \fi
3634           \immediate\write\@auxout{%
3635             \string\newlabel
3636             {LastPage}{\the\Hy@temp}{\thepage}{%
3637               \ifHy@pageanchor page.\Hy@temp\fi}{}}%
3638           }%
3639         \endgroup
3640       \fi
3641       \addtocounter{page}{1}%
3642     }%
3643   }{}%
3644 }
3645 \endpackage
3646 \ifcheck
3647 \checkpackage{lastpage}[1994/06/25]
3648 \checkcommand\def\lastpage@putlabel{%
3649   \addtocounter{page}{-1}%
3650   \immediate\write\@auxout{%
3651     \string\newlabel{LastPage}{\the\Hy@temp}{\thepage}{%
3652       }%
3653     \addtocounter{page}{1}%
3654   }

```

```

3655 </check>
3656 <*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.

```

3657 \def\hypergetref#1{\getrefbykeydefault{#1}{-}{??}}
3658 \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:

```

3659 \@ifpackageloaded{titlesec}{%
3660   \def\ttl@Hy@steplink#1{%
3661     \Hy@GlobalStepCount\Hy@linkcounter
3662     \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
3663     \def\ttl@Hy@saveanchor{%
3664       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
3665     }%
3666   }%
3667   \def\ttl@Hy@refstepcounter#1{%
3668     \let\ttl@b\Hy@raisedlink
3669     \def\Hy@raisedlink##1{\def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}}%
3670     \refstepcounter{#1}%
3671     \let\Hy@raisedlink\ttl@b
3672   }%
3673 }{}

```

Package titletoc support:

```

3674 \@ifpackageloaded{titletoc}{%
3675   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
3676 }{}

```

31 Package varioref support

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

```

3677 \def\Hy@varioref@undefined{{???}{??}{-}{-}}
3678 \@ifpackageloaded{varioref}{%
3679   \def\vref@pagenum#1#2{%
3680     \ifundefined{r@#2}{%
3681       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
3682     }{}%
3683     \edef#1{\getpagerefnumber{#2}}%
3684   }%
3685 }{}

```

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

```

3686 \@ifpackageloaded{longtable}{%
3687   \begingroup
3688     \def\y{\LT@array}%
3689     \@ifundefined{scr@LT@array}{\def\y{\scr@LT@array}}{}%
3690     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
3691       \expandafter\endgroup
3692       \expandafter\def\y[##1]##2{%
3693         \H@refstepcounter{#1}%
3694         \hyper@makecurrent{table}%
3695         #2\@sharp###4%
3696       }%
3697     }%
3698   \expandafter\expandafter\expandafter\x\y[#1]{#2}\@nil

```

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

```

3699   \begingroup
3700     \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
3701       \endgroup
3702       \def\LT@start{%
3703         #1%
3704         \hyper@refstepcounter{table}%
3705         \ifvoid\LT@firsthead\copy
3706         #2%
3707       }%
3708     }%
3709   \expandafter\x\LT@start\@nil
3710 }{}

```

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.

```

3711 \let\new@refstepcounter\refstepcounter
3712 \let\H@equation\equation
3713 \let\H@endequation\endequation
3714 \@ifpackageloaded{amsmath}{%
3715   \long\def\Hy@temp{%
3716     \incr@eqnum
3717     \mathdisplay@push
3718     \st@rredfalse \global\@eqnswtrue
3719     \mathdisplay{equation}%
3720   }%
3721   \ifx\Hy@temp\equation
3722     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
3723       \csname iftrue\endcsname

```



```

3724     \else
3725         \long\def\equation{%
3726             \mathdisplay@push
3727             \st@rredfalse \global\@eqnswtrue
3728             \mathdisplay{equation}%
3729             \incr@eqnum
3730         }%
3731     \fi
3732 \fi
3733 }{%
3734 \def\equation{%
3735     \let\refstepcounter\H@refstepcounter
3736     \H@equation
3737     \make@stripped@name{\theequation}%
3738     \let\theHequation\newname
3739     \hyper@makecurrent{equation}%
3740     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
3741     \let\refstepcounter\new@refstepcounter
3742 }%
3743 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
3744 }

```

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.

```

3745 \newif\if@eqnstar
3746 \@eqnstarfalse
3747 \let\H@eqnarray\eqnarray
3748 \let\H@endeqnarray\endeqnarray
3749 \def\eqnarray{%
3750     \let\Hy@reserved@a\relax
3751     \def\@currentHref{}%
3752     \H@eqnarray
3753     \if@eqnstar
3754     \else
3755         \ifx\\\@currentHref\\%
3756         \else
3757             \make@stripped@name{\theequation}%
3758             \let\theHequation\newname
3759             \hyper@makecurrent{equation}%
3760             \hyper@anchorstart{\@currentHref}\hyper@anchorend
3761         \fi
3762     \fi
3763 }
3764 \def\endeqnarray{%
3765     \H@endeqnarray
3766 }

```

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.

```

3767 \@namedef{eqnarray*}{%
3768     \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
3769 }
3770 \@namedef{endeqnarray*}{%
3771     \nonumber\endeqnarray\@eqnstarfalse
3772 }

```

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

```

3773 \ifundefined{subeqnarray}{-}{%
3774   \let\H@subeqnarray\subeqnarray
3775   \let\H@endsubeqnarray\endsubeqnarray
3776   \def\subeqnarray{%
3777     \let\Hy@reserved@a\relax
3778     \H@subeqnarray
3779     \make@stripped@name{\theequation}%
3780     \let\theHequation\newname
3781     \hyper@makecurrent{equation}%
3782     \hyper@anchorstart{\@currentHref}{-}\hyper@anchorend
3783   }%
3784   \def\endsubeqnarray{%
3785     \H@endsubeqnarray
3786   }%
3787   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
3788 }
```

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

```

3789 \def\make@stripped@name#1{%
3790   \begingroup
3791     \escapechar\m@ne
3792     \global\let\newname\@empty
3793     \protected@edef\Hy@tempa{#1}%
3794     \edef\@tempb{%
3795       \noexpand\@tfor\noexpand\Hy@tempa:=%
3796       \expandafter\strip@prefix\meaning\Hy@tempa
3797     }%
3798     \@tempb\do{%
3799       \if\Hy@tempa\else
3800       \if}\Hy@tempa\else
3801       \xdef\newname{\newname\Hy@tempa}%
3802     \fi
3803   \fi
3804 }%
3805 \endgroup
3806 }
```

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.

```

3807 \ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{-}
3808 \ifHy@hyperfootnotes
3809   \newcounter{Hfootnote}
3810   \let\H@@footnotetext\@footnotetext
3811   \let\H@@footnotemark\@footnotemark
3812   \def\@xfootnotenext[#1]{%
3813     \begingroup
3814     \csname c@\@mpfn\endcsname #1\relax
3815     \unrestored@protected\xdef\@thefnmark{\thempfn}%
3816   \endgroup
}
```

```

3817 \ifx\@footnotetext\@mpfootnotetext
3818 \expandafter\H@@mpfootnotetext
3819 \else
3820 \expandafter\H@@footnotetext
3821 \fi
3822 }%
3823 \def\@xfootnotemark[#1]{%
3824 \begingroup
3825 \c@footnote #1\relax
3826 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
3827 \endgroup
3828 \H@@footnotemark
3829 }%
3830 \let\H@@mpfootnotetext\@mpfootnotetext
3831 \long\def\@mpfootnotetext#1{%
3832 \H@@mpfootnotetext{%
3833 \ifHy@nesting
3834 \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
3835 \else
3836 \Hy@raisedlink{%
3837 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
3838 }#1%
3839 \fi
3840 }%
3841 }%
3842 \long\def\@footnotetext#1{%
3843 \H@@footnotetext{%
3844 \ifHy@nesting
3845 \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
3846 \else
3847 \Hy@raisedlink{%
3848 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
3849 }%
3850 \let\@currentHlabel\Hy@footnote@currentHlabel
3851 \let\@currentHref\Hy@footnote@currentHref
3852 \let\@currentlabelname\@empty
3853 #1%
3854 \fi
3855 }%
3856 }%

```

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.

```

3857 \def\@footnotemark{%
3858 \leavevmode
3859 \ifhmode\edef\@x@sff{\the\spacefactor}\nobreak\fi
3860 \stepcounter{Hfootnote}%
3861 \global\let\Hy@saved@currentHlabel\@currentHlabel
3862 \global\let\Hy@saved@currentHref\@currentHref
3863 \hyper@makecurrent{Hfootnote}%
3864 \global\let\Hy@footnote@currentHlabel\@currentHlabel
3865 \global\let\Hy@footnote@currentHref\@currentHref
3866 \global\let\@currentHlabel\Hy@saved@currentHlabel
3867 \global\let\@currentHref\Hy@saved@currentHref
3868 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
3869 \@makefnmark

```

```

3870 \hyper@linkend
3871 \ifhmode\spacefactor\@x@sf\fi
3872 \relax
3873 }%

```

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.

```

3874 \@ifpackageloaded{longtable}{%
3875 \CheckCommand*{\LT@p@ftntext}[1]{%
3876 \edef\@tempa{%
3877 \the\LT@p@ftn
3878 \noexpand\footnotetext[\the\c@footnote]%
3879 }%
3880 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
3881 }%
3882 \long\def\LT@p@ftntext#1{%
3883 \edef\@tempa{%
3884 \the\LT@p@ftn
3885 \begingroup
3886 \noexpand\c@footnote=\the\c@footnote\relax
3887 \noexpand\protected@xdef
3888 \noexpand\@thefnmark{\noexpand\thempfn}%
3889 \noexpand\protected@xdef\noexpand\@thefnmark{%
3890 \noexpand\thempfn
3891 }%
3892 \expandafter\expandafter\expandafter\noexpand
3893 \expandafter\expandafter\expandafter\Hy@LT@footnotetext
3894 \expandafter\expandafter\expandafter{%
3895 \expandafter\Hy@footnote@currentHref\expandafter
3896 }\expandafter{\Hy@footnote@currentHlabel}%
3897 }%
3898 \global\LT@p@ftn\expandafter{%
3899 \@tempa{#1}%
3900 \endgroup
3901 }%
3902 }%
3903 \long\def\Hy@LT@footnotetext#1#2#3{%
3904 \H@@@footnotetext{%
3905 \ifHy@nesting
3906 \hyper@@anchor{#1}{#3}%
3907 \else
3908 \Hy@raisedlink{%
3909 \hyper@@anchor{#1}{\relax}%
3910 }%
3911 \def\@currentHlabel{#2}%
3912 \def\@currentHref{#1}%
3913 \let\@currentlabelname\@empty
3914 #3%
3915 \fi
3916 }%
3917 }%
3918 }{}%

```

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.

```

3919 \let\HyOrg@maketitle\maketitle

```

```

3920 \def\maketitle{%
3921   \let\Hy@saved@footnotemark\@footnotemark
3922   \let\Hy@saved@footnotetext\@footnotetext
3923   \let\@footnotemark\H@@footnotemark
3924   \let\@footnotetext\H@@footnotetext
3925   \@ifnextchar[\Hy@maketitle@optarg{% ]
3926     \HyOrg@maketitle
3927     \Hy@maketitle@end
3928   }%
3929 }%
3930 \def\Hy@maketitle@optarg[#1]{%
3931   \HyOrg@maketitle[#{#1}]%
3932   \Hy@maketitle@end
3933 }%
3934 \def\Hy@maketitle@end{%
3935   \ifx\@footnotemark\H@@footnotemark
3936     \let\@footnotemark\Hy@saved@footnotemark
3937   \fi
3938   \ifx\@footnotetext\H@@footnotetext
3939     \let\@footnotetext\Hy@saved@footnotetext
3940   \fi
3941 }%

```

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

```

3942 \def\realfootnote{%
3943   \@ifnextchar[\@xfootnote{%
3944     \stepcounter{\@mpfn}%
3945     \protected@xdef\@thefnmark{\thempfn}%
3946     \H@@footnotemark\H@@footnotetext
3947   }%
3948 }%

3949 \fi
3950 \Hy@DisableOption{hyperfootnotes}

3951 </package>
3952 <*check>
3953 \checklatex
3954 \checkcommand\def\@xfootnotenext[#1]{%
3955   \begingroup
3956     \csname c@\@mpfn\endcsname #1\relax
3957     \unrestored@protected@xdef\@thefnmark{\thempfn}%
3958   \endgroup
3959   \@footnotetext
3960 }
3961 \checkcommand\def\@xfootnotemark[#1]{%
3962   \begingroup
3963     \c@footnote #1\relax
3964     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
3965   \endgroup
3966   \@footnotemark
3967 }
3968 \checkcommand\def\@footnotemark{%
3969   \leavevmode
3970   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
3971   \@makefnmark
3972   \ifhmode\spacefactor\@x@sf\fi
3973   \relax

```

```

3974 }
3975 </check>
3976 <*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.

```

3977 \def\caption{%
3978   \ifx\@capttype\@undefined
3979     \latex@error{\noexpand\caption outside float}\@ehd
3980     \expandafter\@gobble
3981   \else
3982     \H@refstepcounter\@capttype
3983     \@ifundefined{fst@\@capttype}{%
3984       \let\Hy@tempa\@caption
3985     }{%
3986       \let\Hy@tempa\Hy@float@caption
3987     }%
3988     \expandafter\@firstofone
3989   \fi
3990   {\@dblarg{\Hy@tempa\@capttype}}%
3991 }
3992 \long\def\@caption#1[#2]#3{%
3993   \hyper@makecurrent{\@capttype}%
3994   \def\@currentlabelname{#2}%
3995   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
3996     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
3997   }%
3998   \begingroup
3999     \@parboxrestore
4000     \if@minipage
4001       \setminipage
4002     \fi
4003     \normalsize
4004     \@makecaption{\csname fnum@#1\endcsname}{%
4005       \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

4006     \ifHy@nesting
4007       \hyper@@anchor{\@currentHref}{#3}%
4008     \else
4009       \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
4010     \fi
4011   }%
4012   \par
4013 \endgroup
4014 }

```

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.

```

4015 \let\Hy@float@caption\@caption
4016 \ifpackageloaded{float}{%
4017   \def\Hy@float@caption{%
4018     \hyper@makecurrent{\@capttype}%
4019     \float@caption
4020   }

```

```

4021 \let\HyOrg@float@makebox\float@makebox
4022 \renewcommand{\float@makebox}[1]{%
4023   \HyOrg@float@makebox{%
4024     #1\relax
4025     \begingroup
4026       \hyper@makecurrent{\@cuptype}%
4027       \hyper@@anchor{\@currentHref}{\relax}%
4028     \endgroup
4029   }%
4030 }%
4031 }{}

4032 </package>
4033 <*check>
4034 \checklatex[1999/06/01 - 2000/06/01]
4035 \checkcommand\def\caption{%
4036   \ifx\@cuptype\undefined
4037     \latex@error{\noexpand\caption outside float}\@ehd
4038     \expandafter\@gobble
4039   \else
4040     \refstepcounter\@cuptype
4041     \expandafter\@firstofone
4042   \fi
4043   {\@dblarg{\@caption\@cuptype}}%
4044 }
4045 \checkcommand\long\def\@caption#1[#2]#3{%
4046   \par
4047   \addcontentsline{csname ext@#1\endcsname}{#1}%
4048   {\protect\numberline{csname the#1\endcsname}{\ignorespaces #2}}%
4049   \begingroup
4050     \@parboxrestore
4051     \if@minipage
4052       \setminipage
4053     \fi
4054     \normalsize
4055     \makecaption{csname fnum@#1\endcsname}{\ignorespaces #3}\par
4056   \endgroup
4057 }
4058 </check>
4059 <*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.

```

4060 \def\hyper@natlinkstart#1{%
4061   \Hy@backout{#1}%
4062   \hyper@linkstart{cite}{cite.#1}%
4063   \def\hyper@nat@current{#1}%
4064 }

```

```

4065 \def\hyper@natlinkend{%
4066   \hyper@linkend
4067 }
4068 \def\hyper@natlinkbreak#1#2{%
4069   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
4070 }
4071 \def\hyper@natanchorstart#1{%
4072   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
4073 }
4074 \def\hyper@natanchorend{\hyper@anchorend}

```

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

```

4075 \@ifundefined{NAT@parse}{%
4076   \def\bibcite#1#2{%
4077     \newl@bel{b}{#1}\@extra@binfo{\hyper@link[cite]{}{cite.#1}{#2}}%
4078   }%
4079   \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.”.

```

4080 \let\Hy@bibcite\bibcite
4081 \begingroup
4082   \@ifundefined{bbl@cite@choice}{%
4083     \g@addto@macro\bbl@cite@choice{%
4084       \let\bibcite\Hy@bibcite
4085     }%
4086   }%
4087 \endgroup

```

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

```

4088 \providecommand*{\@BIBLABEL}{\@biblabel}%
4089 \def\@lbibitem[#1]#2{%
4090   \@skiphyperreftrue
4091   \H@item[%
4092     \ifx\Hy@raisedlink\empty
4093       \hyper@anchorstart{cite.#2}\@BIBLABEL{#1}\hyper@anchorend
4094     \else
4095       \Hy@raisedlink{\hyper@anchorstart{cite.#2}\hyper@anchorend}%
4096       \@BIBLABEL{#1}%
4097     \fi
4098     \hfill
4099   ]%
4100   \@skiphyperreffalse
4101   \if@filesw
4102     \begingroup
4103       \let\protect\noexpand
4104       \immediate\write\@auxout{%
4105         \string\bibcite{#2}{#1}%
4106       }%
4107     \endgroup
4108   \fi
4109   \ignorespaces
4110 }%

```

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

```

4111 \def\@bibitem#1{%
4112   \@skiphyperreftrue\H@item\@skiphyperreffalse

```



```

4113 \Hy@raisedlink{\hyper@anchorstart{cite.#1}\relax\hyper@anchorend}%
4114 \if@filesw
4115 \begingroup
4116 \let\protect\noexpand
4117 \immediate\write\@auxout{%
4118 \string\bibcite{#1}{\the\value{\@listctr}}}%
4119 }%
4120 \endgroup
4121 \fi
4122 \ignorespaces
4123 }%
4124 }{}

4125 </package>
4126 <*check>
4127 \checklatex
4128 \checkcommand\def\@lbibitem[#1]#2{%
4129 \item[\@biblabel{#1}\hfill]%
4130 \if@filesw
4131 {%
4132 \let\protect\noexpand
4133 \immediate\write\@auxout{%
4134 \string\bibcite{#2}{#1}%
4135 }%
4136 }%
4137 \fi
4138 \ignorespaces
4139 }
4140 \checkcommand\def\@bibitem#1{%
4141 \item
4142 \if@filesw
4143 \immediate\write\@auxout{%
4144 \string\bibcite{#1}{\the\value{\@listctr}}}%
4145 }%
4146 \fi
4147 \ignorespaces
4148 }
4149 </check>
4150 <*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.

```

4151 \@ifclassloaded{revtex}{%
4152 \Hy@Info{*** compatibility with revtex **** }%
4153 \def\revtex@checking#1#2{%
4154 \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
4155 \expandafter\def\csname b@#1\endcsname{#2}%
4156 \@SetMaxRnhefLabel{#1}%
4157 \expandafter\let\csname b@#1\endcsname\T@temp
4158 }%

```

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

```

4159 \@ifundefined{CITE}{\def\CITE{\@cite}}{}%
4160 \providecommand*\@extra@b@citeb{}%
4161 \def\CITE[#1]#2{%
4162 \let\@citea\@empty

```

```

4163 \leavevmode
4164 \unskip
4165 $~{%
4166 \scriptstyle
4167 \@CITE{%
4168 \for\@citeb:=#2\do{%
4169 \citea
4170 \def\@citea{\penalty\@m\ }%
4171 \edef\@citeb{\expandafter\@firstofone\@citeb}%
4172 \if@filesw
4173 \immediate\write\@auxout{\string\citation{\@citeb}}%
4174 \fi
4175 \@ifundefined{b@\@citeb\extra@b@citeb}{%
4176 \mbox{\reset@font\bfseries ?}%
4177 \G@refundefinedtrue
4178 \@latex@warning{%
4179 Citation '\@citeb' on page \thepage \space undefined%
4180 }%
4181 }{%
4182 {\csname b@\@citeb\extra@b@citeb\endcsname}%
4183 }%
4184 }%
4185 }{#1}%
4186 }$%
4187 }%

```

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.

```

4188 \def\@citex[#1]#2{%
4189 \let\@citea\@empty
4190 \@cite{%
4191 \for\@citeb:=#2\do{%
4192 \citea
4193 \def\@citea{\penalty\@m\ }%
4194 \edef\@citeb{\expandafter\@firstofone\@citeb}%
4195 \if@filesw
4196 \immediate\write\@auxout{\string\citation{\@citeb}}%
4197 \fi
4198 \@ifundefined{b@\@citeb\extra@b@citeb}{%
4199 \mbox{\reset@font\bfseries ?}%
4200 \G@refundefinedtrue
4201 \@latex@warning{%
4202 Citation '\@citeb' on page \thepage \space undefined%
4203 }%
4204 }{%
4205 \hbox{\csname b@\@citeb\extra@b@citeb\endcsname}%
4206 }%
4207 }%
4208 }{#1}%
4209 }%
4210 }{}

```

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.

```

4211 \ifpackageloaded{harvard}{%
4212   \AtBeginDocument{%
4213     \Hy@Info{*** compatibility with harvard *** }%
4214     \Hy@raiselinksfalse
4215     \def\harvardcite#1#2#3#4{%
4216       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{cite.#1}{#2}}%
4217       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{cite.#1}{#3}}%
4218       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{cite.#1}{#4}}%
4219       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
4220     }%
4221     \def\HAR@citetoaux#1{%
4222       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
4223       \ifHy@backref
4224         \ifx\@empty\@currentlabel
4225           \else
4226             \@bsphack
4227             \if@filesw
4228               \protected@write\@auxout{}{%
4229                 \string\writefile{brf}{%
4230                   \string\backcite{#1}{%
4231                     {thepage}{\@currentlabel}{\@currentHref}%
4232                   }%
4233                 }%
4234               }%
4235             \fi
4236             \@esphack
4237           \fi
4238         \fi
4239       }%
4240     \def\harvarditem{%
4241       \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
4242     }%
4243     \def\@harvarditem[#1]#2#3#4#5\par{%
4244       \item[]%
4245       \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
4246       \if@filesw
4247         \begingroup
4248           \def\protect##1{\string ##1\space}%
4249           \ifthenelse{\equal{#1}{\null}}{%
4250             {\def\next{{#4}{#2}{#3}}}%
4251             {\def\next{{#4}{#2}{#1}{#3}}}%
4252           \immediate\write\@auxout{\string\harvardcite\codeof\next}%
4253         \endgroup
4254       \fi
4255       \protect\hspace*{-\labelwidth}%
4256       \protect\hspace*{-\labelsep}%
4257       \ignorespaces
4258       #5%
4259       \ifHy@backref
4260         \newblock
4261         \backref{\csname br@#4\endcsname}%
4262       \fi
4263     \par
4264   }%

```

`\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`:

```

4265 \long\def\HAR@checkcitations#1#2#3#4{%
4266   \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
4267   \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
4268     \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
4269     \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
4270       \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
4271       \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
4272     \else
4273       \@tempswatrue
4274     \fi
4275   \else
4276     \@tempswatrue
4277   \fi
4278 \else
4279   \@tempswatrue
4280 \fi
4281 }%
4282 }%
4283 }{}

```

36.2 Package chicago

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

```

4284 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

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

```

`\shortciteN`

```

4291 \def\shortciteN{%
4292   \def\@citesep{-1000}%
4293   \def\@cite##1##2{##1}%
4294   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
4295   \@citedata@opt
4296 }%

```

`\@citedata@opt`

```

4297 \def\@citedata@opt{%
4298   \let\@cite@opt\@empty
4299   \@ifnextchar [{%
4300     \@tempswatrue
4301     \@citedatax@opt
4302   }{%
4303     \@tempswafalse
4304     \@citedatax[]%
4305   }%
4306 }%

```

\@citedatax@opt

```
4307 \def\@citedatax@opt[#1]{%
4308   \def\@cite@opt{, #1}%
4309   \@citedatax[#1]}%
4310 }

4311 }{}
```

37 Page numbers

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

```
4312 \def\@begindvi{%
4313   \unvbox \@begindvibox
4314   \Hy@begindvi
4315   \global\let\@begindvi\Hy@begindvi
4316 }
4317 \def\Hy@begindvi{%
4318   \@hyperfixhead
4319   \HyPL@EveryPage
4320 }
4321 \def\pagenumbering#1{%
4322   \global\c@page \@ne
4323   \gdef\thepage{\csname @#1\endcsname\c@page}%
4324 }
```

This is needed for some unremembered reason...

```
4325 \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`.

```
4326 \providecommand\hyper@pagetransition{}
4327 \providecommand\hyper@pageduration{}
4328 \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

```
4329 \def\@hyperfixhead{%
4330   \Hy@DistillerDestFix
4331   \ifHy@pageanchor
4332     \ifHy@hypertextnames
4333     \ifHy@plainpages
4334       \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
4335     \else
4336       \begingroup
4337       \let\@number\@firstofone
4338       \Hy@unicodedefalse
4339       \pdfstringdef\@theH@page{\thepage}%
4340     \fi
4341   \fi
4342 }
```

```

4340         \endgroup
4341         \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\@theH@page}}}%
4342     \fi
4343     \else
4344         \Hy@GlobalStepCount\Hy@pagecounter
4345         \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}}%
4346     \fi
4347     \else
4348         \let\Hy@TempPageAnchor\@empty
4349     \fi
4350     \let\H@old@thehead\@thehead
4351     \if~\@thehead~%
4352         \def\H@old@thehead{\hfil}%
4353     \fi
4354     \ifHy@texht
4355         \def\@thehead{}%
4356     \else
4357         \ifHy@seminarslides
4358             \begingroup
4359                 \let\leavevmode\relax
4360                 \Hy@TempPageAnchor\relax
4361                 \hyper@pagetransition
4362                 \hyper@pageduration
4363                 \hyper@pagehidden
4364             \endgroup
4365         \else
4366             \def\@thehead{%
4367                 \Hy@TempPageAnchor\relax
4368                 \hyper@pagetransition
4369                 \hyper@pageduration
4370                 \hyper@pagehidden
4371                 \H@old@thehead
4372             }%
4373         \fi
4374     \fi
4375     \ifx\PDF@FinishDoc\@empty
4376     \else
4377         \PDF@FinishDoc
4378         \gdef\PDF@FinishDoc{}%
4379     \fi
4380 }

```

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.

```

4381 \begingroup\expandafter\expandafter\expandafter\endgroup
4382 \expandafter\ifx\csname chapter\endcsname\relax
4383     \def\toclevel@part{0}
4384 \else
4385     \def\toclevel@part{-1}
4386 \fi
4387 \def\toclevel@chapter{0}
4388 \def\toclevel@section{1}
4389 \def\toclevel@subsection{2}

```

```

4390 \def\toclevel@subsubsection{3}
4391 \def\toclevel@paragraph{4}
4392 \def\toclevel@subparagraph{5}
4393 \def\toclevel@figure{0}
4394 \def\toclevel@table{0}
4395 \@ifpackageloaded{listings}{%
4396   \providecommand*\theHlstlisting{\thelstlisting}%
4397   \providecommand*\toclevel@lstlisting{0}%
4398 }{}
4399 \@ifpackageloaded{listing}{%
4400   \providecommand*\theHlisting{\thelisting}%
4401   \providecommand*\toclevel@listing{0}%
4402 }{}
4403 \def\addcontentsline#1#2#3{% toc extension, type, tag
4404   \begingroup
4405     \let\label\@gobble
4406     \let\textlatin\@firstofone
4407     \ifx\@currentHref\@empty
4408       \Hy@Warning{%
4409         No destination for bookmark of \string\addcontentsline,%
4410         \MessageBreak destination is added%
4411       }%
4412     \phantomsection
4413   \fi
4414   \expandafter\ifx\csname toclevel@#2\endcsname\relax
4415     \begingroup
4416       \def\Hy@tempa{#1}%
4417       \ifx\Hy@tempa\Hy@bookmarkstype
4418         \Hy@WarningNoLine{bookmark level for unknown #2 defaults to 0}%
4419       \else
4420         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
4421       \fi
4422     \endgroup
4423     \expandafter\gdef\csname toclevel@#2\endcsname{0}%
4424   \fi
4425   \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
4426   \Hy@writebookmark{\csname the#2\endcsname}%
4427     {#3}%
4428     {\@currentHref}%
4429     {\Hy@toclevel}%
4430     {#1}%
4431   \ifHy@verbose
4432     \def\Hy@tempa{#3}%
4433     \@onelevel@sanitize\Hy@tempa
4434     \typeout{pdftex: bookmark at \the\inputlineno:
4435       {\csname the#2\endcsname}
4436       {\Hy@tempa}
4437       {\@currentHref}%
4438       {\Hy@toclevel}%
4439       {#1}%
4440     }%
4441   \fi
4442   \addtocontents{#1}{%
4443     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
4444   }%
4445 \endgroup
4446 }

```

```

4447 \def\contentsline#1#2#3#4{%
4448   \ifx\#4\%
4449     \csname l@#1\endcsname{#2}{#3}%
4450   \else
4451     \ifHy@linktocpage
4452       \csname l@#1\endcsname{#2}{#3}%
4453       \hyper@linkstart{link}{#4}{#3}\hyper@linkend
4454     }%
4455   \else
4456     \csname l@#1\endcsname{%
4457       \hyper@linkstart{link}{#4}{#2}\hyper@linkend
4458     }{#3}%
4459   \fi
4460 \fi
4461 }

4462 \</package>
4463 \<*check>
4464 \checklatex
4465 \checkcommand\def\addcontentsline#1#2#3{%
4466   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
4467 }
4468 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
4469 \</check>
4470 \<*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.

```

4471 \let\H@definecounter\@definecounter
4472 \def\@definecounter#1{%
4473   \H@definecounter{#1}%
4474   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
4475 }

```

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.

```

4476 \let\H@newctr\@newctr
4477 \def\@newctr#1[#2]{%
4478   \H@newctr#1[#2]%
4479   \expandafter\def\csname theH#1\endcsname{%
4480     \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
4481   }%
4482 }

```

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.

```

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 }
4490 \let\Hmake@df@tag@@\make@df@tag@@
4491 \def\make@df@tag@@#1{%
4492   \Hmake@df@tag@@{#1}%
4493   \Hy@GlobalStepCount\Hy@linkcounter
4494   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4495   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4496 }

```

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

```

4497 \@ifpackagewith{hyperref}{pdftex}{%
4498   \let\H@seteqlabel\@seteqlabel
4499   \def\@seteqlabel#1{%
4500     \H@seteqlabel{#1}%
4501     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4502     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4503   }%
4504 }{}

```

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.

```

4505 \let\HyOrg@addtoreset\@addtoreset
4506 \def\@addtoreset#1#2{%
4507   \HyOrg@addtoreset{#1}{#2}%
4508   \expandafter\xdef\csname theH#1\endcsname{%
4509     \expandafter\noexpand
4510       \csname the\ifundefined{theH#2}{H#2}\endcsname
4511     .\noexpand\the\noexpand\value{#1}%
4512   }%
4513 }

```

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

```

4514 \</package>
4515 \< *check>
4516 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
4517 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
4518   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
4519     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
4520       \@addtoreset{#2}{#3}%

```

```

4521 \exp\edef\csname the#2\endcsname{%
4522 \exp\@nx\csname the#3\endcsname .\@nx#1{#2}%
4523 }%
4524 }%
4525 }%
4526 }%
4527 </check>
4528 <*package>
4529 \@ifpackageloaded{amsmath}{%
4530 \@ifpackagelater{amsmath}{1999/12/14}{%
4531 \renewcommand*{\numberwithin}[3][\arabic]{%
4532 \ifundefined{c@#2}{\@nocounterr{#2}}{%
4533 \ifundefined{c@#3}{\@nocnterr{#3}}{%
4534 \HyOrg@addtoreset{#2}{#3}%
4535 \exp\edef\csname the#2\endcsname{%
4536 \exp\@nx\csname the#3\endcsname .\@nx#1{#2}%
4537 }%
4538 \exp\edef\csname theH#2\endcsname{%
4539 \exp\@nx
4540 \csname the\ifundefined{theH#3}{H#3\endcsname
4541 .\@nx#1{#2}%
4542 }%
4543 }%
4544 }%
4545 }%
4546 }{%
4547 \Hy@WarningNoLine{%
4548 \string\numberwithin\space of package ‘amsmath’
4549 only fixed\MessageBreak
4550 for version 2000/06/06 v2.12 or newer%
4551 }%
4552 }
4553 }{}

```

41 Included figures

Simply intercept the low level graphics package macro.

```

4554 \ifHy@figures
4555 \let\Hy@Gin@setfile\Gin@setfile
4556 \def\Gin@setfile#1#2#3{%
4557 \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
4558 }
4559 \fi
4560 \Hy@DisableOption{hyperfigures}

```

42 hyperindex entries

Internal command names are prefixed with \HyInd@.

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

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

```

4561 \ifHy@hyperindex
4562   \def\HyInd@ParenLeft{()}%
4563   \def\HyInd@ParenRight{)}%
4564   \Hy@nextfalse
4565   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
4566   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
4567   \begingroup
4568     \lccode'\|=\expandafter'\HyInd@EncapChar\relax
4569   \lowercase{\endgroup
4570     \ifHy@next
4571       \let\HyInd@org@wrindex\@wrindex
4572       \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
4573       \def\HyInd@@wrindex#1#2|#3|#4\{\%
4574         \ifx\|#3\%
4575           \HyInd@org@wrindex{#1}{#2|hyperpage}%
4576         \else
4577           \def\Hy@temp@A{#3}%
4578           \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4579             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4580             \relax
4581           \HyInd@org@wrindex{#1}{#2|#3}%
4582         \else
4583           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
4584         \fi
4585       \fi
4586     }%
4587   \else
4588     \def\@wrindex#1{\@@wrindex#1||\}%
4589     \def\@@wrindex#1|#2|#3\{\%
4590       \if@files
4591         \ifx\|#2\%
4592           \protected@write\@indexfile{}\%
4593             \string\indexentry{#1|hyperpage}{\thepage}%
4594           }%
4595         \else
4596           \def\Hy@temp@A{#2}%
4597           \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4598             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4599             \relax
4600           \protected@write\@indexfile{}\%
4601             \string\indexentry{#1|#2}{\thepage}%
4602           }%
4603         \else
4604           \protected@write\@indexfile{}\%
4605             \string\indexentry{#1|#2hyperpage}{\thepage}%
4606           }%
4607         \fi
4608       \fi
4609     \fi
4610   \endgroup
4611   \@esphack
4612 }%
4613 \fi
4614 }%
4615 \fi

```

```

4616 \Hy@DisableOption{hyperindex}
4617 \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.

```

4618 \def\hyperpage#1{\@hyperpage#1----\}
4619 \def\@hyperpage#1--#2--#3\{\%
4620   \ifx\#2\%
4621     \@commahyperpage{#1}%
4622   \else
4623     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
4624   \fi
4625 }
4626 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
4627 \def\@commahyperpage#1, #2,#3\{\%
4628   \ifx\#2\%
4629     \HyInd@pagelink{#1}%
4630   \else
4631     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
4632   \fi
4633 }

```

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

```

4634 \def\HyInd@pagelink#1{%
4635   \begingroup
4636   \toks@={}%
4637   \HyInd@removespaces#1 \@nil
4638   \endgroup
4639 }
4640 \def\HyInd@removespaces#1 #2\@nil{%
4641   \toks@=\expandafter{\the\toks@#1}%
4642   \ifx\#2\%
4643     \edef\x{\the\toks@}%
4644     \ifx\x\@empty
4645     \else
4646       \hyperlink{page.\the\toks@}{\the\toks@}%
4647     \fi
4648   \else
4649     \Hy@ReturnAfterFi{%
4650       \HyInd@removespaces#2\@nil
4651     }%
4652   \fi
4653 }

```

43 Compatibility with foiltex

```

4654 \@ifclassloaded{foils}{%
4655   \providecommand*\ext@table{lot}%
4656   \providecommand*\ext@figure{lof}%
4657 }{}

```

44 Compatibility with seminar slide package

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

```

4658 \@ifclassloaded{seminar}{%

```

```

4659 \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}%
4660 }{%
4661 \Hy@seminarslidesfalse
4662 }
4663 \@ifpackageloaded{slidesec}{%
4664 \newcommand\theHslidesection {\arabic{slidesection}}%
4665 \newcommand\theHslidesubsection{%
4666 \theHslidesection.\arabic{slidesubsection}}%
4667 }%
4668 \def\slide@heading[#1]#2{%
4669 \H@refstepcounter{slidesection}%
4670 \@addtoreset{slidesubsection}{slidesection}%
4671 \addtocontents{los}{%
4672 \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
4673 {\@SCTR}{slideheading.\theslidesection}}%
4674 }%
4675 \def\Hy@tempa{#2}%
4676 \ifx\Hy@tempa\@empty
4677 \else
4678 {%
4679 \edef\@currentlabel{%
4680 \csname p@slidesection\endcsname\theslidesection
4681 }%
4682 \makeslideheading{#2}%
4683 }%
4684 \fi
4685 \gdef\theslideheading{#1}%
4686 \gdef\theslidesubheading{%
4687 \ifHy@bookmarksnumbered
4688 \def\Hy@slidetitle{\theslidesection\space #1}%
4689 \else
4690 \def\Hy@slidetitle{#1}%
4691 \fi
4692 \ifHy@hypertextnames
4693 \ifHy@naturalnames
4694 \hyper@@anchor{slideheading.\theslidesection}{\relax}%
4695 \Hy@writebookmark
4696 {\theslidesection}%
4697 {\Hy@slidetitle}%
4698 {slideheading.\theslidesection}%
4699 {1}%
4700 {toc}%
4701 \else
4702 \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
4703 \Hy@writebookmark
4704 {\theslidesection}%
4705 {\Hy@slidetitle}%
4706 {slideheading.\theHslidesection}%
4707 {1}%
4708 {toc}%
4709 \fi
4710 \else
4711 \Hy@GlobalStepCount\Hy@linkcounter
4712 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
4713 \Hy@writebookmark
4714 {\theslidesection}%
4715 {\Hy@slidetitle}%

```

```

4716         {slideheading.\the\Hy@linkcounter}%
4717         {1}%
4718         {toc}%
4719     \fi
4720 }%
4721 \def\slide@subheading[#1]#2{%
4722     \H@refstepcounter{slidesubsection}%
4723     \addtocontents{los}{%
4724         \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
4725         {\@SCTR}{slideheading.\theslidesubsection}%
4726     }%
4727     \def\Hy@tempa{#2}%
4728     \ifx\Hy@tempa\@empty
4729     \else
4730     {%
4731         \edef\@currentlabel{%
4732             \csname p@slidesubsection\endcsname\theslidesubsection
4733         }%
4734         \makeslidesubheading{#2}%
4735     }%
4736     \fi
4737     \gdef\theslidesubheading{#1}%
4738     \ifHy@bookmarksnumbered
4739     \def\Hy@slidetitle{\theslidesubsection\space #1}%
4740     \else
4741     \def\Hy@slidetitle{#1}%
4742     \fi
4743     \ifHy@hypertextnames
4744     \ifHy@naturalnames
4745         \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
4746         \Hy@writebookmark
4747             {\theslidesubsection}%
4748             {\Hy@slidetitle}%
4749             {slideheading.\theslidesubsection}%
4750             {2}%
4751             {toc}%
4752     \else
4753         \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
4754         \Hy@writebookmark
4755             {\theslidesubsection}%
4756             {\Hy@slidetitle}%
4757             {slideheading.\theHslidesubsection}%
4758             {2}%
4759             {toc}%
4760     \fi
4761     \else
4762     \Hy@GlobalStepCount\Hy@linkcounter
4763     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
4764     \Hy@writebookmark
4765         {\theslidesubsection}%
4766         {\Hy@slidetitle}%
4767         {slideheading.\the\Hy@linkcounter}%
4768         {1}%
4769         {toc}%
4770     \fi
4771 }%
4772 \providecommand*{\listslidenam}{List of Slides}%

```

```

4773 \def\listofslides{%
4774   \section*{%
4775     \listslideiname
4776     \@mkboth{%
4777       \expandafter\MakeUppercase\listslideiname
4778     }{%
4779       \expandafter\MakeUppercase\listslideiname
4780     }%
4781   }%
4782   \def\l@slide##1##2##3##4{%
4783     \slide@undottedcline{%
4784       \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
4785     }{%
4786   }%
4787   \let\l@subslide\l@slide
4788   \@startlos
4789 }%
4790 \def\slide@contents{%
4791   \def\l@slide##1##2##3##4{%
4792     \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
4793   }%
4794   \let\l@subslide\@gobblefour
4795   \@startlos
4796 }%
4797 \def\Slide@contents{%
4798   \def\l@slide##1##2##3##4{%
4799     \ifcase\lslide@flag
4800       \message{##1 ** \the\c@slidesection}%
4801       \ifnum##1>\c@slidesection
4802         \def\lslide@flag{1}%
4803         {%
4804           \large
4805           \slide@ccline{%
4806             \slidenumberline{$\rightarrow\bullet$}%
4807             {\hyperlink{##4}{##2}}}%
4808           }{##3}%
4809         }%
4810       \else
4811         {%
4812           \large
4813           \slide@ccline{%
4814             \slidenumberline{$\surd\;\bullet$}%
4815             {\hyperlink{##4}{##2}}}%
4816           }{##3}%
4817         }%
4818       \fi
4819     \or
4820     \def\lslide@flag{2}%
4821     {%
4822       \large
4823       \slide@ccline{%
4824         \slidenumberline{$\bullet$}%
4825         {\hyperlink{##4}{##2}}}%
4826       }{##3}%
4827     }%
4828     \or
4829     {%

```

```

4830         \large
4831         \slide@ccline{%
4832             \slidenumberline{$\bullet$}%
4833             {\hyperlink{##4}{##2}}%
4834             }{##3}%
4835         }%
4836     \fi
4837 }%
4838 \def\l@subslide##1##2##3##4{%
4839     \ifnum\lslide@flag=1
4840         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
4841     \fi
4842 }%
4843 \def\lslide@flag{0}%
4844 \@startlos
4845 }%
4846 }{}

```

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.)

```

4847 \ifHy@texht
4848     \expandafter\endinput
4849 \fi
4850 \let\real@setref\@setref
4851 \def\@setref#1#2#3{% csname, extract group, refname
4852     \ifx#1\relax
4853         \protect\G@refundefinedtrue
4854         \nfss@text{\reset@font\bfseries ??}%
4855         \@latex@warning{%
4856             Reference ‘#3’ on page \thepage \space undefined%
4857         }%
4858     \else
4859         \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
4860     \fi
4861 }

```

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

```

4862 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
4863     \begingroup
4864     \toks0={\hyper@@link{#5}{#4}}%
4865     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
4866     \edef\x{\endgroup
4867         \the\toks0 {\the\toks1 }%
4868     }%
4869     \x
4870 }
4871 \def\@pagesetref#1#2#3{% csname, extract macro, ref
4872     \ifx#1\relax
4873         \protect\G@refundefinedtrue
4874         \nfss@text{\reset@font\bfseries ??}%
4875         \@latex@warning{%
4876             Reference ‘#3’ on page \thepage \space undefined%
4877         }%
4878     \else
4879         \protect\hyper@@link
4880         {\expandafter\@fifthoffive#1}%

```



```

4881      {page.\expandafter\@secondoffive#1}%
4882      {\expandafter\@secondoffive#1}%
4883    \fi
4884  }

4885 </package>
4886 <*check>
4887 \checklatex
4888 \checkcommand\def\@setref#1#2#3{%
4889   \ifx#1\relax
4890     \protect\G@refundefinedtrue
4891     \nfss@text{\reset@font\bfseries ??}%
4892     \@latex@warning{%
4893       Reference ‘3’ on page \thepage\space undefined%
4894     }%
4895   \else
4896     \expandafter#2#1\null
4897   \fi
4898 }
4899 </check>
4900 <*package>

```

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

```

4901 \def\@refstar#1{%
4902   \@safe@activestru
4903   \expandafter\real@setref\csname r@#1\endcsname\@firstoffive{#1}%
4904   \@safe@activesfalse
4905 }
4906 \def\@pagerefstar#1{%
4907   \@safe@activestru
4908   \expandafter\real@setref\csname r@#1\endcsname\@secondoffive{#1}%
4909   \@safe@activesfalse
4910 }
4911 \DeclareRobustCommand\autoref[1]{%
4912   \@safe@activestru
4913   \expandafter\auto@setref\csname r@#1\endcsname\@firstoffive{#1}%
4914   \@safe@activesfalse
4915 }
4916 \def\auto@setref#1#2#3{% csname, extract group, refname
4917   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
4918     \edef\@thisref{\expandafter\@fourthoffive#1\@empty\@empty}%
4919     \expandafter\test@reftype\@thisref\%
4920     \hyper@link
4921     {\expandafter\@fifthoffive#1}%
4922     {\expandafter\@fourthoffive#1\@empty\@empty}%
4923     {\@currentHtag\expandafter#2#1\@empty\@empty\null}%
4924   \else
4925     \protect\G@refundefinedtrue
4926     \nfss@text{\reset@font\bfseries ??}%
4927     \@latex@warning{%
4928       Reference ‘3’ on page \thepage \space undefined%
4929     }%
4930   \fi
4931 }
4932 \def\test@reftype#1.#2\{%
4933   \@ifundefined{#1autorefname}{%
4934     \@ifundefined{#1name}{%

```

```

4935     \def\@currentHtag{}%
4936     \@latex@warning{no tag name for #1 at \the\inputlineno}%
4937   }{%
4938     \def\@currentHtag{\csname#1name\endcsname~}%
4939   }%
4940 }{%
4941   \def\@currentHtag{\csname#1autorefname\endcsname~}%
4942 }%
4943 }
4944 \def\@currentHtag{}

Defaults for the names that \autoref uses.

4945 \providecommand\AMSautorefname{\equationautorefname}
4946 \providecommand\Hfootnoteautorefname{\footnoteautorefname}
4947 \providecommand\Itemautorefname{\itemautorefname}
4948 \providecommand\itemautorefname{item}
4949 \providecommand\equationautorefname{Equation}
4950 \providecommand\footnoteautorefname{footnote}
4951 \providecommand\itemautorefname{item}
4952 \providecommand\figureautorefname{Figure}
4953 \providecommand\tableautorefname{Table}
4954 \providecommand\partautorefname{Part}
4955 \providecommand\appendixautorefname{Appendix}
4956 \providecommand\chapterautorefname{chapter}
4957 \providecommand\sectionautorefname{section}
4958 \providecommand\subsectionautorefname{subsection}
4959 \providecommand\subsubsectionautorefname{subsubsection}
4960 \providecommand\paragraphautorefname{paragraph}
4961 \providecommand\subparagraphautorefname{subparagraph}
4962 \providecommand\FancyVerbLineautorefname{line}
4963 \providecommand\theoremautorefname{Theorem}
4964 </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`.

```

4965 < *pdfTex | dvipdfm | vtex | pdfmarkbase | dviwindo >
4966 \begingroup\expandafter\expandafter\expandafter\endgroup
4967 \expandafter\ifx\csname pdfescapestring\endcsname\relax
4968   \begingroup
4969     \catcode'\|=0 %
4970     \makeother\| %
4971   |@firstofone|endgroup
4972   |def|Hy@pstringdef#1#2{%
4973     |edef#1{#2}%
4974     |@onelevel@sanitize#1%
4975     |edef#1{|expandafter|Hy@ExchangeBackslash#1|@nil}%
4976     |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil)%

```

```

4977     |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
4978   }%
4979   |def|Hy@ExchangeBackslash#1\#2|@nil{%
4980     #1%
4981     |ifx|\#2|}%
4982   |else
4983     \\\%
4984     |Hy@ReturnAfterFi{%
4985       |Hy@ExchangeBackslash#2|@nil
4986     }%
4987   |fi
4988 }%
4989 }
4990 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
4991   #1%
4992   \ifx\\#2\\%
4993   \else
4994     \@backslashchar(%
4995     \Hy@ReturnAfterFi{%
4996       \Hy@ExchangeLeftParenthesis#2\@nil
4997     }%
4998   \fi
4999 }
5000 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
5001   #1%
5002   \ifx\\#2\\%
5003   \else
5004     \@backslashchar)%
5005     \Hy@ReturnAfterFi{%
5006       \Hy@ExchangeRightParenthesis#2\@nil
5007     }%
5008   \fi
5009 }
5010 \else
5011   \def\Hy@pstringdef#1#2{%
5012     \edef#1{\pdfescapestring{#2}}%
5013   }%
5014 \fi
5015 </pdfTeX | dvipdfm | vTeX | pdfmarkbase | dviwindo>

```

45.2 pdfTeX

5016 <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:

```

5017 \def\setpdflinkmargin#1{\pdflinkmargin#1}
5018 \ifx\pdfstartlink\@undefined% less than version 14
5019   \let\pdfstartlink\pdfannotlink
5020   \let\pdflinkmargin\@tempdima
5021   \let\pdfxform\pdfform
5022   \let\pdflastxform\pdflastform
5023   \let\pdfrefxform\pdfrefform
5024 \else
5025   \pdflinkmargin1pt

```

5026 \fi

First set up the default linking

5027 \providecommand\@pdfview{XYZ}

First define the anchors:

5028 \def\new@pdflink#1{%

5029 \ifHy@verbose

5030 \typeout{pdftex: define anchor at line \the\inputlineno: #1}%

5031 \fi

5032 \Hy@SaveLastskip

5033 \Hy@pstringdef\Hy@pstringDest{#1}%

5034 \Hy@DestName\Hy@pstringDest\@pdfview

5035 \Hy@RestoreLastskip

5036 }

5037 \let\pdf@endanchor\@empty

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

5038 \def\Hy@DestName#1#2{%

5039 \pdfdest name{#1}#2\relax

5040 }

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.

5041 \providecommand\@pdfborder{0 0 1}

5042 \providecommand*\@pdfborderstyle{}

5043 \def\Hy@undefinedname{UNDEFINED}

5044 \def\find@pdflink#1#2{%

5045 \leavevmode

5046 \protected@edef\Hy@testname{#2}%

5047 \ifx\Hy@testname\@empty

5048 \let\Hy@testname\Hy@undefinedname

5049 \else

5050 \Hy@pstringdef\Hy@testname\Hy@testname

5051 \fi

5052 \Hy@StartlinkName{%

5053 \Hy@setpdfborder

5054 /H\@pdfhighlight

5055 /C[\CurrentBorderColor]%

5056 }\Hy@testname

5057 \expandafter\Hy@colorlink\csname @#1color\endcsname

5058 }

5059 \def\Hy@StartlinkName#1#2{%

5060 \pdfstartlink attr{#1}goto name{#2}\relax

5061 }

5062 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}

5063 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}

5064 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}

5065 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}

5066 \def\hyper@linkstart#1#2{%

5067 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%

5068 \find@pdflink{#1}{#2}}

5069 \def\hyper@linkend{\close@pdflink}

5070 \def\hyper@link#1#2#3{%

5071 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%

5072 \find@pdflink{#1}{#2}#3\close@pdflink

```

5073 }
5074 \def\CurrentBorderColor{\@linkbordercolor}
5075 \def\hyper@linkurl#1#2{%
5076   \begingroup
5077     \Hy@pstringdef\Hy@pstringURI{#2}%
5078     \hyper@chars
5079     \leavevmode
5080     \pdfstartlink
5081     attr{%
5082       \Hy@setpdfborder
5083       /H\@pdfhighlight
5084       /C[\@urlbordercolor]%
5085     }%
5086     user{%
5087       /Subtype/Link%
5088       /A<<%
5089       /Type/Action%
5090       /S/URI%
5091       /URI(\Hy@pstringURI)%
5092     >>%
5093     }%
5094     \relax
5095     \Hy@colorlink\@urlcolor#1%
5096     \close@pdflink
5097   \endgroup
5098 }
5099 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
5100   \begingroup
5101     \Hy@pstringdef\Hy@pstringF{#2}%
5102     \Hy@pstringdef\Hy@pstringD{#3}%
5103     \leavevmode
5104     \pdfstartlink
5105     attr{%
5106       \Hy@setpdfborder
5107       /H\@pdfhighlight
5108       /C[\@filebordercolor]%
5109     }%
5110     user {%
5111       /Subtype/Link%
5112       /A<<%
5113       /F(\Hy@pstringF)%
5114       /S/GoToR%
5115       \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}

```

```

5116       \ifx\#3\%
5117       /D[0 \@pdfstartview]%
5118       \else

```

```

5119         /D(\Hy@pstringD)%
5120     \fi
5121     >>%
5122 }%
5123 \relax
5124 \Hy@colorlink\@filecolor#1%
5125 \close@pdflink
5126 \endgroup
5127 }
5128 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
5129 \begingroup
5130 \Hy@pstringdef\Hy@pstringF{#1}%
5131 \Hy@pstringdef\Hy@pstringP{#3}%
5132 \leavevmode
5133 \pdfstartlink
5134 attr{%
5135     \Hy@setpdfborder
5136     /H\@pdfhighlight
5137     /C[\@runbordercolor]%
5138 }%
5139 user {%
5140     /Subtype/Link%
5141     /A<<%
5142         /F(\Hy@pstringF)%
5143         /S/Launch%
5144         \ifHy@newwindow /NewWindow true\fi
5145         \ifx\#3\%
5146         \else
5147             /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
5148         \fi
5149     >>%
5150 }%
5151 \relax
5152 \Hy@colorlink\@filecolor#2%
5153 \close@pdflink
5154 \endgroup
5155 }

```

\@pdfproducer

```

5156 \ifx\@pdfproducer\relax
5157 \def\@pdfproducer{pdfTeX}
5158 \ifx\@pdfproducer\@undefined
5159 \else
5160 \ifx\@pdfproducer\relax
5161 \else
5162 \ifnum\@pdfproducer>0 %
5163 \def\@pdfproducer{pdfTeX}
5164 \fi
5165 \fi
5166 \fi
5167 \ifx\@pdfproducer\@undefined
5168 \else
5169 \ifnum\@pdfproducer<100 %
5170 \edef\@pdfproducer{%
5171     \@pdfproducer
5172     \the\@pdfproducer.\@pdfproducerrevision
5173 }

```

```

5174 \else
5175 \ifnum\pdfTeXversion<130 %
5176 \edef\@pdfproducer{%
5177 \@pdfproducer-%
5178 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
5179 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
5180 \pdfTeXrevision
5181 }
5182 \else
5183 \edef\@pdfproducer{%
5184 \@pdfproducer-%
5185 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
5186 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
5187 \pdfTeXrevision
5188 }%
5189 \fi
5190 \fi
5191 \fi
5192 \fi

```

\PDF@SetupDox

```

5193 \def\PDF@SetupDoc{%
5194 \ifx\@pdfpagescrop\@empty
5195 \else
5196 \edef\process@me{%
5197 \pdfpagesattr={%
5198 /CropBox[\@pdfpagescrop]%
5199 \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
5200 \else
5201 ^^J\the\pdfpagesattr
5202 \fi
5203 }%
5204 }%
5205 \process@me
5206 \fi
5207 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
5208 \pdfcatalog{%
5209 /PageMode\@pdfpagemode
5210 \ifx\@baseurl\@empty
5211 \else
5212 /URI<</Base(\Hy@pstringB)>>%
5213 \fi
5214 }%
5215 \ifx\@pdfstartview\@empty
5216 \else
5217 openaction goto page \@pdfstartpage {\@pdfstartview}%
5218 \fi
5219 \edef\Hy@temp{%
5220 \ifHy@toolbar\else /HideToolbar true\fi
5221 \ifHy@menubar\else /HideMenubar true\fi
5222 \ifHy>windowui\else /HideWindowUI true\fi
5223 \ifHy@fitwindow /FitWindow true\fi
5224 \ifHy@centerwindow /CenterWindow true\fi
5225 \ifHy@displaydoctitle /DisplayDocTitle true\fi
5226 \ifx\@pdfnonfullscreenpagemode\@empty
5227 \else
5228 /NonFullScreenPageMode\@pdfnonfullscreenpagemode

```

```

5229     \fi
5230   }%
5231   \pdfcatalog{%
5232     \ifx\Hy@temp\@empty
5233     \else
5234       /ViewerPreferences<<\Hy@temp>>%
5235     \fi
5236     \ifx\pdf@pagelayout\@empty
5237     \else
5238       /PageLayout/\pdf@pagelayout
5239     \fi
5240   }%
5241 }

```

\PDF@FinishDoc

```

5242 \def\PDF@FinishDoc{%
5243   \Hy@UseMaketitleInfos
5244   \pdfinfo{%
5245     /Author(\@pdfauthor)%
5246     /Title(\@pdftitle)%
5247     /Subject(\@pdfsubject)%
5248     /Creator(\@pdfcreator)%
5249     \ifx\@pdfcreationdate\@empty
5250     \else
5251       /CreationDate(\@pdfcreationdate)%
5252     \fi
5253     \ifx\@pdfmoddate\@empty
5254     \else
5255       /ModDate(\@pdfmoddate)%
5256     \fi
5257     \ifx\@pdfproducer\relax
5258     \else
5259       /Producer(\@pdfproducer)%
5260     \fi
5261     /Keywords(\@pdfkeywords)%
5262   }%
5263   \Hy@DisableOption{pdfauthor}%
5264   \Hy@DisableOption{pdftitle}%
5265   \Hy@DisableOption{pdfsubject}%
5266   \Hy@DisableOption{pdfcreator}%
5267   \Hy@DisableOption{pdfcreationdate}%
5268   \Hy@DisableOption{pdfmoddate}%
5269   \Hy@DisableOption{pdfproducer}%
5270   \Hy@DisableOption{pdfkeywords}%
5271 }

```

\hyper@pagetransition \@pdfpagetransition is initialized with \relax. So it indicates, if option pdfpage-transition is used. First previous /Trans entries are removed. If a new /Trans key exists, it is appended to \pdfpageattr.

```

5272 \def\hyper@pagetransition{%
5273   \ifx\@pdfpagetransition\relax
5274   \else
5275     \expandafter\Hy@RemoveTransPageAttr\the\pdfpageattr^^J/Trans{}>>\END
5276     \ifx\@pdfpagetransition\@empty
5277     \else
5278       \edef\@processme{%
5279         \global\pdfpageattr{%

```



```

5280         \the\pdfpageattr
5281         ^^J/Trans << /S /\@pdfpagetransition\space >>%
5282     }%
5283 }%
5284     \@processme
5285 \fi
5286 \fi
5287 }

```

\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.

```

5288 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
5289     \ifx\#2\%
5290         \global\pdfpageattr{#1}%
5291     \else
5292         \Hy@RemoveTransPageAttr#1#4\END
5293     \fi
5294 }

```

\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`.

```

5295 \def\hyper@pageduration{%
5296     \ifx\@pdfpageduration\relax
5297     \else
5298         \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{ } \END
5299         \ifx\@pdfpageduration\empty
5300         \else
5301             \edef\@processme{%
5302                 \global\pdfpageattr{%
5303                     \the\pdfpageattr
5304                     ^^J/Dur \@pdfpageduration\space
5305                 }%
5306             }%
5307             \@processme
5308         \fi
5309     \fi
5310 }

```

\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.

```

5311 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
5312     \ifx\#2\%
5313         \global\pdfpageattr{#1}%
5314     \else
5315         \Hy@RemoveDurPageAttr#1#4\END
5316     \fi
5317 }

```

\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).

```

5318 \def\hyper@pagehidden{%
5319   \ifHy@useHidKey
5320     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
5321     \ifHy@pdfpagehidden
5322       \edef\@processme{%
5323         \global\pdfpageattr{%
5324           \the\pdfpageattr
5325           ^^J/Hid true % SPACE
5326         }%
5327       }%
5328       \@processme
5329     \fi
5330   \fi
5331 }

```

`\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.

```

5332 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
5333   \ifx\#2\%
5334     \global\pdfpageattr{#1}%
5335   \else
5336     \Hy@RemoveHidPageAttr#1#4\END
5337   \fi
5338 }

```

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.

```

5339 \pdfoutput=1
5340 \pdfcompresslevel=9
5341 \AtBeginDocument{%
5342   \ifHy@setpagesize
5343     \expandafter\@firstofone
5344   \else
5345     \expandafter\@gobble
5346   \fi
5347   {%
5348     \@ifclassloaded{seminar}{%
5349       \setlength{\pdfhorigin}{1truein}%
5350       \setlength{\pdfvorigin}{1truein}%
5351     \ifportrait
5352       \ifdim\paperwidth=\z@
5353       \else
5354         \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
5355       \fi
5356       \ifdim\paperheight=\z@
5357       \else
5358         \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
5359       \fi
5360     \else
5361       \ifdim\paperheight=\z@
5362       \else
5363         \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
5364       \fi
5365       \ifdim\paperwidth=\z@
5366       \else

```

```

5367         \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
5368         \fi
5369     \fi
5370 }{%
5371     \@ifundefined{stockwidth}{%
5372         \ifdim\paperwidth=\z@
5373         \else
5374             \setlength{\pdfpagewidth}{\paperwidth}%
5375         \fi
5376         \ifdim\paperheight=\z@
5377         \else
5378             \setlength{\pdfpageheight}{\paperheight}%
5379         \fi
5380     }{%
5381         \ifdim\stockwidth=\z@
5382         \else
5383             \setlength{\pdfpagewidth}{\stockwidth}%
5384         \fi
5385         \ifdim\stockheight=\z@
5386         \else
5387             \setlength{\pdfpageheight}{\stockheight}%
5388         \fi
5389     }%
5390 }%
5391 }%
5392 \Hy@DisableOption{setpagesize}%
5393 }
5394 \def\Acrobatmenu#1#2{%
5395     \leavevmode
5396     \pdfstartlink
5397     attr{%
5398         \Hy@setpdfborder
5399         /H \@pdfhighlight
5400         /C[\@menubordercolor]%
5401     }%
5402     user{
5403         /Subtype /Link
5404         /A<<%
5405             /S/Named/N/#1%
5406         >>%
5407     }%
5408     \relax
5409     \Hy@colorlink\@menucolor#2\close@pdflink
5410 }
5411 </pdfTeX>
5412 <*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 be used to communicate to the *dvi* viewer the full (URL) location of the current document so that files specified by relative URL's may be retrieved correctly.

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

```
5413 \def\PDF@FinishDoc{}
5414 \def\PDF@SetupDoc{%
5415   \ifx\@baseurl\@empty
5416   \else
5417     \special{html:<base href="\@baseurl">}%
5418   \fi
5419 }
5420 \def\hyper@anchor#1{%
5421   \Hy@SaveLastskip
5422   \begingroup
5423     \let\protect=\string
5424     \hyper@chars
5425     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
5426   \endgroup
5427   \Hy@activeanchortrue
5428   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5429   \special{html:</a>}%
5430   \Hy@activeanchorfalse
5431   \Hy@RestoreLastskip
5432 }
5433 \def\hyper@anchorstart#1{%
5434   \Hy@SaveLastskip
5435   \begingroup
5436     \hyper@chars
5437     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
5438   \endgroup
5439   \Hy@activeanchortrue
5440 }
5441 \def\hyper@anchorend{%
5442   \special{html:</a>}%
5443   \Hy@activeanchorfalse
5444   \Hy@RestoreLastskip
5445 }
5446 \def\@urltype{url}
5447 \def\hyper@linkstart#1#2{%
```

```

5448 \expandafter\Hy@colorlink\csname @#1color\endcsname
5449 \def\Hy@tempa{#1}%
5450 \ifx\Hy@tempa\urltype
5451   \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
5452 \else
5453   \begingroup
5454     \hyper@chars
5455     \special{html:<a href=\hyper@quote\##2\hyper@quote>}}%
5456   \endgroup
5457 \fi
5458 }
5459 \def\hyper@linkend{%
5460   \special{html:</a>}}%
5461 \Hy@endcolorlink
5462 }
5463 \def\hyper@linkfile#1#2#3{%
5464   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}}%
5465 }
5466 \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.

```

5467 \leavevmode
5468 \ifHy@raiselinks
5469   \setbox\@tempboxa=\color@hbox #1\color@endbox
5470   \@linkdim\dp\@tempboxa
5471   \lower\@linkdim\hbox{%
5472     \hyper@chars
5473     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
5474   }%
5475   \Hy@colorlink\@urlcolor#1%
5476   \@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).

```

5477   \advance\@linkdim by -6.5\p@
5478   \raise\@linkdim\hbox{\special{html:</a>}}%
5479   \Hy@endcolorlink
5480 \else
5481   \begingroup
5482     \hyper@chars
5483     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
5484     \Hy@colorlink\@urlcolor#1%
5485     \special{html:</a>}}%
5486     \Hy@endcolorlink
5487   \endgroup
5488 \fi
5489 }
5490 \def\hyper@link#1#2#3{%
5491   \hyper@linkurl{#3}{\##2}}%
5492 }
5493 \def\hyper@image#1#2{%
5494   \begingroup
5495     \hyper@chars
5496     \special{html:<img src=\hyper@quote#1\hyper@quote>}}%

```

```

5497 \endgroup
5498 }
5499 </hypertex>
5500 <*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, L^AT_EX 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.

```

5501 \providecommand\wwwbrowser{c:\string\netscape\string\netscape}
5502 \def\hyper@anchor#1{%
5503   \Hy@SaveLastskip
5504   \begingroup
5505     \let\protect=\string
5506     \special{mark: #1}%
5507   \endgroup
5508   \Hy@activeanchortrue
5509   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5510   \Hy@activeanchorfalse
5511   \Hy@RestoreLastskip
5512 }
5513 \def\hyper@anchorstart#1{%
5514   \Hy@SaveLastskip
5515   \special{mark: #1}%
5516   \Hy@activeanchortrue
5517 }
5518 \def\hyper@anchorend{%
5519   \Hy@activeanchorfalse
5520   \Hy@RestoreLastskip
5521 }
5522 \def\hyper@linkstart#1#2{%
5523   \expandafter\Hy@colorlink\csname @#1color\endcsname
5524   \special{button:
5525     10000000
5526     \number\baselineskip\space
5527     #2%
5528   }%
5529 }
5530 \def\hyper@linkend{%
5531   \Hy@endcolorlink
5532 }
5533 \def\hyper@link#1#2#3{%
5534   \setbox\@tempboxa=\color@hbox #3\color@endbox
5535   \leavevmode
5536   \ifHy@raiselinks
5537     \@linkdim\dp\@tempboxa
5538     \lower\@linkdim\hbox{%
5539       \special{button:

```

```

5540         \number\wd\@tempboxa\space
5541         \number\ht\@tempboxa\space
5542         #2%
5543     }%
5544     \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
5545     \Hy@endcolorlink
5546 }%
5547 \@linkdim\ht\@tempboxa
5548 \advance\@linkdim by -6.5\p@
5549 \raise\@linkdim\hbox{}%
5550 \else
5551     \special{button:
5552         \number\wd\@tempboxa\space
5553         \number\ht\@tempboxa\space
5554         #2%
5555     }%
5556     \exandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
5557 \fi
5558 }
5559 \def\hyper@linkurl#1#2{%
5560     \begingroup
5561     \hyper@chars
5562     \leavevmode
5563     \setbox\@tempboxa=\color@hbox #1\color@endbox
5564     \ifHy@raiselinks
5565         \@linkdim\dp\@tempboxa
5566         \lower\@linkdim\hbox{%
5567             \special{button:
5568                 \number\wd\@tempboxa\space
5569                 \number\ht\@tempboxa\space
5570                 launch: \wwwbrowser\space
5571                 #2%
5572             }%
5573             \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5574         }%
5575         \@linkdim\ht\@tempboxa
5576         \advance\@linkdim by -6.5\p@
5577         \raise\@linkdim\hbox{}%
5578     \else
5579         \special{button:
5580             \number\wd\@tempboxa\space
5581             \number\ht\@tempboxa\space
5582             launch: \wwwbrowser\space
5583             #2%
5584         }%
5585         \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5586     \fi
5587 \endgroup
5588 }
5589 \def\hyper@linkfile#1#2#3{%
5590     \begingroup
5591     \hyper@chars
5592     \leavevmode
5593     \setbox\@tempboxa=\color@hbox #1\color@endbox
5594     \ifHy@raiselinks
5595         \@linkdim\dp\@tempboxa
5596         \lower\@linkdim\hbox{%

```

```

5597         \special{button:
5598             \number\wd\@tempboxa\space
5599             \number\ht\@tempboxa\space
5600             #3,
5601             file: #2%
5602         }%
5603         \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5604     }%
5605     \@linkdim\ht\@tempboxa
5606     \advance\@linkdim by -6.5\p@
5607     \raise\@linkdim\hbox{}}%
5608 \else
5609     \special{button:
5610         \number\wd\@tempboxa\space
5611         \number\ht\@tempboxa\space
5612         #3,
5613         file: #2
5614     }%
5615     \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5616 \fi
5617 \endgroup
5618 }
5619 \ifx\@pdfproducer\relax
5620 \def\@pdfproducer{dviwindo + Distiller}
5621 \fi
5622 \def\PDF@FinishDoc{%
5623     \Hy@UseMaketitleInfos
5624     \special{PDF: Keywords \@pdfkeywords}%
5625     \special{PDF: Title \@pdftitle}%
5626     \special{PDF: Creator \@pdfcreator}%
5627     \ifx\@pdfcreationdate\@empty
5628     \else
5629         \special{PDF: CreationDate \@pdfcreationdate}%
5630     \fi
5631     \ifx\@pdfmoddate\@empty
5632     \else
5633         \special{PDF: ModDate \@pdfmoddate}%
5634     \fi
5635     \special{PDF: Author \@pdfauthor}%
5636     \ifx\@pdfproducer\relax
5637     \else
5638         \special{PDF: Producer \@pdfproducer}%
5639     \fi
5640     \special{PDF: Subject \@pdfsubject}%
5641     \Hy@DisableOption{pdfauthor}%
5642     \Hy@DisableOption{pdftitle}%
5643     \Hy@DisableOption{pdfsubject}%
5644     \Hy@DisableOption{pdfcreator}%
5645     \Hy@DisableOption{pdfcreationdate}%
5646     \Hy@DisableOption{pdfmoddate}%
5647     \Hy@DisableOption{pdfproducer}%
5648     \Hy@DisableOption{pdfkeywords}%
5649 }
5650 \def\PDF@SetupDoc{%
5651     \ifx\@baseurl\@empty
5652     \else
5653         \special{PDF: Base \@baseurl}%

```



```

5654 \fi
5655 \ifx\@pdfpagescrop\@empty\else
5656 \special{PDF: BBox \@pdfpagescrop}%
5657 \fi
5658 \pdfmark{pdfmark=/DOCVIEW,
5659   Page=\@pdfstartpage,
5660   View=\@pdfstartview,
5661   PageMode=\@pdfpagemode
5662 }%
5663 \ifx\@pdfpagescrop\@empty
5664 \else
5665 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
5666 \fi
5667 \edef\Hy@temp{%
5668   \ifHy@toolbar\else /HideToolbar true\fi
5669   \ifHy@menubar\else /HideMenubar true\fi
5670   \ifHy>windowui\else /HideWindowUI true\fi
5671   \ifHy@fitwindow /FitWindow true\fi
5672   \ifHy@centerwindow /CenterWindow true\fi
5673   \ifHy@displaydoctitle /DisplayDocTitle true\fi
5674   \ifx\@pdfnonfullscreenpagemode\@empty
5675   \else
5676   /NonFullScreenPageMode\@pdfnonfullscreenpagemode
5677   \fi
5678 }%
5679 \pdfmark{pdfmark=/PUT,
5680   Raw={%
5681     \string{Catalog\string} <<
5682     \ifx\Hy@temp\@empty
5683     \else
5684     /ViewerPreferences<<\Hy@temp>>%
5685     \fi
5686     \ifx\pdf@pagelayout\@empty
5687     \else
5688     /PageLayout /\pdf@pagelayout\space
5689     \fi
5690     >>%
5691   }%
5692 }%
5693 }
5694 </dviwindo>
5695 < *dvipdfm>

```

45.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

5696 \newsavebox{\pdfm@box}
5697 \def\@pdfm@mark#1{\special{pdf:#1}}
5698 \def\@pdfm@dest#1{%
5699   \Hy@SaveLastskip
5700   \Hy@pstringdef\Hy@pstringDest{#1}%
5701   \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\@pdfview\space @xpos @ypos]}%
5702   \Hy@RestoreLastskip
5703 }
5704 \providecommand\@pdfview{XYZ}
5705 \providecommand\@pdfborder{0 0 1}
5706 \providecommand*\@pdfborderstyle{}

```

```

5707 \def\hyper@anchor#1{%
5708   \@pdfm@dest{#1}%
5709 }
5710 \def\hyper@anchorstart#1{%
5711   \Hy@activeanchortrue
5712   \@pdfm@dest{#1}%
5713 }
5714 \def\hyper@anchorend{%
5715   \Hy@activeanchorfalse
5716 }
5717 \def\Hy@undefinedname{UNDEFINED}
5718 \def\hyper@linkstart#1#2{%
5719   \protected@edef\Hy@testname{#2}%
5720   \ifx\Hy@testname\empty
5721     \let\Hy@testname\Hy@undefinedname
5722   \else
5723     \Hy@pstringdef\Hy@testname\Hy@testname
5724   \fi
5725   \@pdfm@mark{%
5726     bann <<
5727     /Type /Annot
5728     /Subtype /Link
5729     \Hy@setpdfborder
5730     /C [\csname @#1bordercolor\endcsname]
5731     /A <<
5732     /S /GoTo
5733     /D (\Hy@testname)
5734     >>
5735     >>
5736   }%
5737   \expandafter\Hy@colorlink\csname @#1color\endcsname
5738 }
5739 \def\hyper@linkend{%
5740   \Hy@endcolorlink
5741   \@pdfm@mark{eann}%
5742 }
5743 \def\hyper@link#1#2#3{%
5744   \hyper@linkstart{#1}{#2}#3\hyper@linkend
5745 }
5746 \def\hyper@linkfile#1#2#3{%
5747   \Hy@pstringdef\Hy@pstringF{#2}%
5748   \Hy@pstringdef\Hy@pstringD{#3}%
5749   \leavevmode
5750   \@pdfm@mark{%
5751     bann <<
5752     /Type /Annot
5753     /Subtype /Link
5754     \Hy@setpdfborder
5755     /C [\@filebordercolor]
5756     /A <<
5757     /S /GoToR
5758     /F (\Hy@pstringF)
5759     /D \ifx\#3\[\[0 \@pdfstartview]\else(\Hy@pstringD)\fi\space
5760     \ifHy@newwindow /NewWindow true \fi
5761     >>
5762     >>%
5763   }%

```

```

5764 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5765 \@pdfm@mark{eann}%
5766 }
5767 \def\hyper@launch run:#1\#2#3{% filename, anchor text linkname
5768 \Hy@pstringdef\Hy@pstringF{#1}%
5769 \Hy@pstringdef\Hy@pstringP{#3}%
5770 \leavevmode
5771 \@pdfm@mark{%
5772     bann <<
5773         /Type /Annot
5774         /Subtype /Link
5775         \Hy@setpdfborder
5776         /C [\@filebordercolor]
5777         /A <<
5778             /S /Launch
5779             /F (\Hy@pstringF)
5780             \ifHy@newwindow /NewWindow true \fi
5781             \ifx\#3\%
5782             \else
5783                 /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
5784             \fi
5785         >>
5786     >>%
5787 }%
5788 \Hy@colorlink\@filecolor#2\Hy@endcolorlink
5789 \@pdfm@mark{eann}%
5790 }
5791 \def\hyper@linkurl#1#2{%
5792 \Hy@pstringdef\Hy@pstringURI{#2}%
5793 \leavevmode
5794 \@pdfm@mark{%
5795     bann <<
5796         /Type /Annot
5797         /Subtype /Link
5798         \Hy@setpdfborder
5799         /C [\@urlbordercolor]
5800         /A <<
5801             /S /URI
5802             /URI (\Hy@pstringURI)
5803         >>
5804     >>%
5805 }%
5806 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5807 \@pdfm@mark{eann}%
5808 }
5809 \def\Acrobatmenu#1#2{%
5810 \leavevmode
5811 \@pdfm@mark{%
5812     bann <<
5813         /Type /Annot
5814         /Subtype /Link
5815         /A <<
5816             /S /Named
5817             /N /#1
5818         >>
5819         \Hy@setpdfborder
5820         /C [\@menubordercolor]

```

```

5821     >>%
5822 }%
5823 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
5824 \@pdfm@mark{eann}%
5825 }
5826 \ifx\@pdfproducer\relax
5827 \def\@pdfproducer{dvipdfm}
5828 \fi
5829 \def\PDF@FinishDoc{%
5830 \Hy@UseMaketitleInfos
5831 \@pdfm@mark{%
5832 docinfo <<
5833 /Title (\@pdftitle)
5834 /Subject (\@pdfsubject)
5835 /Creator (\@pdfcreator)
5836 \ifx\@pdfcreationdate\@empty
5837 \else
5838 /CreationDate(\@pdfcreationdate) %
5839 \fi
5840 \ifx\@pdfmoddate\@empty
5841 \else
5842 /ModDate(\@pdfmoddate) %
5843 \fi
5844 /Author (\@pdfauthor)
5845 \ifx\@pdfproducer\relax
5846 \else
5847 /Producer (\@pdfproducer)
5848 \fi
5849 /Keywords (\@pdfkeywords)
5850 >>%
5851 }%
5852 \Hy@DisableOption{pdfauthor}%
5853 \Hy@DisableOption{pdftitle}%
5854 \Hy@DisableOption{pdfsubject}%
5855 \Hy@DisableOption{pdfcreator}%
5856 \Hy@DisableOption{pdfcreationdate}%
5857 \Hy@DisableOption{pdfmoddate}%
5858 \Hy@DisableOption{pdfproducer}%
5859 \Hy@DisableOption{pdfkeywords}%
5860 }
5861 \def\PDF@SetupDoc{%
5862 \edef\Hy@temp{%
5863 \ifHy@toolbar\else /HideToolbar true\fi
5864 \ifHy@menubar\else /HideMenubar true\fi
5865 \ifHy>windowui\else /HideWindowUI true\fi
5866 \ifHy@fitwindow /FitWindow true\fi
5867 \ifHy@centerwindow /CenterWindow true\fi
5868 \ifHy@displaydoctitle /DisplayDocTitle true\fi
5869 \ifx\@pdfnonfullscreenpagemode\@empty
5870 \else
5871 /NonFullScreenPageMode\@pdfnonfullscreenpagemode
5872 \fi
5873 }%
5874 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
5875 \@pdfm@mark{%
5876 docview <<%
5877 \ifx\@pdfstartview\@empty

```

```

5878 \else
5879 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
5880 \fi
5881 \ifx\@baseurl\@empty
5882 \else
5883 /URI<</Base(\Hy@pstringB)>>%
5884 \fi
5885 /PageMode \@pdfpagemode
5886 \ifx\Hy@temp\@empty
5887 \else
5888 /ViewerPreferences<<\Hy@temp>>%
5889 \fi
5890 \ifx\pdf@pagelayout\@empty
5891 \else
5892 /PageLayout/\pdf@pagelayout\space
5893 \fi
5894 >>%
5895 }%
5896 \ifx\@pdfpagescrop\@empty
5897 \else
5898 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}
5899 \fi
5900 }
5901 </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.

```

5902 <*vtexhtml>
5903 \RequirePackage{vtexhtml}
5904 \newif\if@Localurl
5905 \def\PDF@FinishDoc{}
5906 \def\PDF@SetupDoc{%
5907 \ifx\@baseurl\@empty
5908 \else
5909 \special{!direct <base href="\@baseurl">}%
5910 \fi
5911 }
5912 \def\@urltype{url}
5913 \def\hyper@link#1#2#3{%
5914 \leavevmode
5915 \special{!direct <a href=\hyper@quote\hyper@hash#2\hyper@quote>}%
5916 #3%
5917 \special{!direct </a>}%
5918 }
5919 \def\hyper@linkurl#1#2{%
5920 \begingroup
5921 \hyper@chars
5922 \leavevmode
5923 \MathBSuppress=1\relax
5924 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
5925 #1%
5926 \MathBSuppress=0\relax
5927 \special{!direct </a>}%
5928 \endgroup
5929 }

```

```

5930 \def\hyper@linkfile#1#2#3{%
5931   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
5932 }
5933 \def\hyper@linkstart#1#2{%
5934   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
5935     \@Localurltrue
5936     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
5937   \else
5938     \@Localurlfalse
5939     \begingroup
5940       \hyper@chars
5941       \special{!aref #2}%
5942     \endgroup
5943   \fi
5944 }
5945 \def\hyper@linkend{%
5946   \if@Localurl
5947     \special{!endaref}%
5948   \else
5949     \special{!direct </a>}%
5950   \fi
5951 }
5952 \def\hyper@anchorstart#1{%
5953   \Hy@SaveLastskip
5954   \begingroup
5955     \hyper@chars
5956     \special{!aname #1}%
5957     \special{!direct <a name=\hyper@quote#1\hyper@quote>}%
5958   \endgroup
5959   \Hy@activeanchortrue
5960 }
5961 \def\hyper@anchorend{%
5962   \special{!direct </a>}%
5963   \Hy@activeanchorfalse
5964   \Hy@RestoreLastskip
5965 }
5966 \def\hyper@anchor#1{%
5967   \Hy@SaveLastskip
5968   \begingroup
5969     \let\protect=\string
5970     \hyper@chars
5971     \leavevmode
5972     \special{!aname #1}%
5973     \special{!direct <a name=\hyper@quote #1\hyper@quote>}%
5974   \endgroup
5975   \Hy@activeanchortrue
5976   \bgroup\anchor@spot\egroup
5977   \special{!direct </a>}%
5978   \Hy@activeanchorfalse
5979   \Hy@RestoreLastskip
5980 }
5981 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
5982 \def\@endForm{}
5983 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
5984   \typeout{Sorry, TeXpider does not yet support FORM gauges}%
5985 }
5986 \def\@TextField[#1]#2{% parameters, label

```

```

5987 \typeout{Sorry, TeXpider does not yet support FORM text fields}%
5988 }
5989 \def\@CheckBox[#1]#2{% parameters, label
5990 \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
5991 }
5992 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
5993 \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
5994 }
5995 \def\@PushButton[#1]#2{% parameters, label
5996 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
5997 }
5998 \def\@Reset[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
5999 \def\@Submit[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
6000 \end{vtexhtml}
6001 \end{*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.

```

6002 \ifx\mediaheight\@undefined
6003 \else
6004 \ifx\mediaheight\relax
6005 \else
6006 \ifHy@setpagesize
6007 \providecommand*\VTeXInitMediaSize{%
6008 \ifundefined{stockwidth}{%
6009 \ifdim\paperheight>0pt %
6010 \setlength\mediaheight\paperheight
6011 \fi
6012 \ifdim\paperheight>0pt %
6013 \setlength\mediawidth\paperwidth
6014 \fi
6015 }{%
6016 \ifdim\stockheight>0pt %
6017 \setlength\mediaheight\stockheight
6018 \fi
6019 \ifdim\stockwidth>0pt %
6020 \setlength\mediawidth\stockwidth
6021 \fi
6022 }%
6023 }%
6024 \AtBeginDocument{\VTeXInitMediaSize}%
6025 \fi
6026 \Hy@DisableOption{setpagesize}%
6027 \fi
6028 \fi

```

Older versions of VTeX require xyz in lower case.

```

6029 \providecommand\pdfview{xyz}
6030 \providecommand\pdfborder{0 0 1}
6031 \providecommand*\pdfborderstyle{}
6032 \def\CurrentBorderColor{\@linkbordercolor}
6033 \def\hyper@anchor#1{%
6034 \Hy@SaveLastskip
6035 \begingroup
6036 \let\protect=\string
6037 \hyper@chars
6038 \special{!aname #1;\pdfview}%

```

```

6039 \endgroup
6040 \Hy@activeanchortrue
6041 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6042 \Hy@activeanchorfalse
6043 \Hy@RestoreLastskip
6044 }
6045 \def\hyper@anchorstart#1{%
6046 \Hy@SaveLastskip
6047 \begingroup
6048 \hyper@chars
6049 \special{!aname #1;\@pdfview}%
6050 \endgroup
6051 \Hy@activeanchortrue
6052 }
6053 \def\hyper@anchorend{%
6054 \Hy@activeanchorfalse
6055 \Hy@RestoreLastskip
6056 }
6057 \def\@urltype{url}
6058 \def\Hy@undefinedname{UNDEFINED}
6059 \def\hyper@linkstart#1#2{%
6060 \Hy@pstringdef\Hy@pstringURI{#2}%
6061 \expandafter\Hy@colorlink\csname @#1color\endcsname
6062 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6063 \def\Hy@tempa{#1}%
6064 \ifx\Hy@tempa\@urltype
6065 \special{!%
6066 \href <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6067 a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6068 }%
6069 \else
6070 \protected@edef\Hy@testname{#2}%
6071 \ifx\Hy@testname\@empty
6072 \let\Hy@testname\Hy@undefinedname
6073 \fi
6074 \special{!%
6075 \href \Hy@testname;%
6076 a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6077 }%
6078 \fi
6079 }
6080 \def\hyper@linkend{%
6081 \special{!endaref}%
6082 \Hy@endcolorlink
6083 }
6084 \def\hyper@linkfile#1#2#3{%
6085 \leavevmode
6086 \special{!%
6087 \href <%
6088 \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
6089 f=#2>#3;%
6090 a=<\Hy@setpdfborder /C [\@filebordercolor]>%
6091 }%
6092 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6093 \special{!endaref}%
6094 }
6095 \def\hyper@linkurl#1#2{%

```



```

6096 \begingroup
6097   \Hy@pstringdef\Hy@pstringURI{#2}%
6098   \hyper@chars
6099   \leavevmode
6100   \special{!%
6101     aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6102     a=<\Hy@setpdfborder /C [\@urlbordercolor]>%
6103   }%
6104   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6105   \special{!endaref}%
6106 \endgroup
6107 }
6108 \def\hyper@link#1#2#3{%
6109   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6110   \leavevmode
6111   \protected@edef\Hy@testname{#2}%
6112   \ifx\Hy@testname\@empty
6113     \let\Hy@testname\Hy@undefinedname
6114   \fi
6115   \special{!%
6116     aref \Hy@testname;%
6117     a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6118   }%
6119   \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
6120   \special{!endaref}%
6121 }
6122 \def\hyper@image#1#2{%
6123   \hyper@linkurl{#2}{#1}%
6124 }
6125 \def\@hyper@launch run:#1\#2#3{%
6126   \Hy@pstringdef\Hy@pstringF{#1}%
6127   \Hy@pstringdef\Hy@pstringP{#3}%
6128   \leavevmode
6129   \special{!aref
6130     <u=%
6131       /Type /Action
6132       /S /Launch
6133       /F (\Hy@pstringF)
6134       \ifHy@newwindow /NewWindow true \fi
6135       \ifx\#3\\\else /Win << /F (\Hy@pstringF) /P (\Hy@pstringP) >> \fi%
6136     >;%
6137     a=<\Hy@setpdfborder /C [\@runbordercolor]>%
6138   }%
6139   \Hy@colorlink\@filecolor#2\Hy@endcolorlink
6140   \special{!endaref}%
6141 }
6142 \def\Acrobatmenu#1#2{%
6143   \leavevmode
6144   \special{!%
6145     aref <u=/S /Named /N /#1>;%
6146     a=<\Hy@setpdfborder /C [\@menubordercolor]>%
6147   }%
6148   \Hy@colorlink\@menucolor#2\Hy@endcolorlink
6149   \special{!endaref}%
6150 }

```

The following code (transition effects) is made by Alex Kostin.
The code below makes sense for VT_EX 7.02 or later.

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

```
6151 \ifnum\Hy@VTeXversion<702 %
6152 \else
6153   \def\hyper@pagetransition{%
6154     \ifx\@pdfpagetransition\relax
6155     \else
6156       \ifx\@pdfpagetransition\@empty
```

Standard incantation.

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

```
6157     \else
6158       \hvtex@parse@trans\@pdfpagetransition
6159     \fi
6160   \fi
6161 }
```

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:

```
6162 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}
6163 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}
6164 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}
6165 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}
6166 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}
6167 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}
6168 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}
```

Optional parameters:

```
6169 \def\hvtex@par@dimension{/Dm}
6170 \def\hvtex@par@direction{/Di}
6171 \def\hvtex@par@duration{/D}
6172 \def\hvtex@par@motion{/M}
```

Tokenizer:

```
6173 \def\hvtex@gettoken{\expandafter\hvtex@gettoken\hvtex@buffer\@nil}
```

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

```
6174 \def\hvtex@gettoken@#1 #2\@nil{%
6175   \edef\hvtex@token{#1}%
6176   \edef\hvtex@buffer{#2}%
6177 }
6178 \def\hvtex@parse@trans#1{%
```

Initializing code:

```
6179 \let\hvtex@trans@code\@empty
6180 \let\hvtex@param@dimension\@empty
6181 \let\hvtex@param@direction\@empty
6182 \let\hvtex@param@duration\@empty
6183 \let\hvtex@param@motion\@empty
6184 \edef\hvtex@buffer{#1\space}%
```

First token is the PDF transition name without escape.

```
6185 \hvtex@gettoken
6186 \ifx\hvtex@token\@empty
```

Leading space(s)?

```
6187 \ifx\hvtex@buffer\@empty
```

The buffer is empty, nothing to do.

```
6188 \else
6189 \hvtex@gettoken
6190 \fi
6191 \fi
6192 \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
6193 \hvtex@trans@params
6194 }
```

Reentrant macro to parse optional parameters.

```
6195 \def\hvtex@trans@params{%
6196 \ifx\hvtex@buffer\@empty
6197 \else
6198 \hvtex@gettoken
6199 \let\hvtex@trans@par\hvtex@token
6200 \ifx\hvtex@buffer\@empty
6201 \else
6202 \hvtex@gettoken
6203 \ifx\hvtex@trans@par\hvtex@par@duration
```

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

```
6204 \let\hvtex@param@duration\hvtex@token
6205 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
6206 \expandafter\edef\expandafter\hvtex@param@motion
6207 \expandafter{\expandafter\@gobble\hvtex@token}%
6208 \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
6209 \expandafter\edef\expandafter\hvtex@param@dimension
6210 \expandafter{\expandafter\@gobble\hvtex@token}%
6211 \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).

```
6212 \let\hvtex@param@direction\hvtex@token
6213 \fi\fi\fi\fi
6214 \fi
6215 \fi
6216 \ifx\hvtex@buffer\@empty
6217 \let\next\hvtex@produce@trans
6218 \else
6219 \let\next\hvtex@trans@params
```

```

6220   \fi
6221   \next
6222 }

```

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

```

6223 \def\hvtex@produce@trans{%
6224   \let\vtex@trans@special\@empty
6225   \if S\hvtex@trans@code
6226     \edef\vtex@trans@special{\hvtex@trans@code
6227       \hvtex@param@dimension\hvtex@param@motion}%
6228   \else \if B\hvtex@trans@code
6229     \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@dimension}%
6230   \else \if X\hvtex@trans@code
6231     \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@motion}%
6232   \else \if W\hvtex@trans@code
6233     \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6234   \else \if D\hvtex@trans@code
6235     \let\vtex@trans@special\hvtex@trans@code
6236   \else \if R\hvtex@trans@code
6237     \let\vtex@trans@special\hvtex@trans@code
6238   \else \if G\hvtex@trans@code
6239     \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6240   \fi\fi\fi\fi\fi\fi\fi
6241   \ifx\vtex@trans@special\@empty
6242   \else
6243     \ifx\hvtex@param@duration\@empty
6244     \else
6245       \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

6246       \multiply\dimen@\@m
6247       \edef\vtex@trans@special{\vtex@trans@special,\strip@pt\dimen@}%
6248   \fi

```

And all the mess is just for this.

```

6249   \special{!trans \vtex@trans@special}%
6250   \fi
6251 }
6252 \def\hyper@pageduration{%
6253   \ifx\@pdfpageduration\relax
6254   \else
6255     \ifx\@pdfpageduration\@empty
6256     \special{!duration-}%
6257   \else
6258     \special{!duration \@pdfpageduration}%
6259   \fi
6260   \fi
6261 }
6262 \def\hyper@pagehidden{%
6263   \ifHy@useHidKey
6264     \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
6265   \fi
6266 }
6267 \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

```

6268 \ifx\@pdfproducer\relax
6269   \def\@pdfproducer{VTeX}
6270   \ifnum\Hy@VTeXversion>\z@
6271     \count@VTeXversion
6272     \divide\count@ 100
6273     \edef\@pdfproducer{\@pdfproducer\space v\the\count@}
6274     \multiply\count@ -100
6275     \advance\count@VTeXversion
6276     \edef\@pdfproducer{%
6277       \@pdfproducer
6278       .\ifnum\count@<10 0\fi\the\count@
6279       \ifx\VTeXOS\@undefined\else
6280         \ifnum\VTeXOS>0 %
6281           \ifnum\VTeXOS<6 %
6282             \space(
6283             \ifcase\VTeXOS
6284               \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
6285             \fi
6286             )%
6287           \fi
6288         \fi
6289       \fi
6290       ,\space
6291       \ifnum\OpMode=\@ne PDF\else PS\fi
6292       \space backend%
6293       \ifx\gexmode\@undefined\else
6294         \ifnum\gexmode>\z@\space with GeX\fi
6295       \fi
6296     }
6297   \fi
6298 \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).

```

6299 \def\PDF@SetupDoc{%
6300   \ifx\@pdfpagescrop\@empty
6301     \else

```

```

6302     \special{!pdfinfo b=<\@pdfpagescrop>}%
6303 \fi
6304 \special{!onopen Page\@pdfstartpage}%
6305 \special{!pdfinfo p=<\@pdfpagemode>}%
6306 \ifx\@baseurl\@empty
6307 \else
6308     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
6309 \fi
6310 \special{!pdfinfo v=<<<%
6311     \ifHy@toolbar\else /HideToolbar true\fi
6312     \ifHy@menubar\else /HideMenubar true\fi
6313     \ifHy>windowui\else /HideWindowUI true\fi
6314     \ifHy@fitwindow /FitWindow true\fi
6315     \ifHy@centerwindow /CenterWindow true\fi
6316     \ifHy@displaydoctitle /DisplayDocTitle true\fi
6317     \ifx\@pdfnonfullscreenpagemode\@empty
6318     \else
6319         /NonFullScreenPageMode\@pdfnonfullscreenpagemode
6320     \fi
6321 >>>}%
6322 \ifx\pdf@pagelayout\@empty
6323 \else
6324     \special{!pdfinfo l=</\pdf@pagelayout\space>}%
6325 \fi
6326 }%
6327 \def\PDF@FinishDoc{%
6328     \Hy@UseMaketitleInfos
6329     \special{!pdfinfo a=<\@pdfauthor>}%
6330     \special{!pdfinfo t=<\@pdftitle>}%
6331     \special{!pdfinfo s=<\@pdfsubject>}%
6332     \special{!pdfinfo c=<\@pdfcreator>}%
6333     \ifx\@pdfproducer\relax
6334     \else
6335         \special{!pdfinfo r=<\@pdfproducer>}%
6336     \fi
6337     \special{!pdfinfo k=<\@pdfkeywords>}%
6338     \Hy@DisableOption{pdfauthor}%
6339     \Hy@DisableOption{pdftitle}%
6340     \Hy@DisableOption{pdfsubject}%
6341     \Hy@DisableOption{pdfcreator}%
6342     \Hy@DisableOption{pdfcreationdate}%
6343     \Hy@DisableOption{pdfmoddate}%
6344     \Hy@DisableOption{pdfproducer}%
6345     \Hy@DisableOption{pdfkeywords}%
6346 }
6347 </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.

```

6348 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
6349 <package>\providecommand*\Hy@DistillerDestFix{}
6350 <*pdfmark | dviwindo>
6351 \def\Hy@DistillerDestFix{%
6352   \begin{group}
6353     \let\x\literalps@out

```

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

```

6354   \ifnum \ifundefined{OpMode}{0}{}%
6355     \ifundefined{gexmode}{0}{}%
6356     \ifnum\gexmode>0 \OpMode\else 0\fi
6357   }>1 %
6358   \def\x##1{%
6359     \immediate\special{!=##1}%
6360   }%
6361 \fi
6362 \x{%
6363   /product where{%
6364     pop %
6365     product(Distiller)search{%
6366       pop pop pop %
6367       version(.)search{%
6368         exch pop exch pop%
6369         (3011)eq{%
6370           gsave %
6371           newpath 0 0 moveto closepath clip%
6372           /Courier findfont 10 scalefont setfont %
6373           72 72 moveto(.)show %
6374           grestore%
6375         }if%
6376       }{pop}ifelse%
6377     }{pop}ifelse%
6378   }if%
6379   }%
6380 \endgroup
6381 }
6382 </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

```

6383 <*pdfmark | dvipdf>
6384 \def\hyper@anchor#1{%
6385   \Hy@SaveLastskip
6386   \begingroup
6387     \pdfmark[\anchor@spot]{%
6388       pdfmark=/DEST,%
6389       linktype=anchor,%
6390       View=/\@pdfview \@pdfviewparams,%
6391       DestAnchor={#1}%
6392     }%
6393   \endgroup
6394   \Hy@RestoreLastskip
6395 }
6396 <*dvipdf>
6397 \def\hyper@anchorstart#1{\Hy@activeanchortrue}
6398 \def\hyper@anchorend{\Hy@activeanchorfalse}
6399 \def\hyper@linkstart#1#2{%
6400   \expandafter\Hy@colorlink\csname @#1color\endcsname
6401   \xdef\hyper@currentanchor{#2}%
6402 }
6403 \def\hyper@linkend{%
6404   \Hy@endcolorlink
6405 }
6406 </dvipdf>
6407 <*pdfmark>
6408 \@ifundefined{hyper@anchorstart}{}{\endinput}
6409 \def\hyper@anchorstart#1{%
6410   \Hy@SaveLastskip
6411   \literalps@out{H.S}%
6412   \xdef\hyper@currentanchor{#1}%
6413   \Hy@activeanchortrue
6414 }
6415 \def\hyper@anchorend{%
6416   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
6417   \pdfmark{%
6418     pdfmark=/DEST,%
6419     linktype=anchor,%
6420     View=/\@pdfview \@pdfviewparams,%
6421     DestAnchor=\hyper@currentanchor,%
6422     Raw=H.B%
6423   }%
6424   \Hy@activeanchorfalse
6425   \Hy@RestoreLastskip
6426 }
6427 \def\hyper@linkstart#1#2{%
6428   \ifHy@breaklinks
6429     \else
6430       \leavevmode\hbox\bgroup
6431       \fi
6432       \expandafter\Hy@colorlink\csname @#1color\endcsname
6433       \literalps@out{H.S}%
6434       \xdef\hyper@currentanchor{#2}%
6435       \gdef\hyper@currentlinktype{#1}%
6436 }
6437 \def\hyper@linkend{%
6438   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
6439   \edef\Hy@tempcolor{\csname @\hyper@currentlinktype bordercolor\endcsname}%

```



```

6440 \pdfmark{%
6441   pdfmark=/ANN,%
6442   linktype=link,%
6443   Subtype=/Link,%
6444   Dest=\hyper@currentanchor,%
6445   AcroHighlight=\@pdfhighlight,%
6446   Border=\@pdfborder,%
6447   BorderStyle=\@pdfborderstyle,%
6448   Color=\Hy@tempcolor,%
6449   Raw=H.B%
6450 }%
6451 \Hy@endcolorlink
6452 \ifHy@breaklinks
6453 \else
6454   \egroup
6455 \fi
6456 }
6457 \<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.

```

6458 \begingroup
6459 \catcode'P=12
6460 \catcode'T=12
6461 \lowercase{\endgroup}
6462 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>z@.#2\fi}%
6463 }
6464 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
6465 \</pdfmark>

```

\hyper@pagetransition

```

6466 \def\hyper@pagetransition{%
6467   \ifx\@pdfpagetransition\relax
6468   \else
6469     \ifx\@pdfpagetransition\@empty
6470       % 1. Does an old entry have to be deleted?
6471       % 2. If 1=yes, how to delete?
6472     \else
6473       \pdfmark{%
6474         pdfmark=/PUT,%
6475         Raw={%
6476           \string{ThisPage\string}%
6477           <</Trans << /S /\@pdfpagetransition\space >> >>%
6478         }%
6479       }%
6480     \fi
6481   \fi
6482 }

```

\hyper@pageduration

```

6483 \def\hyper@pageduration{%
6484   \ifx\@pdfpageduration\relax
6485   \else
6486     \ifx\@pdfpageduration\@empty
6487       % 1. Does an old entry have to be deleted?
6488       % 2. If 1=yes, how to delete?

```

```

6489     \else
6490     \pdfmark{%
6491         pdfmark=/PUT,%
6492         Raw={%
6493             \string{ThisPage\string}%
6494             <</Dur \@pdfpageduration>>%
6495         }%
6496     }%
6497     \fi
6498 \fi
6499 }

```

\hyper@pagehidden

```

6500 \def\hyper@pagehidden{%
6501     \ifHy@useHidKey
6502     \pdfmark{%
6503         pdfmark=/PUT,%
6504         Raw={%
6505             \string{ThisPage\string}%
6506             <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
6507         }%
6508     }%
6509     \fi
6510 }

6511 </pdfmark>
6512 \def\hyper@image#1#2{%
6513     \hyper@linkurl{#2}{#1}}
6514 \def\Hy@undefinedname{UNDEFINED}
6515 \def\hyper@link#1#2#3{%
6516     \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
6517     \begingroup
6518     \protected@edef\Hy@testname{#2}%
6519     \ifx\Hy@testname\@empty
6520         \let\Hy@testname\Hy@undefinedname
6521     \fi
6522 <*\dvi pdf>
6523     \pdfmark[{#3}]{%
6524         pdfmark=/LNK,%
6525         {},{%
6526             linktype={#1},%
6527             AcroHighlight=\@pdfhighlight,%
6528             Border=\@pdfborder,%
6529             BorderStyle=\@pdfborderstyle,%
6530             Color=\Hy@tempcolor,%
6531             Dest=\Hy@testname
6532         }%
6533 </dvi pdf>
6534 <*\pdfmarkbase>
6535     \pdfmark[{#3}]{%
6536         Color=\Hy@tempcolor,%
6537         linktype={#1},%
6538         AcroHighlight=\@pdfhighlight,%
6539         Border=\@pdfborder,%
6540         BorderStyle=\@pdfborderstyle,%
6541         pdfmark=/ANN,%
6542         Subtype=/Link,%
6543         Dest=\Hy@testname

```

```

6544     }%
6545 </pdfmarkbase>
6546 \endgroup
6547 }
6548 \newtoks\pdf@docset
6549 \def\PDF@FinishDoc{%
6550   \Hy@UseMaketitleInfos
6551   \let\Hy@temp\@empty
6552   \ifx\@pdfcreationdate\@empty
6553   \else
6554     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
6555   \fi
6556   \ifx\@pdfmoddate\@empty
6557   \else
6558     \expandafter\def\expandafter\Hy@temp\expandafter{%
6559       \Hy@temp
6560       ModDate=\@pdfmoddate,%
6561     }%
6562   \fi
6563   \ifx\@pdfproducer\relax
6564   \else
6565     \expandafter\def\expandafter\Hy@temp\expandafter{%
6566       \Hy@temp
6567       Producer=\@pdfproducer,%
6568     }%
6569   \fi
6570   \expandafter
6571   \pdfmark\expandafter{%
6572     \Hy@temp
6573     pdfmark=/DOCINFO,%
6574     Title=\@pdftitle,%
6575     Subject=\@pdfsubject,%
6576     Creator=\@pdfcreator,%
6577     Author=\@pdfauthor,%
6578     Keywords=\@pdfkeywords
6579   }%
6580   \Hy@DisableOption{pdfauthor}%
6581   \Hy@DisableOption{pdftitle}%
6582   \Hy@DisableOption{pdfsubject}%
6583   \Hy@DisableOption{pdfcreator}%
6584   \Hy@DisableOption{pdfcreationdate}%
6585   \Hy@DisableOption{pdfmoddate}%
6586   \Hy@DisableOption{pdfproducer}%
6587   \Hy@DisableOption{pdfkeywords}%
6588 }
6589 \def\PDF@SetupDoc{%
6590   \pdfmark{%
6591     pdfmark=/DOCVIEW,%
6592     Page=\@pdfstartpage,%
6593     View=\@pdfstartview,%
6594     PageMode=\@pdfpagemode
6595   }%
6596   \ifx\@pdfpagescrop\@empty
6597   \else
6598     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
6599   \fi
6600   \edef\Hy@temp{%

```

```

6601 \ifHy@toolbar\else /HideToolbar true\fi
6602 \ifHy@menubar\else /HideMenubar true\fi
6603 \ifHy>windowui\else /HideWindowUI true\fi
6604 \ifHy@fitwindow /FitWindow true\fi
6605 \ifHy@centerwindow /CenterWindow true\fi
6606 \ifHy@displaydoctitle /DisplayDocTitle true\fi
6607 \ifx\@pdfnonfullscreenpagemode\@empty
6608 \else
6609 /NonFullScreenPageMode\@pdfnonfullscreenpagemode
6610 \fi
6611 }%
6612 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6613 \pdfmark{%
6614 pdfmark=PUT,%
6615 Raw={%
6616 \string{Catalog\string} <<
6617 \ifx\Hy@temp\@empty
6618 \else
6619 /ViewerPreferences<<\Hy@temp>>%
6620 \fi
6621 \ifx\pdf@pagelayout\@empty
6622 \else
6623 /PageLayout /\pdf@pagelayout\space
6624 \fi
6625 \ifx\@baseurl\@empty
6626 \else
6627 /URI << /Base (\Hy@pstringB) >>%
6628 \fi
6629 >>%
6630 }%
6631 }%
6632 }
6633 </pdfmark | dvipdf>
6634 <*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.

```

6635 \newif\ifHy@pdfmarkerror
6636 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
6637 \def\pdfmark@[#1]#2{%
6638 \Hy@pdfmarkerrorfalse
6639 \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
6640 \@processme
6641 \let\pdf@type\relax
6642 \setkeys{PDF}{#2}%
6643 \ifHy@pdfmarkerror
6644 \else
6645 \ifx\pdf@type\relax
6646 \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
6647 \ifx\#1\\\relax\else\pdf@rect{#1}\fi
6648 \else
6649 \ifx\#1\\\relax
6650 <pdfmarkbase> \literalps@out[{\the\pdf@toks\space\pdf@type\space pdfmark}%
6651 <dvipdf> \literalps@out{/ANN >>}%

```

```

6652      \else
6653        \ifundefined{@\pdf@linktype color}{%
6654          \Hy@colorlink\@linkcolor
6655        }{%
6656          \expandafter\Hy@colorlink
6657            \csname @\pdf@linktype color\endcsname
6658        }%
6659        \pdf@rect{#1}%
6660 \pdfmarkbase) \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark}%
6661 \dvipdf) \literalps@out{/ANN >>}%
6662      \Hy@endcolorlink
6663    \fi
6664  \fi
6665 \fi
6666 }

```

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}

```

```

6667 \newsavebox{\pdf@box}
6668 \providecommand{\Hy@setouterhbox}{\sbox}
6669 \providecommand{\Hy@breaklinksunhbox}{\unhbox}
6670 \def\pdf@rect#1{%
6671 \dvipdf) \literalps@out{/ANN \pdf@type\space\the\pdf@toks\space <<}#1%
6672 \leavevmode
6673 \ifHy@breaklinks
6674   \Hy@setouterhbox\pdf@box{#1}%
6675 \else
6676   \sbox\pdf@box{#1}%
6677 \fi
6678 \dimen@ht\pdf@box
6679 \ifdim\dp\pdf@box=\z@
6680   \literalps@out{H.S}%
6681 \else
6682   \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
6683 \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...).

```

6684 \ifHy@breaklinks
6685   \expandafter\Hy@breaklinksunhbox
6686 \else
6687   \expandafter\box
6688 \fi
6689 \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

```

```

6690 \ifdim\dimen@=\z@
6691 \literalps@out{H.R}%
6692 \else
6693 \raise\dimen@hbox{\literalps@out{H.R}}%
6694 \fi
6695 \pdf@addtoksx{H.B}%
6696 }

```

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.

```

6697 \newtoks\pdf@toks
6698 \newtoks\pdf@defaulttoks
6699 \pdf@defaulttoks={}
6700 \def\pdf@addtoks#1#2{%
6701 \edef\@processme{\pdf@toks{\the\pdf@toks\space /#2 #1}}%
6702 \@processme
6703 }
6704 \def\pdf@addtoksx#1{%
6705 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
6706 \@processme
6707 }
6708 \def\PDFdefaults#1{%
6709 \pdf@defaulttoks={#1}%
6710 }

```

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

```

6711 % what is the type of pdfmark?
6712 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
6713 % what is the link type?
6714 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
6715 \def\pdf@linktype{link}
6716 % parameter is a stream of PDF
6717 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
6718 % parameter is a name
6719 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
6720 % parameter is a array
6721 \define@key{PDF}{Border}{%
6722 \edef\Hy@temp{#1}%
6723 \ifx\Hy@temp\@empty
6724 \else
6725 \pdf@addtoks{[#1]}{Border}%
6726 \fi
6727 }
6728 % parameter is a dictionary
6729 \define@key{PDF}{BorderStyle}{%
6730 \edef\Hy@temp{#1}%
6731 \ifx\Hy@temp\@empty
6732 \else
6733 \pdf@addtoks{<<#1>>}{BS}%
6734 \fi
6735 }
6736 % parameter is a array
6737 \define@key{PDF}{Color}{\pdf@addtoks{[#1]}{Color}}
6738 % parameter is a string
6739 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
6740 % parameter is a integer
6741 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
6742 % parameter is a array

```

```

6743 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}
6744 % parameter is a string
6745 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
6746 % parameter is a string or file
6747 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
6748 % parameter is a destination
6749 \define@key{PDF}{Dest}{%
6750   \Hy@pstringdef\Hy@pstringDest{#1}%
6751   \ifx\Hy@pstringDest\@empty
6752     \Hy@pdfmarkerrortrue
6753     \Hy@Warning{Destination with empty name ignored}%
6754   \else
6755     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
6756   \fi
6757 }
6758 \define@key{PDF}{DestAnchor}{%
6759   \Hy@pstringdef\Hy@pstringDest{#1}%
6760   \ifx\Hy@pstringDest\@empty
6761     \Hy@pdfmarkerrortrue
6762     \Hy@Warning{Destination with empty name ignored}%
6763   \else
6764     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
6765   \fi
6766 }
6767 % parameter is a string
6768 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
6769 % parameter is a string
6770 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
6771 % parameter is a int
6772 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
6773 % parameter is a name
6774 \define@key{PDF}{AcroHighlight}{\pdf@addtoks{#1}{H}}
6775 % parameter is a string
6776 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}
6777 % parameter is a string
6778 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
6779 % parameter is a string
6780 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
6781 % parameter is a string
6782 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
6783 % parameter is a Boolean
6784 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
6785 % parameter is a integer or name
6786 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
6787 % parameter is a name
6788 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
6789 % parameter is a string
6790 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
6791 % parameter is a array
6792 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}
6793 % parameter is a integer
6794 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
6795 % parameter is a name
6796 \pdfmarkbase\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
6797 \dvipdf\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{}}
6798 % parameter is a string
6799 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}

```

```

6800 % parameter is a string
6801 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
6802 % parameter is a string
6803 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
6804 % parameter is an array
6805 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}
6806 % parameter is a string
6807 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

6808 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
6809 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
6810 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
6811 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
6812 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
6813 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
6814 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
6815 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
6816 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
6817 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
6818 </pdfmarkbase | dvipdf>
6819 *pdfmark | dvipdf)
6820 \def\Acrobatmenu#1#2{%
6821   \pdfmark[#{2}]{%
6822     linktype=menu,%
6823     pdfmark=/ANN,%
6824     AcroHighlight=\@pdfhighlight,%
6825     Border=\@pdfborder,%
6826     BorderStyle=\@pdfborderstyle,%
6827     Action={<< /Subtype /Named /N /#1 >>},%
6828     Subtype=/Link%
6829   }%
6830 }

```

And now for some useful examples:

```

6831 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
6832 \def\PDFNextPage@[#1]#2{%
6833   \pdfmark[#{2}]{%
6834     #1,%
6835     Border=\@pdfborder,%
6836     BorderStyle=\@pdfborderstyle,%
6837     Color=.2 .1 .5,%
6838     pdfmark=/ANN,%
6839     Subtype=/Link,%
6840     Page=/Next%
6841   }%
6842 }
6843 \def\PDFPreviousPage{%
6844   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}]%
6845 }
6846 \def\PDFPreviousPage@[#1]#2{%
6847   \pdfmark[#{2}]{%
6848     #1,%
6849     Border=\@pdfborder,%
6850     BorderStyle=\@pdfborderstyle,%
6851     Color=.4 .4 .1,%
6852     pdfmark=/ANN,%
6853     Subtype=/Link,%

```



```

6854     Page=/Prev%
6855   }%
6856 }
6857 \def\PDFOpen#1{%
6858   \pdfmark{#1,pdfmark=/DOCVIEW}%
6859 }

```

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!

```

6860 \def\PDFPage{\@ifnextchar [{\PDFPage@}{\PDFPage@[]}}
6861 \def\PDFPage@[#1]#2#3{%
6862   \let\pageref\simple@pageref
6863   \pdfmark[{#3}] {%
6864     #1,%
6865     Page={#2},%
6866     AcroHighlight=\@pdfhighlight,%
6867     Border=\@pdfborder,%
6868     BorderStyle=\@pdfborderstyle,%
6869     Color=\@pagebordercolor,%
6870     pdfmark=/ANN,%
6871     Subtype=/Link%
6872   }%
6873 }
6874 \def\simple@pageref#1{%
6875   \expandafter\ifx\csname r@#1\endcsname\relax
6876     0%
6877   \else
6878     \expandafter\expandafter\expandafter
6879       \@secondoffive\csname r@#1\endcsname
6880   \fi}

```

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

```

6881 \def\hyper@linkurl#1#2{%
6882   \begingroup
6883     \Hy@pstringdef\Hy@pstringURI{#2}%
6884     \hyper@chars
6885     \leavevmode
6886     \pdfmarkbase)
6887     \pdfmark[{#1}] {%
6888       pdfmark=/ANN,%
6889       linktype=url,%
6890       AcroHighlight=\@pdfhighlight,%
6891       Border=\@pdfborder,%
6892       BorderStyle=\@pdfborderstyle,%
6893       Color=\@urlbordercolor,%
6894       Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
6895       Subtype=/Link%
6896     }%
6897   \pdfmarkbase)
6898   \dvi pdf)
6899   \pdfmark[{#1}] {%
6900     pdfmark=/LNK,%
6901     linktype=url,%
6902     AcroHighlight=\@pdfhighlight,%
6903     Border=\@pdfborder,%
6904     BorderStyle=\@pdfborderstyle,%
6905     Color=\@urlbordercolor,%

```

```

6906     Action={URI /URI <\Hy@hstringURI>}%
6907   }%
6908 \endgroup
6909 \endgroup
6910 }
6911 \def\hyper@linkfile#1#2#3{%
6912   \begingroup
6913     \Hy@pstringdef\Hy@pstringF{#2}%
6914     \Hy@pstringdef\Hy@pstringD{#3}%
6915     \leavevmode
6916 \pdfmark<
6917   \pdfmark[{#1}] {%
6918     pdfmark=/ANN,%
6919     Subtype=/Link,%
6920     AcroHighlight=\@pdfhighlight,%
6921     Border=\@pdfborder,%
6922     BorderStyle=\@pdfborderstyle,%
6923     linktype=file,%
6924     Color=\@filebordercolor,%
6925     Action={<<
6926       /S /GoToR
6927       \ifHy@newwindow /NewWindow true \fi
6928       /F (\Hy@pstringF)
6929       /D \ifx\#3\@pdfstartview\else(\Hy@pstringD) cvn\fi
6930     >>}%
6931   }%
6932 \pdfmark>
6933 \endgroup
6934 \pdfmark[{#1}] {%
6935   pdfmark=/LNK,%
6936   linktype=file,%
6937   AcroHighlight=\@pdfhighlight,%
6938   Border=\@pdfborder,%
6939   BorderStyle=\@pdfborderstyle,%
6940   Color=\@filebordercolor,%
6941   Action={<<
6942     /S /GoToR
6943     \ifHy@newwindow /NewWindow true \fi
6944     /F (\Hy@pstringF)
6945     /D \ifx\#3\@pdfstartview\else(\Hy@pstringD) cvn\fi
6946   >>}%
6947 }%
6948 \endgroup
6949 \endgroup
6950 }
6951 \def\@hyper@launch run:#1\#2#3{%
6952   \begingroup
6953     \Hy@pstringdef\Hy@pstringF{#1}%
6954     \Hy@pstringdef\Hy@pstringP{#3}%
6955     \leavevmode
6956 \pdfmark<
6957   \pdfmark[{#2}] {%
6958     pdfmark=/ANN,%
6959     Subtype=/Link,%
6960     AcroHighlight=\@pdfhighlight,%
6961     Border=\@pdfborder,%
6962     BorderStyle=\@pdfborderstyle,%

```

```

6963     linktype=file,%
6964     Color=@filebordercolor,%
6965     Action={<<
6966         /S /Launch
6967         \ifHy@newwindow /NewWindow true \fi
6968         /F (\Hy@pstringF)
6969         \ifx\#3\%
6970         \else
6971             /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
6972         \fi
6973     >>}%
6974 }%
6975 </pdfmark>
6976 <*dvipdf>
6977     \pdfmark[#{2}]{%
6978         pdfmark=/LNK,%
6979         linktype=file,%
6980         AcroHighlight=@pdfhighlight,%
6981         Border=@pdfborder,%
6982         BorderStyle=@pdfborderstyle,%
6983         Color=@filebordercolor,%
6984         Action={<<
6985             /S /GoToR
6986             \ifHy@newwindow /NewWindow true \fi
6987             /F (\Hy@pstringF)
6988             \ifx\#3\%
6989             \else
6990                 /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
6991             \fi
6992         >>}%
6993     }%
6994 </dvipdf>
6995 \endgroup
6996 }
6997 </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.

```

6998 <*dvips>
6999 \input{pdfmark.def}%
7000 \ifx\@pdfproducer\relax
7001     \def\@pdfproducer{dvips + Distiller}
7002 \fi
7003 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
7004 \def\headerps@out#1{\special{! #1}}%
7005 \providecommand\@pdfborder{0 0 12}
7006 \providecommand*\@pdfborderstyle{}
7007 \providecommand\@pdfview{XYZ}
7008 \providecommand\@pdfviewparams{ H.V}
7009 \AtBeginDvi{%
7010     \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.

```
7011 /DvipsToPDF { 72.27 mul Resolution div } def
7012 /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.

```
7013 /HyperBorder { 1 PDFToDvips } def
7014 /H.V {pdf@hoff pdf@voff null} def
7015 /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

```
7016 /H.S {
7017   currentpoint
7018   HyperBorder add /pdf@lly exch def
7019   dup DvipsToPDF /pdf@hoff exch def
7020   HyperBorder sub /pdf@llx exch def
7021 } 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`

```
7022 /H.L {
7023   2 sub dup
7024   /HyperBasePt exch def
7025   PDFToDvips /HyperBaseDvips exch def
7026   currentpoint
7027   HyperBaseDvips sub /pdf@ury exch def
7028   /pdf@urx exch def
7029 } def
7030 /H.A {
7031   H.L
7032 % |pdf@voff| = the distance from the top of the page to a point
7033 % |\baselineskip| above the current point in PDF coordinates
7034   currentpoint exch pop
7035   vsize 72 sub exch DvipsToPDF
7036   HyperBasePt sub % baseline skip
7037   sub /pdf@voff exch def
7038 } def
7039 /H.R {
7040   currentpoint
7041   HyperBorder sub /pdf@ury exch def
```

```

7042      HyperBorder add /pdf@urx exch def
7043 % | /pdf@voff| = the distance from the top of the page to the current point, in
7044 % PDF coordinates
7045      currentpoint exch pop vsize 72 sub
7046      exch DvipsToPDF sub /pdf@voff exch def
7047   } def
7048   systemdict /pdfmark known
7049   {
7050     userdict /?pdfmark systemdict /exec get put
7051   }{
7052     userdict /?pdfmark systemdict /pop get put
7053     userdict /pdfmark systemdict /cleartomark get put
7054   }
7055   ifelse
7056 }%
7057 }
7058 \AfterBeginDocument{%
7059   \ifx\special@paper\@empty\else
7060     \ifHy@setpagesize
7061       \special{papersize=\special@paper}%
7062     \fi
7063     \Hy@DisableOption{setpagesize}%
7064   \fi
7065 }
7066 </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.

```

7067 <*vtexpdfmark>
7068 \input{pdfmark.def}%
7069 \ifx\@pdfproducer\relax
7070   \ifnum\OpMode=\@one
7071     \def\@pdfproducer{VTeX}
7072   \else
7073     \def\@pdfproducer{VTeX + Distiller}
7074   \fi
7075 \fi
7076 \def\literalps@out#1{\special{pS:#1}}%
7077 \def\headerps@out#1{\immediate\special{pS:#1}}%
7078 \providecommand\@pdfborder{0 0 1}
7079 \providecommand*\@pdfborderstyle{}
7080 \providecommand\@pdfview{XYZ}
7081 \providecommand\@pdfviewparams{ H.V}
7082 \AtBeginDvi{%
7083   \headerps@out{%
7084     /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.

```

7085   /HyperBorder {1} def
7086   /H.V {pdf@hoff pdf@voff null} def
7087   /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: $\text{pdf@lly} = Y_c - \text{HyperBorder}$, $\text{pdf@hoff} = X_c + 72$, $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

7088   /H.S {
7089     currentpoint
7090     HyperBorder sub
7091     /pdf@lly exch def
7092     dup 72 add /pdf@hoff exch def
7093     HyperBorder sub
7094     /pdf@llx exch def
7095   } def

```

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

```

7096   /H.L {
7097     2 sub
7098     /HyperBasePt exch def
7099     currentpoint
7100     HyperBasePt add HyperBorder add
7101     /pdf@ury exch def
7102     HyperBorder add
7103     /pdf@urx exch def
7104   } def
7105   /H.A {
7106     H.L
7107     currentpoint exch pop
7108     vsize 72 sub exch
7109     HyperBasePt add add
7110     /pdf@voff exch def
7111   } def

```

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

```

7112   /H.R {
7113     currentpoint
7114     HyperBorder add
7115     /pdf@ury exch def
7116     HyperBorder add
7117     /pdf@urx exch def
7118     currentpoint exch pop vsize 72 sub add
7119     /pdf@voff exch def
7120   } def
7121   systemdict /pdfmark known
7122   {
7123     userdict /?pdfmark systemdict /exec get put
7124   }{
7125     userdict /?pdfmark systemdict /pop get put
7126     userdict /pdfmark systemdict /cleartomark get put
7127   }
7128   ifelse
7129 }%
7130 }
7131 </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.

```
7132 <*textures>
7133 \begingroup
7134   \obeylines %
7135   \gdef\Hy@ps@CR{\noexpand
7136     }%
7137 \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`.

```
7138 \def\literalps@out#1{%
7139   \special{postscript 0 0 transform}%
7140   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
7141 }%
7142 %
```

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.

```
7143 \def\headerps@out#1{%
7144   \special{%
7145     prepostscript TeXdict begin\Hy@ps@CR
7146       #1\Hy@ps@CR
7147     end%
7148   }%
7149 }%
7150 %
```

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.

```
7151 \AtBeginDvi{%
7152   \headerps@out{%
7153     /betterpdfmark {%
7154       systemdict begin
7155         dup /BP eq
7156         {cleartomark gsave nulldevice []}
7157         {dup /EP eq
7158           {cleartomark cleartomark grestore}
7159           {cleartomark}
7160         }ifelse
7161       }ifelse
7162     end
7163   }def\Hy@ps@CR
```

```

7164 __pdfmark__ not{/pdfmark /betterpdfmark load def}if
7165 systemdict /pdfmark known
7166 {
7167     userdict /?pdfmark systemdict /load get put
7168 }{
7169     userdict /?pdfmark systemdict /pop get put
7170 }
7171 ifelse
7172 }% end of \headerps@out
7173}% end of \AtBeginDvi
7174%
7175\input{pdfmark.def}%
7176%
7177\ifx\@pdfproducer\relax
7178 \def\@pdfproducer{Textures + Distiller}%
7179\fi
7180\providecommand\@pdfborder{0 0 1}
7181\providecommand*\@pdfborderstyle{}
7182\providecommand\@pdfview{XYZ}
7183\providecommand\@pdfviewparams{ H.V}
7184%

```

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 .

```

7185\headerps@out{%

```

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

```

7186 /vsize {\Hy@pageheight} def
7187 /DvipsToPDF {} def
7188 /PDFToDvips {} def
7189 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
7190 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
7191 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
7192 /H.S {
7193     currentpoint
7194     HyperBorder add /pdf@lly exch def
7195     dup DvipsToPDF /pdf@hoff exch def
7196     HyperBorder sub /pdf@llx exch def
7197 } def\Hy@ps@CR
7198 /H.L {
7199     2 sub
7200     PDFToDvips /HyperBase exch def
7201     currentpoint
7202     HyperBase sub /pdf@ury exch def
7203     /pdf@urx exch def
7204 } def\Hy@ps@CR
7205 /H.A {
7206     H.L
7207     currentpoint exch pop
7208     vsize 72 sub exch DvipsToPDF
7209     HyperBase sub % baseline skip
7210     sub /pdf@voff exch def
7211 } def\Hy@ps@CR
7212 /H.R {
7213     currentpoint

```



```

7214   HyperBorder sub /pdf@ury exch def
7215   HyperBorder add /pdf@urx exch def
7216   currentpoint exch pop vsize 72 sub
7217   exch DvipsToPDF sub /pdf@voff exch def
7218 } def\Hy@ps@CR
7219 }

7220 \AfterBeginDocument{%
7221   \ifHy@colorlinks
7222     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
7223   \fi
7224 }

```

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.

```

7225 \expandafter\let\expandafter\keepPDF@SetupDoc
7226   \csname PDF@SetupDoc\endcsname
7227 \def\PDF@SetupDoc{%
7228   \ifx\@baseurl\@empty
7229   \else
7230     \special{html:<base href="\@baseurl">}%
7231   \fi
7232   \keepPDF@SetupDoc
7233 }

7234 \def\hyper@anchor#1{%
7235   \Hy@SaveLastskip
7236   \begingroup
7237     \let\protect=\string
7238     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
7239   \endgroup
7240   \Hy@activeanchortrue
7241   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7242   \special{html:</a>}%
7243   \Hy@activeanchorfalse
7244   \Hy@RestoreLastskip
7245 }

7246 \def\hyper@anchorstart#1{%
7247   \Hy@SaveLastskip
7248   \begingroup
7249     \hyper@chars
7250     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
7251   \endgroup
7252   \Hy@activeanchortrue
7253 }

7254 \def\hyper@anchorend{%
7255   \special{html:</a>}%
7256   \Hy@activeanchorfalse
7257   \Hy@RestoreLastskip
7258 }

7259 \def\@urltype{url}
7260 \def\hyper@linkstart#1#2{%
7261   \expandafter\Hy@colorlink\csname @#1color\endcsname
7262   \def\Hy@tempa{#1}%
7263   \ifx\Hy@tempa\@urltype
7264     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7265   \else
7266     \begingroup
7267       \hyper@chars

```

```

7268     \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
7269     \endgroup
7270     \fi
7271 }
7272 \def\hyper@linkend{%
7273     \special{html:</a>}%
7274     \Hy@endcolorlink
7275 }
7276 \def\hyper@linkfile#1#2#3{%
7277     \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
7278 }
7279 \def\hyper@linkurl#1#2{%
7280     \leavevmode
7281     \ifHy@raiselinks
7282         \setbox\@tempboxa=\color@hbox #1\color@endbox
7283         \@linkdim\dp\@tempboxa
7284         \lower\@linkdim\hbox{%
7285             \hyper@chars
7286             \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7287             }%
7288         \Hy@colorlink\@urlcolor#1%
7289         \@linkdim\ht\@tempboxa
7290         \advance\@linkdim by -6.5\p@
7291         \raise\@linkdim\hbox{\special{html:</a>}}%
7292         \Hy@endcolorlink
7293     \else
7294         \begingroup
7295         \hyper@chars
7296         \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7297         \Hy@colorlink\@urlcolor#1%
7298         \special{html:</a>}%
7299         \Hy@endcolorlink
7300     \endgroup
7301     \fi
7302 }
7303 \def\hyper@link#1#2#3{%
7304     \hyper@linkurl{#3}{\##2}%
7305 }
7306 \def\hyper@image#1#2{%
7307     \begingroup
7308     \hyper@chars
7309     \special{html:<img src=\hyper@quote#1\hyper@quote>}%
7310     \endgroup
7311 }
7312 </textures>

```

45.12 dvipsone

```

7313 % \subsection{dvipsone driver}
7314 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
7315 % |\special| commands.
7316 <*dvipsone>
7317 \providecommand\@pdfborder{0 0 65781}
7318 \providecommand*\@pdfborderstyle{}
7319 \input{pdfmark.def}%
7320 \ifx\@pdfproducer\relax
7321     \def\@pdfproducer{dvipsone + Distiller}

```

```

7322 \fi
7323 \def\literalps@out#1{\special{ps:#1}}%
7324 \def\headerps@out#1{\special{! #1}}%
7325 \def\PDF@FinishDoc{%
7326   \Hy@UseMaketitleInfos
7327   \special{PDF: Keywords \@pdfkeywords}%
7328   \special{PDF: Title \@pdftitle}%
7329   \special{PDF: Creator \@pdfcreator}%
7330   \ifx\@pdfcreationdate\@empty
7331   \else
7332     \special{PDF: CreationDate \@pdfcreationdate}%
7333   \fi
7334   \ifx\@pdfmoddate\@empty
7335   \else
7336     \special{PDF: ModDate \@pdfmoddate}%
7337   \fi
7338   \special{PDF: Author \@pdfauthor}%
7339   \ifx\@pdfproducer\relax
7340   \else
7341     \special{PDF: Producer \@pdfproducer}%
7342   \fi
7343   \special{PDF: Subject \@pdfsubject}%
7344   \Hy@DisableOption{pdfauthor}%
7345   \Hy@DisableOption{pdftitle}%
7346   \Hy@DisableOption{pdfsubject}%
7347   \Hy@DisableOption{pdfcreator}%
7348   \Hy@DisableOption{pdfcreationdate}%
7349   \Hy@DisableOption{pdfmoddate}%
7350   \Hy@DisableOption{pdfproducer}%
7351   \Hy@DisableOption{pdfkeywords}%
7352 }
7353 \def\PDF@SetupDoc{%
7354   \pdfmark{%
7355     pdfmark=/DOCVIEW,
7356     Page=\@pdfstartpage,
7357     View=\@pdfstartview,
7358     PageMode=\@pdfpagemode
7359   }%
7360   \ifx\@pdfpagescrop\@empty
7361   \else
7362     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7363   \fi
7364   \edef\Hy@temp{%
7365     \ifHy@toolbar\else /HideToolbar true\fi
7366     \ifHy@menubar\else /HideMenubar true\fi
7367     \ifHy>windowui\else /HideWindowUI true\fi
7368     \ifHy@fitwindow /FitWindow true\fi
7369     \ifHy@centerwindow /CenterWindow true\fi
7370     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7371     \ifx\@pdfnonfullscreenpagemode\@empty
7372     \else
7373       /NonFullScreenPageMode\@pdfnonfullscreenpagemode
7374     \fi
7375   }%
7376   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7377   \pdfmark{%
7378     pdfmark=/PUT,%

```

```

7379 Raw={%
7380   \string{Catalog\string} <<
7381   \ifx\Hy@temp\@empty
7382   \else
7383     /ViewerPreferences<<\Hy@temp>>%
7384   \fi
7385   \ifx\pdf@pagelayout\@empty
7386   \else
7387     /PageLayout /\pdf@pagelayout\space
7388   \fi
7389   \ifx\@baseurl\@empty
7390   \else
7391     /URI << /Base (\Hy@pstringB) >>%
7392   \fi
7393   >>%
7394 }%
7395 }%
7396 }
7397 \providecommand\pdfview{XYZ}
7398 \providecommand\pdfviewparams{ %
7399   gsave revscl currentpoint grestore
7400   72 add exch pop null exch null
7401 }

```

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 .

```

7402 \special{headertext=

```

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

```

7403 /DvipsToPDF { 65781 div } def
7404 /PDFToDvips { 65781 mul } def
7405 /HyperBorder { 1 PDFToDvips } def
7406 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def
7407 /H.S {
7408   currentpoint
7409   HyperBorder add /pdf@lly exch def
7410   dup DvipsToPDF /pdf@hoff exch def
7411   HyperBorder sub /pdf@llx exch def
7412 } def
7413 /H.L {
7414   2 sub
7415   PDFToDvips /HyperBase exch def
7416   currentpoint
7417   HyperBase sub /pdf@ury exch def
7418   /pdf@urx exch def
7419 } def
7420 /H.A {
7421   H.L
7422   currentpoint exch pop
7423   HyperBase sub % baseline skip
7424   DvipsToPDF /pdf@voff exch def
7425 } def
7426 /H.R {
7427   currentpoint
7428   HyperBorder sub /pdf@ury exch def

```

```

7429   HyperBorder add /pdf@urx exch def
7430   currentpoint exch pop DvipsToPDF /pdf@voff exch def
7431 } def
7432 systemdict
7433 /pdfmark known
7434 {
7435   userdict /?pdfmark /exec load put
7436 }{
7437   userdict /?pdfmark /pop load put
7438   userdict /pdfmark systemdict /cleartomark get put
7439 }
7440 ifelse
7441 }
7442 </dvipsone>
7443 <*dvipdf>
7444 \def\literalps@out#1{\special{pdf: #1}}%
7445 \providecommand\@pdfborder{0 0 1}
7446 \providecommand*\@pdfborderstyle{}
7447 </dvipdf>

```

45.13 TeX4ht

```

7448 <*tex4ht>
7449 \@ifpackageloaded{tex4ht}
7450 {\typeout{hyperref tex4ht: tex4ht already loaded}}%
7451 {\RequirePackage[hTeX4ht]{tex4ht}}
7452 \def\PDF@FinishDoc{}
7453 \def\PDF@SetupDoc{%
7454   \ifx\@baseurl\@empty
7455   \else
7456     \special{t4ht=<base href="\@baseurl">}%
7457   \fi
7458 }
7459 \def\hyper@anchor#1{%
7460   \Hy@SaveLastskip
7461   \begingroup
7462     \let\protect=\string
7463     \special{t4ht=<a name=\hyper@quote #1\hyper@quote>}%
7464   \endgroup
7465   \Hy@activeanchortrue
7466   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7467   \special{t4ht=</a>}%
7468   \Hy@activeanchorfalse
7469   \Hy@RestoreLastskip
7470 }
7471 \def\hyper@anchorstart#1{%
7472   \Hy@SaveLastskip
7473   \begingroup
7474     \hyper@chars\special{t4ht=<a name=\hyper@quote#1\hyper@quote>}%
7475   \endgroup
7476   \Hy@activeanchortrue
7477 }
7478 \def\hyper@anchorend{%
7479   \special{t4ht=</a>}%
7480   \Hy@activeanchorfalse
7481   \Hy@RestoreLastskip
7482 }
7483 \def\@urltype{url}

```

```

7484 \def\hyper@linkstart#1#2{%
7485   \expandafter\Hy@colorlink\csname @#1color\endcsname
7486   \def\Hy@tempa{#1}%
7487   \ifx\Hy@tempa\@urltype
7488     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7489   \else
7490     {\hyper@chars\special{t4ht=<a href=\hyper@quote\##2\hyper@quote>}}%
7491   \fi
7492 }
7493 \def\hyper@linkend{%
7494   \special{t4ht=</a>}%
7495   \Hy@endcolorlink
7496 }
7497 \def\hyper@linkfile#1#2#3{%
7498   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
7499 }
7500 \def\hyper@linkurl#1#2{%
7501   \leavevmode
7502   \ifHy@raiselinks
7503     \setbox\@tempboxa=\color@hbox #1\color@endbox
7504     \@linkdim\dp\@tempboxa
7505     \lower\@linkdim\hbox{%
7506       \begingroup
7507         \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7508       \endgroup
7509     }%
7510     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7511     \@linkdim\ht\@tempboxa
7512     \advance\@linkdim by -6.5\p@
7513     \raise\@linkdim\hbox{\special{t4ht=</a>}}%
7514   \else
7515     \begingroup
7516       \hyper@chars
7517       \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7518       \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7519       \special{t4ht=</a>}%
7520     \endgroup
7521   \fi
7522 }
7523 \def\hyper@link#1#2#3{%
7524   \hyper@linkurl{#3}{\##2}%
7525 }
7526 \def\hyper@image#1#2{%
7527   \begingroup
7528     \hyper@chars
7529     \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
7530   \endgroup
7531 }
7532 \let\autoref\ref
7533 \ifx \rEfLiNK \UnDef
7534   \def\rEfLiNK #1#2{#2}%
7535 \fi
7536 \def\backref#1{}
7537 </tex4ht>
7538 <*tex4htcfg>
7539 \IfFileExists{\jobname.cfg}{\endinput}{}
7540 \Preamble{html}

```

```

7541 \begin{document}
7542 \EndPreamble
7543 \def\TeX{\TeX}
7544 \def\OMEGA{\Omega}
7545 \def\LaTeX{\LaTeX}
7546 \def\LaTeXe{\LaTeX2e}
7547 \def\TeX{e-\TeX}
7548 \def\MF{Metafont}
7549 \def\MP{Metapost}
7550 \</tex4htcfg>

```

46 Driver-specific form support

46.1 pdfmarks

```

7551 \<*pdfmark>
7552 \long\def\@Form[#1]{%
7553 \AtBeginDvi{%
7554 \headerps@out{%
7555 [ /_objdef {pdfDocEncoding}
7556 /type /dict
7557 /OBJ pdfmark
7558 [ {pdfDocEncoding}
7559 << /Type /Encoding
7560 /Differences [ 24 /breve /caron /circumflex /dotaccent
7561 /hungarumlaut /ogonek /ring /tilde 39 /quotesingle 96 /grave 128
7562 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin /fraction
7563 /guilsinglleft /guilsinglright /minus /perthousand /quotedblbase
7564 /quotedblleft /quotedblright /quoteleft /quoteright /quotesinglbase
7565 /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis /Zcaron /dotlessi
7566 /lslash /oe /scaron /zcaron 164 /currency 166 /brokenbar 168 /dieresis
7567 /copyright /ordfeminine 172 /logicalnot /.notdef /registered /macron
7568 /degree /plusminus /twosuperior /threesuperior /acute /mu 183
7569 /periodcentered /cedilla /onesuperior /ordmasculine 188 /onequarter
7570 /onehalf /threequarters 192 /Agrave /Aacute /Acircumflex /Atilde
7571 /Adieresis /Aring /AE /Ccedilla /Egrave /Eacute /Ecircumflex
7572 /Edieresis /Igrave /Iacute /Icircumflex /Idieresis /Eth /Ntilde
7573 /Ograve /Oacute /Ocircumflex /Otilde /Odieresis /multiply /Oslash
7574 /Ugrave /Uacute /Ucircumflex /Udieresis /Yacute /Thorn /germandbls
7575 /agrave /aacute /acircumflex /atilde /adieresis /aring /ae /ccedilla
7576 /egrave /eacute /ecircumflex /edieresis /igrave /iacute /icircumflex
7577 /idieresis /eth /ntilde /ograve /oacute /ocircumflex /otilde
7578 /odieresis /divide /oslash /ugrave /uacute /ucircumflex /udieresis
7579 /yacute /thorn /ydieresis ]
7580 >>
7581 /PUT pdfmark
7582 [ /_objdef {ZaDb}
7583 /type /dict
7584 /OBJ pdfmark
7585 [ {ZaDb}
7586 <<
7587 /Type /Font
7588 /Subtype /Type1
7589 /Name /ZaDb
7590 /BaseFont /ZapfDingbats
7591 >>
7592 /PUT pdfmark
7593 [ /_objdef {Helv}

```

```

7594 /type /dict
7595 /OBJ pdfmark
7596 [ {Helv}
7597 <<
7598 /Type /Font
7599 /Subtype /Type1
7600 /Name /Helv
7601 /BaseFont /Helvetica
7602 /Encoding {pdfDocEncoding}
7603 >>
7604 /PUT pdfmark
7605 [ /_objdef {aform}
7606 /type /dict
7607 /OBJ pdfmark
7608 [ /_objdef {afields}
7609 /type /array
7610 /OBJ pdfmark
7611 {
7612 [/BBox [0 0 100 100] /_objdef {Check} /BP pdfmark
7613 1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (4) show
7614 [/EP pdfmark
7615 [/BBox [0 0 100 100] /_objdef {Cross} /BP pdfmark
7616 1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (8) show
7617 [/EP pdfmark
7618 [/BBox [0 0 250 100] /_objdef {Submit} /BP pdfmark 0.6 setgray 0 0 250
7619 100 rectfill 1 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246 96
7620 lineto 4 96 lineto 4 4 lineto fill 0.34 setgray 248 98 moveto 248 2
7621 lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
7622 /Helvetica 76 selectfont 0 setgray 8 22.5 moveto (Submit) show
7623 [/EP pdfmark
7624 [/BBox [0 0 250 100] /_objdef {SubmitP} /BP pdfmark 0.6 setgray 0 0
7625 250 100 rectfill 0.34 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246
7626 96 lineto 4 96 lineto 4 4 lineto fill 1 setgray 248 98 moveto 248 2
7627 lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
7628 /Helvetica 76 selectfont 0 setgray 10 20.5 moveto (Submit) show
7629 [/EP pdfmark
7630 } ?pdfmark
7631 [ {aform}
7632 <<
7633 /Fields {afields}
7634 /DR << /Font << /ZaDb {ZaDb} /Helv {Helv} >> >>
7635 /DA (/Helv 10 Tf 0 g )
7636 /CO {corder}
7637 /NeedAppearances true
7638 >>
7639 /PUT pdfmark
7640 [ \string{Catalog\string}
7641 <<
7642 /AcroForm {aform}
7643 >>
7644 /PUT pdfmark
7645 [ /_objdef {corder} /type /array /OBJ pdfmark % dps
7646 }}%
7647 \setkeys{Form}{#1}%
7648 }
7649 \def\@endForm{}
7650 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum

```



```

7651 \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
7652 }
7653 \def\@TextField[#1]#2{% parameters, label
7654 \def\Fld@name{#2}%
7655 \def\Fld@default{}%
7656 \let\Fld@value\@empty
7657 \def\Fld@width{\DefaultWidthofText}%
7658 \def\Fld@height{\DefaultHeightofText}%
7659 \ifFld@multiline
7660 \begingroup
7661 \dimen@=\DefaultHeightofText
7662 \dimen@=4\dimen@
7663 \edef\x{\endgroup
7664 \def\noexpand\Fld@height{\the\dimen@}%
7665 }%
7666 \x
7667 \fi
7668 \bgroup
7669 \Field@toks={ }%
7670 \setkeys{Field}{#1}%
7671 \ifFld@hidden\def\Fld@width{1sp}\fi
7672 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
7673 \LayoutTextField{#2}{%
7674 \Hy@escapeform\PDFForm@Text
7675 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
7676 pdfmark=/ANN,Raw={\PDFForm@Text}%
7677 }%
7678 }%
7679 \egroup
7680 }
7681 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7682 \def\Fld@name{#2}%
7683 \def\Fld@default{}%
7684 \def\Fld@width{\DefaultWidthofChoiceMenu}%
7685 \def\Fld@height{\DefaultHeightofChoiceMenu}%
7686 \bgroup
7687 \Fld@menulength=0
7688 \@tempdima\z@
7689 \@for\@curropt:=#3\do{%
7690 \expandafter\Fld@checkequals\@curropt==\%
7691 \Hy@StepCount\Fld@menulength
7692 \settowidth{\@tempdimb}{\@currDisplay}%
7693 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
7694 }%
7695 \advance\@tempdima by 15\p@
7696 \Field@toks={ }%
7697 \setkeys{Field}{#1}%
7698 \ifFld@hidden\def\Fld@width{1sp}\fi
7699 \LayoutChoiceField{#2}{%
7700 \ifFld@radio
7701 \@@Radio{#3}%
7702 \else
7703 {%
7704 \ifdim\Fld@width<\@tempdima
7705 \ifdim\@tempdima<1cm\@tempdima1cm\fi
7706 \edef\Fld@width{\the\@tempdima}%
7707 \fi

```

```

7708         \def\Fld@flags{}%
7709         \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
7710         \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
7711         \ifx\Fld@flags\@empty
7712             \@tempdima=\the\Fld@menulength\Fld@charsize
7713             \advance\@tempdima by \Fld@borderwidth bp
7714             \advance\@tempdima by \Fld@borderwidth bp
7715             \edef\Fld@height{\the\@tempdima}%
7716         \fi
7717         \@@ListBox{#3}%
7718     }%
7719 \fi
7720 }%
7721 \egroup
7722 }
7723 \def\@@Radio#1{%
7724     \Fld@listcount=0
7725     \@for\@curropt:=#1\do{%
7726         \expandafter\Fld@checkequals\@curropt==\%
7727         \Hy@StepCount\Fld@listcount
7728         \@currDisplay\space
7729         \Hy@escapeform\PDFForm@Radio
7730         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
7731             pdfmark=/ANN,%
7732             Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
7733         } % deliberate space between radio buttons
7734     }%
7735 }
7736 \newcount\Fld@listcount
7737 \def\@@ListBox#1{%
7738     \Choice@toks={ }%
7739     \Fld@listcount=0
7740     \@for\@curropt:=#1\do{%
7741         \expandafter\Fld@checkequals\@curropt==\%
7742         \Hy@StepCount\Fld@listcount
7743         \edef\@processme{%
7744             \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
7745         }\@processme
7746     }%
7747     \Hy@escapeform\PDFForm@List
7748     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
7749         pdfmark=/ANN,Raw={\PDFForm@List}%
7750     }%
7751 }
7752 \def\@PushButton[#1]#2{% parameters, label
7753     \def\Fld@name{#2}%
7754     \bgroup
7755         \Field@toks={ }%
7756         \setkeys{Field}{#1}%
7757         \ifFld@hidden\def\Fld@width{1sp}\fi
7758         \LayoutPushButtonField{%
7759             \Hy@escapeform\PDFForm@Push
7760             \pdfmark[\MakeButtonField{#2}]{%
7761                 pdfmark=/ANN,Raw={\PDFForm@Push}%
7762             }%
7763         }%
7764     \egroup

```

```

7765 }
7766 \def\@Submit[#1]#2{%
7767   \Field@toks={ }%
7768   \def\Fld@width{\DefaultWidthofSubmit}%
7769   \def\Fld@height{\DefaultHeightofSubmit}%
7770   \bgroup
7771     \def\Fld@name{Submit}%
7772     \setkeys{Field}{#1}%
7773     \ifFld@hidden\def\Fld@width{1sp}\fi
7774     \Hy@escapeform\PDFForm@Submit
7775     \pdfmark[\MakeButtonField{#2}] {%
7776       pdfmark=/ANN,%
7777       Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
7778     }%
7779   \egroup
7780 }
7781 \def\@Reset[#1]#2{%
7782   \Field@toks={ }%
7783   \def\Fld@width{\DefaultWidthofReset}%
7784   \def\Fld@height{\DefaultHeightofReset}%
7785   \bgroup
7786     \def\Fld@name{Reset}%
7787     \setkeys{Field}{#1}%
7788     \ifFld@hidden\def\Fld@width{1sp}\fi
7789     \Hy@escapeform\PDFForm@Reset
7790     \pdfmark[\MakeButtonField{#2}] {%
7791       pdfmark=/ANN,Raw={\PDFForm@Reset}%
7792     }%
7793   \egroup
7794 }
7795 \def\@CheckBox[#1]#2{% parameters, label
7796   \def\Fld@name{#2}%
7797   \def\Fld@default{0}%
7798   \bgroup
7799     \def\Fld@width{\DefaultWidthofCheckBox}%
7800     \def\Fld@height{\DefaultHeightofCheckBox}%
7801     \Field@toks={ }%
7802     \setkeys{Field}{#1}%
7803     \ifFld@hidden\def\Fld@width{1sp}\fi
7804     \LayoutCheckField{#2} {%
7805       \Hy@escapeform\PDFForm@Check
7806       \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}] {%
7807         pdfmark=/ANN,Raw={\PDFForm@Check}%
7808       }%
7809     }%
7810   \egroup
7811 }
7812 \pdfmark

```

46.2 dvipdf

```

7813 \dvipdf
7814 \def\@Form[#1]{\typeout{Sorry, I do not support FORMs}}
7815 \def\@endForm{}
7816 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7817   \typeout{Sorry, dvipdf does not support FORM gauges}%
7818 }
7819 \def\@TextField[#1]#2{% parameters, label

```

```

7820 \typeout{Sorry, dvipdf does not support FORM text fields}%
7821 }
7822 \def\@CheckBox[#1]#2{% parameters, label
7823 \typeout{Sorry, dvipdf does not support FORM checkboxes}%
7824 }
7825 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7826 \typeout{Sorry, dvipdf does not support FORM choice menus}%
7827 }
7828 \def\@PushButton[#1]#2{% parameters, label
7829 \typeout{Sorry, dvipdf does not support FORM pushbuttons}%
7830 }
7831 \def\@Reset[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
7832 \def\@Submit[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
7833 \end{dvipdf}

```

46.3 HyperTeX

```

7834 \hypertex
7835 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
7836 \def\@endForm{}
7837 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7838 \typeout{Sorry, HyperTeX does not support FORM gauges}%
7839 }
7840 \def\@TextField[#1]#2{% parameters, label
7841 \typeout{Sorry, HyperTeX does not support FORM text fields}%
7842 }
7843 \def\@CheckBox[#1]#2{% parameters, label
7844 \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
7845 }
7846 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7847 \typeout{Sorry, HyperTeX does not support FORM choice menus}%
7848 }
7849 \def\@PushButton[#1]#2{% parameters, label
7850 \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
7851 }
7852 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
7853 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
7854 \end{hypertex}

```

46.4 TeX4ht

```

7855 \tex4ht
7856 \def\@Form[#1]{%
7857 \setkeys{Form}{#1}%
7858 \HCode{<form action="\Form@action" method="\Form@method">}%
7859 }
7860 \def\@endForm{\HCode{</form>}}
7861 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7862 \typeout{Sorry, TeX4ht does not support gauges}%
7863 }
7864 \def\@TextField[#1]#2{% parameters, label
7865 \let\Hy@reserved@a\@empty
7866 \def\Fld@name{#2}%
7867 \def\Fld@default{}%
7868 \bgroup
7869 \Field@toks={ }%
7870 \setkeys{Field}{#1}%
7871 \HCode{<label for="\Fld@name">#2</label>}%
7872 \ifFld@password

```

```

7873     \@@PasswordField
7874     \else
7875     \@@TextField
7876     \fi
7877 \egroup
7878 }
7879 \def\@@PasswordField{%
7880   \HCode{%
7881     <input type="password"
7882       id="\Fld@name"
7883       name="\Fld@name"
7884       \ifFld@hidden type="hidden"\fi
7885       value="\Fld@default"
7886       \the\Field@toks
7887     >%
7888   }%
7889 }
7890 \def\@@TextField{%
7891   \ifFld@multiline
7892     \HCode{<textarea
7893       \ifFld@readonly readonly \fi
7894       id="\Fld@name"
7895       name="\Fld@name"
7896       \ifFld@hidden type="hidden"\fi
7897       \the\Field@toks>%
7898   }%
7899   \Fld@default
7900   \HCode{</textarea>}}%
7901 \else
7902   \HCode{<input type="text"
7903     \ifFld@readonly readonly \fi
7904     id="\Fld@name"
7905     name="\Fld@name"
7906     \ifFld@hidden type="hidden"\fi
7907     value="\Fld@default" \the\Field@toks>
7908   }%
7909 \fi
7910 }
7911 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7912   \def\Fld@name{#2}%
7913   \def\Fld@default{}%
7914   \let\Hy@reserved@a\relax
7915   \bgroup
7916   \expandafter\Fld@findlength#3\\%
7917   \Field@toks={ }%
7918   \setkeys{Field}{#1}%
7919   #2%
7920   \ifFld@radio
7921     \expandafter\@@Radio#3\\%
7922   \else
7923     \expandafter\@@Menu#3\\%
7924   \fi
7925 \egroup
7926 }
7927 \def\Fld@findlength#1\\{%
7928   \Fld@menulength=0
7929   \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%

```

```

7930 }
7931 \def\@@Menu#1\{\%
7932   \HCode{<select size="\the\Fld@menulength"
7933     name="\Fld@name" \the\Field@toks>}%
7934   \@for\@curropt:=#1\do{%
7935     \expandafter\Fld@checkequals\@curropt==\%
7936     \HCode{<option
7937       \ifx\@curropt\Fld@default selected \fi
7938       value="\@currValue">\@currDisplay</option>%
7939     }%
7940   }%
7941   \HCode{</select>}%
7942 }
7943 \def\@@Radio#1\{\%
7944   \@for\@curropt:=#1\do{%
7945     \expandafter\Fld@checkequals\@curropt==\%
7946     \HCode{<input type="radio"
7947       \ifx\@curropt\Fld@default checked \fi
7948       name="\Fld@name"
7949       value="\@currValue"
7950       \the\Field@toks>%
7951     }%
7952     \@currDisplay
7953   }%
7954 }
7955 \def\@PushButton[#1]#2{% parameters, label
7956   \def\Fld@name{#2}%
7957   \bgroup
7958     \Field@toks={ }%
7959     \setkeys{Field}{#1}%
7960     \HCode{<input type="button"
7961       name="\Fld@name"
7962       value="#2"
7963       \the\Field@toks>%
7964     }%
7965     \HCode{</button>}%
7966   \egroup
7967 }
7968 \def\@Submit[#1]#2{%
7969   \HCode{<button type="submit">#2</button>}%
7970 }
7971 \def\@Reset[#1]#2{%
7972   \HCode{<button type="reset">#2</button>}%
7973 }
7974 \def\@CheckBox[#1]#2{% parameters, label
7975   \let\Hy@reserved@a\@empty
7976   \def\Fld@name{#2}%
7977   \def\Fld@default{0}%
7978   \bgroup
7979     \Field@toks={ }%
7980     \setkeys{Field}{#1}%
7981     \HCode{<input type="checkbox"
7982       \ifFld@checked checked \fi
7983       \ifFld@disabled disabled \fi
7984       \ifFld@readonly readonly \fi
7985       name="\Fld@name"
7986       \ifFld@hidden type="hidden"\fi

```

```

7987     value="\Fld@default"
7988     \the\Fld@toks>%
7989     #2%
7990   }%
7991 \egroup
7992 }
7993 </tex4ht>

```

46.5 pdfTeX

```

7994 <*pdfTeX>
7995 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7996   \typeout{Sorry, pdfTeX does not support FORM gauges}%
7997 }
7998 \def\MakeFieldObject#1#2{\sbox0{#1}%
7999   \immediate\pdfxform0 %
8000   \expandafter\edef\csname #2Object\endcsname{%
8001     \the\pdflastxform\space 0 R%
8002   }%
8003 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
8004 }%
8005 \def\@Form[#1]{%
8006   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
8007   \setkeys{Form}{#1}%
8008   \ifnum\pdfTeXversion>13
8009     \pdfrefobj\OBJ@pdfdocencoding
8010     \pdfrefobj\OBJ@ZaDb
8011     \pdfrefobj\OBJ@Helv
8012     \pdfrefobj\OBJ@acroform
8013   \fi
8014   \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
8015   \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

8016   \begingroup
8017     \fontfamily{pzd}%
8018     \fontencoding{U}%
8019     \fontseries{m}%
8020     \fontshape{n}%
8021     \selectfont
8022     \char123 %
8023   \endgroup
8024 }{Ding}%
8025 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{Submit}}}}{Submit}%
8026 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{SubmitP}}}}{SubmitP}%
8027 }
8028 \def\@EndForm{}
8029 \def\@TextField[#1]#2{% parameters, label
8030   \def\Fld@name{#2}%
8031   \def\Fld@default{}%
8032   \let\Fld@value\@empty
8033   \def\Fld@width{\DefaultWidthofText}%
8034   \def\Fld@height{\DefaultHeightofText}%
8035   \ifFld@multiline
8036     \begingroup
8037       \dimen@=\DefaultHeightofText
8038       \dimen@=4\dimen@
8039       \edef\x{\endgroup
8040         \def\noexpand\Fld@height{\the\dimen@}%

```

```

8041     }%
8042     \x
8043 \fi
8044 \bgroup
8045     \Field@toks={ }%
8046     \setkeys{Field}{#1}%
8047     \ifFld@hidden\def\Fld@width{1sp}\fi
8048     \ifx\Fld@value\empty\def\Fld@value{\Fld@default}\fi
8049     \LayoutTextField{#2}{%
8050         \Hy@escapeform\PDFForm@Text
8051         \pdfstartlink user {\PDFForm@Text}\relax
8052         \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
8053     }%
8054 \egroup
8055 }
8056 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8057     \def\Fld@name{#2}%
8058     \def\Fld@default{}%
8059     \def\Fld@width{\DefaultWidthofChoiceMenu}%
8060     \def\Fld@height{\DefaultHeightofChoiceMenu}%
8061     \bgroup
8062         \Fld@menulength=0
8063         \@tempdima\z@
8064         \@for\@curropt:=#3\do{%
8065             \expandafter\Fld@checkequals\@curropt==\%
8066             \Hy@StepCount\Fld@menulength
8067             \settowidth{\@tempdimb}{\@currDisplay}%
8068             \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8069         }%
8070         \advance\@tempdima by 15\p@
8071         \Field@toks={ }%
8072         \setkeys{Field}{#1}%
8073         \ifFld@hidden\def\Fld@width{1sp}\fi
8074         \LayoutChoiceField{#2}{%
8075             \ifFld@radio
8076                 \@@Radio{#3}%
8077             \else
8078                 {%
8079                     \ifdim\Fld@width<\@tempdima
8080                         \ifdim\@tempdima<1cm\@tempdima1cm\fi
8081                         \edef\Fld@width{\the\@tempdima}%
8082                     \fi
8083                     \def\Fld@flags{}%
8084                     \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8085                     \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8086                     \ifx\Fld@flags\empty
8087                         \@tempdima=\the\Fld@menulength\Fld@charsize
8088                         \advance\@tempdima by \Fld@borderwidth bp
8089                         \advance\@tempdima by \Fld@borderwidth bp
8090                         \edef\Fld@height{\the\@tempdima}%
8091                     \fi
8092                     \@@Listbox{#3}%
8093                 }%
8094             \fi
8095         }%
8096     \egroup
8097 }

```



```

8098 \def\@@Radio#1{%
8099   \Fld@listcount=0
8100   \@for\@curropt:=#1\do{%
8101     \expandafter\Fld@checkequals\@curropt==\\%
8102     \Hy@StepCount\Fld@listcount
8103     \@currDisplay\space
8104     \leavevmode
8105     \Hy@escapeform\PDFForm@Radio
8106     \pdfstartlink user {%
8107       \PDFForm@Radio
8108       /AP <<
8109       /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.

```

8110       /\@currValue\space \DingObject
8111       >>
8112     >>
8113   }%
8114   \relax
8115   \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
8116   \space% deliberate space between radio buttons
8117 }%
8118 }
8119 \newcount\Fld@listcount
8120 \def\@@Listbox#1{%
8121   \Choice@toks={ }%
8122   \Fld@listcount=0
8123   \@for\@curropt:=#1\do{%
8124     \expandafter\Fld@checkequals\@curropt==\\%
8125     \Hy@StepCount\Fld@listcount
8126     \edef\@processme{%
8127       \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8128     }\@processme
8129   }%
8130   \leavevmode
8131   \Hy@escapeform\PDFForm@List
8132   \pdfstartlink user {\PDFForm@List}\relax
8133   \MakeChoiceField{\Fld@width}{\Fld@height}%
8134   \pdfendlink
8135 }
8136 \def\@PushButton[#1]#2{% parameters, label
8137   \def\Fld@name{#2}%
8138   \bgroup
8139     \Field@toks={ }%
8140     \setkeys{Field}{#1}%
8141     \ifFld@hidden\def\Fld@width{1sp}\fi
8142     \LayoutPushButtonField{%
8143       \leavevmode
8144       \Hy@escapeform\PDFForm@Push
8145       \pdfstartlink user {\PDFForm@Push}\relax
8146       \MakeButtonField{#2}%
8147       \pdfendlink
8148     }%
8149   \egroup
8150 }
8151 \def\@Submit[#1]#2{%

```

```

8152 \Field@toks={ }%
8153 \def\Fld@width{\DefaultWidthofSubmit}%
8154 \def\Fld@height{\DefaultHeightofSubmit}%
8155 \bgroup
8156 \def\Fld@name{Submit}%
8157 \setkeys{Field}{#1}%
8158 \ifFld@hidden\def\Fld@width{1sp}\fi
8159 \leavevmode
8160 \Hy@escapeform\PDFForm@Submit
8161 \pdfstartlink user {%
8162 \PDFForm@Submit
8163 /AP << /N \SubmitObject\space /D \SubmitPObject >>
8164 }%
8165 \relax
8166 \MakeButtonField{#2}%
8167 \pdfendlink
8168 \egroup
8169 }
8170 \def\@Reset[#1]#2{%
8171 \Field@toks={ }%
8172 \def\Fld@width{\DefaultWidthofReset}%
8173 \def\Fld@height{\DefaultHeightofReset}%
8174 \bgroup
8175 \def\Fld@name{Reset}%
8176 \setkeys{Field}{#1}%
8177 \ifFld@hidden\def\Fld@width{1sp}\fi
8178 \leavevmode
8179 \Hy@escapeform\PDFForm@Reset
8180 \pdfstartlink user {\PDFForm@Reset}\relax
8181 \MakeButtonField{#2}%
8182 \pdfendlink
8183 \egroup
8184 }
8185 \def\@CheckBox[#1]#2{% parameters, label
8186 \def\Fld@name{#2}%
8187 \def\Fld@default{0}%
8188 \bgroup
8189 \def\Fld@width{\DefaultWidthofCheckBox}%
8190 \def\Fld@height{\DefaultHeightofCheckBox}%
8191 \Field@toks={ }%
8192 \setkeys{Field}{#1}%
8193 \ifFld@hidden\def\Fld@width{1sp}\fi
8194 \LayoutCheckField{#2}{%
8195 \Hy@escapeform\PDFForm@Check
8196 \pdfstartlink user {\PDFForm@Check}\relax
8197 \MakeCheckField{\Fld@width}{\Fld@height}%
8198 \pdfendlink
8199 }%
8200 \egroup
8201 }
8202 \pdfobj { << /Type /Encoding /Differences [ 24 /breve /caron
8203 /circumflex /dotaccent /hungarumlaut /ogonek /ring /tilde 39
8204 /quotesingle 96 /grave 128 /bullet /dagger /daggerdbl /ellipsis
8205 /emdash /endash /florin /fraction /guilsinglleft /guilsinglright
8206 /minus /perthousand /quotedblbase /quotedblleft /quotedblright
8207 /quoteleft /quoteright /quotesinglbase /trademark /fi /fl /Lslash /OE
8208 /Scaron /Ydieresis /Zcaron /dotlessi /lslash /oe /scaron /zcaron 164

```

```

8209 /currency 166 /brokenbar 168 /dieresis /copyright /ordfeminine 172
8210 /logicalnot /.notdef /registered /macron /degree /plusminus
8211 /twosuperior /threesuperior /acute /mu 183 /periodcentered /cedilla
8212 /onesuperior /ordmasculine 188 /onequarter /onehalf /threequarters 192
8213 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE /Ccedilla
8214 /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute /Icircumflex
8215 /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex /Otilde
8216 /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex /Udieresis
8217 /Yacute /Thorn /germandbls /agrave /aacute /acircumflex /atilde
8218 /adieresis /aring /ae /ccedilla /egrave /eacute /ecircumflex
8219 /edieresis /igrave /iacute /icircumflex /idieresis /eth /ntilde
8220 /ograde /oacute /ocircumflex /otilde /odieresis /divide /oslash
8221 /ugrave /uacute /ucircumflex /udieresis /yacute /thorn /ydieresis ] >>
8222 }
8223 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
8224 \pdfobj {
8225   <<
8226     /Type /Font
8227     /Subtype /Type1
8228     /Name /ZaDb
8229     /BaseFont /ZapfDingbats
8230 >>
8231 }
8232 \edef\OBJ@ZaDb{\the\pdflastobj}
8233 \pdfobj { <<
8234   /Type /Font
8235   /Subtype /Type1
8236   /Name /Helv
8237   /BaseFont /Helvetica
8238   /Encoding \OBJ@pdfdocencoding\space 0 R
8239 >>
8240 }
8241 \edef\OBJ@Helv{\the\pdflastobj}
8242 \pdfobj {
8243   <<
8244     /Fields []
8245     /DR <<
8246       /Font << /ZaDb \OBJ@ZaDb\space 0 R /Helv \OBJ@Helv\space 0 R >>
8247     >>
8248     /DA (/Helv 10 Tf 0 g )
8249     /NeedAppearances true
8250 >>
8251 }
8252 \edef\OBJ@acroform{\the\pdflastobj}
8253 </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.

```
8254 <*dvipdfm>
```

\@Gauge

```

8255 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8256   \typeout{Sorry, dvipdfm does not support FORM gauges}%
8257 }

```

\@Form

```

8258 \def \@Form[#1]{%
8259   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
8260   \setkeys{Form}{#1}%
8261   \@pdfm@mark{obj @afields [ ]}%
8262   \@pdfm@mark{obj @corder [ ]}%
8263   \@pdfm@mark{%
8264     obj @aform <<
8265       /Fields @afields
8266       /DR << /Font << /ZaDb @OBJZaDb /Helv @OBJHelv >> >>
8267       /DA (/Helv 10 Tf 0 g )
8268       /CO @corder
8269       /NeedAppearances true
8270     >>%
8271   }%
8272   \@pdfm@mark{put @catalog << /AcroForm @aform >>}%
8273 }

\@endForm

8274 \def \@endForm{}

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

8275 \def \dvipdfm@setdim{%
8276   height \the\ht\pdfm@box\space
8277   width \the\wd\pdfm@box\space
8278   depth \the\dp\pdfm@box\space
8279 }

\@TextField

8280 \def \@TextField[#1]#2{% parameters, label
8281   \def \Fld@name{#2}%
8282   \def \Fld@default{}%
8283   \let \Fld@value\@empty
8284   \def \Fld@width{\DefaultWidthofText}%
8285   \def \Fld@height{\DefaultHeightofText}%
8286   \ifFld@multiline
8287     \begingroup
8288       \dimen@=\DefaultHeightofText
8289       \dimen@=4\dimen@
8290       \edef\x{\endgroup
8291         \def\noexpand\Fld@height{\the\dimen@}%
8292       }%
8293     \x
8294   \fi
8295   \bgroup
8296     \Field@toks={ }%
8297     \setkeys{Field}{#1}%
8298     \ifFld@hidden\def\Fld@width{1sp}\fi
8299     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
8300     \setbox\pdfm@box=\hbox{%
8301       \MakeTextField{\Fld@width}{\Fld@height}%
8302     }%
8303     \LayoutTextField{#2}{%
8304       \Hy@escapeform\PDFForm@Text
8305       \@pdfm@mark{%
8306         ann @\Fld@name\space \dvipdfm@setdim << \PDFForm@Text >>%
8307       }%
8308     }%

```

```

8309 \unhbox\pdfm@box
8310 \@pdfm@mark{put \@fields \@Fld@name}% record in \@fields array
8311 \egroup
8312 }

```

\@ChoiceMenu

```

8313 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8314 \def\Fld@name{#2}%
8315 \def\Fld@default{}%
8316 \def\Fld@width{\DefaultWidthofChoiceMenu}%
8317 \def\Fld@height{\DefaultHeightofChoiceMenu}%
8318 \bgroup
8319 \Fld@menulength=0
8320 \@tempdima\z@
8321 \@for\@curropt:=#3\do{%
8322 \expandafter\Fld@checkequals\@curropt==\%
8323 \Hy@StepCount\Fld@menulength
8324 \settowidth{\@tempdimb}{\@currDisplay}%
8325 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8326 }%
8327 \advance\@tempdima by 15\p@
8328 \Field@toks={ }%
8329 \setkeys{Field}{#1}%
8330 \ifFld@hidden\def\Fld@width{1sp}\fi
8331 \LayoutChoiceField{#2}{%
8332 \ifFld@radio
8333 \@@Radio{#3}%
8334 \else
8335 {%
8336 \ifdim\Fld@width<\@tempdima
8337 \ifdim\@tempdima<1cm\@tempdima1cm\fi
8338 \edef\Fld@width{\the\@tempdima}%
8339 \fi
8340 \def\Fld@flags{}%
8341 \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8342 \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8343 \ifx\Fld@flags\@empty
8344 \@tempdima=\the\Fld@menulength\Fld@charsize
8345 \advance\@tempdima by \Fld@borderwidth bp
8346 \advance\@tempdima by \Fld@borderwidth bp
8347 \edef\Fld@height{\the\@tempdima}%
8348 \fi
8349 \@@Listbox{#3}%
8350 }%
8351 \fi
8352 }%
8353 \egroup
8354 }

```

\@@Radio

```

8355 \def\@@Radio#1{%
8356 \Fld@listcount=0
8357 \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
8358 \@for\@curropt:=#1\do{%
8359 \expandafter\Fld@checkequals\@curropt==\%
8360 \Hy@StepCount\Fld@listcount
8361 \@currDisplay\space

```

```

8362 \leavevmode
8363 \Hy@escapeform\PDFForm@Radio
8364 \@pdfm@mark{%
8365   ann \ifnum\Fld@listcount=1 @\Fld@name\space\fi
8366   \dvipdfm@setdim
8367   <<
8368   \PDFForm@Radio\space
8369   /AP << /N << /\@currValue /null >> >>
8370   >>%
8371   }%
8372   \unhcopy\pdfm@box\space% deliberate space between radio buttons
8373   \ifnum\Fld@listcount=1\@pdfm@mark{put @afields @\Fld@name}\fi
8374   }%
8375 }

```

\Fld@listcount

```

8376 \newcount\Fld@listcount

```

\@@ListBox

```

8377 \def\@@ListBox#1{%
8378   \Choice@toks={ }%
8379   \Fld@listcount=0
8380   \@for\@curropt:=#1\do{%
8381     \expandafter\Fld@checkequals\@curropt==\%
8382     \Hy@StepCount\Fld@listcount
8383     \edef\@processme{%
8384       \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8385     }\@processme
8386   }%
8387   \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
8388   \leavevmode
8389   \Hy@escapeform\PDFForm@List
8390   \@pdfm@mark{%
8391     ann @\Fld@name\space\dvipdfm@setdim
8392     << \PDFForm@List >>%
8393   }%
8394   \unhbox\pdfm@box
8395   \@pdfm@mark{put @afields @\Fld@name}%
8396 }

```

\@PushButton

```

8397 \def\@PushButton[#1]#2{% parameters, label
8398   \def\Fld@name{#2}%
8399   \bgroup
8400   \Field@toks={ }%
8401   \setkeys{Field}{#1}%
8402   \ifFld@hidden\def\Fld@width{1sp}\fi
8403   \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8404   \LayoutPushButtonField{%
8405     \leavevmode
8406     \Hy@escapeform\PDFForm@Push
8407     \@pdfm@mark{%
8408       ann @\Fld@name\space\dvipdfm@setdim
8409       << \PDFForm@Push >>%
8410     }%
8411   }%
8412   \unhbox\pdfm@box

```

```

8413 \pdfmark{put @afields @\Fld@name}%
8414 \egroup
8415 }

\@Submit
8416 \def\@Submit[#1]#2{%
8417 \Field@toks={ }%
8418 \def\Fld@width{\DefaultWidthofSubmit}%
8419 \def\Fld@height{\DefaultHeightofSubmit}%
8420 \bgroup
8421 \def\Fld@name{Submit}%
8422 \setkeys{Field}{#1}%
8423 \ifFld@hidden\def\Fld@width{1sp}\fi
8424 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8425 \leavevmode
8426 \Hy@escapeform\PDFForm@Submit
8427 \pdfmark{%
8428 ann @\Fld@name\space\dvipdfm@setdim
8429 << \PDFForm@Submit >>%
8430 }%
8431 \unhbox\pdfm@box%
8432 \pdfmark{put @afields @\Fld@name}%
8433 \egroup
8434 }

\@Reset
8435 \def\@Reset[#1]#2{%
8436 \Field@toks={ }%
8437 \def\Fld@width{\DefaultWidthofReset}%
8438 \def\Fld@height{\DefaultHeightofReset}%
8439 \bgroup
8440 \def\Fld@name{Reset}%
8441 \setkeys{Field}{#1}%
8442 \ifFld@hidden\def\Fld@width{1sp}\fi
8443 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8444 \leavevmode
8445 \Hy@escapeform\PDFForm@Reset
8446 \pdfmark{%
8447 ann @\Fld@name\space\dvipdfm@setdim
8448 << \PDFForm@Reset >>%
8449 }%
8450 \unhbox\pdfm@box
8451 \pdfmark{put @afields @\Fld@name}%
8452 \egroup
8453 }

\@CheckBox
8454 \def\@CheckBox[#1]#2{% parameters, label
8455 \def\Fld@name{#2}%
8456 \def\Fld@default{0}%
8457 \bgroup
8458 \def\Fld@width{\DefaultWidthofCheckBox}%
8459 \def\Fld@height{\DefaultHeightofCheckBox}%
8460 \Field@toks={ }%
8461 \setkeys{Field}{#1}%
8462 \ifFld@hidden\def\Fld@width{1sp}\fi
8463 \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%

```

```

8464 \LayoutCheckField{#2}{%
8465 \Hy@escapeform\PDFForm@Check
8466 \@pdfm@mark{%
8467 ann @\Fld@name\space\dvipdfm@setdim
8468 << \PDFForm@Check >>%
8469 }%
8470 \unhbox\pdfm@box
8471 \@pdfm@mark{put @afields @\Fld@name}%
8472 }%
8473 \egroup
8474 }

8475 \@pdfm@mark{obj @OBJpdfdocencoding << /Type /Encoding /Differences [%
8476 24 /breve /caron /circumflex /dotaccent /hungarumlaut /ogonek /ring
8477 /tilde
8478 39 /quotesingle
8479 96 /grave
8480 128 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin
8481 /fraction /guilsinglleft /guilsinglright /minus /perthousand
8482 /quotedblbase /quotedblleft /quotedblright /quoteleft /quoteright
8483 /quotesinglbase /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis
8484 /Zcaron /dotlessi /lslash /oe /scaron /zcaron
8485 164 /currency
8486 166 /brokenbar
8487 168 /dieresis /copyright /ordfeminine
8488 172 /logicalnot /.notdef /registered /macron /degree /plusminus
8489 /twosuperior /threesuperior /acute /mu
8490 183 /periodcentered /cedilla /onesuperior /ordmasculine
8491 188 /onequarter /onehalf /threequarters
8492 192 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE
8493 /Ccedilla /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute
8494 /Icircumflex /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex
8495 /Otilde /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex
8496 /Udieresis /Yacute /Thorn /germandbls /agrave /aacute /acircumflex
8497 /atilde /adieresis /aring /ae /ccedilla /egrave /eacute
8498 /ecircumflex /edieresis /igrave /iacute /icircumflex /idieresis
8499 /eth /ntilde /ograde /oacute /ocircumflex /otilde /odieresis
8500 /divide /oslash /ugrave /uacute /ucircumflex /udieresis /yacute
8501 /thorn /ydieresis%
8502 ] >>
8503 }
8504 \@pdfm@mark{obj @OBJZaDb
8505 <<
8506 /Type /Font
8507 /Subtype /Type1
8508 /Name /ZaDb
8509 /BaseFont /ZapfDingbats
8510 >>
8511 }
8512 \@pdfm@mark{obj @OBJHelv
8513 <<
8514 /Type /Font
8515 /Subtype /Type1
8516 /Name /Helv
8517 /BaseFont /Helvetica
8518 /Encoding @OBJpdfdocencoding
8519 >>
8520 }

```


8521 \langle /dvipdfm \rangle

46.7 Common forms part

8522 \langle *pdfform \rangle

\Hy@escapestring

```
8523 \begingroup\expandafter\expandafter\expandafter\endgroup
8524 \expandafter\ifx\csname pdfescapestring\endcsname\relax
8525   \let\Hy@escapestring\@firstofone
8526   \def\Hy@escapeform#1{%
8527     \ifHy@escapeform
8528       \def\Hy@escapestring##1{%
8529         \noexpand\Hy@escapestring{\noexpand##1}%
8530       }%
8531     \edef\Hy@temp{#1}%
8532     \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
8533     \def\Hy@escapestring##1{%
8534       \@ifundefined{Hy@esc@\string##1}{%
8535         ##1%
8536         \ThisShouldNotHappen
8537       }{%
8538         \csname Hy@esc@\string##1\endcsname
8539       }%
8540     }%
8541   \else
8542     \let\Hy@escapestring\@firstofone
8543   \fi
8544 }%
8545 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
8546   \ifx\#3\%
8547   \else
8548     \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
8549     \Hy@ReturnAfterFi{%
8550       \Hy@@escapeform#3\@nil
8551     }%
8552   \fi
8553 }%
8554 \else
8555   \def\Hy@escapeform#1{%
8556     \ifHy@escapeform
8557       \let\Hy@escapestring\pdfescapestring
8558     \else
8559       \let\Hy@escapestring\@firstofone
8560     \fi
8561   }%
8562   \Hy@escapeform{}}%
8563 \fi
```

\PDFForm@Check

```
8564 \def\PDFForm@Check{%
8565   /Subtype /Widget
8566   \ifFld@hidden /F 6 \else /F 4 \fi
8567   /T (\Hy@escapestring{Fld@name})
8568   /Q \Fld@align\space
8569   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8570   /MK <<
```

```

8571 /BC [\Fld@bordercolor]
8572 \ifx\Fld@bcolor\@empty
8573 \else
8574 /BG [\Fld@bcolor]
8575 \fi
8576 /CA (\Hy@escapestring{\Fld@cbsymbol})
8577 >>
8578 /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
8579 /FT /Btn
8580 /H /P
8581 \ifFld@checked /V /Yes \else /V /Off \fi
8582 }

```

\PDFForm@Push

```

8583 \def\PDFForm@Push{%
8584 /Subtype /Widget
8585 \ifFld@hidden /F 6 \else /F 4 \fi
8586 /T (\Hy@escapestring{\Fld@name})
8587 /FT /Btn
8588 /Ff 65540
8589 /H /P
8590 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8591 /MK <<
8592 /BC [\Fld@bordercolor]
8593 >>
8594 /A << /S /JavaScript /JS (\Hy@escapestring{\Fld@onclick}) >>
8595 }

```

\Fld@additionalactions

```

8596 \def\Fld@additionalactions{%
8597 /AA <<

```

K input (keystroke) format

```

8598 \ifx\Fld@keystroke@code\@empty
8599 \else
8600 /K << /S /JavaScript /JS (\Hy@escapestring{\Fld@keystroke@code}) >>
8601 \fi

```

F display format

```

8602 \ifx\Fld@format@code\@empty
8603 \else
8604 /F << /S /JavaScript /JS (\Hy@escapestring{\Fld@format@code}) >>
8605 \fi

```

V validation

```

8606 \ifx\Fld@validate@code\@empty
8607 \else
8608 /V << /S /JavaScript /JS (\Hy@escapestring{\Fld@validate@code}) >>
8609 \fi

```

C calculation

```

8610 \ifx\Fld@calculate@code\@empty
8611 \else
8612 /C << /S /JavaScript /JS (\Hy@escapestring{\Fld@calculate@code}) >>
8613 \fi

```

Fo receiving the input focus

```

8614 \ifx\Fld@onfocus@code\@empty
8615 \else

```

```

8616      /Fo << /S /JavaScript /JS (\Hy@escapestring{\Fld@onfocus@code}) >>
8617      \fi

```

Bl loosing the input focus (blurred)

```

8618      \ifx\Fld@onblur@code\@empty
8619      \else
8620      /Bl << /S /JavaScript /JS (\Hy@escapestring{\Fld@onblur@code}) >>
8621      \fi

```

D pressing the mouse button (down)

```

8622      \ifx\Fld@onmousedown@code\@empty
8623      \else
8624      /D << /S /JavaScript /JS (\Hy@escapestring{\Fld@onmousedown@code}) >>
8625      \fi

```

U releasing the mouse button (up)

```

8626      \ifx\Fld@onmouseup@code\@empty
8627      \else
8628      /U << /S /JavaScript /JS (\Hy@escapestring{\Fld@onmouseup@code}) >>
8629      \fi

```

E cursor enters the annotation's active area.

```

8630      \ifx\Fld@onenter@code\@empty
8631      \else
8632      /E << /S /JavaScript /JS (\Hy@escapestring{\Fld@onenter@code}) >>
8633      \fi

```

X cursor exits the annotation's active area.

```

8634      \ifx\Fld@onexit@code\@empty
8635      \else
8636      /X << /S /JavaScript /JS (\Hy@escapestring{\Fld@onexit@code}) >>
8637      \fi
8638      >>
8639      }

```

\PDFForm@List

```

8640 \def\PDFForm@List{%
8641   /Subtype /Widget
8642   \ifFld@hidden /F 6 \else /F 4 \fi
8643   /T (\Hy@escapestring{\Fld@name})
8644   /FT /Ch
8645   /Q \Fld@align\space
8646   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8647   /MK <<
8648     /BC [\Fld@bordercolor]
8649     \ifx\Fld@bcolor\@empty
8650     \else
8651     /BG [\Fld@bcolor]
8652     \fi
8653   >>
8654   /DA (/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg )
8655   /Opt [\the\Choice@toks]
8656   /DV (\Hy@escapestring{\Fld@default})
8657   \Fld@additionalactions
8658   \Fld@flags
8659 }

```

\PDFForm@Radio

```

8660 \def\PDFForm@Radio{%

```

```

8661 /Subtype /Widget
8662 \ifFld@hidden /F 6 \else /F 4 \fi
8663 /T (\Hy@escapestring{\Fld@name})
8664 /FT /Btn
8665 /Ff 49152
8666 /H /P
8667 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8668 /MK <<
8669 /BC [\Fld@bordercolor]
8670 \ifx\Fld@bcolor\@empty
8671 \else
8672 /BG [\Fld@bcolor]
8673 \fi
8674 /CA (H)
8675 >>
8676 /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
8677 \ifx\@currValue\Fld@default
8678 /V /\Fld@default\space
8679 \else
8680 /V /Off
8681 \fi
8682 \Fld@additionalactions
8683 }

```

\PDFForm@Text

```

8684 \def\PDFForm@Text{%
8685 /Subtype /Widget
8686 \ifFld@hidden /F 6 \else /F 4 \fi
8687 /T (\Hy@escapestring{\Fld@name})
8688 /Q \Fld@align\space
8689 /FT /Tx
8690 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8691 /MK <<
8692 /BC [\Fld@bordercolor]
8693 \ifx\Fld@bcolor\@empty
8694 \else
8695 /BG [\Fld@bcolor]
8696 \fi
8697 >>
8698 /DA (/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg )
8699 /DV (\Hy@escapestring{\Fld@default})
8700 /V (\Hy@escapestring{\Fld@value})
8701 \Fld@additionalactions
8702 \ifFld@multiline
8703 \ifFld@readonly /Ff 4097 \else /Ff 4096 \fi
8704 \else
8705 \ifFld@password
8706 \ifFld@readonly /Ff 8193 \else /Ff 8192 \fi
8707 \else
8708 \ifFld@readonly /Ff 1 \fi
8709 \fi
8710 \fi
8711 \ifnum\Fld@maxlen>0/MaxLen \Fld@maxlen \fi
8712 }

```

\PDFForm@Submit

```

8713 \def\PDFForm@Submit{%

```

```

8714 /Subtype /Widget
8715 \ifFld@hidden /F 6 \else /F 4 \fi
8716 /T (\Hy@escapestring{\Fld@name})
8717 /FT /Btn
8718 /Ff 65540
8719 /H /P
8720 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8721 /MK <<
8722 /BC [\Fld@bordercolor]
8723 >>
8724 /A <<
8725 /S /SubmitForm
8726 /F <<
8727 /FS /URL
8728 /F (\Hy@escapestring{\Form@action})
8729 >>
8730 \ifForm@html /Flags 4 \fi
8731 >>
8732 }

```

\PDFForm@Reset

```

8733 \def\PDFForm@Reset{%
8734 /Subtype /Widget
8735 \ifFld@hidden /F 6 \else /F 4 \fi
8736 /T (\Hy@escapestring{\Fld@name})
8737 /FT /Btn
8738 /H /P
8739 /DA (/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)
8740 /Ff 65540
8741 /MK <<
8742 /BC [\Fld@bordercolor]
8743 % /CA (Clear)
8744 % /AC (Done)
8745 >>
8746 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8747 /A << /S /ResetForm >>
8748 }

8749 </pdfform>
8750 <*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`

```

8751 \def\phantomsection{%
8752 \Hy@GlobalStepCount\Hy@linkcounter
8753 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
8754 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%

```

```

8755 }
8756 </package>

```

47.1 Bookmarks

```

8757 <*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`.

```

8758 \def\Hy@writebookmark#1#2#3#4#5{% section number, text, label, level, file
8759 \ifx\WriteBookmarks\relax%
8760 \else
8761 \ifnum#4>\Hy@bookmarksdepth\relax
8762 \else
8763 \@@writetorep{#1}{#2}{#3}{#4}{#5}%
8764 \fi
8765 \fi}
8766 \def\Hy@currentbookmarklevel{0}
8767 \def\Hy@numberline#1{#1 }
8768 \def\@@writetorep#1#2#3#4#5{%
8769 \begingroup
8770 \edef\Hy@tempa{#5}%
8771 \ifx\Hy@tempa\Hy@bookmarkstype
8772 \edef\Hy@level{#4}%
8773 \ifx\Hy@levelcheck Y%
8774 \@tempcnta\Hy@level\relax
8775 \advance\@tempcnta by -1
8776 \ifnum\Hy@currentbookmarklevel<\@tempcnta
8777 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
8778 \advance\@tempcnta by 1
8779 \Hy@Warning{%
8780 Difference (\the\@tempcnta) between bookmark levels is %
8781 greater \MessageBreak than one, level fixed%
8782 }%
8783 \@tempcnta\Hy@currentbookmarklevel
8784 \advance\@tempcnta by 1
8785 \edef\Hy@level{\the\@tempcnta}%
8786 \fi
8787 \else
8788 \global\let\Hy@levelcheck Y%
8789 \fi
8790 \global\let\Hy@currentbookmarklevel\Hy@level
8791 \@tempcnta\Hy@level\relax
8792 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
8793 \advance\@tempcnta by -1
8794 \edef\Hy@tempa{#3}%
8795 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
8796 \ifx\Hy@tempa\Hy@tempb
8797 \Hy@Warning{%
8798 The anchor of a bookmark and its parent's must not%
8799 \MessageBreak be the same. Added a new anchor%
8800 }%
8801 \phantomsection
8802 \fi

```

```

8803 \ifHy@bookmarksnumbered
8804 \let\numberline\Hy@numberline
8805 \else
8806 \let\numberline\@gobble
8807 \fi
8808 \pdfstringdef\Hy@tempa{#2}%
8809 \if@files
8810 \protected@write\@outlinefile{}\{
8811 \protect\BOOKMARK
8812 [\Hy@level] [\@bookmarkopenstatus{\Hy@level}]{#3}%
8813 {\Hy@tempa}{\Hy@tempb}%
8814 }\%
8815 \fi
8816 \fi
8817 \endgroup
8818 }

```

In the call of `\BOOKMARK` the braces around #4 are omitted, because it is not likely, that the level number contains] .

```

8819 \newcommand{\currentpdfbookmark}{\%
8820 \pdfbookmark[\Hy@currentbookmarklevel]\%
8821 }
8822 \newcommand{\subpdfbookmark}{\%
8823 \@tempcnta\Hy@currentbookmarklevel
8824 \Hy@StepCount\@tempcnta
8825 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]\%
8826 }
8827 \newcommand{\belowpdfbookmark}[2]{\%
8828 \@tempcnta\Hy@currentbookmarklevel
8829 \Hy@StepCount\@tempcnta
8830 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
8831 \advance\@tempcnta by -1
8832 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
8833 }

```

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.

```

8834 \renewcommand\pdfbookmark[3][0]{\%
8835 \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
8836 \hyper@anchorstart{#3.#1}\hyper@anchorend
8837 }
8838 \def\BOOKMARK{\@ifnextchar[\@BOOKMARK]{\@BOOKMARK[1][-]}
8839 \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.

```

8840 \*vtex
8841 \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.

```

8842 \begingroup

```

```

8843 \catcode'\'=12
8844 \ifnum\Hy@VTeXversion<650 %
8845 \catcode\'=12
8846 \gdef\hv@pdf@char#1#2#3{%
8847 \char
8848 \ifcase'#1#2#3
8849 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
8850 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
8851 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
8852 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
8853 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
8854 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
8855 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
8856 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
8857 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
8858 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
8859 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
8860 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
8861 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
8862 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
8863 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
8864 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
8865 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
8866 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
8867 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
8868 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
8869 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
8870 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
8871 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
8872 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
8873 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
8874 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
8875 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
8876 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
8877 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
8878 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
8879 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
8880 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
8881 \fi
8882 }
8883 \else
8884 \gdef\hv@pdf@char{\char'}
8885 \fi
8886 \endgroup

```

\@@BOOKMARK

```

8887 \def\@@BOOKMARK[#1][#2]#3#4#5{%
8888 \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
8889 \edef\@mycount{\the\@serial@counter}%
8890 \Hy@StepCount\@serial@counter
8891 \edef\@parcount{%
8892 \expandafter\ifx\csname @count@#5\endcsname\relax
8893 0%
8894 \else
8895 \csname @count@#5\endcsname
8896 \fi
8897 }%

```



```

8898 \immediate\special{!outline #3;p=\@parcount,i=\@mycount,s=\ifx#2-c\else
8899 o\fi,t=#4}%
8900 }%

```

\ReadBookmarks

```

8901 \def\ReadBookmarks{%
8902   \begingroup
8903     \def\O{\hv@pdf@char 0}%
8904     \def\1{\hv@pdf@char 1}%
8905     \def\2{\hv@pdf@char 2}%
8906     \def\3{\hv@pdf@char 3}%
8907     \def\({}%
8908     \def\)}%
8909     \def\do##1{%
8910       \ifnum\the\catcode'##1=\active
8911         \makeother##1%
8912       \fi
8913     }%
8914     \dospecials
8915     \InputIfFileExists{\jobname.out}{\}{}%
8916   \endgroup
8917   \ifx\WriteBookmarks\relax
8918   \else
8919     \if@filesw
8920       \newwrite\@outlinefile
8921       \immediate\openout\@outlinefile=\jobname.out
8922       \ifHy@typexml
8923         \immediate\write\@outlinefile{<relaxxml>\relax}%
8924       \fi
8925     \fi
8926   \fi
8927 }

8928 </vtex>

8929 <!*vtex>
8930 \def\ReadBookmarks{%
8931   \begingroup
8932     \escapechar='\\%
8933     \let\escapechar\@gobble %
8934     \def\@@BOOKMARK [##1][##2]##3##4##5{\calc@bm@number{##5}}%
8935     \InputIfFileExists{\jobname.out}{\}{}%
8936     \ifx\WriteBookmarks\relax
8937       \global\let\WriteBookmarks\relax
8938     \fi
8939     \def\@@BOOKMARK [##1][##2]##3##4##5{%
8940       \def\Hy@temp{##4}%
8941     <*pdftex>
8942       \Hy@pstringdef\Hy@pstringName{##3}%
8943       \Hy@OutlineName{\Hy@pstringName{
8944         ##2\check@bm@number{##3}%
8945       }}%
8946       \expandafter\strip@prefix\meaning\Hy@temp
8947     }%
8948 </pdftex>
8949 <*pdfmark>
8950       \Hy@pstringdef\Hy@pstringName{##3}%
8951       \pdfmark{

```

```

8952         pdfmark=/OUT,%
8953         Count={##2\check@bm@number{##3}},%
8954         Dest={\Hy@pstringName},%
8955         Title=\expandafter\strip@prefix\meaning\Hy@temp
8956     }%
8957 </pdfmark>
8958 <*dvipdfm>
8959     \Hy@pstringdef\Hy@pstringName{##3}%
8960     \@pdfm@mark{%
8961         outline ##1 <<
8962         /Title (\expandafter\strip@prefix\meaning\Hy@temp)
8963         /A <<
8964         /S /GoTo
8965         /D (\Hy@pstringName)
8966         >>
8967     >>
8968     }%
8969 </dvipdfm>
8970 }%
8971 {%
8972     \def\WriteBookmarks{0}%
8973     \InputIfFileExists{\jobname.out}{-}{-}%
8974 }%
8975 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
8976 \ifx\WriteBookmarks\relax
8977 \else
8978     \if@files
8979     \newwrite\@outlinefile
8980     \immediate\openout\@outlinefile=\jobname.out
8981     \ifHy@typexml
8982     \immediate\write\@outlinefile{<relaxxml>\relax}%
8983     \fi
8984 \fi
8985 \fi
8986 \endgroup
8987 }
8988 <*pdfTeX>
8989 \def\Hy@OutlineName#1#2#3#4{%
8990     \pdfoutline goto name{#2}count#3{#4}%
8991 }
8992 </pdfTeX>
8993 \def\check@bm@number#1{%
8994     \expandafter\ifx\csname B_#1\endcsname\relax
8995     0%
8996     \else
8997     \csname B_#1\endcsname
8998     \fi
8999 }
9000 \def\calc@bm@number#1{%
9001     \@tempcnta=\check@bm@number{#1}\relax
9002     \advance\@tempcnta by1
9003     \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
9004 }
9005 </!vTeX>

```

This code is added, so that option ‘pdfpagenumbers’ works with option ‘implicit’ (suggestion of Sebastian Rahtz).

```

9006 \ifHy@implicit

```

```

9007 \else
9008   \def\@begindvi{%
9009     \unvbox\@begindvibox
9010     \HyPL@EveryPage
9011     \global\let\@begindvi\HyPL@EveryPage
9012   }%
9013   \expandafter\endinput
9014 \fi

9015 </outlines>
9016 <*outlines | hypertex>

9017 \let\H@old@ssect\@ssect
9018 \def\@ssect#1#2#3#4#5{%
9019   \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
9020   \phantomsection
9021 }
9022 \let\H@old@schapter\@schapter
9023 \def\@schapter#1{%
9024   \H@old@schapter{#1}%
9025   \begingroup
9026     \let\@mkboth\@gobbletwo
9027     \Hy@GlobalStepCount\Hy@linkcounter
9028     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9029     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9030   \endgroup
9031 }

```

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:

```

9032 \@ifundefined{chapter}{%
9033   \let\Hy@org@chapter\@chapter
9034   \def\@chapter{%
9035     \def\Hy@next{%
9036       \Hy@GlobalStepCount\Hy@linkcounter
9037       \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9038       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9039     }%
9040     \ifnum\c@secnumdepth>\m@ne
9041       \@ifundefined{if@mainmatter}%
9042       \iftrue{\csname if@mainmatter\endcsname}
9043       \let\Hy@next\relax
9044     \fi
9045     \fi
9046     \Hy@next
9047     \Hy@org@chapter
9048   }%
9049 }

9050 \let\H@old@part\@part
9051 \begingroup\expandafter\expandafter\expandafter\endgroup
9052 \expandafter\ifx\csname chapter\endcsname\relax
9053   \let\Hy@secnum@part\z@
9054 \else
9055   \let\Hy@secnum@part\m@ne
9056 \fi
9057 \def\@part{%
9058   \ifnum\Hy@secnum@part>\c@secnumdepth

```

```

9059 \phantomsection
9060 \fi
9061 \H@old@part
9062 }

9063 \let\H@old@spart\@spart
9064 \def\@spart#1{%
9065 \H@old@spart{#1}%
9066 \Hy@GlobalStepCount\Hy@linkcounter
9067 \xdef\@currentHref{part*.\the\Hy@linkcounter}%
9068 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9069 }

9070 \let\H@old@sect\@sect
9071 \def\@sect#1#2#3#4#5#6[#7]#8{%
9072 \ifnum #2>\c@secnumdepth
9073 \Hy@GlobalStepCount\Hy@linkcounter
9074 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
9075 \fi
9076 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}%
9077 \ifnum #2>\c@secnumdepth
9078 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9079 \fi
9080 }

9081 </outlines | hypertex>
9082 <*outlines>

9083 \expandafter\def\csname Parent-4\endcsname{}
9084 \expandafter\def\csname Parent-3\endcsname{}
9085 \expandafter\def\csname Parent-2\endcsname{}
9086 \expandafter\def\csname Parent-1\endcsname{}
9087 \expandafter\def\csname Parent0\endcsname{}
9088 \expandafter\def\csname Parent1\endcsname{}
9089 \expandafter\def\csname Parent2\endcsname{}
9090 \expandafter\def\csname Parent3\endcsname{}
9091 \expandafter\def\csname Parent4\endcsname{}

9092 </outlines>

```

48 Compatibility with koma-script classes

```

9093 <*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.

```

9094 \def\Hy@tempa{%
9095 \def\@addchap[##1]##2{%
9096 \typeout{##2}%
9097 \if@twoside
9098 \@mkboth{##1}{}%
9099 \else
9100 \@mkboth{}{##1}%
9101 \fi
9102 \addtocontents{lof}{\protect\addvspace{10\p@}}%
9103 \addtocontents{lot}{\protect\addvspace{10\p@}}%
9104 \Hy@GlobalStepCount\Hy@linkcounter
9105 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9106 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%

```

```

9107 \if@twocolumn
9108 \topnewpage[\@makeschapterhead{##2}]%
9109 \else
9110 \@makeschapterhead{##2}%
9111 \afterheading
9112 \fi
9113 \addcontentsline{toc}{chapter}{##1}%
9114 }%
9115 }
9116 \@ifclassloaded{scrbook}{%
9117 \@ifclasslater{scrbook}{2001/01/01}{%
9118 \let\Hy@tempa\@empty
9119 }{}%
9120 }{%
9121 \@ifclassloaded{scrreprt}{%
9122 \@ifclasslater{scrreprt}{2001/01/01}{%
9123 \let\Hy@tempa\@empty
9124 }{}%
9125 }{%
9126 \let\Hy@tempa\@empty
9127 }%
9128 }%
9129 \Hy@tempa
9130 </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

```

9131 <*pd1enc>
9132 \DeclareFontEncoding{PD1}{}{}

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

9133 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
9134 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
9135 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
9136 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
9137 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed

```

Accents

```

9138 \DeclareTextAccent{\`}{PD1}{\textgrave}
9139 \DeclareTextAccent{\'}{PD1}{\textacute}
9140 \DeclareTextAccent{\`}{PD1}{\textcircumflex}
9141 \DeclareTextAccent{\~}{PD1}{\texttilde}
9142 \DeclareTextAccent{\"}{PD1}{\textdieresis}
9143 \DeclareTextAccent{\r}{PD1}{\textring}
9144 \DeclareTextAccent{\v}{PD1}{\textcaron}
9145 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
9146 \DeclareTextAccent{\c}{PD1}{\textcedilla}
9147 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textgrave}
9148 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
9149 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textcircumflex}
9150 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
9151 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textdieresis}
9152 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
9153 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}

```

```

9154 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
9155 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
9156 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}

Accent glyph names
9157 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve
9158 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
9159 \DeclareTextCommand{\textcircumflex}{PD1}{\032} % circumflex
9160 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
9161 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
9162 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
9163 \DeclareTextCommand{\textring}{PD1}{\036} % ring
9164 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde

\040: space
\041: exclam
9165 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042
9166 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign
9167 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar
9168 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent
9169 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand

\047: quotesingle
9170 \DeclareTextCommand{\textparenleft}{PD1}{\string\()} % parenleft \050
9171 \DeclareTextCommand{\textparenright}{PD1}{\string\)} % parenright \051

\052: asterisk
\053: plus
\054: comma
\055: hyphen
\056: period
\057: slash
\060... \071: 0...9
\072: colon
\073: semicolon
9172 \DeclareTextCommand{\textless}{PD1}{<} % less \074

\075: equal
9173 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076

\077: question
\100: at
\101... \132: A...Z
\133: bracketleft
9174 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash

\135: bracketright
9175 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum
9176 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
9177 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave

\141... \172: a...z
9178 \DeclareTextCompositeCommand{\.}{PD1}{i}{i} % i
9179 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
9180 \DeclareTextCommand{\textbar}{PD1}{|} % bar
9181 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
9182 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde

No glyph \177 in PDFDocEncoding.
9183 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
9184 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
9185 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl

```

```

9186 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis
9187 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
9188 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
9189 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
9190 \DeclareTextCommand{\textfractionmark}{PD1}{/} % fraction, \207
9191 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft
9192 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
9193 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
9194 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
9195 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
9196 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
9197 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright
9198 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
9199 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
9200 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
9201 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark
9202 \DeclareTextCommand{\textfi}{PD1}{fi} % fi ?? \223
9203 \DeclareTextCommand{\textfl}{PD1}{fl} % fl ?? \224
9204 \DeclareTextCommand{\L}{PD1}{L} % Lslash, \225
9205 \DeclareTextCommand{\OE}{PD1}{\226} % OE
9206 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron
9207 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230} % Ydieresis
9208 \DeclareTextCommand{\IJ}{PD1}{\230}
9209 \DeclareTextCompositeCommand{\v}{PD1}{Z}{Z} % Zcaron, \231
9210 \DeclareTextCommand{\i}{PD1}{i} % dotlessi, \232
9211 \DeclareTextCommand{\l}{PD1}{l} % lslash, \233
9212 \DeclareTextCommand{\oe}{PD1}{\234} % oe
9213 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
9214 \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.

```

9215 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
9216 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown
9217 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
9218 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
9219 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
9220 \DeclareTextCommand{\textyen}{PD1}{\245} % yen
9221 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
9222 \DeclareTextCommand{\textsection}{PD1}{\247} % section
9223 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
9224 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
9225 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
9226 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
9227 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

```

No glyph \255 in PDFDocEncoding.

```

9228 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
9229 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
9230 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
9231 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
9232 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
9233 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
9234 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
9235 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
9236 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
9237 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
9238 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
9239 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior

```

9240 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine
 9241 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright
 9242 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter
 9243 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf
 9244 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters
 9245 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown
 9246 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300} % Agrave
 9247 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301} % Acute
 9248 \DeclareTextCompositeCommand{\~}{PD1}{A}{\302} % Acircumflex
 9249 \DeclareTextCompositeCommand{\`}{PD1}{A}{\303} % Atilde
 9250 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304} % Adieresis
 9251 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring
 9252 \DeclareTextCommand{\AE}{PD1}{\306} % AE
 9253 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla
 9254 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310} % Egrave
 9255 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311} % Eacute
 9256 \DeclareTextCompositeCommand{\~}{PD1}{E}{\312} % Ecircumflex
 9257 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313} % Edieresis
 9258 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314} % Igrave
 9259 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315} % Iacute
 9260 \DeclareTextCompositeCommand{\~}{PD1}{I}{\316} % Icircumflex
 9261 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317} % Idieresis
 9262 \DeclareTextCommand{\DH}{PD1}{\320} % Eth
 9263 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth
 9264 \DeclareTextCompositeCommand{\`}{PD1}{N}{\321} % Ntilde
 9265 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322} % Ograve
 9266 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323} % Oacute
 9267 \DeclareTextCompositeCommand{\~}{PD1}{O}{\324} % Ocircumflex
 9268 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325} % Otilde
 9269 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326} % Odieresis
 9270 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply
 9271 \DeclareTextCommand{\O}{PD1}{\330} % Oslash
 9272 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331} % Ugrave
 9273 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute
 9274 \DeclareTextCompositeCommand{\~}{PD1}{U}{\333} % Ucircumflex
 9275 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis
 9276 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335} % Yacute
 9277 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn
 9278 \DeclareTextCommand{\ss}{PD1}{\337} % germandbls
 9279 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340} % agrave
 9280 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute
 9281 \DeclareTextCompositeCommand{\~}{PD1}{a}{\342} % acircumflex
 9282 \DeclareTextCompositeCommand{\`}{PD1}{a}{\343} % atilde
 9283 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344} % adieresis
 9284 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring
 9285 \DeclareTextCommand{\ae}{PD1}{\346} % ae
 9286 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla
 9287 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350} % egrave
 9288 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute
 9289 \DeclareTextCompositeCommand{\~}{PD1}{e}{\352} % ecircumflex
 9290 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353} % edieresis
 9291 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354} % igrave
 9292 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
 9293 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
 9294 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
 9295 \DeclareTextCompositeCommand{\~}{PD1}{i}{\356} % icircumflex
 9296 \DeclareTextCompositeCommand{\~}{PD1}{i}{\356} % icircumflex


```

9297 \DeclareTextCompositeCommand{"}{PD1}{i}{\357} % idieresis
9298 \DeclareTextCompositeCommand{"}{PD1}{\i}{\357} % idieresis
9299 \DeclareTextCommand{\dh}{PD1}{\360} % eth
9300 \DeclareTextCompositeCommand{~}{PD1}{n}{\361} % ntilde
9301 \DeclareTextCompositeCommand{'}{PD1}{o}{\362} % ograve
9302 \DeclareTextCompositeCommand{'}{PD1}{o}{\363} % oacute
9303 \DeclareTextCompositeCommand{^}{PD1}{o}{\364} % ocircumflex
9304 \DeclareTextCompositeCommand{^}{PD1}{o}{\365} % otilde
9305 \DeclareTextCompositeCommand{"}{PD1}{o}{\366} % odieresis
9306 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
9307 \DeclareTextCommand{\o}{PD1}{\370} % oslash
9308 \DeclareTextCompositeCommand{'}{PD1}{u}{\371} % ugrave
9309 \DeclareTextCompositeCommand{'}{PD1}{u}{\372} % uacute
9310 \DeclareTextCompositeCommand{^}{PD1}{u}{\373} % ucircumflex
9311 \DeclareTextCompositeCommand{"}{PD1}{u}{\374} % udieresis
9312 \DeclareTextCompositeCommand{'}{PD1}{y}{\375} % yacute
9313 \DeclareTextCommand{\th}{PD1}{\376} % thorn
9314 \DeclareTextCompositeCommand{"}{PD1}{y}{\377} % ydieresis
9315 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

9316 \DeclareTextCommand{\SS}{PD1}{SS}
9317 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

9318 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
9319 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
9320 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
9321 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
9322 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
9323 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
9324 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
9325 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

9326 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
9327 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
9328 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
9329 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
9330 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
9331 \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;

```

9332 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
9333 \DeclareTextCompositeCommand{'}{PD1}{c}{c} % cacute
9334 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
9335 \DeclareTextCompositeCommand{'}{PD1}{n}{n} % nacute
9336 \DeclareTextCompositeCommand{'}{PD1}{s}{s} % sacute
9337 \DeclareTextCompositeCommand{'}{PD1}{z}{z} % zacute
9338 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot
9339 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
9340 \DeclareTextCompositeCommand{'}{PD1}{C}{C} % Cacute
9341 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
9342 \DeclareTextCompositeCommand{'}{PD1}{N}{N} % Nacute
9343 \DeclareTextCompositeCommand{'}{PD1}{S}{S} % Sacute
9344 \DeclareTextCompositeCommand{'}{PD1}{Z}{Z} % Zacute
9345 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot

```

```

9346 (/pd1enc)

```

49.2 PU encoding

```
9347 \DeclareFontEncoding{PU}{\fontenc}{\fontenc}
9348 \DeclareFontEncoding{PU}{\fontenc}{\fontenc}
```

49.2.1 Basic Latin

Special white space escape characters not for use in bookmarks but for other PDF strings.

```
9349 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
9350 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
9351 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
9352 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
9353 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed
```

Accents

```
9354 \DeclareTextAccent{\`}{PU}{\textgrave}
9355 \DeclareTextAccent{\'}{PU}{\textacute}
9356 \DeclareTextAccent{\~}{PU}{\textcircumflex}
9357 \DeclareTextAccent{\~}{PU}{\texttilde}
9358 \DeclareTextAccent{\\"}{PU}{\textdieresis}
9359 \DeclareTextAccent{\r}{PU}{\textring}
9360 \DeclareTextAccent{\v}{PU}{\textcaron}
9361 \DeclareTextAccent{\.}{PU}{\textdotaccent}
9362 \DeclareTextAccent{\c}{PU}{\textcedilla}
9363 \DeclareTextAccent{\U}{PU}{\textbreve}
9364 \DeclareTextAccent{\C}{PU}{\textdoublegrave}
9365 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textgrave}
9366 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
9367 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textcircumflex}
9368 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
9369 \DeclareTextCompositeCommand{\\"}{PU}{\@empty}{\textdieresis}
9370 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
9371 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
9372 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
9373 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
9374 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
9375 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}
9376 \DeclareTextCommand{\=}{PU}[1]{\TextSymbolUnavailable{\=#1}}#1
9377 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
9378 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
9379 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}
```

Accent glyph names

```
9380 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
9381 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
9382 \DeclareTextCommand{\textcircumflex}{PU}{\80\032} % circumflex
9383 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
9384 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
9385 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
9386 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
9387 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
9388 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave
```

\040: space

\041: exclam

```
9389 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
9390 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
9391 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
9392 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
9393 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand
```

```

\047: quotesingle
9394 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft
9395 \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

9396 \DeclareTextCommand{\textless}{PU}{<} % less \80\074

\075: equal

9397 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076

\077: question
\100: at
\101... \132: A...Z
\133: bracketleft

9398 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash

\135: bracketright

9399 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum
9400 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore
9401 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave

\141... \172: a...z

9402 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % i
9403 \DeclareTextCommand{\j}{PU}{j} % jdotless
9404 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft
9405 \DeclareTextCommand{\textbar}{PU}{|} % bar
9406 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright
9407 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde

No glyph \177 in PDFDocEncoding.

```

49.2.2 Latin-1 Supplement

```

9408 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212
9409 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223
9410 \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.

```

9411 %\DeclareTextCommand{\OE}{PU}{OE} % OE
9412 %\DeclareTextCommand{\oe}{PU}{oe} % oe

```

The euro \240 is inserted in version 1.3 of the pdf specification.

```

9413 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown
9414 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent
9415 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling
9416 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency
9417 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen
9418 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar
9419 \DeclareTextCommand{\textsection}{PU}{\80\247} % section
9420 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis

```

9421 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright
 9422 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine
 9423 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft
 9424 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot

No glyph \255 in PDFDocEncoding.

9425 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered
 9426 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron
 9427 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree
 9428 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus
 9429 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior
 9430 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior
 9431 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute
 9432 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu
 9433 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph
 9434 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered
 9435 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla
 9436 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior
 9437 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine
 9438 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright
 9439 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter
 9440 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf
 9441 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters
 9442 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown
 9443 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300} % Agrave
 9444 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute
 9445 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\302} % Acircumflex
 9446 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303} % Atilde
 9447 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis
 9448 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring
 9449 \DeclareTextCommand{\AE}{PU}{\80\306} % AE
 9450 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla
 9451 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310} % Egrave
 9452 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311} % Eacute
 9453 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\312} % Ecircumflex
 9454 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis
 9455 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314} % Igrave
 9456 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315} % Iacute
 9457 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\316} % Icircumflex
 9458 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317} % Idieresis
 9459 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth
 9460 \DeclareTextCompositeCommand{\`}{PU}{N}{\80\321} % Ntilde
 9461 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322} % Ograve
 9462 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323} % Oacute
 9463 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\324} % Ocircumflex
 9464 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325} % Otilde
 9465 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326} % Odieresis
 9466 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply
 9467 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash
 9468 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331} % Ugrave
 9469 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332} % Uacute
 9470 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\333} % Ucircumflex
 9471 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334} % Udieresis
 9472 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335} % Yacute
 9473 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn
 9474 \DeclareTextCommand{\ss}{PU}{\80\337} % germandbls
 9475 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340} % agrave
 9476 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341} % aacute

```

9477 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\342} % acircumflex
9478 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343} % atilde
9479 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344} % adieresis
9480 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
9481 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
9482 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
9483 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350} % egrave
9484 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351} % eacute
9485 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\352} % ecircumflex
9486 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353} % edieresis
9487 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354} % igrave
9488 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354} % igrave
9489 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
9490 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355} % iacute
9491 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\356} % icircumflex
9492 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\356} % icircumflex
9493 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
9494 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
9495 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
9496 \DeclareTextCompositeCommand{\`}{PU}{n}{\80\361} % ntilde
9497 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362} % ograve
9498 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363} % oacute
9499 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\364} % ocircumflex
9500 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\365} % otilde
9501 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366} % odieresis
9502 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
9503 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
9504 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371} % ugrave
9505 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372} % uacute
9506 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\373} % ucircumflex
9507 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374} % udieresis
9508 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375} % yacute
9509 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
9510 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377} % ydieresis
9511 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```
9512 \DeclareTextCommand{\SS}{PU}{SS}
```

Aliases (german.sty)

```

9513 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
9514 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
9515 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
9516 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
9517 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
9518 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
9519 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
9520 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

9521 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
9522 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
9523 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
9524 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
9525 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

49.2.3 Latin Extended-A

```

9526 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% Amacron
9527 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% amacron

```

```

9528 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% Abreve
9529 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% abreve
9530 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% Aogonek
9531 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% aogonek
9532 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% Cacute
9533 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% cacute
9534 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% Ccircumflex
9535 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% ccircumflex
9536 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% Cdot
9537 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% cdot
9538 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% Ccaron
9539 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% ccaron
9540 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% Dcaron
9541 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% dcaron
9542 \DeclareTextCommand{\DJ}{PU}{\81\020}% Dslash
9543 \DeclareTextCommand{\dj}{PU}{\81\021}% dslash
9544 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% Emacron
9545 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% emacron
9546 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% Ebreve
9547 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% ebreve
9548 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% Edot
9549 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% edot
9550 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% Eogonek
9551 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% eogonek
9552 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% Ecaron
9553 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% ecaron
9554 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% Gcircumflex
9555 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% gcircumflex
9556 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% Gbreve
9557 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% gbreve
9558 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% Gdot
9559 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% gdot
9560 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% Gcedilla
9561 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% gcedilla
9562 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% Hcircumflex
9563 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% hcircumflex
9564 \DeclareTextCommand{\textHslash}{PU}{\81\046}% Hslash
9565 \DeclareTextCommand{\texthslash}{PU}{\81\047}% hslash
9566 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% Itilde
9567 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% itilde
9568 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% itilde
9569 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% Imacron
9570 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% imacron
9571 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% imacron
9572 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% Ibreve
9573 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% ibreve
9574 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% ibreve
9575 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% Iogonek
9576 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% iogonek
9577 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% iogonek
9578 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% Idot
9579 \DeclareTextCommand{\i}{PU}{\81\061}% idotless
9580 % IJlig
9581 % ijlig
9582 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% Jcircumflex
9583 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% jcircumflex
9584 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% jcircumflex

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9585 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
9586 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
9587 % kgreen
9588 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
9589 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
9590 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
9591 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
9592 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
9593 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
9594 % L middle dot
9595 % l middle dot
9596 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
9597 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
9598 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute
9599 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
9600 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
9601 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
9602 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
9603 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
9604 % n apostrophe
9605 \DeclareTextCommand{\NG}{PU}{\81\112} % NG
9606 \DeclareTextCommand{\ng}{PU}{\81\113} % ng
9607 \DeclareTextCompositeCommand{=}{PU}{O}{\81\114} % Omacron
9608 \DeclareTextCompositeCommand{=}{PU}{o}{\81\115} % omacron
9609 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve
9610 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
9611 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
9612 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
9613 \DeclareTextCommand{\OE}{PU}{\81\122} % OE
9614 \DeclareTextCommand{\oe}{PU}{\81\123} % oe
9615 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
9616 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
9617 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
9618 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
9619 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
9620 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
9621 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
9622 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
9623 \DeclareTextCompositeCommand{\`}{PU}{S}{\81\134} % Scircumflex
9624 \DeclareTextCompositeCommand{\`}{PU}{s}{\81\135} % scircumflex
9625 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
9626 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
9627 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
9628 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
9629 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
9630 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
9631 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
9632 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
9633 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
9634 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
9635 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150} % Utilde
9636 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151} % utilde
9637 \DeclareTextCompositeCommand{=}{PU}{U}{\81\152} % Umacron
9638 \DeclareTextCompositeCommand{=}{PU}{u}{\81\153} % umacron
9639 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
9640 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
9641 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring

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9642 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
9643 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
9644 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute
9645 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Uogonek
9646 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % uogonek
9647 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164} % Wcircumflex
9648 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165} % wcircumflex
9649 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166} % Ycircumflex
9650 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167} % ycircumflex
9651 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170} % Ydieresis
9652 \DeclareTextCommand{\IJ}{PU}{\81\170}
9653 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
9654 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
9655 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
9656 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
9657 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
9658 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

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49.2.4 Latin Extended-B

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9659 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
9660 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
9661 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
9662 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
9663 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
9664 \DeclareTextCompositeCommand{\v}{PU}{\i}{\81\320} % icaron
9665 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
9666 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
9667 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
9668 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
9669 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
9670 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
9671 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
9672 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
9673 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
9674 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
9675 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Oogonek
9676 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

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49.2.5 Greek

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9677 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
9678 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
9679 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}
9680 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
9681 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
9682 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
9683 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
9684 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
9685 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}
9686 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
9687 \DeclareTextCommand{\textBeta}{PU}{\83\222}
9688 \DeclareTextCommand{\textGamma}{PU}{\83\223}
9689 \DeclareTextCommand{\textDelta}{PU}{\83\224}
9690 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
9691 \DeclareTextCommand{\textZeta}{PU}{\83\226}
9692 \DeclareTextCommand{\textEta}{PU}{\83\227}
9693 \DeclareTextCommand{\textTheta}{PU}{\83\230}
9694 \DeclareTextCommand{\textIota}{PU}{\83\231}

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9695 \DeclareTextCommand{\textKappa}{PU}{\83\232}
9696 \DeclareTextCommand{\textLambda}{PU}{\83\233}
9697 \DeclareTextCommand{\textMu}{PU}{\83\234}
9698 \DeclareTextCommand{\textNu}{PU}{\83\235}
9699 \DeclareTextCommand{\textXi}{PU}{\83\236}
9700 \DeclareTextCommand{\textOmicron}{PU}{\83\237}
9701 \DeclareTextCommand{\textPi}{PU}{\83\240}
9702 \DeclareTextCommand{\textRho}{PU}{\83\241}
9703 \DeclareTextCommand{\textSigma}{PU}{\83\243}
9704 \DeclareTextCommand{\textTau}{PU}{\83\244}
9705 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}
9706 \DeclareTextCommand{\textPhi}{PU}{\83\246}
9707 \DeclareTextCommand{\textChi}{PU}{\83\247}
9708 \DeclareTextCommand{\textPsi}{PU}{\83\250}
9709 \DeclareTextCommand{\textOmega}{PU}{\83\251}
9710 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}
9711 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}
9712 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}
9713 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}
9714 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}
9715 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}
9716 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}
9717 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}
9718 \DeclareTextCommand{\textalpha}{PU}{\83\261}
9719 \DeclareTextCommand{\textbeta}{PU}{\83\262}
9720 \DeclareTextCommand{\textgamma}{PU}{\83\263}
9721 \DeclareTextCommand{\textdelta}{PU}{\83\264}
9722 \DeclareTextCommand{\textepsilon}{PU}{\83\265}
9723 \DeclareTextCommand{\textzeta}{PU}{\83\266}
9724 \DeclareTextCommand{\texteta}{PU}{\83\267}
9725 \DeclareTextCommand{\texttheta}{PU}{\83\270}
9726 \DeclareTextCommand{\textiota}{PU}{\83\271}
9727 \DeclareTextCommand{\textkappa}{PU}{\83\272}
9728 \DeclareTextCommand{\textlambda}{PU}{\83\273}
9729 \DeclareTextCommand{\textmu}{PU}{\83\274}
9730 \DeclareTextCommand{\textnu}{PU}{\83\275}
9731 \DeclareTextCommand{\textxi}{PU}{\83\276}
9732 \DeclareTextCommand{\textomicron}{PU}{\83\277}
9733 \DeclareTextCommand{\textpi}{PU}{\83\300}
9734 \DeclareTextCommand{\textrho}{PU}{\83\301}
9735 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
9736 \DeclareTextCommand{\textsigma}{PU}{\83\303}
9737 \DeclareTextCommand{\texttau}{PU}{\83\304}
9738 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
9739 \DeclareTextCommand{\textphi}{PU}{\83\306}
9740 \DeclareTextCommand{\textchi}{PU}{\83\307}
9741 \DeclareTextCommand{\textpsi}{PU}{\83\310}
9742 \DeclareTextCommand{\textomega}{PU}{\83\311}
9743 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}
9744 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}
9745 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}
9746 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}
9747 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}
9748 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}
9749 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}
9750 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}
9751 %\DeclareTextCommand{\textdigamma}{PU}{\83\334}

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9752 \DeclareTextCommand{\textvarkappa}{PU}{\83\360}
9753 \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.

```

9754 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
9755 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}%
9756 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
9757 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% GJE
9758 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
9759 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
9760 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
9761 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI
9762 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
9763 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
9764 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE
9765 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
9766 \DeclareTextCompositeCommand{'}{PU}{\CYRK}{\84\014}% KJE
9767 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
9768 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
9769 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A
9770 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
9771 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
9772 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
9773 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
9774 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
9775 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
9776 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
9777 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I
9778 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
9779 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}%
9780 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
9781 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
9782 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM
9783 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN
9784 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O
9785 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE
9786 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER
9787 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES
9788 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE
9789 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U
9790 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF
9791 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA
9792 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE
9793 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE
9794 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA
9795 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA
9796 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN
9797 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU
9798 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN
9799 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E
9800 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU
9801 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA
9802 \DeclareTextCommand{\cyra}{PU}{\84\060}% a
9803 \DeclareTextCommand{\cyrb}{PU}{\84\061}% be
9804 \DeclareTextCommand{\cyrv}{PU}{\84\062}% ve

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9805 \DeclareTextCommand{\cyrg}{PU}{\84\063}% ghe
 9806 \DeclareTextCommand{\cyrd}{PU}{\84\064}% de
 9807 \DeclareTextCommand{\cyre}{PU}{\84\065}% ie
 9808 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% zhe
 9809 \DeclareTextCommand{\cyrz}{PU}{\84\067}% ze
 9810 \DeclareTextCommand{\cyri}{PU}{\84\070}% i
 9811 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i
 9812 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}%
 9813 \DeclareTextCommand{\cyrk}{PU}{\84\072}% ka
 9814 \DeclareTextCommand{\cyrk}{PU}{\84\073}% el
 9815 \DeclareTextCommand{\cyrn}{PU}{\84\074}% em
 9816 \DeclareTextCommand{\cyrn}{PU}{\84\075}% en
 9817 \DeclareTextCommand{\cyro}{PU}{\84\076}% o
 9818 \DeclareTextCommand{\cyrp}{PU}{\84\077}% pe
 9819 \DeclareTextCommand{\cyrr}{PU}{\84\100}% er
 9820 \DeclareTextCommand{\cyr{s}}{PU}{\84\101}% es
 9821 \DeclareTextCommand{\cyrt}{PU}{\84\102}% te
 9822 \DeclareTextCommand{\cyru}{PU}{\84\103}% u
 9823 \DeclareTextCommand{\cyrf}{PU}{\84\104}% ef
 9824 \DeclareTextCommand{\cyrh}{PU}{\84\105}% ha
 9825 \DeclareTextCommand{\cyr{c}}{PU}{\84\106}% tse
 9826 \DeclareTextCommand{\cyr{ch}}{PU}{\84\107}% che
 9827 \DeclareTextCommand{\cyr{sh}}{PU}{\84\110}% sha
 9828 \DeclareTextCommand{\cyr{shch}}{PU}{\84\111}% shcha
 9829 \DeclareTextCommand{\cyr{hrdsn}}{PU}{\84\112}% hard sign
 9830 \DeclareTextCommand{\cyr{ery}}{PU}{\84\113}% yeru
 9831 \DeclareTextCommand{\cyr{sftsn}}{PU}{\84\114}% soft sign
 9832 \DeclareTextCommand{\cyr{erev}}{PU}{\84\115}% e
 9833 \DeclareTextCommand{\cyr{yu}}{PU}{\84\116}% yu
 9834 \DeclareTextCommand{\cyr{ya}}{PU}{\84\117}% ya
 9835 \DeclareTextCommand{\cyr{yo}}{PU}{\84\121}% io
 9836 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}%
 9837 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% dje
 9838 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% gje
 9839 \DeclareTextCommand{\cyrie}{PU}{\84\124}% ukrainian ie
 9840 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% dze
 9841 \DeclareTextCommand{\cyrii}{PU}{\84\126}% byelorussian-ukrainian i
 9842 \DeclareTextCommand{\cyryi}{PU}{\84\127}% yi
 9843 \DeclareTextCommand{\cyrje}{PU}{\84\130}% je
 9844 \DeclareTextCommand{\cyr{lj}}{PU}{\84\131}%lje
 9845 \DeclareTextCommand{\cyr{nje}}{PU}{\84\132}%nje
 9846 \DeclareTextCommand{\cyr{tshe}}{PU}{\84\133}%tshe
 9847 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}%kje
 9848 \DeclareTextCommand{\cyr{ushrt}}{PU}{\84\136}%short u
 9849 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}%dzhe
 9850 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA
 9851 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega
 9852 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT
 9853 \DeclareTextCommand{\cyryat}{PU}{\84\143}% yat
 9854 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E
 9855 \DeclareTextCommand{\cyriote}{PU}{\84\145}% iotified e
 9856 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS
 9857 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% little yus
 9858 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS
 9859 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% iotified little yus
 9860 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS
 9861 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% big yus

9862 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS
 9863 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% iotified big yus
 9864 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI
 9865 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% ksi
 9866 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI
 9867 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi
 9868 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA
 9869 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita
 9870 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA
 9871 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa
 9872 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave
 9873 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave
 9874 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK
 9875 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk
 9876 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA
 9877 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega
 9878 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo
 9879 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo
 9880 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT
 9881 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot
 9882 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA
 9883 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa
 9884 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign
 9885 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO
 9886 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION
 9887 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA
 9888 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA
 9889 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn
 9890 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn
 9891 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke
 9892 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke
 9893 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook
 9894 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook
 9895 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender
 9896 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender
 9897 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender
 9898 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender
 9899 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender
 9900 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% ka descender
 9901 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke
 9902 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke
 9903 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke
 9904 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% ka stroke
 9905 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA
 9906 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka
 9907 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender
 9908 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender
 9909 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE
 9910 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe
 9911 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook
 9912 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook
 9913 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA
 9914 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha
 9915 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender
 9916 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% es descender
 9917 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender
 9918 \DeclareTextCommand{\cyrtddsc}{PU}{\84\255}% te descender

9919 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U
 9920 \DeclareTextCommand{\cyry}{PU}{\84\257}% straight u
 9921 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke
 9922 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% straight u stroke
 9923 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender
 9924 \DeclareTextCommand{\cyrhds}{PU}{\84\263}% ha descender
 9925 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE
 9926 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% ligature te tse
 9927 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender
 9928 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender
 9929 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke
 9930 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% che vertical stroke
 9931 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA
 9932 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha
 9933 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhasian CHE
 9934 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhasian che
 9935 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% abkhasian CHE descender
 9936 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhasian che descender
 9937 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% palochka
 9938 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve
 9939 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% zhe breve
 9940 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook
 9941 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% ka hook
 9942 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook
 9943 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% en hook
 9944 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE
 9945 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che
 9946 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve
 9947 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve
 9948 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% A diaeresis
 9949 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% a diaeresis
 9950 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE
 9951 \DeclareTextCommand{\cyrae}{PU}{\84\325}% ligature a ie
 9952 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve
 9953 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve
 9954 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA
 9955 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% schwa
 9956 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis
 9957 \DeclareTextCompositeCommand{"}{PU}{\cyrswa}{\84\333}% schwa diaeresis
 9958 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% ZHE diaeresis
 9959 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% zhe diaeresis
 9960 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% ZE diaeresis
 9961 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% ze diaeresis
 9962 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhasian DZE
 9963 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhasian dze
 9964 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% I macron
 9965 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% i macron
 9966 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% I diaeresis
 9967 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% i diaeresis
 9968 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% O diaeresis
 9969 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% o diaeresis
 9970 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O
 9971 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% barred o
 9972 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% barred O diaeresis
 9973 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% barred o diaeresis
 9974 \DeclareTextCompositeCommand{\=}{PU}{\CYRU}{\84\356}% U macron
 9975 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% u macron

```

9976 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U diaeresis
9977 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% u diaeresis
9978 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U double acute
9979 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% u double acute
9980 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% CHE diaeresis
9981 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% che diaeresis
9982 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% YERU diaeresis
9983 \DeclareTextCompositeCommand{"}{PU}{\cyrery}{\84\371}% yeru diaeresis

```

49.2.7 Symbols

```

9984 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash
9985 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash
9986 \DeclareTextCommand{\textquotelleft}{PU}{\9040\030} % quoteleft
9987 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright
9988 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase
9989 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
9990 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
9991 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
9992 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
9993 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
9994 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet
9995 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
9996 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
9997 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
9998 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
9999 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
10000 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
10001 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
10002 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}
10003 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
10004 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
10005 \DeclareTextCommand{\cyrlangle}{PU}{\9043\051}
10006 \DeclareTextCommand{\cyrangle}{PU}{\9043\052}
10007 </puenc>

```

49.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

10008 <*puvnenc>
10009 \DeclareTextCommand{\abreve}{PU}{\81\003}
10010 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
10011 \DeclareTextCommand{\dj}{PU}{\81\021}
10012 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
10013 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
10014 \DeclareTextCommand{\ohorn}{PU}{\81\241}
10015 \DeclareTextCommand{\uhorn}{PU}{\81\260}
10016 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
10017 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
10018 \DeclareTextCommand{\DJ}{PU}{\81\020}
10019 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
10020 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
10021 \DeclareTextCommand{\OHORN}{PU}{\81\240}
10022 \DeclareTextCommand{\UHORN}{PU}{\81\257}
10023 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
10024 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}

```

10025 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
10026 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
10027 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
10028 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
10029 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
10030 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
10031 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
10032 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
10033 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
10034 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
10035 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
10036 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}
10037 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}
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10139 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
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50 End of file hycheck.tex

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10144 < *check>
10145 \typeout{}
10146 \begin{document}
10147 \end{document}
10148 </check>

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