

Hypertext marks in L^AT_EX

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processed November 15, 2006

1 Documentation overview for hyperref

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

Manual The user documentation is also available as HTML.

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

ChangeLog This file records the version history.

Options This file provides a short option summary.

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

Bookmark talk, paper The paper version of the talk.

Source code documentation:

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

backref.dtx “Back referencing from bibliographical citations”

nameref.dtx “Section name references in L^AT_EX”

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3 File hycheck.tex

Many commands of 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 $\text{\LaTeX}$ definition and compares this definition with the current meaning of that command.

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

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

```

4 Package options and setup

4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

`\Hy@SetCatcodes`

```

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

```

`\Hy@RestoreCatcodes`

```

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

```

```

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

```

```
230 \Hy@SetCatcodes
```

It needs the December 95 release of L^AT_EX, because it uses `\protected@write`, and it defines commands in options; and the page setup internal code changed at that point. It'll probably break with the later releases!

```

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

```

4.2 Compatibility with format dumps

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

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

```

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

```

4.3 Switches

```

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

```

```

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

```

Defaults for the switches are now set.

```

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

```

```

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

```

5 Common help macros

`\Hy@StepCount`

```

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

```

`\Hy@GlobalStepCount`

```

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

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

```

5.1 Macros for recursions

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

```

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

```

5.2 Babel's protection of shorthand characters

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

```

325 \def\Hy@safe@activetrue{\csname safe@activetrue\endcsname}
326 \def\Hy@safe@activesfalse{\csname safe@activesfalse\endcsname}

```

5.3 Coordinate transformations

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

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

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

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

Example (T_EX):

```

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

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

```

6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.
 Email: oberdiek@uni-freiburg.de.

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

6.1 Description of PDF strings

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

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

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

6.2 Definition of `\pdfstringdef`

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

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

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

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

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

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

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

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

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

```
369 \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.

```
370 \escapechar'\%
```

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

```
371 \edef\0{\string\0}%
372 \edef\1{\string\1}%
373 \edef\2{\string\2}%
374 \edef\3{\string\3}%
```

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

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

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

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

```
384 \@inmathwarn\pdfstringdef
```

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

```
385 \let\@inmathwarn\HyPsd@inmathwarn
```


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

```
386 \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.

```
387 \let\{\textbraceleft
388 \let\}\textbraceright
389 \let\\\textbackslash
390 \let\#\textnumbersign
391 \let\$\textdollar
392 \let\%\textpercent
393 \let\&\textampersand
394 % \let\~\textasciitilde
395 \let\_ \textunderscore
396 \let\P\textparagraph
397 \let\ldots\textellipsis
398 \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.

```
399 \def\{\pdfstringdefWarn\\}%
400 \def\newline{\pdfstringdefWarn\newline}%
```

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

```
401 \def\TeX{\TeX}%
402 \def\LaTeX{La\TeX}%
403 \def\LaTeXe{LaTeX2e}%
404 \def\eTeX{e-\TeX}%
405 \def\MF{Metafont}%
406 \def\MP{Metapost}%
```

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

```
407 \let\emph\@firstofone
408 \let\textbf\@firstofone
409 \let\textit\@firstofone
410 \let\textmd\@firstofone
411 \let\textnormal\@firstofone
412 \let\textrm\@firstofone
413 \let\textsc\@firstofone
414 \let\textsf\@firstofone
415 \let\textsl\@firstofone
```

```

416 \let\texttt\@firstofone
417 \let\textup\@firstofone
418 \let\ttfamily\@empty
419 \let\sffamily\@empty
420 \let\itshape\@empty
421 \let\upshape\@empty
422 \let\bfseries\@empty
423 \let\rm\@empty
424 \let\Huge\@empty
425 \let\LARGE\@empty
426 \let\Large\@empty
427 \let\footnotesize\@empty
428 \let\huge\@empty
429 \let\large\@empty
430 \let\normalsize\@empty
431 \let\scriptsize\@empty
432 \let\small\@empty
433 \let\tiny\@empty

```

Package color.

```

434 \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).

```

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

```

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

```

441 \let\cyr\relax

```

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

```

442 \let\es@roman\@Roman

```

Package german.

```

443 \let\glqq\textglqq
444 \let\grqq\textgrqq
445 \let\glq\textglq
446 \let\grq\textgrq
447 \let\flqq\textflqq
448 \let\frqq\textfrqq
449 \let\flq\textflq
450 \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}
451 \let\if@mid@expandable\@firstoftwo

```

AMS classes.

```
452 \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.

```
453 \let\hspace\HyPsd@hspace
```

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

```
454 \let\label\@gobble
455 \let\index\@gobble
456 \let\glossary\@gobble
457 \let\href\@secondoftwo
```

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

```
458 \let\ref\HyPsd@ref
459 \let\pageref\HyPsd@pageref
```

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

```
460 \def\HyPsd@ar@get##1.##2\@nil{##1}%
461 \def\HyPsd@ar@tmp##1{%
462   \expandafter\expandafter\expandafter\HyPsd@ar@get
463   \expandafter\@fourthoffive##1\@empty\@empty.\@nil
464 }%
465 \def\auto@setref##1##2##3{%
466   \ifx##1\relax
467   \else
468     \csname\HyPsd@ar@tmp{##1}%
469     \expandafter\ifx\csname\HyPsd@ar@tmp{##1}\autorefname\endcsname
470       \relax
471     \else
472       \autoref%
473     \fi
474     name%
475   \endcsname
476   \space
477   \expandafter##2##1\@empty\@empty
478   \fi
479 }%
```

Miscellaneous commands.

```
480 \let\leavevmode\@empty
481 \let\mbox\@empty
```

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

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

Patch for cjk bookmarks.

```
483 \ifHy@CJKbookmarks
484   \HyPsd@CJKhook
485 \fi
```

User hook. The switch `\Hy@pdfstring` is turned on. So user commands can detect that they are processed not to be typeset within $\text{\TeX}$'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`).

```
486 \Hy@pdfstringtrue
487 \pdfstringdefPreHook
```

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

```
488 \HyPsd@LetUnexpandableSpace\space
489 \HyPsd@LetUnexpandableSpace\ %
490 \HyPsd@LetUnexpandableSpace~%
491 \HyPsd@LetUnexpandableSpace\nobreakspace
```

Package `xspace`.

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

Redefinitions of miscellaneous commands. Hyphenation does not make sense.

```
500 \let\discretionary\@gobbletwo
    \@ifstar is defined in  $\text{\LaTeX}$  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:

```
501 \let\@ifnextchar\HyPsd@ifnextchar
502 \let\@ifnextchar\HyPsd@new@ifnextchar
503 \let\@protected@testopt\HyPsd@protected@testopt
```

6.2.2 Expansion

There are several possibilities to expand tokens within $\text{\LaTeX}$:

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

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

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

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

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

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

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

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

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

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

6.2.3 Postprocessing

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

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

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

- $\text{\TeX}$ 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 found by $\text{\TeX}$'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.
- $\text{\TeX}$ silently removes the outermost pair of braces of an argument. To prevent this on unwanted places, in the following the character `|` is appended to the string to make an outer brace to an inner one.

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

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

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

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

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

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

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

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

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

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

```
535 \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
536 \let\HyPsd@String\@empty
537 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
538 \global\let#1\HyPsd@String
```

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

```
539 \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. ldf can produce an additional space before \guillemotright, because \lastskip and \unskip do not work. Therefore it is removed here.

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

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

```

562      \HyPsd@StringSubst{\051}{\HyPsd@empty\string\)}#1%
563      \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`.

```

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

```

573 %      \HyPsd@Subst{---}\textemdash#1%
574 %      \HyPsd@Subst{--}\textendash#1%
575 %      \HyPsd@Subst{fi}\textfi#1%
576 %      \HyPsd@Subst{fl}\textfl#1%
577 %      \HyPsd@Subst{!'}\texttexclamdown#1%
578 %      \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

579      \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.

```

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

```



```
587 \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.

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

```
595 \ifHy@unicode
596 \HyPsd@ConvertToUnicode#1%
597 \fi
```

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

```
598 \pdfstringdefPostHook#1%
599 \endgroup
600 }
```

6.3 Encodings

6.3.1 PD1 encoding

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

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

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

6.3.2 PU encoding

The PU encoding implements the Unicode encoding for use with L^AT_EX's NFSS. Because of large memory requirements the encoding file for Unicode support is only loaded, if option `unicode` is specified as package option.

`\HyPsd@InitUnicode` Because the file `puenc.def` takes a lot of memory, the loading is defined in the macro `\HyPsd@InitUnicode` called by the package option `unicode`.

```
605 \def\HyPsd@InitUnicode{%
606 \ifundefined{T@PU}{\input{puenc.def}}{}%
607 \DeclareFontFamily{PU}{pdf}{}%
```

```

608 \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
609 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
610 \let\HyPsd@InitUnicode\relax
611 }

```

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.

```

612 \newcommand*{\texorpdfstring}{%
613   \ifHy@pdfstring
614     \expandafter\@secondoftwo
615   \else
616     \expandafter\@firstoftwo
617   \fi
618 }

```

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`.

```

619 \@ifundefined{pdfstringdefPreHook}{%
620   \let\pdfstringdefPreHook\@empty
621 }{}
622 \@ifundefined{pdfstringdefPostHook}{%
623   \let\pdfstringdefPostHook\@gobble
624 }{}

```

`\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`.

```

625 \def\pdfstringdefDisableCommands{%
626   \begingroup
627     \makeatletter
628     \HyPsd@DisableCommands
629 }

```

`\HyPsd@DisableCommands`

```

630 \long\def\HyPsd@DisableCommands#1{%

```

```

631 \toks0=\expandafter{\pdfstringdefPreHook}%
632 \toks1={#1}%
633 \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
634 \endgroup
635 }

```

`\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`.

```

636 \def\pdfstringdefWarn#1{%
637 \expandafter\noexpand\csname\<>-string#1\endcsname
638 }

```

6.5 Help macros for expansion

6.5.1 Babel languages

```

639 \newif\ifHy@next

Nothing to do for english.
640 \@ifpackagewith{babel}{danish}{}%
641 \def\HyPsd@babel@danish{%
642 \declare@shorthand{danish}{"}{}%
643 \declare@shorthand{danish}{"}{}%
644 }%
645 {}%
646 \Hy@nextfalse
647 \@ifpackagewith{babel}{dutch}{\Hy@nexttrue}{}%
648 \@ifpackagewith{babel}{afrikaans}{\Hy@nexttrue}{}%
649 \ifHy@next
650 \def\HyPsd@babel@dutch{%
651 \declare@shorthand{dutch}{"}{}%
652 \declare@shorthand{dutch}{"}{}%
653 }%
654 \fi
655 \@ifpackagewith{babel}{finnish}{}%
656 \def\HyPsd@babel@finnish{%
657 \declare@shorthand{finnish}{"}{}%
658 }%
659 {}%
660 \Hy@nextfalse
661 \@ifpackagewith{babel}{frenchb}{\Hy@nexttrue}{}%
662 \@ifpackagewith{babel}{français}{\Hy@nexttrue}{}%
663 \ifHy@next
664 \def\HyPsd@babel@frenchb{%
665 \def\guill@spacing{ }%
666 }%
667 \fi
668 \Hy@nextfalse
669 \@ifpackagewith{babel}{german}{\Hy@nexttrue}{}%
670 \@ifpackagewith{babel}{germanb}{\Hy@nexttrue}{}%
671 \@ifpackagewith{babel}{austrian}{\Hy@nexttrue}{}%

```

```

672 \ifHy@next
673   \def\HyPsd@babel@german{%
674     \declare@shorthand{german}{f}{f}%
675     \declare@shorthand{german}{|}{|}%
676     \declare@shorthand{german}{~}{-}%
677   }%
678 \fi
679 \Hy@nextfalse
680 \@ifpackagewith{babel}{ngerman}{\Hy@nexttrue}{}%
681 \@ifpackagewith{babel}{ngermanb}{\Hy@nexttrue}{}%
682 \@ifpackagewith{babel}{naustrian}{\Hy@nexttrue}{}%
683 \ifHy@next
684   \def\HyPsd@babel@ngerman{%
685     \declare@shorthand{german}{|}{|}%
686     \declare@shorthand{german}{~}{-}%
687   }%
688 \fi
689 \Hy@nextfalse
690 \@ifpackagewith{babel}{usorbian}{\Hy@nexttrue}{}%
691 \@ifpackagewith{babel}{uppersorbian}{\Hy@nexttrue}{}%
692 \ifHy@next
693   \def\HyPsd@babel@usorbian{%
694     \declare@shorthand{usorbian}{f}{f}%
695     \declare@shorthand{usorbian}{|}{|}%
696   }%
697 \fi
698 \Hy@nextfalse
699 \@ifpackagewith{babel}{brazil}{\Hy@nexttrue}{}%
700 \@ifpackagewith{babel}{brazilian}{\Hy@nexttrue}{}%
701 \@ifpackagewith{babel}{portuges}{\Hy@nexttrue}{}%
702 \@ifpackagewith{babel}{portuguese}{\Hy@nexttrue}{}%
703 \ifHy@next
704   \def\HyPsd@babel@portuges{%
705     \declare@shorthand{portuges}{|}{|}%
706   }%
707 \fi
708 \Hy@nextfalse
709 \@ifpackagewith{babel}{russian}{\Hy@nexttrue}{}%
710 \@ifpackagewith{babel}{russianb}{\Hy@nexttrue}{}%
711 \ifHy@next
712   \def\HyPsd@babel@russian{%
713     \declare@shorthand{russian}{|}{|}%
714     \declare@shorthand{russian}{~}{-}%
715   }%
716 \fi
717 \Hy@nextfalse
718 \@ifpackagewith{babel}{ukrainian}{\Hy@nexttrue}{}%
719 \@ifpackagewith{babel}{ukraineb}{\Hy@nexttrue}{}%
720 \ifHy@next
721   \def\HyPsd@babel@ukrainian{%
722     \declare@shorthand{ukrainian}{|}{|}%
723     \declare@shorthand{ukrainian}{~}{-}%
724   }%
725 \fi
726 \@ifpackagewith{babel}{macedonian}{%
727   \def\HyPsd@babel@macedonian{%
728     \declare@shorthand{macedonian}{|}{|}%

```

```

729 \declare@shorthand{macedonian}{~}{-}%
730 }%
731 {}
732 \@ifpackagewith{babel}{slovene}{%
733 \def\HyPsd@babel@slovene{%
734 \declare@shorthand{slovene}{~}{-}%
735 }%
736 {}
737 \@ifpackagewith{babel}{swedish}{%
738 \def\HyPsd@babel@swedish{%
739 \declare@shorthand{swedish}{~}{-}%
740 \declare@shorthand{swedish}{~}{-}%
741 }%
742 {}

```

6.5.2 CJK bookmarks

`\HyPsd@CJKhook` Some internal commands of package `cjk` are redefined to avoid error messages. For a rudimental support of CJK bookmarks the active characters are redefined so that they print themselves.

After preprocessing of Big5 encoded data the following string for a double-byte character is emitted:

```
^^7f<arg1>^^7f<arg2>^^7f
```

`<arg1>` is the first byte in the range (always $> 0x80$); `<arg2>` is the second byte in decimal notation ($\geq 0x40$).

```

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

```

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

```

774 \def\HyPsd@CJKActiveChars#1{%
775   \ifx#1!%
776     \let\HyPsd@CJKActiveChars\relax
777   \else
778     \edef#1{\noexpand\Hy@cjkpu\string#1}%
779   \fi
780   \HyPsd@CJKActiveChars
781 }

```

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

```

782 \def\HyPsd@DecimalToOctal#1{%
783   \ifcase #1 %
784     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
785     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
786     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
787     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
788     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
789     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
790     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
791     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
792     \or @\or A\or B\or C\or D\or E\or F\or G%
793     \or H\or I\or J\or K\or L\or M\or N\or O%
794     \or P\or Q\or R\or S\or T\or U\or V\or W%
795     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
796     \or \140\or a\or b\or c\or d\or e\or f\or g%
797     \or h\or i\or j\or k\or l\or m\or n\or o%
798     \or p\or q\or r\or s\or t\or u\or v\or w%
799     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
800     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
801     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
802     \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
803     \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
804     \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
805     \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
806     \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
807     \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
808     \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
809     \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
810     \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
811     \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
812     \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
813     \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
814     \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
815     \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
816   \fi
817 }

```

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_ε versions [1998/06/01] and [1998/12/01]. I expect that versions below [1995/12/01] don't work.

To understand the patch easier, the original code of `\@current@cmd` and `\@changed@cmd`

follows (L^AT_EX 2_ε release [1998/12/01]). In the normal case `\pdfstringdef` is executed in a context where `\protect` has the meaning of `\@typesetprotect` (`=\relax`).

```

\def\@current@cmd#1{%
  \ifx\protect\@typeset@protect
    \inmathwarn#1%
  \else
    \noexpand#1\expandafter\@gobble
  \fi}
\def\@changed@cmd#1#2{%
  \ifx\protect\@typeset@protect
    \inmathwarn#1%
    \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
      \expandafter\ifx\csname ?\string#1\endcsname\relax
        \expandafter\def\csname ?\string#1\endcsname{%
          \TextSymbolUnavailable#1%
        }%
      \fi
      \global\expandafter\let
        \csname\cf@encoding\string#1\expandafter\endcsname
        \csname ?\string#1\endcsname
      \fi
      \csname\cf@encoding\string#1%
        \expandafter\endcsname
    \else
      \noexpand#1%
    \fi}
\gdef\TextSymbolUnavailable#1{%
  \@latex@error{%
    Command \protect#1 unavailable in encoding \cf@encoding%
  }\@eha}
\def\@inmathwarn#1{%
  \ifmmode
    \@latex@warning{Command \protect#1 invalid in math mode}%
  \fi}

818 \def\HyPsd@inmathwarn#1#2{%
819   \ifx#2\expandafter
820     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
821       \HyPsd@GLYPHERR
822       \expandafter\@gobble\string#1%
823     >%
824     \expandafter\expandafter\expandafter\HyPsd@EndWithElse
825   \else
826     \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
827   \fi
828 \else
829   \expandafter#2%
830 \fi
831 }
832 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
833 \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`

```
834 \def\HyPsd@add@accent#1#2{%
835   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
836   #2%
837 }%
```

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`.

```
838 \def\HyPsd@LetUnexpandableSpace#1{%
839   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
840 }
```

`\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.

```
841 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace
```

6.5.6 Marker for commands

`\HyPsd@XSPACE` Some commands and informations cannot be utilized before the string expansion and the checking process. Command names are filtered out, so we need another way to transport the information: An unusual # with catcode 12 marks the beginning of the extra information.

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

6.5.7 \hspace fix

`\HyPsd@hspace`

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

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

```
846 \def\HyPsd@@hspace#1*#2\END{%
847   \ifx\#2\%
848     \HyPsd@hspacetest{#1}%
849   \else
850     \expandafter\HyPsd@hspacetest
851   \fi
852 }
```

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

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


6.5.8 Fix for AMS classes

```

854 \@ifundefined{tocsection}{%
855   \let\HyPSD@AMSclassfix\relax
856 }{%
857   \def\HyPSD@AMSclassfix{%
858     \let\tocpart\HyPSD@tocsection
859     \let\tocchapter\HyPSD@tocsection
860     \let\tocappendix\HyPSD@tocsection
861     \let\tocsection\HyPSD@tocsection
862     \let\tocsubsection\HyPSD@tocsection
863     \let\tocsubsubsection\HyPSD@tocsection
864     \let\tocparagraph\HyPSD@tocsection
865   }%
866   \def\HyPSD@tocsection#1#2#3{%
867     \if @#2@ \else \if @#1@ \else #1 \fi #2. \fi
868     #3%
869   }%
870 }

```

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.

```

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

```

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

```

872 \def\HyPsd@@ref#1*#2\END{%
873   \ifx\#2\%
874     \HyPsd@@@ref{#1}%
875   \else
876     \expandafter\HyPsd@@@ref
877   \fi
878 }%

```

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

```

879 \def\HyPsd@@@ref#1{%
880   \expandafter\ifx\csname r@#1\endcsname\relax
881     ??%
882   \else
883     \expandafter\expandafter\expandafter\@car\csname r@#1\endcsname\@nil
884   \fi
885 }

```

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

```

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

```

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

```

887 \def\HyPsd@@pageref#1*#2\END{%
888   \ifx\#2\%
889     \HyPsd@@@pageref{#1}%
890   \else
891     \expandafter\HyPsd@@@pageref
892   \fi
893 }

```

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

```

894 \def\HyPsd@@@pageref#1{%
895   \expandafter\ifx\csname r@#1\endcsname\relax
896     ??%
897   \else
898     \expandafter\expandafter\expandafter\expandafter
899     \expandafter\expandafter\expandafter\@car
900     \expandafter\expandafter\expandafter\@gobble
901     \csname r@#1\endcsname\@nil
902   \fi
903 }
```

6.5.10 Redefining the defining commands

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

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

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

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

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

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

```

\HyPsd@DefCommand
\HyPsd@LetCommand
904 \begingroup
905   \def\x#1#2{%
906     \endgroup
907     \let#1\def
908     \def\HyPsd@DefCommand##1##2##{%
909       #1%
910       \expandafter\noexpand
911       \csname\expandafter\@gobble\string##1\@empty\endcsname
912       \@gobble
913     }%
914     \let#2\let
915     \def\HyPsd@@@LetCommand##1{%
```

```

916 \expandafter\ifx\csname##1\expandafter\endcsname
917 \csname iftrue\endcsname
918 \pdfstringdefWarn\let
919 \expandafter\@gobble
920 \else
921 \expandafter\ifx\csname##1\expandafter\endcsname
922 \csname iffalse\endcsname
923 \pdfstringdefWarn\let
924 \expandafter\expandafter\expandafter\@gobble
925 \else
926 #2%
927 \expandafter\noexpand
928 \csname##1\expandafter\expandafter\expandafter\endcsname
929 \fi
930 \fi
931 }%
932 }%
933 \expandafter\x\csname <def>-command\expandafter\endcsname
934 \csname <let>-command\endcsname
935 \def\HyPsd@LetCommand#1{%
936 \expandafter\expandafter\expandafter\HyPsd@@LetCommand
937 \expandafter\expandafter\expandafter{%
938 \expandafter\@gobble\string#1\@empty
939 }%
940 }

```

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.

```

941 \def\HyPsd@ifnextchar{%
942 \pdfstringdefWarn\ifnextchar
943 \expandafter\@gobbletwo\@gobble
944 }

```

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

```

945 \def\HyPsd@new@ifnextchar{%
946 \pdfstringdefWarn\new@ifnextchar
947 \expandafter\@gobbletwo\@gobble
948 }

```

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`.

```

949 \def\HyPsd@protected@testopt#1{%
950 \pdfstringdefWarn#1%
951 \@gobbletwo
952 }

```

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:

```
953 \def\HyPsd@Warning#1{%
954   \begingroup
955     \def\space{ }%
956     \Hy@Warning{#1}%
957   \endgroup
958 }
```

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`.

```
959 \def\HyPsd@ProtectSpaces#1{%
960   \expandafter\HyPsd@@ProtectSpaces
961     \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
962 }
```

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

```
963 \def\HyPsd@@ProtectSpaces#1 #2\HyPsd@End#3{%
964   \ifx\scrollmode#2\scrollmode
965     \HyPsd@RemoveMask#1\HyPsd@End#3%
966   \else
967     \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
968     \Hy@ReturnAfterFi{%
969       \expandafter\HyPsd@@ProtectSpaces#3\HyPsd@End#3%
970     }%
971   \fi
972 }
```

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.

```
973 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
974   \toks@\expandafter{#1}%
975   \xdef#2{\the\toks@}%
976 }
```

6.6.3 Remove grouping braces

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

```
977 \def\HyPsd@RemoveBraces#1{%
978   \ifx\scrollmode#1\scrollmode
979   \else
980     \Hy@ReturnAfterFi{%
981       \HyPsd@@RemoveBraces#1\HyPsd@End{#1}%
982     }%
983   \fi
984 }
```

`\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`.

```

985 \def\HyPsd@@RemoveBraces#1#2\HyPsd@End#3{%
986   \def\Hy@temp@A{#1#2}%
987   \def\Hy@temp@B{#3}%
988   \ifx\Hy@temp@A\Hy@temp@B
989     \expandafter\def\expandafter\HyPsd@String\expandafter{%
990       \HyPsd@String#1%
991     }%
992     \Hy@ReturnAfterElseFi{%
993       \ifx\scrollmode#2\scrollmode
994         \else
995           \Hy@ReturnAfterFi{%
996             \HyPsd@RemoveBraces{#2}%
997           }%
998         \fi
999       }%
1000   \else
1001     \def\Hy@temp@A{#1}%
1002     \HyPsd@AppendItalcorr\HyPsd@String
1003     \Hy@ReturnAfterFi{%
1004       \ifx\Hy@temp@A\@empty
1005         \Hy@ReturnAfterElseFi{%
1006           \HyPsd@RemoveBraces{#2}%
1007         }%
1008       \else
1009         \Hy@ReturnAfterFi{%
1010           \HyPsd@ProtectSpaces\Hy@temp@A
1011           \HyPsd@AppendItalcorr\Hy@temp@A
1012           \expandafter\HyPsd@RemoveBraces\expandafter
1013             {\Hy@temp@A#2}%
1014         }%
1015       \fi
1016     }%
1017   \fi
1018 }
```

`\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`.

```

1019 \def\HyPsd@AppendItalcorr#1{%
1020   \expandafter\HyPsd@@AppendItalcorr\expandafter{/}\#1%
1021 }
1022 \def\HyPsd@@AppendItalcorr#1#2{%
1023   \expandafter\def\expandafter#2\expandafter{#2#1}%
1024 }
```

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`).

```

1025 \def\HyPsd@CheckCatcodes#1#2\HyPsd@end{%
1026   \global\let\HyPsd@Rest\relax
1027   \ifcat\relax\noexpand#1\relax
1028     \ifx#1\protect
1029       \else
1030         \ifx#1\penalty
1031           \setbox\z@=\hbox{%
1032             \afterassignment\HyPsd@AfterCountRemove
1033             \count@=#2\HyPsd@end
1034           }%
1035         \else
1036           \ifx#1\kern
1037             \setbox\z@=\hbox{%
1038               \afterassignment\HyPsd@AfterDimenRemove
1039               \dimen@=#2\HyPsd@end
1040             }%
1041           \else
1042             \ifx#1\hskip
1043               \setbox\z@=\hbox{%
1044                 \afterassignment\HyPsd@AfterSkipRemove
1045                 \skip@=#2\HyPsd@end
1046               }%
1047             \else
1048               \HyPsd@CatcodeWarning{#1}%
1049             \fi
1050           \fi
1051         \fi
1052       \fi
1053     \else
1054       \ifcat#1 %SPACE
1055         \expandafter\def\expandafter\HyPsd@String\expandafter{%
1056           \HyPsd@String\HyPsd@SPACEOPTI
1057         }%
1058       \else
1059         \ifcat$#1%
1060           \HyPsd@CatcodeWarning{math shift}%
1061         \else
1062           \ifcat&#1%
1063             \HyPsd@CatcodeWarning{alignment tab}%
1064           \else
1065             \ifcat^#1%
1066               \HyPsd@CatcodeWarning{superscript}%
1067             \else
1068               \ifcat_#1%
1069                 \HyPsd@CatcodeWarning{subscript}%
1070             \else
1071               \expandafter\def\expandafter\HyPsd@String\expandafter{%

```

```

1072             \HyPsd@String#1%
1073         }%
1074     \fi
1075 \fi
1076 \fi
1077 \fi
1078 \fi
1079 \fi
1080 \ifx\HyPsd@Rest\relax
1081     \Hy@ReturnAfterElseFi{%
1082     \ifx\scrollmode#2\scrollmode
1083     \else
1084         \Hy@ReturnAfterFi{%
1085         \HyPsd@CheckCatcodes#2\HyPsd@End
1086     }%
1087 \fi
1088 }%
1089 \else
1090     \Hy@ReturnAfterFi{%
1091     \ifx\HyPsd@Rest\@empty
1092     \else
1093         \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1094     \fi
1095 }%
1096 \fi
1097 }

```

Remove counts, dimens, skips.

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

```

1098 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1099     \gdef\HyPsd@Rest{#1}%
1100 }

```

`\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.

```

1101 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1102     \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@ \fi > 1ex
1103     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1104     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1105 \else
1106     \ifdim\dimen@=\z@
1107     \else
1108         \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1109     \fi
1110     \gdef\HyPsd@Rest{#1}%
1111 \fi
1112 }

```

`\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).

```

1113 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1114     \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@ \fi > 1ex
1115     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%

```

```

1116 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1117 \else
1118 \ifdim\skip@=\z@
1119 \else
1120 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1121 \fi
1122 \gdef\HyPsd@Rest{#1}%
1123 \fi
1124 }

```

Catcode warnings.

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

```

1125 \def\HyPsd@CatcodeWarning#1{%
1126 \HyPsd@Warning{%
1127 Token not allowed in a PDFDocEncoded string,%
1128 \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1129 }%
1130 }
1131 \begingroup
1132 \catcode'\|=0
1133 \catcode'\|=12
1134 \gdef\HyPsd@RemoveCmdPrefix#1{%
1135 \expandafter\HyPsd@@RemoveCmdPrefix
1136 \string#1|@empty\<>-|@empty|@empty
1137 }%
1138 \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1139 \endgroup

```

\HyPsd@RemoveSpaceWarning

```

1140 \def\HyPsd@RemoveSpaceWarning#1{%
1141 \HyPsd@Warning{%
1142 Token not allowed in a PDFDocEncoded string:%
1143 \MessageBreak #1\MessageBreak
1144 removed%
1145 }%
1146 }

```

\HyPsd@ReplaceSpaceWarning

```

1147 \def\HyPsd@ReplaceSpaceWarning#1{%
1148 \HyPsd@Warning{%
1149 Token not allowed in a PDFDocEncoded string:%
1150 \MessageBreak #1\MessageBreak
1151 replaced by space%
1152 }%
1153 }

```

6.6.5 Check for wrong glyphs

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

```

1154 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1155 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1156 \HyPsd@String#1%
1157 }%
1158 \ifx\#2\%

```



```

1159 \else
1160   \Hy@ReturnAfterFi{%
1161     \HyPsd@GlyphProcessWarning#2\@empty
1162   }%
1163 \fi
1164 }
1165 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1166   \HyPsd@Warning{%
1167     Glyph not defined in %
1168     P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1169     removing '@backslashchar#1'%
1170   }%
1171   \HyPsd@GlyphProcess#2\@empty
1172 }

```

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`.

```

1173 \def\HyPsd@spaceopti#1{ % first space
1174   \ifx\HyPsd@spaceopti#1%
1175     \040%
1176   \else
1177     #1%
1178   \fi
1179 }%

```

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.

```

1180 \def\HyPsd@Subst#1#2#3{%
1181   \def\HyPsd@@Replace##1#1##2\END{%
1182     ##1%
1183     \ifx\##2\%
1184       \else
1185         #2%
1186         \Hy@ReturnAfterFi{%
1187           \HyPsd@@Replace##2\END
1188         }%
1189       \fi
1190     }%
1191   \xdef#3{%
1192     \expandafter\HyPsd@@Replace#3#1\END
1193   }%
1194 }

```

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

```

1195 \def\HyPsd@StringSubst#1{%
1196   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1197 }

```

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.

```

1198 \def\HyPsd@doxspace#1{%
1199   \ifx#1\relax\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                   \ifx#1-\else
1208                     \ifx#1'\else
1209                       \HyPsd@SPACEOPTI
1210                     \fi
1211                   \fi
1212                 \fi
1213               \fi
1214             \fi
1215           \fi
1216         \fi
1217       \fi
1218     \fi
1219   \fi
1220   #1%
1221 }%
```

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.

```

1222 \begingroup
1223   \catcode'\|=0
1224   \catcode'\|=12
```

`\HyPsd@ConvertToUnicode`

```

1225 |gdef|HyPsd@ConvertToUnicode#1{%
1226   |xdef#1{%
1227     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1228   }%
1229   |xdef#1{%
1230     |ifx#1|@empty
1231     |else
1232       \376\377%
1233       #1%
1234     |fi
1235   }%
1236 }
```

`\HyPsd@DoConvert`

```

1237 |gdef|HyPsd@DoConvert#1{%
1238   |ifx#1|@empty
```

```

1239     |else
1240     |Hy@ReturnAfterFi{%
1241     |ifx#1\%
1242     \%
1243     |expandafter|HyPsd@DoEscape
1244     |else
1245     \000#1%
1246     |expandafter|HyPsd@DoConvert
1247     |fi
1248     }%
1249     |fi
1250 }

```

\HyPsd@DoEscape

```

1251 |gdef|HyPsd@DoEscape#1{%
1252 |ifx#19%
1253 |expandafter|HyPsd@GetTwoBytes
1254 |else
1255 |Hy@ReturnAfterFi{%
1256 |ifx#18%
1257 00%
1258 |expandafter|HyPsd@GetTwoBytes
1259 |else
1260 #1%
1261 |expandafter|HyPsd@GetOneByte
1262 |fi
1263 }%
1264 |fi
1265 }

```

\HyPsd@GetTwoBytes

```

1266 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1267 #1\#2#3#4%
1268 |HyPsd@DoConvert
1269 }

```

\HyPsd@GetOneByte

```

1270 |gdef|HyPsd@GetOneByte#1#2{%
1271 #1#2%
1272 |HyPsd@DoConvert
1273 }
1274 |endgroup

```

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

```

1275 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1276 \xdef#4{#4#1#2}%
1277 \HyPsd@@ConvertToUnicode#3\END#4%
1278 }

```

6.6.9 Support for UTF-8 input encoding

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

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

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

```
1279 \begingroup\expandafter\expandafter\expandafter\endgroup
1280 \expandafter\ifx\csname numexpr\endcsname\relax
1281   \let\HyPsd@UTFviii\relax
1282 \else
1283   \def\HyPsd@UTFviii{%
1284     \let\UTFviii@two@octets\HyPsd@UTFviii@two
1285     \let\UTFviii@three@octets\HyPsd@UTFviii@three
1286     \let\unichar\HyPsd@unichar
1287   }%
```

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.

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

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

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

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

$$(5)$$

```
1288 \def\HyPsd@UTFviii@two#1#2{%
1289   \expandafter\HyPsd@UTFviii@two
1290   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1291   \number'#1\expandafter|%
1292   \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|%
1293   \number'#2 \@nil
1294 }%
1295 \def\HyPsd@UTFviii@two#1|#2|#3|#4\@nil{%
1296   \expandafter\8%
1297   \number\numexpr #1-48\expandafter\relax
1298   \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1299   \number\numexpr #3-8*%
1300   \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1301   \number\numexpr #4-8*#3\relax
1302 }%
```

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

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

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

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

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

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

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

$$(12)$$

```
1303 \def\HyPsd@UTFviii@three#1#2#3{%
1304   \expandafter\HyPsd@UTFviii@three
```

```

1305 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1306 \number'#1\expandafter|%
1307 \number\ifnum\dimexpr'#2-128\relax <32 0\else 1\fi\expandafter|%
1308 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|%
1309 \number'#2\expandafter|%
1310 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|%
1311 \number'#3 \@nil
1312 }%
1313 \def\HyPsd@UTFviii@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1314 \expandafter\9%
1315 \number\dimexpr #1-56\expandafter\relax
1316 \number\dimexpr 2*(#2-4*#1)+#3\expandafter\relax
1317 \number\dimexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1318 \csname\number\dimexpr #5-4*#4\relax\expandafter\endcsname
1319 \number\dimexpr #6-16\expandafter\relax
1320 \number\dimexpr #7-8*#6\relax
1321 }%

```

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

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

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

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

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

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

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

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

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

$$(21)$$

```

1322 \def\HyPsd@UTFviii@four#1{%
1323 \expandafter\HyPsd@UTFviii@four\number'#1|%
1324 }%
1325 \def\HyPsd@UTFviii@four#1|#2|#3|#4{%
1326 \expandafter\HyPsd@UTFviii@four\number#1\expandafter|%
1327 \number'#2\expandafter|
1328 \number\dimexpr.03125\dimexpr'#2sp\expandafter|%
1329 \number'#3\expandafter|%
1330 \number\dimexpr.03125\dimexpr'#3sp\expandafter|%
1331 \number'#4\expandafter|%
1332 \number\dimexpr.125\dimexpr'#4|%
1333 }%
1334 \def\HyPsd@UTFviii@@four#1|#2|#3|#4|#5|#6|#7|{%
1335 \931%
1336 \number\dimexpr\dimexpr.5\dimexpr#1sp\relax\relax -120\relax
1337 \csname\number\dimexpr\ifodd#1 2\else 0\fi +#3-4\relax\endcsname
1338 \number\dimexpr.25\dimexpr #2sp - 32\dimexpr#3sp\relax\relax\relax
1339 % ...
1340 }%

```

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]+

```

1341 \def\HyPsd@unichar#1{%
1342 \expandafter\HyPsd@@unichar\string#1\@empty\@empty\@empty\@nil
1343 }%
1344 \def\HyPsd@@unichar #1-#2-#3#4#5#6\@nil{%
1345 \ifnum#2>191 %
1346 \ifnum#2<224 %
1347 \expandafter\HyPsd@UTFviii@@two
1348 \number\dimexpr.25\dimexpr#2sp\expandafter\relax\expandafter|%
1349 \number#2\expandafter|%
1350 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|%
1351 \number'#3 \@nil
1352 \else
1353 \ifnum#2<240 %
1354 \expandafter\HyPsd@UTFviii@@three
1355 \number\dimexpr.25\dimexpr#2sp\expandafter\relax\expandafter|%
1356 \number#2\expandafter|%
1357 \number\ifnum\numexpr'#3-128\relax <32 0\else 1\fi\expandafter|%
1358 \number\dimexpr.25\dimexpr'#3sp\expandafter\relax\expandafter|%
1359 \number'#3\expandafter|%
1360 \number\dimexpr.125\dimexpr'#4sp\expandafter\relax\expandafter|%
1361 \number'#4 \@nil
1362 \else
1363 ?% unsupported
1364 \fi
1365 \fi
1366 \fi
1367 }%
1368 \fi

```

7 Support of other packages

7.1 Class memoir

```

1369 \@ifclassloaded{memoir}{%
1370 \AtEndOfPackage{\RequirePackage{memhfixc}}}%
1371 }{}

```

7.2 Package subfigure

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

```

1372 \@ifpackageloaded{subfigure}{%
1373 \@ifundefined{sub@label}{%
1374 \Hy@hypertextnamesfalse
1375 }{%
1376 \renewcommand*{\sub@label}[1]{%
1377 \@bsphack
1378 \subfig@oldlabel{#1}%
1379 \if@filesw
1380 \beginingroup
1381 \edef\@currentlabstr{%
1382 \expandafter\strip@prefix\meaning\@currentlabelname
1383 }%
1384 \protected@write\@auxout{}{%
1385 \string\newlabel{sub@#1}{%
1386 {\@nameuse{\@thesub\@capytype}}%
1387 {\thepage}%
1388 {\expandafter\strip@period\@currentlabstr\relax.\relax\@@@}%

```

```

1389         {\@currentHref}%
1390     }%
1391 }%
1392 }%
1393 \endgroup
1394 \fi
1395 \@esphack
1396 }%
1397 \@ifpackagelater{subfigure}{2002/03/26}{}%
1398 \providecommand*\toclevel@subfigure{1}%
1399 \providecommand*\toclevel@subtable{1}%
1400 }%
1401 }%
1402 {}

```

7.3 Package xr and xr-hyper

The beta version of xr that supports \XR@addURL is called xr-hyper. Therefore we test for the macro itself and not for the package name:

```

1403 \@ifundefined{XR@addURL}{%
1404 }{%

```

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.

```

1405 \def\xR@addURL#1{\xR@dURL#1{}{}{}\\}%
1406 \def\xR@dURL#1#2#3#4#5\{%
1407   {#1}{#2}%
1408   \if!#4!%
1409     \else
1410       {#3}{#4}{\xR@URL}%
1411   \fi
1412 }%
1413 }

```

1414 \def\Hy@true{true}
1415 \def\Hy@false{false}

Providing dummy definitions.

```

1416 \let\literalps@out@gobble
1417 \newcommand\pdfbookmark[3][]{ }
1418 \let\Acrobatmenu@gobble
1419 \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

```

1420 \let\HyperRaiseLinkLength\@tempdima
1421 \let\HyperRaiseLinkHook\@empty
1422 \def\HyperRaiseLinkDefault{\baselineskip}

```

\HyperRaiseLinkHook allows the user to reassign \HyperRaiseLinkLength.

```

1423 \def\Hy@raisedlink#1{%
1424   \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1425   \HyperRaiseLinkHook
1426   \ifvmode
1427     #1%
1428   \else
1429     \penalty\@M
1430     \smash{\raise\HyperRaiseLinkLength\hbox{#1}}%
1431   \fi
1432 }

```

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

```

\Hy@RestoreLastskip
1433 \def\Hy@SaveLastskip{%
1434   \let\Hy@RestoreLastskip\relax
1435   \ifvmode
1436     \ifdim\lastskip=\z@
1437       \let\Hy@RestoreLastskip\nobreak
1438     \else
1439       \begingroup
1440         \skip@=-\lastskip
1441         \edef\x{%
1442           \endgroup
1443           \def\noexpand\Hy@RestoreLastskip{%
1444             \noexpand\ifvmode
1445               \noexpand\nobreak
1446               \vskip\the\skip@
1447               \vskip\the\lastskip\relax
1448             \noexpand\fi
1449           }%
1450         }%
1451       \x
1452     \fi
1453   \else
1454     \ifhmode
1455       \ifdim\lastskip=\z@
1456         \let\Hy@RestoreLastskip\nobreak
1457       \else
1458         \begingroup
1459           \skip@=-\lastskip
1460           \edef\x{%
1461             \endgroup
1462             \def\noexpand\Hy@RestoreLastskip{%
1463               \noexpand\ifhmode
1464                 \noexpand\nobreak
1465                 \hskip\the\skip@
1466                 \hskip\the\lastskip\relax
1467               \noexpand\fi
1468             }%
1469           }%
1470         \x
1471       \fi
1472     \fi

```



```

1473 \fi
1474 }%

```

9 Options

9.1 Help macros

\Hy@boolkey

```

1475 \def\Hy@boolkey{\@dblarg\Hy@@boolkey}
1476 \def\Hy@@boolkey[#1]#2#3{%
1477   \lowercase{\def\Hy@tempa{#3}}%
1478   \ifx\Hy@tempa\@empty
1479     \let\Hy@tempa\Hy@true
1480   \fi
1481   \ifx\Hy@tempa\Hy@true
1482   \else
1483     \ifx\Hy@tempa\Hy@false
1484     \else
1485       \let\Hy@tempa\relax
1486     \fi
1487   \fi
1488   \ifx\Hy@tempa\relax
1489     \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1490   \else
1491     \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1492     \csname Hy@#2\Hy@tempa\endcsname
1493   \fi
1494 }

```

\Hy@WarnOptionValue

```

1495 \def\Hy@WarnOptionValue#1#2#3{%
1496   \Hy@Warning{%
1497     Unexpected value ‘#1’\MessageBreak
1498     of option ‘#2’ instead of\MessageBreak
1499     #3%
1500   }
1501 }

```

\Hy@DisableOption

```

1502 \def\Hy@DisableOption#1{%
1503   \@ifundefined{KV@Hyp@#1@default}{%
1504     \define@key{Hyp}{#1}%
1505   }{%
1506     \define@key{Hyp}{#1}[]%
1507   }%
1508   {\Hy@WarnOptionDisabled{#1}}%
1509 }

```

\Hy@WarnOptionDisabled

```

1510 \def\Hy@WarnOptionDisabled#1{%
1511   \Hy@Warning{%
1512     Option ‘#1’ has already been used,\MessageBreak
1513     setting the option has no effect%
1514   }%
1515 }

```

9.2 Defining the options

```
1516 \define@key{Hyp}{implicit}[true]{%
1517   \Hy@boolkey{implicit}{#1}%
1518 }
1519 \define@key{Hyp}{draft}[true]{%
1520   \Hy@boolkey{draft}{#1}%
1521 }
1522 \define@key{Hyp}{final}[true]{%
1523   \Hy@boolkey{final}{#1}%
1524 }
1525 \let\KV@Hyp@nolinks\KV@Hyp@draft
1526 \define@key{Hyp}{a4paper}[true]{%
1527   \def\special@paper{210mm,297mm}%
1528   \def\Hy@pageheight{842}%
1529 }
1530 \define@key{Hyp}{a5paper}[true]{%
1531   \def\special@paper{148mm,210mm}%
1532   \def\Hy@pageheight{595}%
1533 }
1534 \define@key{Hyp}{b5paper}[true]{%
1535   \def\special@paper{176mm,250mm}%
1536   \def\Hy@pageheight{709}%
1537 }
1538 \define@key{Hyp}{letterpaper}[true]{%
1539   \def\special@paper{8.5in,11in}%
1540   \def\Hy@pageheight{792}%
1541 }
1542 \define@key{Hyp}{legalpaper}[true]{%
1543   \def\special@paper{8.5in,14in}%
1544   \def\Hy@pageheight{1008}%
1545 }
1546 \define@key{Hyp}{executivepaper}[true]{%
1547   \def\special@paper{7.25in,10.5in}%
1548   \def\Hy@pageheight{720}%
1549 }
1550 \define@key{Hyp}{setpagesize}[true]{%
1551   \Hy@boolkey{setpagesize}{#1}%
1552 }
1553 \define@key{Hyp}{debug}[true]{%
1554   \Hy@boolkey{debug}{verbose}{#1}%
1555 }
1556 \define@key{Hyp}{linktopage}[true]{%
1557   \Hy@boolkey{linktopage}{#1}%
1558 }
1559 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1560 \def\XR@ext{dvi}
1561 \define@key{Hyp}{verbose}[true]{%
1562   \Hy@boolkey{verbose}{#1}%
1563 }
1564 \define@key{Hyp}{typexml}[true]{%
1565   \Hy@boolkey{typexml}{#1}%
1566 }
```

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.

```

1567 \define@key{Hyp}{raiselinks}[true]{%
1568   \Hy@boolkey{raiselinks}{#1}%
1569 }

```

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

```

1570 \define@key{Hyp}{breaklinks}[true]{%
1571   \Hy@boolkey{breaklinks}{#1}%
1572 }

```

Determines whether an automatic anchor is put on each page

```

1573 \define@key{Hyp}{pageanchor}[true]{%
1574   \Hy@boolkey{pageanchor}{#1}%
1575 }

```

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.

```

1576 \define@key{Hyp}{plainpages}[true]{%
1577   \Hy@boolkey{plainpages}{#1}%
1578 }

```

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

```

1579 \define@key{Hyp}{naturalnames}[true]{%
1580   \Hy@boolkey{naturalnames}{#1}%
1581 }

```

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

```

1582 \define@key{Hyp}{hypertextnames}[true]{%
1583   \Hy@boolkey{hypertextnames}{#1}%
1584 }

```

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

```

1585 \define@key{Hyp}{nesting}[true]{%
1586   \Hy@boolkey{nesting}{#1}%
1587 }

```

```

1588 \define@key{Hyp}{unicode}[true]{%
1589   \Hy@boolkey{unicode}{#1}%
1590   \HyPsd@InitUnicode
1591 }

```

10 Options for different drivers

```

1592 \define@key{Hyp}{hyperref}[true]{}
1593 \define@key{Hyp}{tex4ht}[true]{%
1594   \def\XR@ext{html}%
1595   \Hy@texhttrue
1596   \def\Hy@raisedlink{}%
1597   \setkeys{Hyp}{colorlinks=true}%
1598   \def\BeforeTeXIVht{\usepackage{color}}%
1599   \def\Hy@driver{htex4ht}%
1600   \def\MaybeStopEarly{%
1601     \typeout{Hyperref stopped early}%
1602     \AfterBeginDocument{\PDF@FinishDoc}%
1603     \endinput
1604   }%
1605 }
1606 \define@key{Hyp}{pdftex}[true]{%
1607   \def\Hy@driver{hpdftex}%
1608   \def\XR@ext{pdf}%
1609   \PassOptionsToPackage{pdftex}{color}%

```

```

1610 \Hy@breaklinkstrue
1611 }
1612 \define@key{Hyp}{dvipdf}[true]{%
1613   \Hy@WarningNoLine{%
1614     Option 'dvipdf' is deprecated.\MessageBreak
1615     See the user manual for available driver options%
1616   }%
1617 }
1618 \define@key{Hyp}{nativepdf}[true]{%
1619   \def\Hy@driver{hdvips}%
1620   \def\Hy@raisedlink{}%
1621   \def\XR@ext{pdf}%
1622 }
1623 \define@key{Hyp}{dvipdfm}[true]{%
1624   \def\Hy@driver{hdvipdfm}%
1625   \def\XR@ext{pdf}%
1626   \Hy@breaklinkstrue
1627 }
1628 \define@key{Hyp}{dvipdfmx}[true]{%
1629   \def\Hy@driver{hdvipdfm}%
1630   \def\XR@ext{pdf}%
1631   \Hy@breaklinkstrue
1632 }
1633 \define@key{Hyp}{pdfmark}[true]{%
1634   \def\Hy@driver{hdvips}%
1635   \def\Hy@raisedlink{}%
1636   \def\XR@ext{pdf}%
1637 }
1638 \define@key{Hyp}{dvips}[true]{%
1639   \def\Hy@driver{hdvips}%
1640   \def\Hy@raisedlink{}%
1641   \def\XR@ext{pdf}%
1642 }
1643 \define@key{Hyp}{hypertex}[true]{%
1644   \def\Hy@driver{hypertex}%
1645 }
1646 \let\Hy@MaybeStopNow\relax
1647 \define@key{Hyp}{vtex}[true]{%
1648   \begingroup\expandafter\expandafter\expandafter\endgroup
1649   \expandafter\ifx\csname OpMode\endcsname\relax
1650     \@latex@error{Non-VTeX processor}{}%
1651     \global\let\Hy@MaybeStopNow\endinput
1652     \endinput
1653   \else
1654     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1655       \def\XR@ext{pdf}%
1656       \def\Hy@driver{hvtex}%
1657     \else
1658       \ifnum\OpMode=10\relax
1659         \def\XR@ext{htm}%
1660         \def\Hy@driver{hvtexhtm}%
1661         \def\MaybeStopEarly{%
1662           \typeout{Hyperref stopped early}%
1663           \AfterBeginDocument{\PDF@FinishDoc}%
1664         \endinput
1665       }%
1666     \else

```

```

1667      \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1668      \global\let\Hy@MaybeStopNow\endinput
1669      \endinput
1670    \fi
1671  \fi
1672 \fi
1673 }
1674 \define@key{Hyp}{vtexpdfmark}[true]{%
1675   \begingroup\expandafter\expandafter\expandafter\endgroup
1676   \expandafter\ifx\csname OpMode\endcsname\relax
1677     \@latex@error{Non-VTeX processor}{}%
1678     \let\Hy@MaybeStopNow\endinput
1679     \endinput
1680   \else
1681     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1682     \def\XR@ext{pdf}%
1683     \def\Hy@driver{hvtexmrk}%
1684     \def\Hy@raisedlink{}%
1685   \else
1686     \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1687     \let\Hy@MaybeStopNow\endinput
1688     \endinput
1689   \fi
1690 \fi
1691 }
1692 \define@key{Hyp}{dviwindo}[true]{%
1693   \def\Hy@driver{hdviwind}%
1694   \setkeys{Hyp}{colorlinks}%
1695   \PassOptionsToPackage{dviwindo}{color}%
1696 }
1697 \define@key{Hyp}{dvipsone}[true]{%
1698   \def\XR@ext{pdf}%
1699   \def\Hy@driver{hdvipson}%
1700   \def\Hy@raisedlink{}%
1701 }
1702 \define@key{Hyp}{textures}[true]{%
1703   \def\XR@ext{pdf}%
1704   \def\Hy@driver{htexture}%
1705 }
1706 \define@key{Hyp}{latex2html}[true]{%
1707   \AtBeginDocument{\@@latextohtmlX}%
1708 }

```

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

```

1709 \define@key{Hyp}{ps2pdf}[true]{%
1710   \def\Hy@driver{hdvips}%
1711   \def\Hy@raisedlink{}%
1712   \providecommand\@pdfborder{0 0 1}%
1713 }

```

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.

```

1714 \define@key{Hyp}{hyperfigures}[true]{%
1715   \Hy@boolkey[hyperfigures]{figures}{#1}%
1716 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```
1717 \define@key{Hyp}{hyperfootnotes}[true]{%
1718   \Hy@boolkey{hyperfootnotes}{#1}%
1719 }
```

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

```
1720 \def\back@none{none}
1721 \def\back@section{section}
1722 \def\back@page{page}
1723 \def\back@slide{slide}
1724 \define@key{Hyp}{backref}[section]{%
1725   \lowercase{\def\Hy@tempa{#1}}%
1726   \ifx\Hy@tempa\@empty
1727     \let\Hy@tempa\back@section
1728   \fi
1729   \ifx\Hy@tempa\Hy@false
1730     \let\Hy@tempa\back@none
1731   \fi
1732   \ifx\Hy@tempa\back@slide
1733     \let\Hy@tempa\back@section
1734   \fi
1735   \ifx\Hy@tempa\back@page
1736     \PassOptionsToPackage{hyperpageref}{backref}%
1737     \Hy@backreftrue
1738   \else
1739     \ifx\Hy@tempa\back@section
1740       \PassOptionsToPackage{hyperref}{backref}%
1741       \Hy@backreftrue
1742     \else
1743       \ifx\Hy@tempa\back@none
1744         \Hy@backreffalse
1745       \else
1746         \Hy@WarnOptionValue{#1}{backref}{%
1747           'section', 'slide', 'page', 'none', \MessageBreak
1748           or 'false'}%
1749       \fi
1750     \fi
1751   \fi
1752 }
1753 \define@key{Hyp}{pagebackref}[true]{%
1754   \lowercase{\def\Hy@tempa{#1}}%
1755   \ifx\Hy@tempa\@empty
1756     \let\Hy@tempa\Hy@true
1757   \fi
1758   \ifx\Hy@tempa\Hy@true
1759     \PassOptionsToPackage{hyperpageref}{backref}%
1760     \Hy@backreftrue
1761   \else
1762     \ifx\Hy@tempa\Hy@false
1763       \Hy@backreffalse
1764     \else
1765       \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
1766     \fi
1767   \fi
1768 }
```

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

```

1769 \define@key{Hyp}{hyperindex}[true]{%
1770   \Hy@boolkey{hyperindex}{#1}%
1771 }

```

Configuration of encap char.

```

1772 \define@key{Hyp}{encap}[|]{%
1773   \def\HyInd@EncapChar{#1}%
1774 }

```

12 Language options

The \autoref feature depends on the language.

```

1775 \def\HyLang@english{%
1776   \def\equationautorefname{Equation}%
1777   \def\footnoteautorefname{footnote}%
1778   \def\itemautorefname{item}%
1779   \def\figureautorefname{Figure}%
1780   \def\tableautorefname{Table}%
1781   \def\partautorefname{Part}%
1782   \def\appendixautorefname{Appendix}%
1783   \def\chapterautorefname{chapter}%
1784   \def\sectionautorefname{section}%
1785   \def\subsectionautorefname{subsection}%
1786   \def\subsubsectionautorefname{subsubsection}%
1787   \def\paragraphautorefname{paragraph}%
1788   \def\subparagraphautorefname{subparagraph}%
1789   \def\FancyVerbLineautorefname{line}%
1790   \def\theoremautorefname{Theorem}%
1791 }
1792 \def\HyLang@german{%
1793   \def\equationautorefname{Gleichung}%
1794   \def\footnoteautorefname{Fu\ss note}%
1795   \def\itemautorefname{Punkt}%
1796   \def\figureautorefname{Abbildung}%
1797   \def\tableautorefname{Tabelle}%
1798   \def\partautorefname{Teil}%
1799   \def\appendixautorefname{Anhang}%
1800   \def\chapterautorefname{Kapitel}%
1801   \def\sectionautorefname{Abschnitt}%
1802   \def\subsectionautorefname{Unterabschnitt}%
1803   \def\subsubsectionautorefname{Unterunterabschnitt}%
1804   \def\paragraphautorefname{Absatz}%
1805   \def\subparagraphautorefname{Unterabsatz}%
1806   \def\FancyVerbLineautorefname{Zeile}%
1807   \def\theoremautorefname{Theorem}%
1808 }
1809 \def\HyLang@portuges{%
1810   \def\equationautorefname{Equa\c c\~ao}%
1811   \def\footnoteautorefname{Nota de rodap'e}%
1812   \def\itemautorefname{Item}%
1813   \def\figureautorefname{Figura}%
1814   \def\tableautorefname{Tabela}%
1815   \def\partautorefname{Parte}%
1816   \def\appendixautorefname{Ap\~endice}%
1817   \def\chapterautorefname{Cap\~itulo}%
1818   \def\sectionautorefname{Se\c c\~ao}%
1819   \def\subsectionautorefname{Subse\c c\~ao}%

```

```

1820 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
1821 \def\paragraphautorefname{par\'agrafo}%
1822 \def\subparagraphautorefname{subpar\'agrafo}%
1823 \def\FancyVerbLineautorefname{linha}%
1824 \def\theoremautorefname{Teorema}%
1825 }
1826 \def\HyLang@spanish{%
1827 \def\equationautorefname{Ecuaci\'on}%
1828 \def\footnoteautorefname{Nota a pie de p\'agina}%
1829 \def\itemautorefname{Elemento}%
1830 \def\figureautorefname{Figura}%
1831 \def\tableautorefname{Tabla}%
1832 \def\partautorefname{Parte}%
1833 \def\appendixautorefname{Ap\'endice}%
1834 \def\chapterautorefname{Cap\'itulo}%
1835 \def\sectionautorefname{Secci\'on}%
1836 \def\subsectionautorefname{Subsecci\'on}%
1837 \def\subsubsectionautorefname{Subsubsecci\'on}%
1838 \def\paragraphautorefname{P\'arrafo}%
1839 \def\subparagraphautorefname{Subp\'arrafo}%
1840 \def\FancyVerbLineautorefname{L\'inea}%
1841 \def\theoremautorefname{Teorema}%
1842 }
1843 \def\HyLang@afrikaans{%
1844 \def\equationautorefname{Vergelyking}%
1845 \def\footnoteautorefname{Voetnota}%
1846 \def\itemautorefname{Item}%
1847 \def\figureautorefname{Figuur}%
1848 \def\tableautorefname{Tabel}%
1849 \def\partautorefname{Deel}%
1850 \def\appendixautorefname{Bylae}%
1851 \def\chapterautorefname{Hoofstuk}%
1852 \def\sectionautorefname{Afdeling}%
1853 \def\subsectionautorefname{Subafdeling}%
1854 \def\subsubsectionautorefname{Subsubafdeling}%
1855 \def\paragraphautorefname{Paragraaf}%
1856 \def\subparagraphautorefname{Subparagraaf}%
1857 \def\FancyVerbLineautorefname{Lyn}%
1858 \def\theoremautorefname{Teorema}%
1859 }
1860 \def\HyLang@french{%
1861 \def\equationautorefname{\`Equation}%
1862 \def\footnoteautorefname{note}%
1863 \def\itemautorefname{item}%
1864 \def\figureautorefname{Figure}%
1865 \def\tableautorefname{Tableau}%
1866 \def\partautorefname{Partie}%
1867 \def\appendixautorefname{Appendice}%
1868 \def\chapterautorefname{chapitre}%
1869 \def\sectionautorefname{section}%
1870 \def\subsectionautorefname{sous-section}%
1871 \def\subsubsectionautorefname{sous-sous-section}%
1872 \def\paragraphautorefname{paragraphe}%
1873 \def\subparagraphautorefname{sous-paragraphe}%
1874 \def\FancyVerbLineautorefname{ligne}%
1875 \def\theoremautorefname{Th\'eor\'eme}%
1876 }

```



```

1877 \def\HyLang@vietnamese{%
1878   \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr\'inh}%
1879   \def\footnoteautorefname{Ch\'u th\'ich}%
1880   \def\itemautorefname{m\d{u}c}%
1881   \def\figureautorefname{H\'inh}%
1882   \def\tableautorefname{B\h{a}ng}%
1883   \def\partautorefname{Ph\'acircumflex{n}%
1884   \def\appendixautorefname{Ph\d{u} l\d{u}c}%
1885   \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
1886   \def\sectionautorefname{m\d{u}c}%
1887   \def\subsectionautorefname{m\d{u}c}%
1888   \def\subsubsectionautorefname{m\d{u}c}%
1889   \def\paragraphautorefname{dj{o}d{a}n}%
1890   \def\subparagraphautorefname{dj{o}d{a}n}%
1891   \def\FancyVerbLineautorefname{d\'ong}%
1892   \def\theoremautorefname{DJ{}\d{i}nh l\'y}%
1893 }

```

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

```

1894 \def\HyLang@addto#1#2{%
1895   #2%
1896   \@temptokena{#2}%
1897   \ifx#1\relax
1898     \let#1\@empty
1899   \fi
1900   \ifx#1\undefined
1901     \edef#1{\the\@temptokena}%
1902   \else
1903     \toks@\expandafter{#1}%
1904     \edef#1{\the\toks@\the\@temptokena}%
1905   \fi
1906   \@temptokena{}\toks@\@temptokena
1907 }

1908 \def\HyLang@DeclareLang#1#2{%
1909   \begingroup
1910     \edef\x##1##2{%
1911       \noexpand\ifx##2\relax
1912         \errmessage{No definitions for language #2' found!}%
1913       \noexpand\fi
1914     \endgroup
1915     \noexpand\define@key{Hyp}{#1}[]{%
1916       \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
1917     }%
1918   }%
1919   \expandafter\x\csname extras#1\expandafter\endcsname
1920   \csname HyLang@#2\endcsname
1921 }

1922 \HyLang@DeclareLang{english}{english}
1923 \HyLang@DeclareLang{UKenglish}{english}
1924 \HyLang@DeclareLang{british}{english}
1925 \HyLang@DeclareLang{USenglish}{english}
1926 \HyLang@DeclareLang{american}{english}
1927 \HyLang@DeclareLang{german}{german}
1928 \HyLang@DeclareLang{austrian}{german}
1929 \HyLang@DeclareLang{ngerman}{german}
1930 \HyLang@DeclareLang{naustrian}{german}

```

```

1931 \HyLang@DeclareLang{brazil}{portuges}
1932 \HyLang@DeclareLang{brazilian}{portuges}
1933 \HyLang@DeclareLang{portuguese}{portuges}
1934 \HyLang@DeclareLang{spanish}{spanish}
1935 \HyLang@DeclareLang{afrikaans}{afrikaans}
1936 \HyLang@DeclareLang{french}{french}
1937 \HyLang@DeclareLang{frenchb}{french}
1938 \HyLang@DeclareLang{francais}{french}
1939 \HyLang@DeclareLang{acadian}{french}
1940 \HyLang@DeclareLang{canadien}{french}

```

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

```

1941 \define@key{Hyp}{vietnamese}[]{}%
1942   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
1943   \AtEndOfPackage{%
1944     \ifundefined{T@PU}{}{}%
1945     \input{puvnenc.def}%
1946   }%
1947 }%
1948 }
1949 \define@key{Hyp}{vietnam}[]{}%
1950   \HyLang@addto\extravietnam\HyLang@vietnamese
1951   \AtEndOfPackage{%
1952     \ifundefined{T@PU}{}{}%
1953     \input{puvnenc.def}%
1954   }%
1955 }%
1956 }

```

13 Options to change appearance of links

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

```

1957 \define@key{Hyp}{colorlinks}[true]{}%
1958   \Hy@boolkey{colorlinks}{#1}%
1959   \ifHy@colorlinks
1960     \def\@pdfborder{0 0 0}%
1961   \fi
1962 }
1963 \define@key{Hyp}{frenchlinks}[true]{}%
1964   \Hy@boolkey{frenchlinks}{#1}%
1965 }

```

14 Bookmarking

```

1966 \define@key{Hyp}{bookmarks}[true]{}%
1967   \Hy@boolkey{bookmarks}{#1}%
1968 }
1969 \define@key{Hyp}{bookmarksopen}[true]{}%
1970   \Hy@boolkey{bookmarksopen}{#1}%
1971 }

```

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.

```

1972 \let\Hy@bookmarksdepth\c@tocdepth
1973 \define@key{Hyp}{bookmarksdepth}[]{%
1974   \begingroup
1975     \edef\x{#1}%
1976     \ifx\x\empty
1977       \global\let\Hy@bookmarksdepth\c@tocdepth
1978     \else
1979       \ifundefined{toclevel@\x}{%
1980         \@onelevel@sanitize\x
1981         \edef\y{\expandafter\@car\x\@nil}%
1982         \ifcase 0\expandafter\ifx\y-1\fi
1983           \expandafter\ifnum\expandafter'\y>47 %
1984             \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
1985           \Hy@Warning{Unknown document division name (\x)}%
1986         \else
1987           \setbox\z@=\hbox{%
1988             \count@=\x
1989             \xdef\Hy@bookmarksdepth{\the\count@}%
1990           }%
1991         \fi
1992       }{%
1993         \setbox\z@=\hbox{%
1994           \count@=\csname toclevel@\x\endcsname
1995           \xdef\Hy@bookmarksdepth{\the\count@}%
1996         }%
1997       }%
1998     \fi
1999   \endgroup
2000 }

```

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

```

2001 \define@key{Hyp}{bookmarksopenlevel}{%
2002   \def\@bookmarksopenlevel{#1}%
2003 }
2004 \def\@bookmarksopenlevel{\maxdimen}
2005 % ‘bookmarkstyle’ to specify which ‘toc’ file to mimic
2006 \define@key{Hyp}{bookmarkstyle}{%
2007   \def\Hy@bookmarkstyle{#1}%
2008 }
2009 \def\Hy@bookmarkstyle{toc}

```

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

```

2010 \define@key{Hyp}{bookmarksnumbered}[true]{%
2011   \Hy@boolkey{bookmarksnumbered}{#1}%
2012 }

```

Option `CJKbookmarks` enables the patch for CJK bookmarks.

```

2013 \define@key{Hyp}{CJKbookmarks}[true]{%
2014   \Hy@boolkey{CJKbookmarks}{#1}%
2015 }
2016 \define@key{Hyp}{linkcolor}{\def\@linkcolor{#1}}

```

```

2017 \define@key{Hyp}{anchorcolor}{\def\@anchorcolor{#1}}
2018 \define@key{Hyp}{citecolor}{\def\@citecolor{#1}}
2019 \define@key{Hyp}{urlcolor}{\def\@urlcolor{#1}}
2020 \define@key{Hyp}{menucolor}{\def\@menucolor{#1}}
2021 \define@key{Hyp}{filecolor}{\def\@filecolor{#1}}
2022 \define@key{Hyp}{pagecolor}{\def\@pagecolor{#1}}

```

Default values:

```

2023 \def\@linkcolor{red}
2024 \def\@anchorcolor{black}
2025 \def\@citecolor{green}
2026 \def\@filecolor{cyan}
2027 \def\@urlcolor{magenta}
2028 \def\@menucolor{red}
2029 \def\@pagecolor{red}
2030 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2031 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2032 \let\@baseurl\@empty
2033 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2034 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2035 \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.

```

2036 \let\pdfpagetransition\relax
2037 \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.

```

2038 \let\pdfpageduration\relax
2039 \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.

```

2040 \newif\ifHy@useHidKey
2041 \Hy@useHidKeyfalse
2042 \define@key{Hyp}{pdfpagehidden}[true]{%
2043   \Hy@boolkey{pdfpagehidden}{#1}%
2044   \ifHy@pdfpagehidden
2045     \global\Hy@useHidKeytrue
2046   \fi
2047 }

```

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).

```

2048 \def\Hy@ColorList{cite,file,link,menu,page,run,url}
2049 \@for\Hy@temp:=\Hy@ColorList\do{%
2050   \edef\Hy@temp{%

```

```

2051 \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2052 \noexpand\Hy@bordercolor{\Hy@temp}{##1}{ }%
2053 }%
2054 }%
2055 \Hy@temp
2056 }
2057 \def\Hy@bordercolor#1#2#3{%
2058 \begingroup
2059 \Hy@safe@activestrue
2060 \@ifundefined{XC@edef}{\edef}{\XC@edef}\x{#2}%
2061 \expandafter\Hy@CheckColorSpec\x#3#3\@nil{#1}{#2}%
2062 }
2063 \def\Hy@CheckColorSpec#1 #2 #3\@nil#4#5{%
2064 \ifx\#3\%
2065 \ifundefined{XC@bordercolor}{%
2066 \Hy@Warning{%
2067 Unsupported color specification (#4bordercolor).\MessageBreak
2068 Load package 'xcolor' (version >= 1.11) first.\MessageBreak
2069 Ignoring color specification%
2070 }%
2071 \endgroup
2072 }{%
2073 \endgroup
2074 \XC@bordercolor{#4}{#5}%
2075 }%
2076 \else
2077 \endgroup
2078 \@namedef{@#4bordercolor}{#5}%
2079 \fi
2080 }

2081 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2082 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2083 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2084 \def\Hy@setpdfborder{%
2085 \ifx\@pdfborder\@empty
2086 \else
2087 /Border[\@pdfborder]%
2088 \fi
2089 \ifx\@pdfborderstyle\@empty
2090 \else
2091 /BS<<\@pdfborderstyle>>%
2092 \fi
2093 }
2094 \define@key{Hyp}{pdfpagemode}{%
2095 \def\Hy@tempa{#1}%
2096 \ifx\Hy@tempa\@empty
2097 \let\@pdfpagemode\@empty
2098 \else
2099 \def\@pdfpagemode{/#1 }%
2100 \fi
2101 }
2102 \define@key{Hyp}{pdfnonfullscreenpagemode}{%
2103 \def\Hy@tempa{#1}%
2104 \ifx\Hy@tempa\@empty
2105 \let\@pdfnonfullscreenpagemode\@empty
2106 \else
2107 \def\@pdfnonfullscreenpagemode{/#1}%

```

```

2108 \fi
2109 }
2110 \define@key{Hyp}{pdfprintscaling}{%
2111 \def\Hy@tempa{#1}%
2112 \ifx\Hy@tempa\@empty
2113 \let\@pdfprintscaling\@empty
2114 \else
2115 \def\@pdfprintscaling{/#1}%
2116 \fi
2117 }
2118 \define@key{Hyp}{pdfusetitle}[true]{%
2119 \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2120 }
2121 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2122 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2123 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2124 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2125 \define@key{Hyp}{pdfcreationdate}{\pdfstringdef\@pdfcreationdate{#1}}
2126 \define@key{Hyp}{pdfmoddate}{\pdfstringdef\@pdfmoddate{#1}}
2127 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2128 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2129 \define@key{Hyp}{pdfview}{\calculatepdfview#1 \\\}
2130 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2131 \let\setpdflinkmargin\@gobble
2132 \def\calculatepdfview#1 #2\{%
2133 \def\@pdfview{#1}%
2134 \ifx\#2\%
2135 \def\@pdfviewparams{-32768}%
2136 \else
2137 \def\@pdfviewparams{#2}%
2138 \fi
2139 }
2140 \define@key{Hyp}{pdfstartpage}{\def\@pdfstartpage{#1}}
2141 \define@key{Hyp}{pdfstartview}{%
2142 \ifx\#1\%
2143 \def\@pdfstartview{}%
2144 \else
2145 \hypercalcbpdef\@pdfstartview{/#1}%
2146 \fi
2147 }
2148 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
2149 \define@key{Hyp}{pdftoolbar}[true]{%
2150 \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2151 }
2152 \define@key{Hyp}{pdfmenubar}[true]{%
2153 \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2154 }
2155 \define@key{Hyp}{pdfwindowui}[true]{%
2156 \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2157 }
2158 \define@key{Hyp}{pdffitwindow}[true]{%
2159 \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2160 }
2161 \define@key{Hyp}{pdfcenterwindow}[true]{%
2162 \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2163 }
2164 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%

```

```

2165 \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2166 }
2167 \define@key{Hyp}{pdfnewwindow}[true]{%
2168 \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2169 }
2170 \define@key{Hyp}{pdfpagelayout}{\def\pdf@pagelayout{#1}}
2171 \def\pdf@pagelayout{}
2172 \define@key{Hyp}{pdfpagelabels}[true]{%
2173 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2174 }
2175 \define@key{Hyp}{pdfescapeform}[true]{%
2176 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2177 }

```

Default values:

```

2178 \def\@linkbordercolor{1 0 0}
2179 \def\@urlbordercolor{0 1 1}
2180 \def\@menubordercolor{1 0 0}
2181 \def\@filebordercolor{0 .5 .5}
2182 \def\@runbordercolor{0 .7 .7}
2183 \def\@citebordercolor{0 1 0}
2184 \def\@pagebordercolor{1 1 0}
2185 \def\@pdfhighlight{/I}
2186 \def\@pdfpagemode{}
2187 \def\@pdfnonfullscreenpagemode{}
2188 \def\@pdfprintscaling{}
2189 \def\@pdftitle{}
2190 \def\@pdfauthor{}
2191 \let\@pdfproducer\relax
2192 \def\@pdfcreator{LaTeX with hyperref package}
2193 \def\@pdfcreationdate{}
2194 \def\@pdfmoddate{}
2195 \def\@pdfsubject{}
2196 \def\@pdfkeywords{}
2197 \def\@pdfpagescrop{}
2198 \def\@pdfstartview{/Fit }
2199 \def\@pdfstartpage{1}
2200 \let\PDF@SetupDoc\@empty
2201 \let\PDF@FinishDoc\@empty
2202 \let\phantomsection\@empty
2203 \@ifundefined{stockwidth}{%
2204 \edef\special@paper{\the\paperwidth,\the\paperheight}
2205 }{%
2206 \edef\special@paper{\the\stockwidth,\the\stockheight}
2207 }
2208 \begingroup
2209 \dimen@=\@ifundefined{stockheight}{\paperheight}{\stockheight}\relax
2210 \dimen@=0.99626401\dimen@
2211 \xdef\Hy@pageheight{\strip@pt\dimen@}
2212 \endgroup
2213 \def\HyInd@EncapChar{\\}
2214 \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.

```

2215 \let\hyper@normalise\ExecuteOptions

```

```

2216 \let\ExecuteOptions\hypersetup
2217 \Hy@RestoreCatcodes
2218 \InputIfFileExists{hyperref.cfg}{-}{-}
2219 \Hy@SetCatcodes
2220 \let\ExecuteOptions\hyper@normalise
2221 \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`.

```

2222 \RequirePackage{kvoptions}[2006/08/17]
      Add option tex4ht if package tex4ht is loaded.
2223 \@ifpackageloaded{tex4ht}{%
2224   \ifpackagewith{hyperref}{tex4ht}{-}{-}%
2225   \PassOptionsToPackage{tex4ht}{hyperref}%
2226 }%
2227 }{-}

2228 \let\ReadBookmarks\relax
2229 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2230 \AtBeginDocument{%
2231   \ifHy@draft
2232     \let\hyper@@anchor@gobble
2233     \gdef\hyper@link#1#2#3{#3}%
2234     \let\hyper@anchorstart@gobble
2235     \let\hyper@anchorend@empty
2236     \let\hyper@linkstart@gobbletwo
2237     \let\hyper@linkend@empty
2238     \def\hyper@linkurl#1#2{#1}%
2239     \def\hyper@linkfile#1#2#3{#1}%
2240     \def\Acrobatmenu#1#2{#2}%
2241     \let\PDF@SetupDoc@empty
2242     \let\PDF@FinishDoc@empty
2243     \let\@fifthoffive\@secondoftwo
2244     \let\@secondoffive\@secondoftwo
2245     \let\ReadBookmarks\relax
2246     \let\WriteBookmarks\relax
2247     \Hy@WarningNoLine{ draft mode on}%
2248   \fi
2249   \Hy@DisableOption{draft}%
2250   \Hy@DisableOption{nolinks}%
2251   \Hy@DisableOption{final}%
2252 }%

```

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`.

```

2253 \ifx\HyPsd@InitUnicode\relax
2254   \define@key{Hyp}{unicode}[true]{%
2255     \Hy@boolkey{unicode}{#1}%
2256   }
2257 \else
2258   \define@key{Hyp}{unicode}[true]{%
2259     \Hy@boolkey{unicode}{#1}%
2260     \ifHy@unicode

```



```

2261      \Hy@WarningNoLine{Set package option ‘unicode’ first\MessageBreak
2262                          in order to load unicode support%
2263      }%
2264      \Hy@unicodedefalse
2265      \fi
2266  }
2267 \fi

```

The macro \HyPsd@InitUnicode is no longer needed.

```

2268 \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.

```

2269 \Hy@nextfalse
2270 \ifpackagewith{babel}{spanish}{\Hy@nexttrue}{}
2271 \ifpackagewith{babel}{galician}{\Hy@nexttrue}{}
2272 \ifpackagewith{babel}{estonian}{\Hy@nexttrue}{}
2273 \ifHy@next
2274   \let\texttilde\~%
2275 \fi

2276 \ifHy@figures
2277   \Hy@Info{Hyper figures ON}
2278 \else
2279   \Hy@Info{Hyper figures OFF}
2280 \fi

2281 \ifHy@nesting
2282   \Hy@Info{Link nesting ON}
2283 \else
2284   \Hy@Info{Link nesting OFF}
2285 \fi

2286 \ifHy@hyperindex
2287   \Hy@Info{Hyper index ON}
2288 \else
2289   \Hy@Info{Hyper index OFF}
2290 \fi

2291 \ifHy@plainpages
2292   \Hy@Info{Plain pages ON}
2293 \else
2294   \Hy@Info{Plain pages OFF}
2295 \fi

2296 \ifHy@backref
2297   \Hy@Info{Backreferencing ON}
2298 \else
2299   \Hy@Info{Backreferencing OFF}
2300 \fi

2301 \ifHy@typexml
2302   \AtEndOfPackage{\RequirePackage{color}\RequirePackage{nameref}}
2303 \fi
2304 \Hy@DisableOption{typexml}
2305 \ifHy@implicit
2306   \typeout{Implicit mode ON; LaTeX internals redefined}%
2307 \else
2308   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
2309   \def\MaybeStopEarly{%
2310     \typeout{Hyperref stopped early}%

```

```

2311 \AfterBeginDocument{\PDF@FinishDoc}%
2312 \endinput
2313 }%
2314 \AtBeginDocument{%
2315 \let\autoref\ref
2316 \ifx\@pdfpagemode\@empty
2317 \gdef\@pdfpagemode{/UseNone}%
2318 \fi
2319 \global\Hy@backreffalse
2320 }%
2321 \AtEndOfPackage{%
2322 \global\let\ReadBookmarks\relax
2323 \global\let\WriteBookmarks\relax
2324 }%
2325 \fi
2326 \Hy@DisableOption{implicit}

```

15.1.1 Driver loading

```

2327 \AtEndOfPackage{%
2328 \@ifpackageloaded{tex4ht}{%
2329 \def\Hy@driver{htex4ht}%
2330 \Hy@texhttrue
2331 }{}%
2332 \ifx\Hy@driver\@empty
2333 \providecommand*{\Hy@defaultdriver}{hypertex}%
2334 \begingroup\expandafter\expandafter\expandafter\endgroup
2335 \expandafter\ifx\csname pdfoutput\endcsname\relax
2336 \begingroup\expandafter\expandafter\expandafter\endgroup
2337 \expandafter\ifx\csname OpMode\endcsname\relax
2338 \let\Hy@driver\Hy@defaultdriver
2339 \else
2340 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2341 \def\Hy@driver{hvtex}%
2342 \def\XR@ext{pdf}%
2343 \else
2344 \ifnum\OpMode=10\relax
2345 \def\XR@ext{htm}%
2346 \def\Hy@driver{hvtexhtm}%
2347 \def\MaybeStopEarly{%
2348 \typeout{Hyperref stopped early}%
2349 \AfterBeginDocument{\PDF@FinishDoc}%
2350 \endinput
2351 }%
2352 \else
2353 \let\Hy@driver\Hy@defaultdriver
2354 \fi
2355 \fi
2356 \fi
2357 \else
2358 \ifnum\pdfoutput<1 %
2359 \let\Hy@driver\Hy@defaultdriver
2360 \else
2361 \def\Hy@driver{hpdfTeX}%
2362 \def\XR@ext{pdf}%
2363 \PassOptionsToPackage{pdfTeX}{color}%
2364 \Hy@breaklinkstrue

```

```

2365     \fi
2366     \fi
2367     \ifx\Hy@driver\Hy@defaultdriver
2368     \def\Hy@temp{hdvips}%
2369     \ifx\Hy@temp\Hy@driver
2370     \def\Hy@raisedlink{}%
2371     \def\XR@ext{pdf}%
2372     \fi
2373     \def\Hy@temp{hdvipdfm}%
2374     \ifx\Hy@temp\Hy@driver
2375     \def\XR@ext{pdf}%
2376     \Hy@breaklinkstrue
2377     \fi
2378     \def\Hy@temp{hdviwind}%
2379     \ifx\Hy@temp\Hy@driver
2380     \setkeys{Hyp}{colorlinks}%
2381     \PassOptionsToPackage{dviwindo}{color}%
2382     \fi
2383     \def\Hy@temp{hdvipson}%
2384     \ifx\Hy@temp\Hy@driver
2385     \def\XR@ext{pdf}%
2386     \def\Hy@raisedlink{}%
2387     \fi
2388     \def\Hy@temp{textures}%
2389     \ifx\Hy@temp\Hy@driver
2390     \def\XR@ext{pdf}%
2391     \fi
2392     \fi
2393     \typeout{*hyperref using default driver \Hy@driver*}%
2394 \else
2395     \typeout{*hyperref using driver \Hy@driver*}%
2396 \fi
2397 \input{\Hy@driver.def}%
2398 \let\@unprocessedoptions\relax
2399 \Hy@RestoreCatcodes
2400 }
2401 \Hy@DisableOption{tex4ht}
2402 \Hy@DisableOption{pdftex}
2403 \Hy@DisableOption{dvipdf}
2404 \Hy@DisableOption{nativepdf}
2405 \Hy@DisableOption{dvipdfm}
2406 \Hy@DisableOption{pdfmark}
2407 \Hy@DisableOption{dvips}
2408 \Hy@DisableOption{hypertex}
2409 \Hy@DisableOption{vtex}
2410 \Hy@DisableOption{vtexpdfmark}
2411 \Hy@DisableOption{dviwindo}
2412 \Hy@DisableOption{dvipsone}
2413 \Hy@DisableOption{textures}
2414 \Hy@DisableOption{latex2html}
2415 \Hy@DisableOption{ps2pdf}

```

15.1.2 Bookmarks

```

2416 \def\WriteBookmarks{0}
2417 \def\@bookmarkopenstatus#1{%
2418   \ifHy@bookmarksopen

```

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

```

2419 \ifnum#1<\expandafter\@firstofone\expandafter
2420      {\number\@bookmarkopenlevel} % explicit space
2421 \else
2422     -%
2423 \fi
2424 \else
2425     -%
2426 \fi
2427 }
2428 \ifHy@bookmarks
2429 \Hy@Info{Bookmarks ON}%
2430 \ifx\@pdfpagemode\@empty
2431 \def\@pdfpagemode{/UseOutlines }%
2432 \fi
2433 \else
2434 \def\@bookmarkopenstatus#1{%
2435 \Hy@Info{Bookmarks OFF}%
2436 \AtEndOfPackage{%
2437 \global\let\ReadBookmarks\relax
2438 \global\let\WriteBookmarks\relax
2439 }
2440 \ifx\@pdfpagemode\@empty
2441 \def\@pdfpagemode{/UseNone}%
2442 \fi
2443 \fi
2444 \Hy@DisableOption{bookmarks}

```

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

```

2445 \AtBeginDocument{%
2446 \ifHy@colorlinks
2447 \ifHy@typexml\else\RequirePackage{color}\fi
2448 \def\Hy@colorlink#1{%
2449 \begingroup
2450 \expandafter\Hy@colorscan\expandafter#1#1\@nil%
2451 }%
2452 \def\Hy@colorscan#1{%
2453 \@ifnextchar[% ]
2454 {%
2455 \Hy@colorscan
2456 }{%
2457 \expandafter\color\expandafter#1\@car{}%
2458 }%
2459 }%
2460 \def\Hy@@colorscan#1\@nil{\color#1}%
2461 \def\Hy@endcolorlink{\endgroup}%
2462 \Hy@Info{Link coloring ON}%
2463 \else
2464 \ifHy@frenchlinks
2465 \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
2466 \def\Hy@endcolorlink{\endgroup}%
2467 \Hy@Info{French linking ON}%
2468 \else

```

for grouping consistency:

```

2469 \def\Hy@colorlink#1{\begingroup}%
2470 \def\Hy@endcolorlink{\endgroup}%
2471 \Hy@Info{Link coloring OFF}%

```

```

2472 \fi
2473 \fi
2474 \Hy@DisableOption{colorlinks}%
2475 \Hy@DisableOption{frenchlinks}%
2476 \ifHy@texht
2477 \long\def\@firstoffive#1#2#3#4#5{#1}%
2478 \long\def\@secondoffive#1#2#3#4#5{#2}%
2479 \long\def\@thirdoffive#1#2#3#4#5{#3}%
2480 \long\def\@fourthoffive#1#2#3#4#5{#4}%
2481 \long\def\@fifthoffive#1#2#3#4#5{#5}%
2482 \providecommand*\@safe@activestruer{}%
2483 \providecommand*\@safe@activesfaler{}%
2484 \def\T@ref#1{%
2485 \Hy@safe@activestruer
2486 \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
2487 \Hy@safe@activesfaler
2488 }%
2489 \def\T@pageref#1{%
2490 \Hy@safe@activestruer
2491 \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
2492 \Hy@safe@activesfaler
2493 }%
2494 \else
2495 \ifHy@typexml\else\RequirePackage{nameref}\fi
2496 \fi
2497 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
2498 \DeclareRobustCommand\pageref{%
2499 \@ifstar\@pagerefstar\T@pageref
2500 }%
2501 }
2502 \AfterBeginDocument{%
2503 \ifHy@texht
2504 \else
2505 \ReadBookmarks
2506 \fi
2507 }
2508 \ifHy@backref
2509 \RequirePackage{backref}
2510 \else
2511 \let\Hy@backout\@gobble
2512 \fi
2513 \Hy@DisableOption{backref}
2514 \Hy@DisableOption{pagebackref}
2515 \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.

```

2516 \begingroup
2517 \endlinechar=-1
2518 \catcode'\^M\active

```

```

2519 \catcode'\% \active
2520 \catcode'\# \active
2521 \catcode'\_ \active
2522 \catcode'\$ \active
2523 \gdef\hyper@normalise{
2524   \begingroup
2525   \catcode'\^ \active
2526   \def^^M{ }
2527   \catcode'\% \active
2528   \let%\@percentchar
2529   \let%\_ \active
2530   \catcode'\# \active
2531   \def#{\hyper@hash}
2532   \def\#{\hyper@hash}
2533   \@makeother\&
2534   \edef\textunderscore{\string_}
2535   \let\_ \textunderscore
2536   \catcode'\_ \active
2537   \let\_ \textunderscore
2538   \let~\hyper@tilde
2539   \let\~ \hyper@tilde
2540   \let\textasciitilde\hyper@tilde
2541   \let\\\@backslashchar
2542   \edef$\{\string$}
2543   \Hy@safe@activetrue
2544   \hyper@n@rmalise
2545 }
2546 \catcode'\#=6
2547 \gdef\hyper@n@rmalise#1#2{
2548   \edef\Hy@tempa{
2549     \endgroup
2550     \noexpand#1{\Hy@RemovePercentCr#2%\^M\@nil}
2551   }
2552   \Hy@tempa
2553 }
2554 \gdef\Hy@RemovePercentCr#1%\^M#2\@nil{
2555   #1
2556   \ifx\limits#2\limits
2557   \else
2558     \Hy@ReturnAfterFi{
2559       \Hy@RemovePercentCr #2\@nil
2560     }
2561   \fi
2562 }
2563 \endgroup
2564 \providecommand\hyper@chars{%
2565   \let\#\hyper@hash
2566   \let%\@percentchar
2567 }
2568 \def\hyperlink#1#2{%
2569   \hyper@@link-{-{#1}-{#2}%
2570 }
2571 \DeclareRobustCommand*\href{-{\hyper@normalise\href@}
2572 \begingroup
2573   \catcode'\$=6
2574   \catcode'\#=12
2575   \gdef\href@#1{\expandafter\href@split$1##\}}

```

```

2576 \gdef\href@split$1#$2#$3\{\%
2577 \hyper@@link{$1}{$2}%
2578 }
2579 \endgroup

```

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

```

2580 \RequirePackage{url}
2581 \let\HyOrg@url\url
2582 \def\Hurl{\begingroup \Url}
2583 \let\nolinkurl\Hurl
2584 \DeclareRobustCommand*{\url}{\hyper@normalise\url@}
2585 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

2586 \DeclareRobustCommand*{\hyperimage}{\hyper@normalise\hyper@image}
2587 \providecommand\hyper@image[2]{#2}

2588 \def\hypertarget#1#2{\%
2589 \ifHy@nesting
2590 \hyper@@anchor{#1}{#2}%
2591 \else
2592 \hyper@@anchor{#1}{\relax}#2%
2593 \fi
2594 }

```

`\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.

```

2595 \DeclareRobustCommand*{\hyperref}{\%
2596 \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
2597 }
2598 \def\Hy@babelnormalise#1[#2]{\%
2599 \begingroup
2600 \Hy@safe@activestrue
2601 \edef\Hy@tempa{\%
2602 \endgroup
2603 \noexpand#1[#2]}%
2604 }%
2605 \Hy@tempa
2606 }
2607 \def\@hyperref{\hyper@normalise\@hyperref}
2608 \def\@hyperref#1#2#3{\%
2609 \edef\ref@one{\ifx\#2\else#2.\fi#3}%
2610 \expandafter\tryhyper@link\ref@one\{#1}%
2611 }
2612 \def\tryhyper@link#1\#2{\%
2613 \hyper@@link{#2}{#1}%
2614 }

2615 \def\hyperdef{\@ifnextchar[{\label@hyperdef}\@hyperdef}}
2616 \def\@hyperdef#1#2#3{\%, category, name, text
2617 \ifHy@nesting
2618 \hyper@@anchor{#1.#2}{#3}%
2619 \else
2620 \hyper@@anchor{#1.#2}{\relax}#3%
2621 \fi
2622 }

```

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.

```

2623 \def\label@hyperref[#1]{%
2624   \expandafter\label@hyperref\csname r@#1\endcsname{#1}%
2625 }%
2626 \def\label@@hyperref#1#2#3{%
2627   \ifx#1\relax
2628     \protect\G@refundefinedtrue
2629     \latex@warning{%
2630       Hyper reference ‘#2’ on page \thepage \space undefined%
2631     }%
2632     \hyper@@link{}{??}{#3}%
2633   \else
2634     \hyper@@link{\expandafter\@fifthoffive#1}%
2635     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
2636   \fi
2637 }
2638 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
2639                               % anchor text
2640   \@bsphack
2641   \if@filesw
2642     \protected@write\@auxout{%
2643       {\string\newlabel{#1}{#2}{#3}{#4}{#2.#3}}%
2644     \fi
2645   \@esphack
2646   \ifHy@nesting
2647     \hyper@@anchor{#2.#3}{#4}%
2648   \else
2649     \hyper@@anchor{#2.#3}{\relax}#4%
2650   \fi
2651 }

```

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, its an internal link, otherwise we need to open another file or a URL. A link start has a type, and a URL.

```

2652 \def\hyper@@link{\let\Hy@reserved@a\relax
2653   \ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
2654 }
2655 \def\hyper@link@[#1]#2#3#4{%
2656   \begingroup
2657   \protected@edef\Hy@tempa{#2}%
2658   \Hy@safe@activestrue
2659   \edef\x{#3}%
2660   \ifx\Hy@tempa\@empty
2661     \toks0{\hyper@link{#1}}%
2662   \else
2663     \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
2664   \fi
2665   \toks1{{#4}}%
2666   \edef\x{\endgroup
2667     \the\toks0 {\x}\the\toks1 %
2668   }%
2669   \x

```



```
2670 }
```

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.

```
2671 \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.

```
2672 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1::\#{#1}%  
2673 }
```

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

```
2674 \def\@pdftempwordfile{file}%  
2675 \def\@pdftempwordrun{run}%  
2676 \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:

```
2677 \ifx\|#6\|  
2678 \expandafter\@hyper@linkfile file:#7\#{#3}{#2}%  
2679 \else  
2680 \ifx\|#4\|  
2681 \expandafter\@hyper@linkfile file:#7\#{#3}{#2}%  
2682 \else
```

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

```
2683 \def\@pdftempa{#4}%  
2684 \ifx\@pdftempa\@pdftempwordfile  
2685 \expandafter\@hyper@linkfile#7\#{#3}{#2}%  
2686 \else
```

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

```
2687 \ifx\@pdftempa\@pdftempwordrun  
2688 \expandafter\@hyper@launch#7\#{#3}{#2}%  
2689 \else
```

otherwise its a URL

```
2690 \hyper@linkurl{#3}{#7\ifx\|#2\|\else\hyper@hash#2\fi}%  
2691 \fi  
2692 \fi  
2693 \fi  
2694 \fi  
2695 }
```

By default, turn run: into file:

```
2696 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
2697   \hyper@linkurl{#2}{\Hy@linkfileprefix#1\ifx\#3\\\else\hyper@hash#3\fi}%
2698 }
```

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

```
2699 \def\@hyper@linkfile file:#1\#2#3{%
2700   %file url,link string, name
2701   \filename@parse{#1}%
2702   \ifx\filename@ext\relax
2703     \edef\filename@ext{\XR@ext}%
2704   \fi
2705   \def\use@file{\filename@area\filename@base.\filename@ext}%
2706   \ifx\filename@ext\XR@ext
2707     \hyper@linkfile{#2}{\use@file}{#3}%
2708   \else
2709     \ifx\@baseurl\@empty
2710       \hyper@linkurl{#2}{%
2711         \Hy@linkfileprefix\use@file\ifx\#3\\\else\hyper@hash#3\fi
2712       }%
2713     \else
2714       \hyper@linkurl{#2}{\use@file\ifx\#3\\\else\hyper@hash#3\fi}%
2715     \fi
2716   \fi
2717 }
```

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.

```
2718 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
2719 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
2720   \ifx\#1\%
2721     #2\Hy@WarningNoLine{empty link? #1: #2#3}%
2722   \else
2723     \def\anchor@spot{#2#3}%
2724     \let\put@me@back\@empty
2725     \ifx\relax#2\relax
2726     \else
2727       \ifHy@nesting
2728       \else
2729         \ifcat a\noexpand#2\relax
2730         \else
2731           \ifcat O\noexpand#2 \relax
2732           \else
2733             \typeout{Anchor start is not alphanumeric %
2734               on input line\the\inputlineno%
2735             }%
2736             \let\anchor@spot\@empty
2737             \def\put@me@back{#2#3}%
2738           \fi
2739         \fi
2740       \fi
```

```

2741 \fi
2742 \ifHy@activeanchor
2743 \anchor@spot
2744 \else
2745 \hyper@anchor{#1}%
2746 \fi
2747 \expandafter\put@me@back
2748 \fi
2749 \let\anchor@spot\@empty
2750 }

```

18 Compatibility with the *LT_EX2html* package

Map our macro names on to Nikos', so that documents prepared for that system will work without change.

Note, however, that the whole complicated structure for segmenting documents is not supported; it is assumed that the user will load `html.sty` first, and then `hyperref.sty`, so that the definitions in `html.sty` take effect, and are then overridden in a few circumstances by this package.

```

2751 \let\htmladding\hyperimage
2752 \def\htmladdnormallink#1#2{\href{#2}{#1}}
2753 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
2754 \def\htmlref#1#2{% anchor text, label
2755 \label@hyperref[{#2}]{#1}%
2756 }

```

This is really too much. The *LT_EX2html* package defines its own `\hyperref` command, with a different syntax. Was this always here? Its weird, anyway. We interpret it in the 'printed' way, since we are about fidelity to the page.

```

2757 \def\@latextohtmlX{%
2758 \let\hhyperref\hyperref
2759 \def\hyperref##1##2##3##4{% anchor text for HTML
2760 % text to print before label in print
2761 % label
2762 % post-label text in print
2763 ##2\ref{##4}##3%
2764 }%
2765 }

```

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.

```

2766 \newif\ifFld@checked
2767 \newif\ifFld@hidden
2768 \newif\ifFld@multiline
2769 \newif\ifFld@readonly
2770 \newif\ifFld@disabled
2771 \newif\ifFld@password
2772 \newif\ifFld@radio
2773 \newif\ifFld@combo
2774 \newif\ifFld@popdown

```

```

2775 \Fld@multilinefalse
2776 \Fld@checkedfalse
2777 \Fld@hiddenfalse
2778 \Fld@readonlyfalse
2779 \Fld@disabledfalse
2780 \Fld@radiofalse
2781 \Fld@combofalse
2782 \Fld@popdownfalse
2783 \Fld@passwordfalse
2784 \newcount\Fld@menulength
2785 \newdimen\Field@Width
2786 \newdimen\Fld@charsize
2787 \Fld@charsize=10\p@
2788 \def\Fld@maxlen{0}
2789 \def\Fld@align{0}
2790 \def\Fld@color{0 0 0}
2791 \def\Fld@bcolor{1 1 1}
2792 \def\Fld@bordercolor{1 0 0}
2793 \def\Fld@bordersep{1\p@}
2794 \def\Fld@borderwidth{1}
2795 \def\Fld@borderstyle{S}
2796 \def\Fld@cbsymbol{4}
2797 \newtoks\Choice@toks
2798 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
2799 \def\endForm{\@endForm}
2800 \newif\ifForm@html
2801 \Form@htmlfalse
2802 \def\Form@boolkey#1#2{%
2803   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2804 }
2805 \define@key{Form}{action}{%
2806   \hyper@normalise\Hy@DefFormAction{#1}%
2807 }
2808 \def\Hy@DefFormAction{\def\Form@action}
2809 \def\enc@@html{html}
2810 \define@key{Form}{encoding}{%
2811   \def\Hy@tempa{#1}%
2812   \ifx\Hy@tempa\enc@@html
2813     \Form@htmltrue
2814   \else
2815     \typeout{hyperref: form 'encoding' key set to #1 %
2816       -- unknown type%
2817     }%
2818     \Form@htmlfalse
2819   \fi
2820 }
2821 \define@key{Form}{method}{%
2822   \def\Form@method{#1}%
2823 }
2824 \def\Form@method{}
2825 \def\Field@boolkey#1#2{%
2826   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2827 }
2828 \newtoks\Field@toks
2829 \Field@toks={ }%
2830 \def\Field@addtoks#1#2{%
2831   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%

```

```

2832 \@processme
2833 }
2834 \def\Fld@checkequals#1=#2=#3\{\%
2835 \def\@currDisplay{#1}%
2836 \ifx\#2\%
2837 \def\@currValue{#1}%
2838 \else
2839 \def\@currValue{#2}%
2840 \fi
2841 }
2842 \define@key{Field}{loc}{\%
2843 \def\Fld@loc{#1}%
2844 }
2845 \define@key{Field}{multiline}[true]{\%
2846 \lowercase{\Field@boolkey{#1}}{multiline}%
2847 }
2848 \define@key{Field}{checked}[true]{\%
2849 \lowercase{\Field@boolkey{#1}}{checked}%
2850 }
2851 \define@key{Field}{hidden}[true]{\%
2852 \lowercase{\Field@boolkey{#1}}{hidden}%
2853 }
2854 \define@key{Field}{readonly}[true]{\%
2855 \lowercase{\Field@boolkey{#1}}{readonly}%
2856 }
2857 \define@key{Field}{disabled}[true]{\%
2858 \lowercase{\Field@boolkey{#1}}{disabled}%
2859 }
2860 \define@key{Field}{password}[true]{\%
2861 \lowercase{\Field@boolkey{#1}}{password}%
2862 }
2863 \define@key{Field}{radio}[true]{\%
2864 \lowercase{\Field@boolkey{#1}}{radio}%
2865 }
2866 \define@key{Field}{combo}[true]{\%
2867 \lowercase{\Field@boolkey{#1}}{combo}%
2868 }
2869 \define@key{Field}{popdown}[true]{\%
2870 \lowercase{\Field@boolkey{#1}}{popdown}%
2871 }
2872 \define@key{Field}{accesskey}{\%
2873 \Field@addtoks{accesskey}{#1}%
2874 }
2875 \define@key{Field}{tabkey}{\%
2876 \Field@addtoks{tabkey}{#1}%
2877 }
2878 \define@key{Field}{name}{\%
2879 \def\Fld@name{#1}%
2880 }
2881 \define@key{Field}{width}{\%
2882 \def\Fld@width{#1}%
2883 \Field@Width#1\setbox0=\hbox{m}%
2884 }
2885 \define@key{Field}{maxlen}{\%
2886 \def\Fld@maxlen{#1}%
2887 }
2888 \define@key{Field}{menulength}{\%

```

```

2889 \Fld@menulength=#1\relax
2890 }
2891 \define@key{Field}{height}{%
2892 \def\Fld@height{#1}%
2893 }
2894 \define@key{Field}{charsize}{%
2895 \Fld@charsize#1%
2896 }
2897 \define@key{Field}{fillcolor}{%
2898 \def\Fld@fillcolor{#1}%
2899 }
2900 \define@key{Field}{bordercolor}{%
2901 \def\Fld@bordercolor{#1}%
2902 }
2903 \define@key{Field}{color}{%
2904 \def\Fld@color{#1}%
2905 }
2906 \define@key{Field}{borderwidth}{%
2907 \def\Fld@borderwidth{#1}%
2908 }
2909 \define@key{Field}{borderstyle}{%
2910 \def\Fld@borderstyle{#1}%
2911 }
2912 \define@key{Field}{bordersep}{%
2913 \def\Fld@bordersep{#1}%
2914 }
2915 \define@key{Field}{default}{%
2916 \def\Fld@default{#1}%
2917 }
2918 \define@key{Field}{align}{%
2919 \def\Fld@align{#1}%
2920 }
2921 \define@key{Field}{value}{%
2922 \def\Fld@value{#1}%
2923 }
2924 \define@key{Field}{backgroundcolor}{%
2925 \def\Fld@bcolor{#1}%
2926 }
2927 \define@key{Field}{checkboxsymbol}{%
2928 \def\Fld@cbsymbol{#1}%
2929 }
2930 \def\Fld@format@code{}
2931 \def\Fld@validate@code{}
2932 \def\Fld@calculate@code{}
2933 \def\Fld@keystroke@code{}
2934 \def\Fld@onfocus@code{}
2935 \def\Fld@onblur@code{}
2936 \def\Fld@onmousedown@code{}
2937 \def\Fld@onmouseup@code{}
2938 \def\Fld@onenter@code{}
2939 \def\Fld@onexit@code{}
2940 \define@key{Field}{keystroke}{%
2941 \def\Fld@keystroke@code{#1}%
2942 }
2943 \define@key{Field}{format}{%
2944 \def\Fld@format@code{#1}%
2945 }

```

```

2946 \define@key{Field}{validate}{%
2947   \def\Fld@validate@code{#1}%
2948 }
2949 \define@key{Field}{calculate}{%
2950   \def\Fld@calculate@code{#1}%
2951 }
2952 \define@key{Field}{onfocus}{%
2953   \def\Fld@onfocus@code{#1}%
2954 }
2955 \define@key{Field}{onblur}{%
2956   \def\Fld@onblur@code{#1}%
2957 }
2958 \define@key{Field}{onenter}{%
2959   \def\Fld@onenter@code{#1}%
2960 }
2961 \define@key{Field}{onexit}{%
2962   \def\Fld@onexit@code{#1}%
2963 }
2964 \define@key{Field}{onselect}{%
2965   \Field@addtoks{onselect}{#1}%
2966 }
2967 \define@key{Field}{onchange}{%
2968   \Field@addtoks{onchange}{#1}%
2969 }
2970 \define@key{Field}{onclick}{%
2971   \def\Fld@onclick{#1}%
2972   \Field@addtoks{onclick}{#1}%
2973 }
2974 \define@key{Field}{ondblclick}{%
2975   \Field@addtoks{ondblclick}{#1}%
2976 }
2977 \define@key{Field}{onmousedown}{%
2978   \Field@addtoks{onmousedown}{#1}%
2979 }
2980 \define@key{Field}{onmouseup}{%
2981   \Field@addtoks{onmouseup}{#1}%
2982 }
2983 \define@key{Field}{onmouseover}{%
2984   \Field@addtoks{onmouseover}{#1}%
2985 }
2986 \define@key{Field}{onmousemove}{%
2987   \Field@addtoks{onmousemove}{#1}%
2988 }
2989 \define@key{Field}{onmouseout}{%
2990   \Field@addtoks{onmouseout}{#1}%
2991 }
2992 \define@key{Field}{onkeypress}{%
2993   \Field@addtoks{onkeypress}{#1}%
2994 }
2995 \define@key{Field}{onkeydown}{%
2996   \Field@addtoks{onkeydown}{#1}%
2997 }
2998 \define@key{Field}{onkeyup}{%
2999   \Field@addtoks{onkeyup}{#1}%
3000 }
3001 %
3002 \DeclareRobustCommand\TextField{%

```

```

3003 \@ifnextchar[{\@TextField}{\@TextField[]}%
3004 }
3005 \DeclareRobustCommand\ChoiceMenu{%
3006 \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
3007 }
3008 \DeclareRobustCommand\CheckBox{%
3009 \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
3010 }
3011 \DeclareRobustCommand\PushButton{%
3012 \@ifnextchar[{\@PushButton}{\@PushButton[]}%
3013 }
3014 \DeclareRobustCommand\Gauge{%
3015 \@ifnextchar[{\@Gauge}{\@Gauge[]}%
3016 }
3017 \DeclareRobustCommand\Submit{%
3018 \@ifnextchar[{\@Submit}{\@Submit[]}%
3019 }
3020 \DeclareRobustCommand\Reset{%
3021 \@ifnextchar[{\@Reset}{\@Reset[]}%
3022 }
3023 \def\LayoutTextField#1#2{% label, field
3024 #1 #2%
3025 }
3026 \def\LayoutChoiceField#1#2{% label, field
3027 #1 #2%
3028 }
3029 \def\LayoutCheckField#1#2{% label, field
3030 #1 #2%
3031 }
3032 \def\LayoutPushButtonField#1{% button
3033 #1%
3034 }
3035 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3036 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3037 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3038 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3039 \def\MakeButtonField#1{%
3040 \sbox0{%
3041 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
3042 }%
3043 \@tempdima\ht0
3044 \advance\@tempdima by \Fld@borderwidth bp
3045 \advance\@tempdima by \Fld@borderwidth bp
3046 \ht0\@tempdima
3047 \@tempdima\dp0
3048 \advance\@tempdima by \Fld@borderwidth bp
3049 \advance\@tempdima by \Fld@borderwidth bp
3050 \dp0\@tempdima
3051 \box0\relax
3052 }
3053 \def\DefaultHeightofSubmit{14pt}
3054 \def\DefaultWidthofSubmit{2cm}
3055 \def\DefaultHeightofReset{14pt}
3056 \def\DefaultWidthofReset{2cm}
3057 \def\DefaultHeightofCheckBox{\baselineskip}
3058 \def\DefaultWidthofCheckBox{\baselineskip}
3059 \def\DefaultHeightofChoiceMenu{\baselineskip}

```



```

3060 \def\DefaultWidthofChoiceMenu{\baselineskip}
3061 \def\DefaultHeightofText{\baselineskip}
3062 \def\DefaultWidthofText{3cm}

```

20 Setup

```

3063 \ifHy@figures
3064   \Hy@Info{Hyper figures ON}
3065 \else
3066   \Hy@Info{Hyper figures OFF}
3067 \fi
3068 \ifHy@nesting
3069   \Hy@Info{Link nesting ON}
3070 \else
3071   \Hy@Info{Link nesting OFF}
3072 \fi
3073 \ifHy@hyperindex
3074   \Hy@Info{Hyper index ON}
3075 \else
3076   \Hy@Info{Hyper index OFF}
3077 \fi
3078 \ifHy@backref
3079   \Hy@Info{backreferencing ON}
3080 \else
3081   \Hy@Info{backreferencing OFF}
3082 \fi
3083 \ifHy@colorlinks
3084   \Hy@Info{Link coloring ON}
3085 \else
3086   \Hy@Info{Link coloring OFF}
3087 \fi

```

21 Low-level utility macros

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

```

3088 \edef\hyper@hash{\string#}
3089 \edef\hyper@tilde{\string~}
3090 \edef\hyper@quote{\string"}
3091 \let\@currentHref\@empty
3092 \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.

```

3093 \AfterBeginDocument{%
3094   \Hy@pdfstringtrue
3095   \PDF@SetupDoc
3096   \let\PDF@SetupDoc\@empty
3097   \Hy@DisableOption{pdfpagescrop}%
3098   \Hy@DisableOption{pdfpagemode}%
3099   \Hy@DisableOption{pdfnonfullscreenpagemode}%
3100   \Hy@DisableOption{pdfprintscaling}%
3101   \Hy@DisableOption{pdfstartview}%
3102   \Hy@DisableOption{pdfstartpage}%
3103   \Hy@DisableOption{pdftoolbar}%
3104   \Hy@DisableOption{pdfmenubar}%
3105   \Hy@DisableOption{pdfwindowui}%

```

```

3106 \Hy@DisableOption{pdffitwindow}%
3107 \Hy@DisableOption{pdfcenterwindow}%
3108 \Hy@DisableOption{pdfdisplaydoctitle}%
3109 \Hy@DisableOption{pdfpagelayout}%
3110 \Hy@DisableOption{baseurl}%
3111 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
3112 \Hy@pdfstringfalse
3113 }

```

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.

```

3114 \def\NoHyper{%
3115   \def\hyper@link@{##1}##2##3##4{##4}%
3116   \def\hyper@@anchor##1{%
3117     \global\let\hyper@livelink\hyper@link
3118     \gdef\hyper@link##1##2##3{##3}%
3119     \def\hyper@anchorstart##1{%
3120       \let\hyper@anchorend\@empty
3121       \def\hyper@linkstart##1##2{%
3122         \let\hyper@linkend\@empty
3123         \def\hyper@linkurl##1##2{##1}%
3124         \def\hyper@linkfile##1##2##3{##1}%
3125         \let\Hy@backout\@gobble
3126       }
3127       \def\stop@hyper{%
3128         \def\hyper@link@{##1}##2##3##4{##4}%
3129         \let\Hy@backout\@gobble
3130         \def\hyper@@anchor##1{%
3131           \def\hyper@link##1##2##3{##3}%
3132           \def\hyper@anchorstart##1{%
3133             \let\hyper@anchorend\@empty
3134             \def\hyper@linkstart##1##2{%
3135               \let\hyper@linkend\@empty
3136               \def\hyper@linkurl##1##2{##1}%
3137               \def\hyper@linkfile##1##2##3{##1}%
3138             }
3139             \def\endNoHyper{%
3140               \global\let\hyper@link\hyper@livelink
3141             }
3142           }
3143         }

```

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:

```

3143 \nohyperref

```

```

3144 \let\hyper@@anchor\@gobble
3145 \def\hyper@link#1#2#3{#3}%
3146 \let\hyper@anchorstart\@gobble
3147 \let\hyper@anchorend\@empty
3148 \let\hyper@linkstart\@gobbletwo
3149 \let\hyper@linkend\@empty
3150 \def\hyper@linkurl#1#2{#1}%
3151 \def\hyper@linkfile#1#2#3{#1}%
3152 \let\PDF@SetupDoc\@empty
3153 \let\PDF@FinishDoc\@empty

```

Some top-level commands:

```

3154 \let\Acrobatmenu\@gobble
3155 \let\pdfstringdefDisableCommands\@gobbletwo
3156 \let\texorpdfstring\@firstoftwo
3157 \let\pdfbookmark\@undefined
3158 \newcommand\pdfbookmark[3][]{\@gobble}
3159 \let\phantomsection\@empty
3160 \let\hypersetup\@gobble
3161 \let\hyperbaseurl\@gobble
3162 \let\href\@gobble
3163 \let\hyperdef\@gobbletwo
3164 \let\hyperlink\@gobble
3165 \let\hypertarget\@gobble
3166 \def\hyperref{\@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}}
3167 \long\def\@gobbleopt[#1]{\@gobble}
3168 \let\hyperpage\@empty
3169 \</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}`

```

3170 \<package>
3171 \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.

```

3172 \if@filesw
3173 \ifHy@typexml
3174 \immediate\closeout\@mainaux
3175 \immediate\openout\@mainaux\jobname.aux
3176 \immediate\write\@auxout{<relaxxml>\relax}%
3177 \fi
3178 \immediate\write\@auxout{%
3179 \string\ifx\string\hyper@anchor\string\@undefined^^J%
3180 \global\let\string\oldcontentsline\string\contentsline^^J%
3181 \gdef\string\contentsline%
3182 \string#1\string#2\string#3\string#4{%
3183 \string\oldcontentsline%
3184 {\string#1}{\string#2}{\string#3}}^^J%
3185 \global\let\string\oldnewlabel\string\newlabel^^J%
3186 \gdef\string\newlabel\string#1\string#2{%
3187 \string\newlabelxx{\string#1}\string#2}^^J%

```

```

3188     \gdef\string\newlabelxx%
3189         \string#1\string#2\string#3\string#4\string#5\string#6{%
3190         \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.

```

3191     \string\AtEndDocument{%
3192         \let\string\contentsline\string\oldcontentsline^^J%
3193         \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.

```

3194     \string\else^^J%
3195     \global\let\string\hyper@last\relax^^J%
3196     \string\fi^^J%
3197 }%
3198 \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.

```

3199 \ifx\hyper@last\@undefined
3200   \def\@starttoc#1{%
3201     \begingroup
3202     \makeatletter
3203     \IfFileExists{\jobname.#1}{%
3204       \Hy@WarningNoLine{%
3205         old #1 file detected, not used; run LaTeX again%
3206       }%
3207     }{%
3208       \if@filesw
3209         \expandafter\newwrite\csname tf@#1\endcsname
3210         \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
3211       \fi
3212       \@nobreakfalse
3213     \endgroup
3214   }%
3215   \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
3216 \fi
3217 }

```

25 Title strings

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

```

3218 \ifHy@usetitle
3219   \let\HyOrg@title\title
3220   \let\HyOrg@author\author
3221   \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
3222   \def\Hy@scanopttitle[#1]{%
3223     \gdef\Hy@title{#1}%
3224     \HyOrg@title[#1]%
3225   }%
3226   \def\Hy@scantitle#1{%

```

```

3227 \gdef\Hy@title{#1}%
3228 \HyOrg@title{#1}%
3229 }
3230 \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
3231 \def\Hy@scanoptauthor[#1]{%
3232 \gdef\Hy@author{#1}%
3233 \HyOrg@author[{#1}]%
3234 }%
3235 \def\Hy@scanauthor#1{%
3236 \gdef\Hy@author{#1}%
3237 \HyOrg@author{#1}%
3238 }

```

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.

```

3239 \begingroup
3240 \def\process@me#1\@nil#2{%
3241 \expandafter\let\expandafter\x\csname @#2\endcsname
3242 \edef\y{\expandafter\strip@prefix\meaning\x}%
3243 \def\c##1#1##2\@nil{%
3244 \ifx\\##1\\%
3245 \else
3246 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
3247 \expandafter{\x}%
3248 \fi
3249 }%
3250 \expandafter\c\y\relax#1\@nil
3251 }%
3252 \expandafter\process@me\string\@latex@\@nil{title}%
3253 \expandafter\process@me\string\@latex@\@nil{author}%
3254 \endgroup
3255 \fi
3256 \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.

```

3257 \def\Hy@UseMaketitleString#1{%
3258 \@ifundefined{Hy@#1}{-}{%
3259 \begingroup
3260 \let\Hy@saved@hook\pdfstringdefPreHook
3261 \pdfstringdefDisableCommands{%
3262 \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
3263 \let\newline\\%
3264 }%
3265 \expandafter\ifx\csname @pdf#1\endcsname\@empty
3266 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
3267 \csname Hy@#1\endcsname\@empty
3268 }%
3269 \fi
3270 \global\let\pdfstringdefPreHook\Hy@saved@hook

```

```

3271 \endgroup
3272 }%
3273 }
3274 \def\Hy@newline@title#1{ #1}
3275 \def\Hy@newline@author#1{, #1}
3276 \def\Hy@UseMaketitleInfos{%
3277 \Hy@UseMaketitleString{title}%
3278 \Hy@UseMaketitleString{author}%
3279 }

```

26 Page numbers

This stuff is done by Heiko Oberdiek.

26.1 PDF /PageLabels

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

```

3280 \ifHy@pagelabels

```

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

```

3281 \def\thispdfpagelabel#1{%
3282 \gdef\HyPL@thisLabel{#1}%
3283 }
3284 \global\let\HyPL@thisLabel\relax

```

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

```

3285 \def\HyPL@Labels{}

```

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

```

3286 \newcount\Hy@abspage
3287 \Hy@abspage=0

```

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

```

3288 \def\HyPL@LastType{init}%
3289 \def\HyPL@LastNumber{0}%
3290 \def\HyPL@LastPrefix{}%

```

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

```

3291 \def\HyPL@arabic{D}%
3292 \def\HyPL@Roman{R}%
3293 \def\HyPL@roman{r}%
3294 \def\HyPL@Alph{A}%
3295 \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.

```

3296 \def\HyPL@EveryPage{%
3297 \begingroup
3298 \ifx\HyPL@thisLabel\relax
3299 \let\HyPL@page\thepage
3300 \else
3301 \let\HyPL@page\HyPL@thisLabel
3302 \global\let\HyPL@thisLabel\relax
3303 \fi

```

```

3304 \let\HyPL@Type\relax
3305 \ifnum\the\c@page>0
3306   \expandafter\HyPL@CheckThePage\HyPL@page\@nil
3307 \fi
3308 \let\Hy@temp Y%
3309 \ifx\HyPL@Type\HyPL@LastType
3310 \else
3311   \let\Hy@temp N%
3312 \fi
3313 \ifx\HyPL@Type\relax
3314   \pdfstringdef\HyPL@Prefix{\HyPL@page}%
3315 \else
3316   \pdfstringdef\HyPL@Prefix\HyPL@Prefix
3317 \fi
3318 \ifx\HyPL@Prefix\HyPL@LastPrefix
3319 \else
3320   \let\Hy@temp N%
3321 \fi
3322 \if Y\Hy@temp
3323   \advance\c@page by -1
3324   \ifnum\HyPL@LastNumber=\the\c@page\relax
3325   \else
3326     \let\Hy@temp N%
3327   \fi
3328   \Hy@StepCount\c@page
3329 \fi
3330 \if N\Hy@temp
3331   \ifx\HyPL@Type\relax
3332     \HyPL@StorePageLabel{/P (\HyPL@Prefix)}%
3333   \else
3334     \HyPL@StorePageLabel{%
3335       \ifx\HyPL@Prefix\@empty
3336       \else
3337         /P (\HyPL@Prefix)
3338       \fi
3339       /S /\csname HyPL\HyPL@Type\endcsname
3340       \ifnum\the\c@page=1
3341       \else
3342         \space/St \the\c@page
3343       \fi
3344     }%
3345   \fi
3346 \fi
3347 \xdef\HyPL@LastNumber{\the\c@page}%
3348 \global\let\HyPL@LastType\HyPL@Type
3349 \global\let\HyPL@LastPrefix\HyPL@Prefix
3350 \endgroup
3351 \Hy@GlobalStepCount\Hy@abspage
3352 }

```

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

```

3353 \def\HyPL@CheckThePage#1\@nil{%
3354   \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
3355 }

```

`\HyPL@@CheckThePage` The first check is, is `\thepage` is defined such as in $\text{\LaTeX}$, 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`.

```

3356 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
3357   \def\Hy@tempa{#4}%
3358   \def\Hy@tempb{\csname\endcsname\c@page}%
3359   \ifx\Hy@tempa\Hy@tempb
3360     \expandafter\ifx\csname HyPL#3\endcsname\relax
3361     \else
3362       \def\HyPL@Type{#3}%
3363       \def\HyPL@Prefix{#2}%
3364     \fi
3365   \else
3366     \begingroup
3367     \let\Hy@next\endgroup
3368     \let\HyPL@found\@undefined
3369     \def\arabic{\HyPL@Format{arabic}}%
3370     \def\Roman{\HyPL@Format{Roman}}%
3371     \def\roman{\HyPL@Format{roman}}%
3372     \def\Alph{\HyPL@Format{Alph}}%
3373     \def\alph{\HyPL@Format{alph}}%
3374     \protected@edef\Hy@temp{#1}%
3375     \ifx\HyPL@found\relax
3376       \toks@{\expandafter{\Hy@temp}}%
3377       \edef\Hy@next{\endgroup
3378         \noexpand\HyPL@@@CheckThePage\the\toks@
3379         \noexpand\HyPL@found\relax\noexpand\@nil
3380       }%
3381     \fi
3382     \Hy@next
3383   \fi
3384 }
```

`\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`.

```

3385 \def\HyPL@Format#1#2{%
3386   \ifx\HyPL@found\@undefined
3387     \expandafter\ifx\csname c@#2\endcsname\c@page
3388     \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
3389   \else
3390     \expandafter\noexpand\csname#1\endcsname{#2}%
3391   \fi
3392   \else
3393     \expandafter\noexpand\csname#1\endcsname{#2}%
3394   \fi
3395 }
```

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

```

3396 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
3397   \def\Hy@tempa{#3}%
3398   \def\Hy@tempb{\HyPL@found\relax}%
3399   \ifx\Hy@tempa\Hy@tempb
3400     \def\HyPL@Type{#2}%
3401     \def\HyPL@Prefix{#1}%
3402   \fi
3403 }
```


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

```

3404 \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.
3405 \def\HyPL@Useless{0 << /S /D >> }%
3406 \@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.
3407 \def\HyPL@SetPageLabels{%
3408     \@onelevel@sanitize\HyPL@Labels
3409     \ifx\HyPL@Labels\@empty
3410     \else
3411         \ifx\HyPL@Labels\HyPL@Useless
3412         \else
3413             \Hy@PutCatalog{/PageLabels << /Nums [\HyPL@Labels] >>}%
3414         \fi
3415     \fi
3416 }

\HyPL@EveryPage Without option ‘pdfpagelabels’ we need a dummy for \HyPL@EveryPage.
3417 \else
3418     \let\HyPL@EveryPage\@empty
3419 \fi

Option ‘pdfpagelabels’ has been used and is now disabled.
3420 \Hy@DisableOption{pdfpagelabels}
3421 </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`

```

3422 <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.
3423 <vTeX>
3424 \edef\Hy@VTeXversion{%
3425     \ifx\VTeXversion\@undefined
3426         \z@
3427     \else
3428         \ifx\VTeXversion\relax
3429             \z@
3430         \else
3431             \VTeXversion
3432         \fi
3433     \fi
3434 }
3435 \begingroup

```

```

3436 \ifnum\Hy@VTeXversion<660 %
3437   \gdef\Hy@PutCatalog#1{%
3438     \Hy@WarningNoLine{%
3439       VTeX 6.59g or above required for pdfpagelabels%
3440     }%
3441   }
3442 \else
3443   \gdef\Hy@PutCatalog#1{%
3444     \Hy@vt@PutCatalog#1/PageLabels <<>>\@nil
3445   }
3446   \gdef\Hy@vt@PutCatalog#1/PageLabels <<#2>>#3\@nil{%
3447     \ifx\#2\%
3448       \else
3449         \immediate\special{!pdfpagelabels #2}%
3450       \fi
3451     }
3452   \fi
3453 \endgroup
3454 \</vtex>

3455 \<*pdftex | vtex>

```

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

```

3456 \ifHy@pagelabels
3457   \def\HyPL@StorePageLabel#1{%
3458     \toks@{\expandafter{\HyPL@Labels}}%
3459     \xdef\HyPL@Labels{%
3460       \the\toks@
3461       \the\Hy@abspage\space<< #1 >> %
3462     }%
3463   }

```

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.

```

3464 \AtEndDocument{\clearpage\HyPL@SetPageLabels}
3465 \fi
3466 \</pdftex | vtex>

```

26.1.2 pdfmarkbase, dvipdfm

`\Hy@PutCatalog`

```

3467 \<dvipdfm>\def\Hy@PutCatalog#1{\@pdfmark{docview << #1 >>}}
3468 \<*pdfmarkbase>
3469 \def\Hy@PutCatalog#1{%
3470   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
3471 }
3472 \</pdfmarkbase>

3473 \<*pdfmarkbase | dvipdfm>
3474 \ifHy@pagelabels

```

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

```

3475 \def\HyPL@StorePageLabel#1{%
3476   \if@filesw
3477     \begingroup
3478     \edef\Hy@tempa{\the\Hy@abspage\space<< #1 >> }%

```

```

3479         \immediate\write\@mainaux{%
3480             \string\HyPL@Entry{\Hy@tempa}%
3481         }%
3482     \endgroup
3483 \fi
3484 }

```

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.

```

3485 \AfterBeginDocument{%
3486     \if@filesw
3487         \immediate\write\@mainaux{%
3488             \string\providecommand\string*\string\HyPL@Entry[1]{}%
3489         }%
3490     \fi
3491     \ifx\HyPL@Labels\@empty
3492         \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
3493     \else
3494         \HyPL@SetPageLabels
3495     \fi
3496     \let\HyPL@Entry\@gobble
3497 }%

```

`\HyPL@Entry`

```

3498 \def\HyPL@Entry#1{%
3499     \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
3500         \HyPL@Labels
3501         #1%
3502     }%
3503 }

3504 \fi
3505 </pdfmarkbase | dvipdfm>
3506 <*package>
3507 \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 its 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

```

3508 \newcommand\theHequation{\theHsection.\arabic{equation}}
3509 \@ifundefined{thepart}{\newcommand\theHpart{\arabic{part}}}{%
3510 \@ifundefined{thechapter}{%
3511   \newcommand\theHsection    {\arabic{section}}
3512   \newcommand\theHfigure     {\arabic{figure}}
3513   \newcommand\theHtable      {\arabic{table}}
3514 }{%
3515   \newcommand\theHchapter    {\arabic{chapter}}
3516   \newcommand\theHfigure     {\theHchapter.\arabic{figure}}
3517   \newcommand\theHtable      {\theHchapter.\arabic{table}}
3518   \newcommand\theHsection    {\theHchapter.\arabic{section}}
3519 }
3520 \newcommand\theHsubsection   {\theHsection.\arabic{subsection}}
3521 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
3522 \newcommand\theHparagraph    {\theHsubsubsection.\arabic{paragraph}}
3523 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
3524 \newcommand\theHtheorem      {\theHsection.\arabic{theorem}}
3525 \newcommand\theHthm          {\theHsection.\arabic{thm}}

```

Thanks to Greta Meyer (gbd@pop.cwru.edu) for making me realize that enumeration starts at 0 for every list! But `\item` occurs inside `\trivlist`, so check if its a real `\item` before incrementing counters.

```

3526 \let\H@item\item
3527 \newcounter{Item}
3528 \def\theHItem{\arabic{Item}}
3529 \def\item{%
3530   \@hyper@itemfalse
3531   \if@nmbrlist\@hyper@itemtrue\fi
3532   \H@item
3533 }
3534 \newcommand\theHenumi    {\theHItem}
3535 \newcommand\theHenumii   {\theHItem}
3536 \newcommand\theHenumiii  {\theHItem}
3537 \newcommand\theHenumiv   {\theHItem}
3538 \newcommand\theHHfootnote {\arabic{Hfootnote}}
3539 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
3540 \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.

```

3541 \let\H@refstepcounter\refstepcounter
3542 \edef\name@of@eq{equation}%
3543 \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.

```

3544 \newif\if@hyper@item
3545 \newif\if@skiphyperref
3546 \@hyper@itemfalse
3547 \@skiphyperreffalse
3548 \def\refstepcounter#1{%
3549   \H@refstepcounter{#1}%
3550   \edef\This@name{#1}%
3551   \ifx\This@name\name@of@slide
3552     \else
3553       \if@skiphyperref

```

```

3554 \else
3555 \if@hyper@item
3556 \stepcounter{Item}%
3557 \hyper@refstepcounter{Item}%
3558 \else
3559 \hyper@refstepcounter{#1}%
3560 \fi
3561 \fi
3562 \fi
3563 }

```

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.

```

3564 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@measuring@false}

```

`\hyper@refstepcounter`

```

3565 \def\hyper@refstepcounter#1{%
3566 \edef\This@name{#1}%
3567 \ifx\This@name\name@of@eq
3568 \make@stripped@name{\theequation}%
3569 \let\theHequation\newname
3570 \fi
3571 \@ifundefined{theH#1}{%
3572 \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
3573 }{}%
3574 \hyper@makecurrent{#1}%
3575 \ifmeasuring@
3576 \else
3577 \Hy@raisedlink{%
3578 \hyper@anchorstart{\@currentHref}\hyper@anchorend
3579 }%
3580 \fi
3581 }

```

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`.

```

3582 \def\Hy@chapterstring{chapter}
3583 \def\Hy@appendixstring{appendix}
3584 \def\Hy@chapapp{\Hy@chapterstring}
3585 \let\HyOrg@appendix\appendix
3586 \def\appendix{%
3587 \@ifundefined{chapter}%
3588 {\gdef\theHsection{\Alph{section}}}%
3589 {\gdef\theHchapter{\Alph{chapter}}}%
3590 \xdef\Hy@chapapp{\Hy@appendixstring}%
3591 \HyOrg@appendix
3592 }

```

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

```

3593 \def\hyper@makecurrent#1{%
3594 \begingroup
3595 \edef\Hy@param{#1}%

```

```

3596 \ifx\Hy@param\Hy@chapterstring
3597 \let\Hy@param\Hy@chapapp
3598 \fi
3599 \ifHy@hypertextnames
3600 \let\@number\@firstofone
3601 \ifHy@naturalnames
3602 \let\textlatin\@firstofone
3603 \xdef\@currentHlabel{\csname the#1\endcsname}%
3604 \else
3605 \xdef\@currentHlabel{\csname theH#1\endcsname}%
3606 \fi
3607 \xdef\@currentHref{%
3608 \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
3609 }%
3610 \else
3611 \Hy@GlobalStepCount\Hy@linkcounter
3612 \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
3613 \fi
3614 \endgroup
3615 }

3616 \@ifpackageloaded{fancyvrb}{%
3617 \def\FV@StepLineNo{%
3618 \FV@SetLineNo
3619 \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
3620 \FV@StepLineNo
3621 }%
3622 }{}

```

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 `hypertextnames` 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`

```

3623 \AtBeginDocument{%
3624 \@ifpackageloaded{lastpage}{%
3625 \ifHy@pageanchor
3626 \else
3627 \Hy@WarningNoLine{%
3628 The \string\pageref{LastPage} link doesn't work\MessageBreak
3629 with disabled option 'pageanchor'%
3630 }%
3631 \fi
3632 \def\lastpage@putlabel{%
3633 \addtocounter{page}{-1}%
3634 \if@filesw
3635 \begingroup
3636 \let\@number\@firstofone
3637 \ifHy@pageanchor
3638 \ifHy@hypertextnames
3639 \ifHy@plainpages

```

```

3640         \def\Hy@temp{\arabic{page}}%
3641     \else
3642         \Hy@unicodedefalse
3643         \pdfstringdef\Hy@temp{\thepage}%
3644     \fi
3645 \else
3646     \def\Hy@temp{\the\Hy@pagecounter}%
3647 \fi
3648 \fi
3649 \immediate\write\@auxout{%
3650     \string\newlabel
3651     {LastPage}{\thepage}{\thepage}%
3652     \ifHy@pageanchor page.\Hy@temp\fi}%
3653 }%
3654 \endgroup
3655 \fi
3656 \addtocounter{page}{1}%
3657 }%
3658 }{}%
3659 }
3660 \</package>
3661 \<*check>
3662 \checkpackage{lastpage}[1994/06/25]
3663 \checkcommand\def\lastpage@putlabel{%
3664     \addtocounter{page}{-1}%
3665     \immediate\write\@auxout{%
3666         \string\newlabel{LastPage}{\thepage}%
3667     }%
3668     \addtocounter{page}{1}%
3669 }
3670 \</check>
3671 \<*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.

```

3672 \def\hypergetref#1{\getrefbykeydefault{#1}{}{??}}
3673 \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:

```

3674 \@ifpackageloaded{titlesec}{%
3675     \def\ttl@Hy@steplink#1{%
3676         \Hy@GlobalStepCount\Hy@linkcounter
3677         \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
3678         \def\ttl@Hy@saveanchor{%
3679             \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
3680         }%
3681     }%
3682     \def\ttl@Hy@refstepcounter#1{%

```

```

3683 \let\ttl@b\Hy@raisedlink
3684 \def\Hy@raisedlink##1{\def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}}%
3685 \refstepcounter{#1}%
3686 \let\Hy@raisedlink\ttl@b
3687 }%
3688 }{}

```

Package titletoc support:

```

3689 \@ifpackageloaded{titletoc}{%
3690 \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
3691 }{}

```

31 Package varioref support

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

```

3692 \def\Hy@varioref@undefined{{???}{??}{-}{-}}
3693 \@ifpackageloaded{varioref}{%
3694 \def\vref@pagenum#1#2{%
3695 \ifundefined{r@#2}{%
3696 \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
3697 }{}%
3698 \edef#1{\getpagerefnumber{#2}}%
3699 }%
3700 }{}

```

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

```

3701 \@ifpackageloaded{longtable}{%
3702 \begingroup
3703 \def\y{\LT@array}%
3704 \ifundefined{scr@LT@array}{-}{\def\y{\scr@LT@array}}%
3705 \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
3706 \expandafter\endgroup
3707 \expandafter\def\y[#1]##2{%
3708 \H@refstepcounter{#1}%
3709 \hyper@makecurrent{table}%
3710 #2\@sharp####4%
3711 }%
3712 }%
3713 \expandafter\expandafter\expandafter\x\y[#1]{#2}\@nil

```

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

```

3714 \begingroup
3715 \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
3716 \endgroup
3717 \def\LT@start{%
3718 #1%
3719 \hyper@refstepcounter{table}%
3720 \ifvoid\LT@firsthead\copy

```



```

3721      #2%
3722    }%
3723  }%
3724  \expandafter\x\LT@start\@nil
3725 }{}

```

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.

```

3726 \let\new@refstepcounter\refstepcounter
3727 \let\H@equation\equation
3728 \let\H@endequation\endequation

3729 \@ifpackageloaded{amsmath}{%
3730   \long\def\Hy@temp{%
3731     \incr@eqnum
3732     \mathdisplay@push
3733     \st@rredfalse \global\@eqnswtrue
3734     \mathdisplay{equation}%
3735   }%
3736   \ifx\Hy@temp\equation
3737     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
3738       \csname iftrue\endcsname
3739   \else
3740     \long\def\equation{%
3741       \mathdisplay@push
3742       \st@rredfalse \global\@eqnswtrue
3743       \mathdisplay{equation}%
3744       \incr@eqnum
3745     }%
3746     \fi
3747   \fi
3748 }{%
3749   \def\equation{%
3750     \let\refstepcounter\H@refstepcounter
3751     \H@equation
3752     \make@stripped@name{\theequation}%
3753     \let\theHequation\newname
3754     \hyper@makecurrent{equation}%
3755     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
3756     \let\refstepcounter\new@refstepcounter
3757   }%
3758   \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
3759 }

```

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.

```

3760 \newif\if@eqnstar
3761 \@eqnstarfalse

```

```

3762 \let\H@eqnarray\eqnarray
3763 \let\H@endeqnarray\endeqnarray
3764 \def\eqnarray{%
3765   \let\Hy@reserved@a\relax
3766   \def\@currentHref{%
3767     \H@eqnarray
3768     \if@eqnstar
3769     \else
3770       \ifx\\ \@currentHref\\
3771       \else
3772         \make@stripped@name{\theequation}%
3773         \let\theHequation\newname
3774         \hyper@makecurrent{equation}%
3775         \hyper@anchorstart{\@currentHref}{\hyper@anchorend
3776       \fi
3777     \fi
3778 }
3779 \def\endeqnarray{%
3780   \H@endeqnarray
3781 }

```

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.

```

3782 \@namedef{eqnarray*}{%
3783   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
3784 }
3785 \@namedef{endeqnarray*}{%
3786   \nonumber\endeqnarray\@eqnstarfalse
3787 }

```

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

```

3788 \@ifundefined{subeqnarray}{}{%
3789   \let\H@subeqnarray\subeqnarray
3790   \let\H@endsubeqnarray\endsubeqnarray
3791   \def\subeqnarray{%
3792     \let\Hy@reserved@a\relax
3793     \H@subeqnarray
3794     \make@stripped@name{\theequation}%
3795     \let\theHequation\newname
3796     \hyper@makecurrent{equation}%
3797     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
3798   }%
3799   \def\endsubeqnarray{%
3800     \H@endsubeqnarray
3801   }%
3802   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
3803 }

```

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

```

3804 \def\make@stripped@name#1{%
3805   \begingroup
3806     \escapechar\m@ne
3807     \global\let\newname\empty
3808     \protected@edef\Hy@tempa{#1}%
3809     \edef\@tempb{%
3810       \noexpand\@tfor\noexpand\Hy@tempa:=%
3811       \expandafter\strip@prefix\meaning\Hy@tempa
3812     }%

```

```

3813 \tempb\do{%
3814 \if{\Hy@tempa\else
3815 \if{\Hy@tempa\else
3816 \xdef\newname{\newname\Hy@tempa}%
3817 \fi
3818 \fi
3819 }%
3820 \endgroup
3821 }

```

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.

```

3822 \ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{%
3823 \ifHy@hyperfootnotes
3824 \newcounter{Hfootnote}
3825 \let\H@@footnotetext\@footnotetext
3826 \let\H@@footnotemark\@footnotemark
3827 \def\@xfootnotenext[#1]{%
3828 \begingroup
3829 \csname c@\@mpfn\endcsname #1\relax
3830 \unrestored@protected\xdef\@thefnmark{\thempfn}%
3831 \endgroup
3832 \ifx\@footnotetext\@mpfootnotetext
3833 \expandafter\H@@mpfootnotetext
3834 \else
3835 \expandafter\H@@footnotetext
3836 \fi
3837 }%
3838 \def\@xfootnotemark[#1]{%
3839 \begingroup
3840 \c@footnote #1\relax
3841 \unrestored@protected\xdef\@thefnmark{\thefootnote}%
3842 \endgroup
3843 \H@@footnotemark
3844 }%
3845 \let\H@@mpfootnotetext\@mpfootnotetext
3846 \long\def\@mpfootnotetext#1{%
3847 \H@@mpfootnotetext{%
3848 \ifHy@nesting
3849 \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
3850 \else
3851 \Hy@raisedlink{%
3852 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
3853 }#1%
3854 \fi
3855 }%
3856 }%
3857 \long\def\@footnotetext#1{%
3858 \H@@footnotetext{%
3859 \ifHy@nesting
3860 \hyper@@anchor{\Hy@footnote@currentHref}{#1}%

```

```

3861 \else
3862 \Hy@raisedlink{%
3863 \hyper@anchor{\Hy@footnote@currentHref}{\relax}%
3864 }%
3865 \let\@currentHlabel\Hy@footnote@currentHlabel
3866 \let\@currentHref\Hy@footnote@currentHref
3867 \let\@currentlabelname\@empty
3868 #1%
3869 \fi
3870 }%
3871 }%

```

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.

```

3872 \def\@footnotemark{%
3873 \leavevmode
3874 \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
3875 \stepcounter{Hfootnote}%
3876 \global\let\Hy@saved@currentHlabel\@currentHlabel
3877 \global\let\Hy@saved@currentHref\@currentHref
3878 \hyper@makecurrent{Hfootnote}%
3879 \global\let\Hy@footnote@currentHlabel\@currentHlabel
3880 \global\let\Hy@footnote@currentHref\@currentHref
3881 \global\let\@currentHlabel\Hy@saved@currentHlabel
3882 \global\let\@currentHref\Hy@saved@currentHref
3883 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
3884 \@makefnmark
3885 \hyper@linkend
3886 \ifhmode\spacefactor\x@sf\fi
3887 \relax
3888 }%

```

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.

```

3889 \@ifpackageloaded{longtable}{%
3890 \CheckCommand*{\LT@p@ftntext}[1]{%
3891 \edef\@tempa{%
3892 \the\LT@p@ftn
3893 \noexpand\footnotetext[\the\c@footnote]%
3894 }%
3895 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
3896 }%
3897 \long\def\LT@p@ftntext#1{%
3898 \edef\@tempa{%
3899 \the\LT@p@ftn
3900 \begingroup
3901 \noexpand\c@footnote=\the\c@footnote\relax
3902 \noexpand\protected\xdef
3903 \noexpand\@thefnmark{\noexpand\thempfn}%
3904 \noexpand\protected\xdef\noexpand\@thefnmark{%
3905 \noexpand\thempfn
3906 }%
3907 \expandafter\expandafter\expandafter\noexpand
3908 \expandafter\expandafter\expandafter\Hy@LT@footnotetext

```

```

3909         \expandafter\expandafter\expandafter{%
3910             \expandafter\Hy@footnote@currentHref\expandafter
3911             }\expandafter{\Hy@footnote@currentHlabel}%
3912     }%
3913     \global\LT@p@ftn\expandafter{%
3914         \@tempa{#1}%
3915     \endgroup
3916 }%
3917 }%
3918 \long\def\Hy@LT@footnotetext#1#2#3{%
3919     \H@@@footnotetext{%
3920         \ifHy@nesting
3921             \hyper@@anchor{#1}{#3}%
3922         \else
3923             \Hy@raisedlink{%
3924                 \hyper@@anchor{#1}{\relax}%
3925             }%
3926             \def\@currentHlabel{#2}%
3927             \def\@currentHref{#1}%
3928             \let\@currentlabelname\@empty
3929             #3%
3930         \fi
3931     }%
3932 }%
3933 }{}%

```

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.

```

3934 \let\HyOrg@maketitle\maketitle
3935 \def\maketitle{%
3936     \let\Hy@saved@footnotemark\@footnotemark
3937     \let\Hy@saved@footnotetext\@footnotetext
3938     \let\@footnotemark\H@@@footnotemark
3939     \let\@footnotetext\H@@@footnotetext
3940     \@ifnextchar[\Hy@maketitle@optarg{% ]
3941         \HyOrg@maketitle
3942         \Hy@maketitle@end
3943     }%
3944 }%
3945 \def\Hy@maketitle@optarg[#1]{%
3946     \HyOrg@maketitle[#1]%
3947     \Hy@maketitle@end
3948 }%
3949 \def\Hy@maketitle@end{%
3950     \ifx\@footnotemark\H@@@footnotemark
3951         \let\@footnotemark\Hy@saved@footnotemark
3952     \fi
3953     \ifx\@footnotetext\H@@@footnotetext
3954         \let\@footnotetext\Hy@saved@footnotetext
3955     \fi
3956 }%

```

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

```

3957 \def\realfootnote{%
3958     \@ifnextchar[\@xfootnote{%
3959         \stepcounter{\@mpfn}%
3960         \protected@xdef\@thefnmark{\thempfn}%

```

```

3961      \H@@footnotemark\H@@footnotetext
3962    }%
3963  }%

3964 \fi
3965 \Hy@DisableOption{hyperfootnotes}

3966 </package>
3967 <*check>
3968 \checklatex
3969 \checkcommand\def\@xfootnotenext[#1]{%
3970   \begingroup
3971     \csname c@\@mpfn\endcsname #1\relax
3972     \unrestored@protected@xdef\@thefnmark{\thempfn}%
3973   \endgroup
3974   \@footnotetext
3975 }
3976 \checkcommand\def\@xfootnotemark[#1]{%
3977   \begingroup
3978     \c@footnote #1\relax
3979     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
3980   \endgroup
3981   \@footnotemark
3982 }
3983 \checkcommand\def\@footnotemark{%
3984   \leavevmode
3985   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
3986   \@makefnmark
3987   \ifhmode\spacefactor\@x@sf\fi
3988   \relax
3989 }
3990 </check>
3991 <*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.

```

3992 \def\caption{%
3993   \ifx\@captive\@undefined
3994     \@latex@error{noexpand\caption outside float}\@ehd
3995     \expandafter\@gobble
3996   \else
3997     \H@refstepcounter\@captive
3998     \@ifundefined{fst@\@captive}{%
3999       \let\Hy@tempa\@caption
4000     }{%
4001       \let\Hy@tempa\Hy@float@caption
4002     }%
4003     \expandafter\@firstofone
4004     \fi
4005     {\@dblarg{\Hy@tempa\@captive}}%
4006 }
4007 \long\def\@caption#1[#2]#3{%
4008   \hyper@makecurrent{\@captive}%
4009   \def\@currentlabelname{#2}%
4010   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%

```

```

4011 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
4012 }%
4013 \begingroup
4014 \parboxrestore
4015 \if@minipage
4016 \setminipage
4017 \fi
4018 \normalsize
4019 \@makecaption{\csname fnum#1\endcsname}{%
4020 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

4021 \ifHy@nesting
4022 \hyper@@anchor{\@currentHref}{#3}%
4023 \else
4024 \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
4025 \fi
4026 }%
4027 \par
4028 \endgroup
4029 }

```

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.

```

4030 \let\Hy@float@caption\@caption
4031 \ifpackageloaded{float}{%
4032 \def\Hy@float@caption{%
4033 \hyper@makecurrent{\@capttype}%
4034 \float@caption
4035 }
4036 \let\HyOrg@float@makebox\float@makebox
4037 \renewcommand{\float@makebox}[1]{%
4038 \HyOrg@float@makebox{%
4039 #1\relax
4040 \begingroup
4041 \hyper@makecurrent{\@capttype}%
4042 \hyper@@anchor{\@currentHref}{\relax}%
4043 \endgroup
4044 }%
4045 }%
4046 }{}
4047 </package>
4048 <*check>
4049 \checklatex[1999/06/01 - 2000/06/01]
4050 \checkcommand\def\caption{%
4051 \ifx\@capttype\undefined
4052 \@latex@error{noexpand\caption outside float}\@ehd
4053 \expandafter\@gobble
4054 \else
4055 \refstepcounter\@capttype
4056 \expandafter\@firstofone
4057 \fi
4058 {\@dblarg{\@caption\@capttype}}%
4059 }
4060 \checkcommand\long\def\@caption#1[#2]#3{%
4061 \par
4062 \addcontentsline{\csname ext#1\endcsname}{#1}%
4063 {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%

```

```

4064 \begingroup
4065   \@parboxrestore
4066   \if@minipage
4067     \@setminipage
4068   \fi
4069   \normalsize
4070   \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
4071 \endgroup
4072 }
4073 </check>
4074 <*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, let's make an attempt to get *natbib* right, because that's a powerful, important package. Patrick Daly (daly@linmpi.mpg.de) has provided hooks for us, so all we need to do is activate them.

```

4075 \def\hyper@natlinkstart#1{%
4076   \Hy@backout{#1}%
4077   \hyper@linkstart{cite}{cite.#1}%
4078   \def\hyper@nat@current{#1}%
4079 }
4080 \def\hyper@natlinkend{%
4081   \hyper@linkend
4082 }
4083 \def\hyper@natlinkbreak#1#2{%
4084   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
4085 }
4086 \def\hyper@natanchorstart#1{%
4087   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
4088 }
4089 \def\hyper@natanchorend{\hyper@anchorend}

```

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

```

4090 \ifundefined{NAT@parse}{%
4091   \def\bibcite#1#2{%
4092     \@newl@bel{b}{#1\@extra@binfo}{\hyper@link[cite]{}{cite.#1}{#2}}%
4093   }%
4094   \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.”.

```

4095 \let\Hy@bibcite\bibcite
4096 \begingroup
4097   \ifundefined{bbl@cite@choice}{%
4098     \g@addto@macro\bbl@cite@choice{%
4099       \let\bibcite\Hy@bibcite
4100     }%
4101   }%
4102 \endgroup

```


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

```

4156 \item
4157 \if@filesw
4158   \immediate\write\@auxout{%
4159     \string\bibcite{#1}{\the\value{\@listctr}}}%
4160   }%
4161 \fi
4162 \ignorespaces
4163 }
4164 \</check>
4165 \<*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.

```

4166 \@ifclassloaded{revtex}{%
4167   \Hy@Info{*** compatibility with revtex **** }%
4168   \def\revtex@checking#1#2{%
4169     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
4170     \expandafter\def\csname b@#1\endcsname{#2}%
4171     \@SetMaxRnhefLabel{#1}%
4172     \expandafter\let\csname b@#1\endcsname\T@temp
4173   }%

```

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

```

4174 \@ifundefined{CITE}{\def\CITE{\@cite}}{%
4175   \providecommand*\@extra@b@citeb{}%
4176   \def\CITE[#1]#2{%
4177     \let\@citea\@empty
4178     \leavevmode
4179     \unskip
4180     $^{}%
4181     \scriptstyle
4182     \CITE{%
4183       \@for\@citeb:=#2\do{%
4184         \@citea
4185         \def\@citea{\penalty\@m }%
4186         \edef\@citeb{\expandafter\@firstofone\@citeb}%
4187         \if@filesw
4188           \immediate\write\@auxout{\string\citation{\@citeb}}%
4189         \fi
4190         \@ifundefined{b@\@citeb\extra@b@citeb}{%
4191           \mbox{\reset@font\bfseries ?}%
4192           \G@refundefinedtrue
4193           \@latex@warning{%
4194             Citation ‘\@citeb’ on page \thepage \space undefined%
4195           }%
4196         }{%
4197           {\csname b@\@citeb\extra@b@citeb\endcsname}%
4198         }%
4199       }%
4200     }{#1}%
4201   }$%
4202 }%

```

No, life is too short. I am not going to understand the R_{ev}t_{ex} `\@collapse` macro, I shall just restore the original behaviour of `\@citex`; sigh. This is SO vile.

```

4203 \def\@citex[#1]#2{%

```

```

4204 \let\@citea\@empty
4205 \@cite{%
4206   \@for\@citeb:=#2\do{%
4207     \@citea
4208     \def\@citea{,\penalty\@m\ }%
4209     \edef\@citeb{\expandafter\@firstofone\@citeb}%
4210     \if@filesw
4211       \immediate\write\@auxout{\string\citation{\@citeb}}%
4212     \fi
4213     \ifundefined{b@\@citeb\@extra@b@citeb}{%
4214       \mbox{\reset@font\bfseries ?}%
4215       \G@refundefinedtrue
4216       \@latex@warning{%
4217         Citation ‘\@citeb’ on page \thepage \space undefined%
4218       }%
4219     }%
4220     \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
4221   }%
4222 }%
4223 }{#1}%
4224 }%
4225 }{}

```

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 $\TeX$, then `hyperref` is already loaded at the begin of `harvard.sty`, and the `\newcommand` macros causes error messages.

```

4226 \@ifpackageloaded{harvard}{%
4227   \AtBeginDocument{%
4228     \Hy@Info{*** compatibility with harvard ***}%
4229     \Hy@raiselinksfalse
4230     \def\harvardcite#1#2#3#4{%
4231       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{\cite.#1}{#2}}%
4232       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{\cite.#1}{#3}}%
4233       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{\cite.#1}{#4}}%
4234       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
4235     }%
4236     \def\HAR@citetoaux#1{%
4237       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
4238       \ifHy@backref
4239         \ifx\@empty\@currentlabel
4240           \else
4241             \@bsphack
4242             \if@filesw
4243               \protected@write\@auxout{}{%
4244                 \string\writefile{brf}{%
4245                   \string\backcite{#1}{%
4246                     {\thepage}{\@currentlabel}{\@currentHref}%
4247                   }%
4248                 }%
4249             }%
4250           \fi

```

```

4251         \@esphack
4252         \fi
4253     \fi
4254 }%
4255 \def\harvarditem{%
4256     \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
4257 }%
4258 \def\@harvarditem[#1]#2#3#4#5\par{%
4259     \item[]%
4260     \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
4261     \if@filesw
4262         \begingroup
4263             \def\protect##1{\string ##1\space}%
4264             \ifthenelse{\equal{#1}{\null}}%
4265                 {\def\next{{#4}{#2}{#2}{#3}}}%
4266                 {\def\next{{#4}{#2}{#1}{#3}}}%
4267             \immediate\write\@auxout{\string\harvardcite\codeof\next}%
4268         \endgroup
4269     \fi
4270     \protect\hspace*{-\labelwidth}%
4271     \protect\hspace*{-\labelsep}%
4272     \ignorespaces
4273     #5%
4274     \ifHy@backref
4275         \newblock
4276         \backref{\csname br@#4\endcsname}%
4277     \fi
4278     \par
4279 }%

```

`\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`:

```

4280 \long\def\HAR@checkcitations#1#2#3#4{%
4281     \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
4282     \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
4283         \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
4284         \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
4285             \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
4286             \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
4287                 \else
4288                     \@tempswatrue
4289                 \fi
4290             \else
4291                 \@tempswatrue
4292             \fi
4293         \else
4294             \@tempswatrue
4295         \fi
4296     }%
4297 }%
4298 }{}

```

36.2 Package chicago

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

```

4299 \@ifpackageloaded{chicago}{%
\citeN
4300   \def\citeN{%
4301     \def\@citesep{-1000}%
4302     \def\@cite##1##2{##1}%
4303     \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}}%
4304     \@citedata@opt
4305   }%

\shortciteN
4306   \def\shortciteN{%
4307     \def\@citesep{-1000}%
4308     \def\@cite##1##2{##1}%
4309     \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}}%
4310     \@citedata@opt
4311   }%

\@citedata@opt
4312   \def\@citedata@opt{%
4313     \let\@cite@opt\@empty
4314     \@ifnextchar [{%
4315       \@tempswatrue
4316       \@citedatax@opt
4317     }{%
4318       \@tempswafalse
4319       \@citedatax[]%
4320     }%
4321   }%

\@citedatax@opt
4322   \def\@citedatax@opt[#1]{%
4323     \def\@cite@opt{, #1}%
4324     \@citedatax[{#1}]%
4325   }

4326 }{}

```

37 Page numbers

Give every page an automatic number anchor. This involves, sigh, overloading $\text{\LaTeX}$'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.

```

4327 \def\@begindvi{%
4328   \unvbox \@begindvibox
4329   \Hy@begindvi
4330   \global\let\@begindvi\Hy@begindvi
4331 }
4332 \def\Hy@begindvi{%
4333   \@hyperfixhead
4334   \HyPL@EveryPage
4335 }
4336 \def\pagenumbering#1{%
4337   \global\c@page \@ne
4338   \gdef\thepage{\csname @#1\endcsname\c@page}%
4339 }

```



```

4384         \hyper@pageduration
4385         \hyper@pagehidden
4386         \H@old@thehead
4387     }%
4388     \fi
4389 \fi
4390 \ifx\PDF@FinishDoc\@empty
4391 \else
4392     \PDF@FinishDoc
4393     \gdef\PDF@FinishDoc{}%
4394 \fi
4395 }

```

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.

```

4396 \begingroup\expandafter\expandafter\expandafter\endgroup
4397 \expandafter\ifx\csname chapter\endcsname\relax
4398     \def\toclevel@part{0}
4399 \else
4400     \def\toclevel@part{-1}
4401 \fi
4402 \def\toclevel@chapter{0}
4403 \def\toclevel@section{1}
4404 \def\toclevel@subsection{2}
4405 \def\toclevel@subsubsection{3}
4406 \def\toclevel@paragraph{4}
4407 \def\toclevel@subparagraph{5}
4408 \def\toclevel@figure{0}
4409 \def\toclevel@table{0}
4410 \@ifpackageloaded{listings}{%
4411     \providecommand*\theHlstlisting{\thelstlisting}%
4412     \providecommand*\toclevel@lstlisting{0}%
4413 }{}
4414 \@ifpackageloaded{listing}{%
4415     \providecommand*\theHlisting{\thelisting}%
4416     \providecommand*\toclevel@listing{0}%
4417 }{}
4418 \def\addcontentsline#1#2#3{% toc extension, type, tag
4419     \begingroup
4420         \let\label\@gobble
4421         \let\textlatin\@firstofone
4422         \ifx\@currentHref\@empty
4423             \Hy@Warning{%
4424                 No destination for bookmark of \string\addcontentsline,%
4425                 \MessageBreak destination is added%
4426             }%
4427         \phantomsection
4428         \fi
4429     \expandafter\ifx\csname toclevel@#2\endcsname\relax
4430         \begingroup
4431             \def\Hy@tempa{#1}%
4432             \ifx\Hy@tempa\Hy@bookmarkstype
4433                 \Hy@WarningNoLine{bookmark level for unknown #2 defaults to 0}%

```

```

4434         \else
4435             \Hy@Info{bookmark level for unknown #2 defaults to 0}%
4436         \fi
4437     \endgroup
4438     \expandafter\gdef\csname toplevel@#2\endcsname{0}%
4439 \fi
4440 \edef\Hy@toplevel{\csname toplevel@#2\endcsname}%
4441 \Hy@writebookmark{\csname the#2\endcsname}%
4442     {#3}%
4443     {\@currentHref}%
4444     {\Hy@toplevel}%
4445     {#1}%
4446 \ifHy@verbose
4447     \def\Hy@tempa{#3}%
4448     \@onelevel@sanitize\Hy@tempa
4449     \typeout{pdfTeX: bookmark at \the\inputlineno:
4450         {\csname the#2\endcsname}
4451         {\Hy@tempa}
4452         {\@currentHref}%
4453         {\Hy@toplevel}%
4454         {#1}%
4455     }%
4456 \fi
4457 \addtocontents{#1}{%
4458     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
4459 }%
4460 \endgroup
4461 }
4462 \def\contentsline#1#2#3#4{%
4463     \ifx\#4\%
4464         \csname l@#1\endcsname{#2}{#3}%
4465     \else
4466         \ifHy@linktocpage
4467             \csname l@#1\endcsname{#2}{%
4468                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
4469             }%
4470         \else
4471             \csname l@#1\endcsname{%
4472                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
4473             }{#3}%
4474         \fi
4475     \fi
4476 }
4477 \</package>
4478 \<*check>
4479 \checklatex
4480 \checkcommand\def\addcontentsline#1#2#3{%
4481     \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
4482 }
4483 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
4484 \</check>
4485 \<*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.

```
4486 \let\H@definecounter\@definecounter
4487 \def\@definecounter#1{%
4488   \H@definecounter{#1}%
4489   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
4490 }
```

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.

```
4491 \let\H@newctr\@newctr
4492 \def\@newctr#1[#2]{%
4493   \H@newctr#1[#2]%
4494   \expandafter\def\csname theH#1\endcsname{%
4495     \csname the\@ifundefined{theH#2}{-}{H}#2\endcsname.\arabic{#1}%
4496   }%
4497 }
```

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.

```
4498 \let\Hmake@df@tag@@\make@df@tag@@
4499 \def\make@df@tag@@#1{%
4500   \Hmake@df@tag@@{#1}%
4501   \Hy@GlobalStepCount\Hy@linkcounter
4502   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4503   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4504 }
4505 \let\Hmake@df@tag@@@\make@df@tag@@@
4506 \def\make@df@tag@@@#1{%
4507   \Hmake@df@tag@@@{#1}%
4508   \Hy@GlobalStepCount\Hy@linkcounter
4509   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4510   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4511 }
```

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

```
4512 \@ifpackagewith{hyperref}{pdf $\TeX$ }{%
4513   \let\H@seteqlabel\@seteqlabel
4514   \def\@seteqlabel#1{%
4515     \H@seteqlabel{#1}%
4516     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4517     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4518   }%
4519 }{}
```

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.

```

4520 \let\HyOrg@addtoreset\@addtoreset
4521 \def\@addtoreset#1#2{%
4522   \HyOrg@addtoreset{#1}{#2}%
4523   \expandafter\xdef\csname theH#1\endcsname{%
4524     \expandafter\noexpand
4525     \csname the\@ifundefined{theH#2}{H#2\endcsname
4526     .\noexpand\the\noexpand\value{#1}}%
4527   }%
4528 }

```

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

```

4529 </package>
4530 <*check>
4531 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
4532 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
4533   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
4534     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
4535       \@addtoreset{#2}{#3}%
4536       \@xp\xdef\csname the#2\endcsname{%
4537         \@xp@nx\csname the#3\endcsname .\@nx#1{#2}%
4538       }%
4539     }%
4540   }%
4541 }%
4542 </check>
4543 <*package>
4544 \@ifpackageloaded{amsmath}{%
4545   \@ifpackagelater{amsmath}{1999/12/14}{%
4546     \renewcommand*{\numberwithin}[3][\arabic]{%
4547       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
4548         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
4549           \HyOrg@addtoreset{#2}{#3}%
4550           \@xp\xdef\csname the#2\endcsname{%
4551             \@xp@nx\csname the#3\endcsname .\@nx#1{#2}%
4552           }%
4553           \@xp\xdef\csname theH#2\endcsname{%
4554             \@xp@nx
4555             \csname the\@ifundefined{theH#3}{H#3\endcsname
4556             .\@nx#1{#2}}%
4557           }%
4558         }%
4559       }%
4560     }%
4561   }%
4562   \Hy@WarningNoLine{%

```

```

4563     \string\numberwithin\space of package ‘amsmath’
4564     only fixed\MessageBreak
4565     for version 2000/06/06 v2.12 or newer%
4566 }%
4567 }
4568 }{}

```

41 Included figures

Simply intercept the low level graphics package macro.

```

4569 \ifHy@figures
4570   \let\Hy@Gin@setfile\Gin@setfile
4571   \def\Gin@setfile#1#2#3{%
4572     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
4573   }
4574 \fi
4575 \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.

```

4576 \ifHy@hyperindex
4577   \def\HyInd@ParenLeft{()%
4578   \def\HyInd@ParenRight{)%}
4579   \Hy@nextfalse
4580   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
4581   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
4582   \begingroup
4583     \lccode‘\|=\expandafter‘\HyInd@EncapChar\relax
4584     \lowercase{\endgroup
4585       \ifHy@next
4586         \let\HyInd@org@wrindex\@wrindex
4587         \def\@wrindex#1#2{\HyInd@wrindex{#1}#2||\}%
4588         \def\HyInd@wrindex#1#2|#3|#4\{\%
4589           \ifx\|#3\%
4590             \HyInd@org@wrindex{#1}{#2|hyperpage}%
4591           \else
4592             \def\Hy@temp@A{#3}%
4593             \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4594               \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4595             \relax
4596             \HyInd@org@wrindex{#1}{#2|#3}%
4597           \else
4598             \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
4599           \fi
4600         \fi

```

```

4601     }%
4602   \else
4603     \def\@wrindex#1{\@wrindex#1||\}
4604     \def\@wrindex#1|#2|#3\{\%
4605       \if@filesw
4606         \ifx\#2\%
4607           \protected@write\@indexfile{}\%
4608             \string\indexentry{#1|hyperpage}{\thepage}%
4609           }%
4610         \else
4611           \def\Hy@temp@A{#2}%
4612           \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4613             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4614             \relax
4615           \protected@write\@indexfile{}\%
4616             \string\indexentry{#1|#2}{\thepage}%
4617           }%
4618         \else
4619           \protected@write\@indexfile{}\%
4620             \string\indexentry{#1|#2hyperpage}{\thepage}%
4621           }%
4622         \fi
4623       \fi
4624     \fi
4625   \endgroup
4626   \@esphack
4627 }%
4628 \fi
4629 }%
4630 \fi
4631 \Hy@DisableOption{hyperindex}
4632 \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.

```

4633 \def\hyperpage#1{\@hyperpage#1---\}
4634 \def\@hyperpage#1--#2--#3\{\%
4635   \ifx\#2\%
4636     \@commahyperpage{#1}%
4637   \else
4638     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
4639   \fi
4640 }
4641 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
4642 \def\@commahyperpage#1, #2,#3\{\%
4643   \ifx\#2\%
4644     \HyInd@pagelink{#1}%
4645   \else
4646     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
4647   \fi
4648 }

```

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

```

4649 \def\HyInd@pagelink#1{\%
4650   \begingroup
4651     \toks@={}%
4652     \HyInd@removespaces#1 \@nil

```

```

4653 \endgroup
4654 }
4655 \def\HyInd@removespaces#1 #2\@nil{%
4656 \toks@=\expandafter{\the\toks@#1}%
4657 \ifx\#2\%
4658 \edef\x{\the\toks@}%
4659 \ifx\x\@empty
4660 \else
4661 \hyperlink{page.\the\toks@}{\the\toks@}%
4662 \fi
4663 \else
4664 \Hy@ReturnAfterFi{%
4665 \HyInd@removespaces#2\@nil
4666 }%
4667 \fi
4668 }

```

43 Compatibility with foiltex

```

4669 \@ifclassloaded{foils}{%
4670 \providecommand*\ext@table{lot}%
4671 \providecommand*\ext@figure{lof}%
4672 }{}

```

44 Compatibility with seminar slide package

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

```

4673 \@ifclassloaded{seminar}{%
4674 \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}%
4675 }{%
4676 \Hy@seminarslidesfalse
4677 }
4678 \@ifpackageloaded{slidesec}{%
4679 \newcommand\theHslidesection {\arabic{slidesection}}%
4680 \newcommand\theHslidesubsection{%
4681 \theHslidesection.\arabic{slidesubsection}}%
4682 }%
4683 \def\slide@heading[#1]#2{%
4684 \H@refstepcounter{slidesection}%
4685 \@addtoreset{slidesubsection}{slidesection}%
4686 \addtocontents{los}{%
4687 \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
4688 {\@SCTR}{slideheading.\theslidesection}}%
4689 }%
4690 \def\Hy@tempa{#2}%
4691 \ifx\Hy@tempa\@empty
4692 \else
4693 {%
4694 \edef\@currentlabel{%
4695 \csname p@slidesection\endcsname\theslidesection
4696 }%
4697 \makeslideheading{#2}%
4698 }%
4699 \fi
4700 \gdef\theslideheading{#1}%

```

```

4701 \gdef\theslidesubheading{}%
4702 \ifHy@bookmarksnumbered
4703 \def\Hy@slidetitle{\theslide\section\space #1}%
4704 \else
4705 \def\Hy@slidetitle{#1}%
4706 \fi
4707 \ifHy@hypertextnames
4708 \ifHy@naturalnames
4709 \hyper@@anchor{slideheading.\theslide\section}{\relax}%
4710 \Hy@writebookmark
4711 {\theslide\section}%
4712 {\Hy@slidetitle}%
4713 {slideheading.\theslide\section}%
4714 {1}%
4715 {toc}%
4716 \else
4717 \hyper@@anchor{slideheading.\theHslide\section}{\relax}%
4718 \Hy@writebookmark
4719 {\theslide\section}%
4720 {\Hy@slidetitle}%
4721 {slideheading.\theHslide\section}%
4722 {1}%
4723 {toc}%
4724 \fi
4725 \else
4726 \Hy@GlobalStepCount\Hy@linkcounter
4727 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
4728 \Hy@writebookmark
4729 {\theslide\section}%
4730 {\Hy@slidetitle}%
4731 {slideheading.\the\Hy@linkcounter}%
4732 {1}%
4733 {toc}%
4734 \fi
4735 }%
4736 \def\slide@subheading[#1]#2{%
4737 \H@refstepcounter{slidesubsection}%
4738 \addtocontents{los}{%
4739 \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
4740 {\@SCTR}{slideheading.\theslide\subsubsection}%
4741 }%
4742 \def\Hy@tempa{#2}%
4743 \ifx\Hy@tempa\@empty
4744 \else
4745 {%
4746 \edef\@currentlabel{%
4747 \csname p@slidesubsection\endcsname\theslide\subsubsection
4748 }%
4749 \makeslidesubheading{#2}%
4750 }%
4751 \fi
4752 \gdef\theslidesubheading{#1}%
4753 \ifHy@bookmarksnumbered
4754 \def\Hy@slidetitle{\theslide\subsubsection\space #1}%
4755 \else
4756 \def\Hy@slidetitle{#1}%
4757 \fi

```

```

4758 \ifHy@hypertextnames
4759 \ifHy@naturalnames
4760 \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
4761 \Hy@writebookmark
4762 {\theslidesubsection}%
4763 {\Hy@slidetitle}%
4764 {slideheading.\theslidesubsection}%
4765 {2}%
4766 {toc}%
4767 \else
4768 \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
4769 \Hy@writebookmark
4770 {\theslidesubsection}%
4771 {\Hy@slidetitle}%
4772 {slideheading.\theHslidesubsection}%
4773 {2}%
4774 {toc}%
4775 \fi
4776 \else
4777 \Hy@GlobalStepCount\Hy@linkcounter
4778 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
4779 \Hy@writebookmark
4780 {\theslidesubsection}%
4781 {\Hy@slidetitle}%
4782 {slideheading.\the\Hy@linkcounter}%
4783 {1}%
4784 {toc}%
4785 \fi
4786 }%
4787 \providecommand*{\listslidenam}{List of Slides}%
4788 \def\listofslides{%
4789 \section*{%
4790 \listslidenam
4791 \@mkboth{%
4792 \expandafter\MakeUppercase\listslidenam
4793 }{%
4794 \expandafter\MakeUppercase\listslidenam
4795 }%
4796 }%
4797 \def\l@slide##1##2##3##4{%
4798 \slide@undottedcline{%
4799 \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
4800 }{}%
4801 }%
4802 \let\l@subslide\l@slide
4803 \@startlos
4804 }%
4805 \def\slide@contents{%
4806 \def\l@slide##1##2##3##4{%
4807 \slide@cline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
4808 }%
4809 \let\l@subslide\@gobblefour
4810 \@startlos
4811 }%
4812 \def\Slide@contents{%
4813 \def\l@slide##1##2##3##4{%
4814 \ifcase\lslide@flag

```

```

4815 \message{##1 ** \the\c@slide@section}%
4816 \ifnum##1>\c@slide@section
4817 \def\lslide@flag{1}%
4818 {%
4819 \large
4820 \slide@cline{%
4821 \slidenumberline{$\rightarrow\bullet$}%
4822 {\hyperlink{##4}{##2}}%
4823 }{##3}%
4824 }%
4825 \else
4826 {%
4827 \large
4828 \slide@cline{%
4829 \slidenumberline{$\surd\;\bullet$}%
4830 {\hyperlink{##4}{##2}}%
4831 }{##3}%
4832 }%
4833 \fi
4834 \or
4835 \def\lslide@flag{2}%
4836 {%
4837 \large
4838 \slide@cline{%
4839 \slidenumberline{$\bullet$}%
4840 {\hyperlink{##4}{##2}}%
4841 }{##3}%
4842 }%
4843 \or
4844 {%
4845 \large
4846 \slide@cline{%
4847 \slidenumberline{$\bullet$}%
4848 {\hyperlink{##4}{##2}}%
4849 }{##3}%
4850 }%
4851 \fi
4852 }%
4853 \def\l@subslide##1##2##3##4{%
4854 \ifnum\lslide@flag=1
4855 \undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}}%
4856 \fi
4857 }%
4858 \def\lslide@flag{0}%
4859 \@startlos
4860 }%
4861 }{}

```

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.)

```

4862 \ifHy@texht
4863 \expandafter\endinput
4864 \fi
4865 \let\real@setref\@setref
4866 \def\@setref#1#2#3{% csname, extract group, refname
4867 \ifx#1\relax
4868 \protect\G@refundefinedtrue

```



```

4869 \nfss@text{\reset@font\bfseries ??}%
4870 \@latex@warning{%
4871   Reference ‘#3’ on page \thepage \space undefined%
4872 }%
4873 \else
4874 \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
4875 \fi
4876 }

```

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

```

4877 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
4878 \begingroup
4879 \toks0={\hyper@@link{#5}{#4}}%
4880 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
4881 \edef\x{\endgroup
4882   \the\toks0 {\the\toks1 }}%
4883 }%
4884 \x
4885 }
4886 \def\@pagesetref#1#2#3{% csname, extract macro, ref
4887 \ifx#1\relax
4888 \protect\G@refundefinedtrue
4889 \nfss@text{\reset@font\bfseries ??}%
4890 \@latex@warning{%
4891   Reference ‘#3’ on page \thepage \space undefined%
4892 }%
4893 \else
4894 \protect\hyper@@link
4895 {\expandafter\@fifthoffive#1}%
4896 {page.\expandafter\@secondoffive#1}%
4897 {\expandafter\@secondoffive#1}%
4898 \fi
4899 }
4900 \</package>
4901 \<*check>
4902 \checklatex
4903 \checkcommand\def\@setref#1#2#3{%
4904 \ifx#1\relax
4905 \protect\G@refundefinedtrue
4906 \nfss@text{\reset@font\bfseries ??}%
4907 \@latex@warning{%
4908   Reference ‘#3’ on page \thepage\space undefined%
4909 }%
4910 \else
4911 \expandafter#2#1\@null
4912 \fi
4913 }
4914 \</check>
4915 \<*package>

```

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

```

4916 \def\@refstar#1{%
4917 \Hy@safe@activetrue
4918 \expandafter\real@setref\csname r@#1\endcsname\@firstoffive{#1}%
4919 \Hy@safe@activesfalse
4920 }

```

```

4921 \def\@pagerefstar#1{%
4922   \Hy@safe@activetrue
4923   \expandafter\real@setref\csname r@#1\endcsname\@secondoffive{#1}%
4924   \Hy@safe@activesfalse
4925 }
4926 \DeclareRobustCommand\autoref{%
4927   \@ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}%
4928 }
4929 \def\HyRef@autoref#1#2{%
4930   \begingroup
4931     \Hy@safe@activetrue
4932     \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
4933   \endgroup
4934 }
4935 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
4936   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
4937     \edef\HyRef@thisref{\expandafter\@fourthoffive#1\@empty\@empty\@empty}%
4938     \expandafter\HyRef@testreftype\HyRef@thisref\\%
4939     \Hy@safe@activesfalse
4940     #3{%
4941       \expandafter\@fifthoffive#1%
4942     }{%
4943       \expandafter\@fourthoffive#1\@empty\@empty\@empty
4944     }{%
4945       \HyRef@currentHtag
4946       \expandafter\@firstoffive#1\@empty\@empty\@empty
4947       \null
4948     }%
4949   \else
4950     \protect\G@refundefinedtrue
4951     \nfss@text{\reset@font\bfseries ??}%
4952     \@latex@warning{%
4953       Reference ‘#2’ on page \thepage\space undefined%
4954     }%
4955   \fi
4956 }
4957 \def\HyRef@testreftype#1.#2\\{%
4958   \@ifundefined{#1autorefname}{%
4959     \@ifundefined{#1name}{%
4960       \def\HyRef@currentHtag{%
4961         \@latex@warning{no tag name for #1 at \the\inputlineno}%
4962       }{%
4963         \edef\HyRef@currentHtag{%
4964           \expandafter\noexpand\csname#1name\endcsname
4965           \noexpand~%
4966         }%
4967       }%
4968     }{%
4969       \edef\HyRef@currentHtag{%
4970         \expandafter\noexpand\csname#1autorefname\endcsname
4971         \noexpand~%
4972       }%
4973     }%
4974   }
4975 \def\HyRef@currentHtag{}

```

Defaults for the names that \autoref uses.

```

4976 \providecommand\AMSautorefname{\equationautorefname}

```

```

4977 \providecommand\Hfootnoteautorefname{\footnoteautorefname}
4978 \providecommand\Itemautorefname{\itemautorefname}
4979 \providecommand\itemautorefname{item}
4980 \providecommand\equationautorefname{Equation}
4981 \providecommand\footnoteautorefname{footnote}
4982 \providecommand\itemautorefname{item}
4983 \providecommand\figureautorefname{Figure}
4984 \providecommand\tableautorefname{Table}
4985 \providecommand\partautorefname{Part}
4986 \providecommand\appendixautorefname{Appendix}
4987 \providecommand\chapterautorefname{chapter}
4988 \providecommand\sectionautorefname{section}
4989 \providecommand\subsectionautorefname{subsection}
4990 \providecommand\subsubsectionautorefname{subsubsection}
4991 \providecommand\paragraphautorefname{paragraph}
4992 \providecommand\subparagraphautorefname{subparagraph}
4993 \providecommand\FancyVerbLineautorefname{line}
4994 \providecommand\theoremautorefname{Theorem}
4995 \end{package}

```

45 Configuration files

45.1 PS/PDF strings

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

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

```

4996 \ifpdf \ifdvipdfm \ifvtex \ifpdfmarkbase \ifdviwindo
4997 \begin{group} \expandafter \expandafter \expandafter \end{group}
4998 \expandafter \ifx \csname pdfescapestring \endcsname \relax
4999 \begin{group}
5000   \catcode'\=0 %
5001   \makeother\%
5002   \iffirstofone \end{group}
5003   \def \Hy@pstringdef#1#2{%
5004     \edef#1{#2}%
5005     \ifonelevel \sanitize#1%
5006     \edef#1{\expandafter \Hy@ExchangeBackslash#1\@nil}%
5007     \edef#1{\expandafter \Hy@ExchangeLeftParenthesis#1(\@nil}%
5008     \edef#1{\expandafter \Hy@ExchangeRightParenthesis#1)\@nil}%
5009   }%
5010   \def \Hy@ExchangeBackslash#1\#2\@nil{%
5011     #1%
5012     \ifx\#2\%
5013       \else
5014         \\\%
5015         \Hy@ReturnAfterFi{%
5016           \Hy@ExchangeBackslash#2\@nil
5017         }%
5018       \fi
5019     }%
5020 }

```

```

5021 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
5022   #1%
5023   \ifx\|#2\%
5024   \else
5025     \@backslashchar(%
5026     \Hy@ReturnAfterFi{%
5027       \Hy@ExchangeLeftParenthesis#2\@nil
5028     }%
5029   \fi
5030 }
5031 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
5032   #1%
5033   \ifx\|#2\%
5034   \else
5035     \@backslashchar)%
5036     \Hy@ReturnAfterFi{%
5037       \Hy@ExchangeRightParenthesis#2\@nil
5038     }%
5039   \fi
5040 }
5041 \else
5042 \def\Hy@pstringdef#1#2{%
5043   \edef#1{\pdfescapestring{#2}}%
5044 }%
5045 \fi
5046 </pdfTeX | dvipdfm | vTeX | pdfmarkbase | dviwindo>

```

45.2 pdfTeX

5047 <*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:

```

5048 \def\setpdflinkmargin#1{\pdflinkmargin#1}
5049 \ifx\pdfstartlink\@undefined% less than version 14
5050   \let\pdfstartlink\pdfannotlink
5051   \let\pdflinkmargin\@tempdima
5052   \let\pdfxform\pdfform
5053   \let\pdflastxform\pdflastform
5054   \let\pdfrefxform\pdfrefform
5055 \else
5056   \pdflinkmargin1pt
5057 \fi

```

First set up the default linking

```
5058 \providecommand\@pdfview{XYZ}
```

First define the anchors:

```

5059 \def\new@pdflink#1{%
5060   \ifHy@verbose
5061     \typeout{pdfTeX: define anchor at line \the\inputlineno: #1}%
5062   \fi
5063   \Hy@SaveLastskip
5064   \Hy@pstringdef\Hy@pstringDest{#1}%
5065   \Hy@DestName\Hy@pstringDest\@pdfview
5066   \Hy@RestoreLastskip
5067 }

```

```

5068 \let\pdf@endanchor\@empty
\Hy@DestName Wrap the call of \pdfdest name in \Hy@DestName. Then it can easier be caught by
package hypdestopt.
5069 \def\Hy@DestName#1#2{%
5070   \pdfdest name{#1}#2\relax
5071 }

```

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.

```

5072 \providecommand\@pdfborder{0 0 1}
5073 \providecommand*\@pdfborderstyle{}
5074 \def\Hy@undefinedname{UNDEFINED}
5075 \def\find@pdflink#1#2{%
5076   \leavevmode
5077   \protected@edef\Hy@testname{#2}%
5078   \ifx\Hy@testname\@empty
5079     \let\Hy@testname\Hy@undefinedname
5080   \else
5081     \Hy@pstringdef\Hy@testname\Hy@testname
5082   \fi
5083   \Hy@StartlinkName{%
5084     \Hy@setpdfborder
5085     /H\@pdfhighlight
5086     /C[\CurrentBorderColor]%
5087   }\Hy@testname
5088   \expandafter\Hy@colorlink\csname @#1color\endcsname
5089 }
5090 \def\Hy@StartlinkName#1#2{%
5091   \pdfstartlink attr{#1}goto name{#2}\relax
5092 }
5093 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
5094 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
5095 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
5096 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
5097 \def\hyper@linkstart#1#2{%
5098   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
5099   \find@pdflink{#1}{#2}}
5100 \def\hyper@linkend{\close@pdflink}
5101 \def\hyper@link#1#2#3{%
5102   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
5103   \find@pdflink{#1}{#2}#3\close@pdflink
5104 }
5105 \def\CurrentBorderColor{\@linkbordercolor}
5106 \def\hyper@linkurl#1#2{%
5107   \begingroup
5108     \Hy@pstringdef\Hy@pstringURI{#2}%
5109     \hyper@chars
5110     \leavevmode
5111     \pdfstartlink
5112       attr{%
5113         \Hy@setpdfborder
5114         /H\@pdfhighlight
5115         /C[\@urlbordercolor]%
5116       }%

```

```

5117     user{%
5118         /Subtype/Link%
5119         /A<<%
5120         /Type/Action%
5121         /S/URI%
5122         /URI(\Hy@pstringURI)%
5123     >>%
5124     }%
5125     \relax
5126     \Hy@colorlink\@urlcolor#1%
5127     \close@pdflink
5128 \endgroup
5129 }
5130 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
5131     \begingroup
5132         \Hy@pstringdef\Hy@pstringF{#2}%
5133         \Hy@pstringdef\Hy@pstringD{#3}%
5134         \leavevmode
5135         \pdfstartlink
5136         attr{%
5137             \Hy@setpdfborder
5138             /H\pdfhighlight
5139             /C[\@filebordercolor]%
5140         }%
5141         user {%
5142             /Subtype/Link%
5143             /A<<%
5144             /F(\Hy@pstringF)%
5145             /S/GoToR%
5146             \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}

```

```

5147         \ifx\#3\%
5148             /D[0 \pdfstartview]%
5149         \else
5150             /D(\Hy@pstringD)%
5151         \fi
5152     >>%
5153     }%
5154     \relax
5155     \Hy@colorlink\@filecolor#1%
5156     \close@pdflink
5157 \endgroup
5158 }
5159 \def\hyper@launch run:#1\#2#3{% filename, anchor text linkname
5160     \begingroup
5161         \Hy@pstringdef\Hy@pstringF{#1}%
5162         \Hy@pstringdef\Hy@pstringP{#3}%

```

```

5163 \leavevmode
5164 \pdfstartlink
5165   attr{%
5166     \Hy@setpdfborder
5167     /H\pdfhighlight
5168     /C[\@runbordercolor]%
5169   }%
5170   user {%
5171     /Subtype/Link%
5172     /A<<%
5173       /F(\Hy@pstringF)%
5174       /S/Launch%
5175       \ifHy@newwindow /NewWindow true\fi
5176       \ifx\#3\%
5177         \else
5178           /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
5179         \fi
5180       >>%
5181     }%
5182   \relax
5183   \Hy@colorlink\@filecolor#2%
5184   \close@pdflink
5185 \endgroup
5186 }

```

\@pdfproducer

```

5187 \ifx\@pdfproducer\relax
5188   \def\@pdfproducer{pdfTeX}
5189   \ifx\@pdfproducer\@undefined
5190     \else
5191       \ifx\@pdfproducer\relax
5192         \else
5193           \ifnum\@pdfproducer>0 %
5194             \def\@pdfproducer{pdfTeX}
5195           \fi
5196         \fi
5197       \fi
5198     \ifx\@pdfproducer\@undefined
5199     \else
5200       \ifnum\@pdfproducer<100 %
5201         \edef\@pdfproducer{%
5202           \@pdfproducer-
5203           \the\@pdfproducer.\@pdfproducerrevision
5204         }
5205       \else
5206         \ifnum\@pdfproducer<130 %
5207           \edef\@pdfproducer{%
5208             \@pdfproducer-
5209             \expandafter\@car\the\@pdfproducer\@empty\@nil.%
5210             \expandafter\@cdr\the\@pdfproducer\@empty\@nil
5211             \pdfproducerrevision
5212           }
5213         \else
5214           \edef\@pdfproducer{%
5215             \@pdfproducer-
5216             \expandafter\@car\the\@pdfproducer\@empty\@nil.%
5217             \expandafter\@cdr\the\@pdfproducer\@empty\@nil.%

```

```

5218         \pdfTeXrevision
5219     }%
5220     \fi
5221 \fi
5222 \fi
5223 \fi

```

\PDF@SetupDox

```

5224 \def\PDF@SetupDoc{%
5225   \ifx\@pdfpagescrop\@empty
5226   \else
5227     \edef\process@me{%
5228       \pdfpagesattr={%
5229         /CropBox[\@pdfpagescrop]%
5230         \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
5231         \else
5232           ^^J\the\pdfpagesattr
5233         \fi
5234       }%
5235     }%
5236     \process@me
5237   \fi
5238   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
5239   \pdfcatalog{%
5240     /PageMode\@pdfpagemode
5241     \ifx\@baseurl\@empty
5242     \else
5243       /URI<</Base(\Hy@pstringB)>>%
5244     \fi
5245   }%
5246   \ifx\@pdfstartview\@empty
5247   \else
5248     openaction goto page \@pdfstartpage {\@pdfstartview}%
5249   \fi
5250   \edef\Hy@temp{%
5251     \ifHy@toolbar\else /HideToolbar true\fi
5252     \ifHy@menubar\else /HideMenubar true\fi
5253     \ifHy>windowui\else /HideWindowUI true\fi
5254     \ifHy@fitwindow /FitWindow true\fi
5255     \ifHy@centerwindow /CenterWindow true\fi
5256     \ifHy@displaydoctitle /DisplayDocTitle true\fi
5257     \ifx\@pdfnonfullscreenpagemode\@empty
5258     \else
5259       /NonFullScreenPageMode\@pdfnonfullscreenpagemode
5260     \fi
5261     \ifx\@pdfprintscaling\@empty
5262     \else
5263       /PrintScaling\@pdfprintscaling
5264     \fi
5265   }%
5266   \pdfcatalog{%
5267     \ifx\Hy@temp\@empty
5268     \else
5269       /ViewerPreferences<<\Hy@temp>>%
5270     \fi
5271     \ifx\pdf@pagelayout\@empty
5272     \else

```



```

5273     /PageLayout/\pdf@pagelayout
5274     \fi
5275 }%
5276 }

```

\PDF@FinishDoc

```

5277 \def\PDF@FinishDoc{%
5278   \Hy@UseMaketitleInfos
5279   \pdfinfo{%
5280     /Author(\@pdfauthor)%
5281     /Title(\@pdftitle)%
5282     /Subject(\@pdfsubject)%
5283     /Creator(\@pdfcreator)%
5284     \ifx\@pdfcreationdate\@empty
5285     \else
5286       /CreationDate(\@pdfcreationdate)%
5287     \fi
5288     \ifx\@pdfmoddate\@empty
5289     \else
5290       /ModDate(\@pdfmoddate)%
5291     \fi
5292     \ifx\@pdfproducer\relax
5293     \else
5294       /Producer(\@pdfproducer)%
5295     \fi
5296     /Keywords(\@pdfkeywords)%
5297   }%
5298   \Hy@DisableOption{pdfauthor}%
5299   \Hy@DisableOption{pdftitle}%
5300   \Hy@DisableOption{pdfsubject}%
5301   \Hy@DisableOption{pdfcreator}%
5302   \Hy@DisableOption{pdfcreationdate}%
5303   \Hy@DisableOption{pdfmoddate}%
5304   \Hy@DisableOption{pdfproducer}%
5305   \Hy@DisableOption{pdfkeywords}%
5306 }

```

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

```

5307 \def\hyper@pagetransition{%
5308   \ifx\@pdfpagetransition\relax
5309   \else
5310     \expandafter\Hy@RemoveTransPageAttr\the\pdfpageattr^^J/Trans{}>>\END
5311     \ifx\@pdfpagetransition\@empty
5312     \else
5313       \edef\@processme{%
5314         \global\pdfpageattr{%
5315           \the\pdfpageattr
5316           ^^J/Trans << /S /\@pdfpagetransition\space >>%
5317         }%
5318       }%
5319       \@processme
5320     \fi
5321   \fi
5322 }

```

`\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.

```

5323 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
5324   \ifx\#2\%
5325     \global\pdfpageattr{#1}%
5326   \else
5327     \Hy@RemoveTransPageAttr#1#4\END
5328   \fi
5329 }

```

`\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`.

```

5330 \def\hyper@pageduration{%
5331   \ifx\@pdfpageduration\relax
5332   \else
5333     \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{ } \END
5334     \ifx\@pdfpageduration\@empty
5335     \else
5336       \edef\@processme{%
5337         \global\pdfpageattr{%
5338           \the\pdfpageattr
5339           ^^J/Dur \@pdfpageduration\space
5340         }%
5341       }%
5342       \@processme
5343     \fi
5344   \fi
5345 }

```

`\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.

```

5346 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
5347   \ifx\#2\%
5348     \global\pdfpageattr{#1}%
5349   \else
5350     \Hy@RemoveDurPageAttr#1#4\END
5351   \fi
5352 }

```

`\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).

```

5353 \def\hyper@pagehidden{%
5354   \ifHy@useHidKey
5355     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{ } \END
5356     \ifHy@pdfpagehidden
5357     \edef\@processme{%
5358       \global\pdfpageattr{%
5359         \the\pdfpageattr
5360         ^^J/Hid true % SPACE
5361       }%

```

```

5362     }%
5363     \@processme
5364     \fi
5365     \fi
5366 }

```

`\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.

```

5367 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
5368   \ifx\#2\%
5369     \global\pdfpageattr{#1}%
5370   \else
5371     \Hy@RemoveHidPageAttr#1#4\END
5372   \fi
5373 }

```

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.

```

5374 \pdfoutput=1
5375 \pdfcompresslevel=9
5376 \AtBeginDocument{%
5377   \ifHy@setpagesize
5378     \expandafter\@firstofone
5379   \else
5380     \expandafter\@gobble
5381   \fi
5382   {%
5383     \@ifclassloaded{seminar}{%
5384       \setlength{\pdfhorigin}{1truein}%
5385       \setlength{\pdfvorigin}{1truein}%
5386       \ifportrait
5387         \ifdim\paperwidth=\z@
5388         \else
5389           \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
5390         \fi
5391         \ifdim\paperheight=\z@
5392         \else
5393           \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
5394         \fi
5395       \else
5396         \ifdim\paperheight=\z@
5397         \else
5398           \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
5399         \fi
5400         \ifdim\paperwidth=\z@
5401         \else
5402           \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
5403         \fi
5404       \fi
5405     }{%
5406       \@ifundefined{stockwidth}{%
5407         \ifdim\paperwidth=\z@
5408         \else
5409           \setlength{\pdfpagewidth}{\paperwidth}%
5410         \fi

```

```

5411         \ifdim\paperheight=\z@
5412         \else
5413             \setlength{\pdfpageheight}{\paperheight}%
5414         \fi
5415     }{%
5416         \ifdim\stockwidth=\z@
5417         \else
5418             \setlength{\pdfpagewidth}{\stockwidth}%
5419         \fi
5420         \ifdim\stockheight=\z@
5421         \else
5422             \setlength{\pdfpageheight}{\stockheight}%
5423         \fi
5424     }%
5425 }%
5426 }%
5427 \Hy@DisableOption{setpagesize}%
5428 }
5429 \def\Acrobatmenu#1#2{%
5430     \leavevmode
5431     \pdfstartlink
5432     attr{%
5433         \Hy@setpdfborder
5434         /H \pdfhighlight
5435         /C[\@menubordercolor]%
5436     }%
5437     user{
5438         /Subtype /Link
5439         /A<<%
5440         /S/Named/N/#1%
5441         >>%
5442     }%
5443     \relax
5444     \Hy@colorlink\@menucolor#2\close@pdflink
5445 }
5446 </pdfTeX>
5447 <*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:<a href = "href_string">`

name: `html:<a name = "name_string">`

end: `html:</a>`

image: `html:<img src = "href_string">`

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

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

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

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

```

5448 \def\PDF@FinishDoc{}
5449 \def\PDF@SetupDoc{%
5450   \ifx\@baseurl\@empty
5451   \else
5452     \special{html:<base href="\@baseurl">}%
5453   \fi
5454 }
5455 \def\hyper@anchor#1{%
5456   \Hy@SaveLastskip
5457   \begingroup
5458     \let\protect=\string
5459     \hyper@chars
5460     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
5461   \endgroup
5462   \Hy@activeanchortrue
5463   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5464   \special{html:</a>}%
5465   \Hy@activeanchorfalse
5466   \Hy@RestoreLastskip
5467 }
5468 \def\hyper@anchorstart#1{%
5469   \Hy@SaveLastskip
5470   \begingroup
5471     \hyper@chars
5472     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
5473   \endgroup
5474   \Hy@activeanchortrue
5475 }
5476 \def\hyper@anchorend{%
5477   \special{html:</a>}%
5478   \Hy@activeanchorfalse
5479   \Hy@RestoreLastskip
5480 }
5481 \def\@urltype{url}
5482 \def\hyper@linkstart#1#2{%
5483   \expandafter\Hy@colorlink\csname @#1color\endcsname
5484   \def\Hy@tempa{#1}%
5485   \ifx\Hy@tempa\@urltype
5486     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
5487   \else
5488     \begingroup
5489       \hyper@chars
5490       \special{html:<a href=\hyper@quote\##2\hyper@quote>}%

```

```

5491 \endgroup
5492 \fi
5493 }
5494 \def\hyper@linkend{%
5495 \special{html:</a>}%
5496 \Hy@endcolorlink
5497 }
5498 \def\hyper@linkfile#1#2#3{%
5499 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
5500 }
5501 \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.

```

5502 \leavevmode
5503 \ifHy@raiselinks
5504 \setbox\@tempboxa=\color@hbox #1\color@endbox
5505 \@linkdim\dp\@tempboxa
5506 \lower\@linkdim\hbox{%
5507 \hyper@chars
5508 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
5509 }%
5510 \Hy@colorlink\@urlcolor#1%
5511 \@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).

```

5512 \advance\@linkdim by -6.5\p@
5513 \raise\@linkdim\hbox{\special{html:</a>}}%
5514 \Hy@endcolorlink
5515 \else
5516 \begingroup
5517 \hyper@chars
5518 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
5519 \Hy@colorlink\@urlcolor#1%
5520 \special{html:</a>}}%
5521 \Hy@endcolorlink
5522 \endgroup
5523 \fi
5524 }
5525 \def\hyper@link#1#2#3{%
5526 \hyper@linkurl{#3}{\##2}%
5527 }
5528 \def\hyper@image#1#2{%
5529 \begingroup
5530 \hyper@chars
5531 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
5532 \endgroup
5533 }
5534 </hypertex>
5535 <*dviwindo>

```

45.4 dviwindo

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

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

```
5536 \providecommand\wwwbrowser{c:\string\netscape\string\netscape}
5537 \def\hyper@anchor#1{%
5538   \Hy@SaveLastskip
5539   \begingroup
5540     \let\protect=\string
5541     \special{mark: #1}%
5542   \endgroup
5543   \Hy@activeanchortrue
5544   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5545   \Hy@activeanchorfalse
5546   \Hy@RestoreLastskip
5547 }
5548 \def\hyper@anchorstart#1{%
5549   \Hy@SaveLastskip
5550   \special{mark: #1}%
5551   \Hy@activeanchortrue
5552 }
5553 \def\hyper@anchorend{%
5554   \Hy@activeanchorfalse
5555   \Hy@RestoreLastskip
5556 }
5557 \def\hyper@linkstart#1#2{%
5558   \expandafter\Hy@colorlink\csname @#1color\endcsname
5559   \special{button:
5560     10000000
5561     \number\baselineskip\space
5562     #2%
5563   }%
5564 }
5565 \def\hyper@linkend{%
5566   \Hy@endcolorlink
5567 }
5568 \def\hyper@link#1#2#3{%
5569   \setbox\@tempboxa=\color@hbox #3\color@endbox
5570   \leavevmode
5571   \ifHy@raiselinks
5572     \@linkdim\dp\@tempboxa
5573     \lower\@linkdim\hbox{%
5574       \special{button:
5575         \number\wd\@tempboxa\space
5576         \number\ht\@tempboxa\space
5577         #2%
5578       }%
5579     \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
5580     \Hy@endcolorlink
```

```

5581 }%
5582 \@linkdim\ht\@tempboxa
5583 \advance\@linkdim by -6.5\p@
5584 \raise\@linkdim\hbox{}%
5585 \else
5586 \special{button:
5587 \number\wd\@tempboxa\space
5588 \number\ht\@tempboxa\space
5589 #2%
5590 }%
5591 \exandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
5592 \fi
5593 }
5594 \def\hyper@linkurl#1#2{%
5595 \begingroup
5596 \hyper@chars
5597 \leavevmode
5598 \setbox\@tempboxa=\color@hbox #1\color@endbox
5599 \ifHy@raiselinks
5600 \@linkdim\dp\@tempboxa
5601 \lower\@linkdim\hbox{%
5602 \special{button:
5603 \number\wd\@tempboxa\space
5604 \number\ht\@tempboxa\space
5605 launch: \wwwbrowser\space
5606 #2%
5607 }%
5608 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5609 }%
5610 \@linkdim\ht\@tempboxa
5611 \advance\@linkdim by -6.5\p@
5612 \raise\@linkdim\hbox{}%
5613 \else
5614 \special{button:
5615 \number\wd\@tempboxa\space
5616 \number\ht\@tempboxa\space
5617 launch: \wwwbrowser\space
5618 #2%
5619 }%
5620 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5621 \fi
5622 \endgroup
5623 }
5624 \def\hyper@linkfile#1#2#3{%
5625 \begingroup
5626 \hyper@chars
5627 \leavevmode
5628 \setbox\@tempboxa=\color@hbox #1\color@endbox
5629 \ifHy@raiselinks
5630 \@linkdim\dp\@tempboxa
5631 \lower\@linkdim\hbox{%
5632 \special{button:
5633 \number\wd\@tempboxa\space
5634 \number\ht\@tempboxa\space
5635 #3,
5636 file: #2%
5637 }%

```



```

5638      \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5639    }%
5640    \@linkdim\ht\@tempboxa
5641    \advance\@linkdim by -6.5\p@
5642    \raise\@linkdim\hbox{}}%
5643  \else
5644    \special{button:
5645      \number\wd\@tempboxa\space
5646      \number\ht\@tempboxa\space
5647      #3,
5648      file: #2
5649    }%
5650    \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5651  \fi
5652 \endgroup
5653 }
5654 \ifx\@pdfproducer\relax
5655   \def\@pdfproducer{dviwindo + Distiller}
5656 \fi
5657 \def\PDF@FinishDoc{%
5658   \Hy@UseMaketitleInfos
5659   \special{PDF: Keywords \@pdfkeywords}%
5660   \special{PDF: Title \@pdftitle}%
5661   \special{PDF: Creator \@pdfcreator}%
5662   \ifx\@pdfcreationdate\@empty
5663   \else
5664     \special{PDF: CreationDate \@pdfcreationdate}%
5665   \fi
5666   \ifx\@pdfmoddate\@empty
5667   \else
5668     \special{PDF: ModDate \@pdfmoddate}%
5669   \fi
5670   \special{PDF: Author \@pdfauthor}%
5671   \ifx\@pdfproducer\relax
5672   \else
5673     \special{PDF: Producer \@pdfproducer}%
5674   \fi
5675   \special{PDF: Subject \@pdfsubject}%
5676   \Hy@DisableOption{pdfauthor}%
5677   \Hy@DisableOption{pdftitle}%
5678   \Hy@DisableOption{pdfsubject}%
5679   \Hy@DisableOption{pdfcreator}%
5680   \Hy@DisableOption{pdfcreationdate}%
5681   \Hy@DisableOption{pdfmoddate}%
5682   \Hy@DisableOption{pdfproducer}%
5683   \Hy@DisableOption{pdfkeywords}%
5684 }
5685 \def\PDF@SetupDoc{%
5686   \ifx\@baseurl\@empty
5687   \else
5688     \special{PDF: Base \@baseurl}%
5689   \fi
5690   \ifx\@pdfpagescrop\@empty\else
5691     \special{PDF: BBox \@pdfpagescrop}%
5692   \fi
5693   \pdfmark{pdfmark=/DOCVIEW,
5694     Page=\@pdfstartpage,

```

```

5695     View=\@pdfstartview,
5696     PageMode=\@pdfpagemode
5697 }%
5698 \ifx\@pdfpagescrop\@empty
5699 \else
5700     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
5701 \fi
5702 \edef\Hy@temp{%
5703     \ifHy@toolbar\else /HideToolbar true\fi
5704     \ifHy@menubar\else /HideMenubar true\fi
5705     \ifHy@windowui\else /HideWindowUI true\fi
5706     \ifHy@fitwindow /FitWindow true\fi
5707     \ifHy@centerwindow /CenterWindow true\fi
5708     \ifHy@displaydoctitle /DisplayDocTitle true\fi
5709     \ifx\@pdfnonfullscreenpagemode\@empty
5710     \else
5711         /NonFullScreenPageMode\@pdfnonfullscreenpagemode
5712     \fi
5713     \ifx\@pdfprintscaling\@empty
5714     \else
5715         /PrintScaling\@pdfprintscaling
5716     \fi
5717 }%
5718 \pdfmark{pdfmark=/PUT,
5719     Raw={%
5720         \string{Catalog\string} <<
5721         \ifx\Hy@temp\@empty
5722         \else
5723             /ViewerPreferences<<\Hy@temp>>%
5724         \fi
5725         \ifx\pdf@pagelayout\@empty
5726         \else
5727             /PageLayout /\pdf@pagelayout\space
5728         \fi
5729         >>%
5730     }%
5731 }%
5732 }
5733 </dviwindo>
5734 < *dvipdfm>

```

45.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

5735 \newsavebox{\pdfm@box}
5736 \def\@pdfm@mark#1{\special{pdf:#1}}
5737 \def\@pdfm@dest#1{%
5738     \Hy@SaveLastskip
5739     \Hy@pstringdef\Hy@pstringDest{#1}%
5740     \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\@pdfview\space @xpos @ypos]}}%
5741     \Hy@RestoreLastskip
5742 }
5743 \providecommand\@pdfview{XYZ}
5744 \providecommand\@pdfborder{0 0 1}
5745 \providecommand*\@pdfborderstyle{}
5746 \def\hyper@anchor#1{%
5747     \@pdfm@dest{#1}%

```

```

5748 }
5749 \def\hyper@anchorstart#1{%
5750   \Hy@activeanchortrue
5751   \@pdfm@dest{#1}%
5752 }
5753 \def\hyper@anchorend{%
5754   \Hy@activeanchorfalse
5755 }
5756 \def\Hy@undefinedname{UNDEFINED}
5757 \def\hyper@linkstart#1#2{%
5758   \protected@edef\Hy@testname{#2}%
5759   \ifx\Hy@testname\@empty
5760     \let\Hy@testname\Hy@undefinedname
5761   \else
5762     \Hy@pstringdef\Hy@testname\Hy@testname
5763   \fi
5764   \@pdfm@mark{%
5765     bann <<
5766     /Type /Annot
5767     /Subtype /Link
5768     \Hy@setpdfborder
5769     /C [\csname @#1bordercolor\endcsname]
5770     /A <<
5771     /S /GoTo
5772     /D (\Hy@testname)
5773     >>
5774     >>
5775   }%
5776   \expandafter\Hy@colorlink\csname @#1color\endcsname
5777 }
5778 \def\hyper@linkend{%
5779   \Hy@endcolorlink
5780   \@pdfm@mark{eann}%
5781 }
5782 \def\hyper@link#1#2#3{%
5783   \hyper@linkstart{#1}{#2}#3\hyper@linkend
5784 }
5785 \def\hyper@linkfile#1#2#3{%
5786   \Hy@pstringdef\Hy@pstringF{#2}%
5787   \Hy@pstringdef\Hy@pstringD{#3}%
5788   \leavevmode
5789   \@pdfm@mark{%
5790     bann <<
5791     /Type /Annot
5792     /Subtype /Link
5793     \Hy@setpdfborder
5794     /C [\@filebordercolor]
5795     /A <<
5796     /S /GoToR
5797     /F (\Hy@pstringF)
5798     /D \ifx\#3\@pdfstartview\else(\Hy@pstringD)\fi\space
5799     \ifHy@newwindow /NewWindow true \fi
5800     >>
5801     >>%
5802   }%
5803   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5804   \@pdfm@mark{eann}%

```

```

5805 }
5806 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
5807   \Hy@pstringdef\Hy@pstringF{#1}%
5808   \Hy@pstringdef\Hy@pstringP{#3}%
5809   \leavevmode
5810   \@pdfm@mark{%
5811     bann <<
5812       /Type /Annot
5813       /Subtype /Link
5814       \Hy@setpdfborder
5815       /C [\@filebordercolor]
5816       /A <<
5817         /S /Launch
5818         /F (\Hy@pstringF)
5819         \ifHy@newwindow /NewWindow true \fi
5820         \ifx\#3\%
5821           \else
5822             /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
5823           \fi
5824         >>
5825       >>%
5826     }%
5827   \Hy@colorlink\@filecolor#2\Hy@endcolorlink
5828   \@pdfm@mark{eann}%
5829 }
5830 \def\hyper@linkurl#1#2{%
5831   \Hy@pstringdef\Hy@pstringURI{#2}%
5832   \leavevmode
5833   \@pdfm@mark{%
5834     bann <<
5835       /Type /Annot
5836       /Subtype /Link
5837       \Hy@setpdfborder
5838       /C [\@urlbordercolor]
5839       /A <<
5840         /S /URI
5841         /URI (\Hy@pstringURI)
5842       >>
5843     >>%
5844   }%
5845   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5846   \@pdfm@mark{eann}%
5847 }
5848 \def\Acrobatmenu#1#2{%
5849   \leavevmode
5850   \@pdfm@mark{%
5851     bann <<
5852       /Type /Annot
5853       /Subtype /Link
5854       /A <<
5855         /S /Named
5856         /N /#1
5857       >>
5858       \Hy@setpdfborder
5859       /C [\@menubordercolor]
5860     >>%
5861   }%

```

```

5862 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
5863 \@pdfm@mark{eann}%
5864 }
5865 \ifx\@pdfproducer\relax
5866 \def\@pdfproducer{dvipdfm}
5867 \fi
5868 \def\PDF@FinishDoc{%
5869 \Hy@UseMaketitleInfos
5870 \@pdfm@mark{%
5871 docinfo <<
5872 /Title (\@pdftitle)
5873 /Subject (\@pdfsubject)
5874 /Creator (\@pdfcreator)
5875 \ifx\@pdfcreationdate\@empty
5876 \else
5877 /CreationDate(\@pdfcreationdate) %
5878 \fi
5879 \ifx\@pdfmoddate\@empty
5880 \else
5881 /ModDate(\@pdfmoddate) %
5882 \fi
5883 /Author (\@pdfauthor)
5884 \ifx\@pdfproducer\relax
5885 \else
5886 /Producer (\@pdfproducer)
5887 \fi
5888 /Keywords (\@pdfkeywords)
5889 >>%
5890 }%
5891 \Hy@DisableOption{pdfauthor}%
5892 \Hy@DisableOption{pdftitle}%
5893 \Hy@DisableOption{pdfsubject}%
5894 \Hy@DisableOption{pdfcreator}%
5895 \Hy@DisableOption{pdfcreationdate}%
5896 \Hy@DisableOption{pdfmoddate}%
5897 \Hy@DisableOption{pdfproducer}%
5898 \Hy@DisableOption{pdfkeywords}%
5899 }

5900 \def\PDF@SetupDoc{%
5901 \edef\Hy@temp{%
5902 \ifHy@toolbar\else /HideToolbar true\fi
5903 \ifHy@menubar\else /HideMenubar true\fi
5904 \ifHy>windowui\else /HideWindowUI true\fi
5905 \ifHy@fitwindow /FitWindow true\fi
5906 \ifHy@centerwindow /CenterWindow true\fi
5907 \ifHy@displaydoctitle /DisplayDocTitle true\fi
5908 \ifx\@pdfnonfullscreenpagemode\@empty
5909 \else
5910 /NonFullScreenPageMode\@pdfnonfullscreenpagemode
5911 \fi
5912 \ifx\@pdfprintscaling\@empty
5913 \else
5914 /PrintScaling\@pdfprintscaling
5915 \fi
5916 }%
5917 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
5918 \@pdfm@mark{%

```

```

5919 docview <<%
5920   \ifx\pdfstartview\@empty
5921   \else
5922     /OpenAction[@page\pdfstartpage\pdfstartview]%
5923   \fi
5924   \ifx\@baseurl\@empty
5925   \else
5926     /URI<</Base(\Hy@pstringB)>>%
5927   \fi
5928   /PageMode \pdfpagemode
5929   \ifx\Hy@temp\@empty
5930   \else
5931     /ViewerPreferences<<\Hy@temp>>%
5932   \fi
5933   \ifx\pdf@pagelayout\@empty
5934   \else
5935     /PageLayout/\pdf@pagelayout\space
5936   \fi
5937   >>%
5938 }%
5939 \ifx\pdfpagescrop\@empty
5940 \else
5941   \pdfm@mark{put @pages <</CropBox[\pdfpagescrop]>>}
5942 \fi
5943 }
5944 </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.

```

5945 <*\texhtml>
5946 \RequirePackage{vtexhtml}
5947 \newif\if@Localurl
5948 \def\PDF@FinishDoc{}
5949 \def\PDF@SetupDoc{%
5950   \ifx\@baseurl\@empty
5951   \else
5952     \special{!direct <base href="\@baseurl">}%
5953   \fi
5954 }
5955 \def\@urltype{url}
5956 \def\hyper@link#1#2#3{%
5957   \leavevmode
5958   \special{!direct <a href=\hyper@quote\hyper@hash#2\hyper@quote>}%
5959   #3%
5960   \special{!direct </a>}%
5961 }
5962 \def\hyper@linkurl#1#2{%
5963   \begingroup
5964     \hyper@chars
5965     \leavevmode
5966     \MathBSuppress=1\relax
5967     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
5968     #1%
5969     \MathBSuppress=0\relax
5970     \special{!direct </a>}%

```

```

5971 \endgroup
5972 }
5973 \def\hyper@linkfile#1#2#3{%
5974 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\\#3\fi}%
5975 }
5976 \def\hyper@linkstart#1#2{%
5977 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
5978 \@Localurltrue
5979 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
5980 \else
5981 \@Localurlfalse
5982 \begingroup
5983 \hyper@chars
5984 \special{!aref #2}%
5985 \endgroup
5986 \fi
5987 }
5988 \def\hyper@linkend{%
5989 \if@Localurl
5990 \special{!endaref}%
5991 \else
5992 \special{!direct </a>}%
5993 \fi
5994 }
5995 \def\hyper@anchorstart#1{%
5996 \Hy@SaveLastskip
5997 \begingroup
5998 \hyper@chars
5999 \special{!aname #1}%
6000 \special{!direct <a name=\hyper@quote#1\hyper@quote>}%
6001 \endgroup
6002 \Hy@activeanchortrue
6003 }
6004 \def\hyper@anchorend{%
6005 \special{!direct </a>}%
6006 \Hy@activeanchorfalse
6007 \Hy@RestoreLastskip
6008 }
6009 \def\hyper@anchor#1{%
6010 \Hy@SaveLastskip
6011 \begingroup
6012 \let\protect=\string
6013 \hyper@chars
6014 \leavevmode
6015 \special{!aname #1}%
6016 \special{!direct <a name=\hyper@quote #1\hyper@quote>}%
6017 \endgroup
6018 \Hy@activeanchortrue
6019 \bgroup\anchor@spot\egroup
6020 \special{!direct </a>}%
6021 \Hy@activeanchorfalse
6022 \Hy@RestoreLastskip
6023 }
6024 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
6025 \def\@endForm{}
6026 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
6027 \typeout{Sorry, TeXpider does not yet support FORM gauges}%

```

```

6028 }
6029 \def\@TextField[#1]#2{% parameters, label
6030 \typeout{Sorry, TeXpider does not yet support FORM text fields}%
6031 }
6032 \def\@CheckBox[#1]#2{% parameters, label
6033 \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
6034 }
6035 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
6036 \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
6037 }
6038 \def\@PushButton[#1]#2{% parameters, label
6039 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
6040 }
6041 \def\@Reset[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
6042 \def\@Submit[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
6043 \</vtexhtml>
6044 \<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.

```

6045 \ifx\mediaheight\@undefined
6046 \else
6047 \ifx\mediaheight\relax
6048 \else
6049 \ifHy@setpagesize
6050 \providecommand*\VTeXInitMediaSize{%
6051 \@ifundefined{stockwidth}{%
6052 \ifdim\paperheight>0pt %
6053 \setlength\mediaheight\paperheight
6054 \fi
6055 \ifdim\paperheight>0pt %
6056 \setlength\mediawidth\paperwidth
6057 \fi
6058 }{%
6059 \ifdim\stockheight>0pt %
6060 \setlength\mediaheight\stockheight
6061 \fi
6062 \ifdim\stockwidth>0pt %
6063 \setlength\mediawidth\stockwidth
6064 \fi
6065 }%
6066 }%
6067 \AtBeginDocument{\VTeXInitMediaSize}%
6068 \fi
6069 \Hy@DisableOption{setpagesize}%
6070 \fi
6071 \fi

```

Older versions of VTeX require xyz in lower case.

```

6072 \providecommand\pdfview{xyz}
6073 \providecommand\pdfborder{0 0 1}
6074 \providecommand*\pdfborderstyle{}
6075 \def\CurrentBorderColor{\linkbordercolor}
6076 \def\hyper@anchor#1{%
6077 \Hy@SaveLastskip
6078 \begingroup
6079 \let\protect=\string

```



```

6080 \hyper@chars
6081 \special{!aname #1;\@pdfview}%
6082 \endgroup
6083 \Hy@activeanchortrue
6084 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6085 \Hy@activeanchorfalse
6086 \Hy@RestoreLastskip
6087 }
6088 \def\hyper@anchorstart#1{%
6089 \Hy@SaveLastskip
6090 \begingroup
6091 \hyper@chars
6092 \special{!aname #1;\@pdfview}%
6093 \endgroup
6094 \Hy@activeanchortrue
6095 }
6096 \def\hyper@anchorend{%
6097 \Hy@activeanchorfalse
6098 \Hy@RestoreLastskip
6099 }
6100 \def\@urltype{url}
6101 \def\Hy@undefinedname{UNDEFINED}
6102 \def\hyper@linkstart#1#2{%
6103 \Hy@pstringdef\Hy@pstringURI{#2}%
6104 \expandafter\Hy@colorlink\csname @#1color\endcsname
6105 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6106 \def\Hy@tempa{#1}%
6107 \ifx\Hy@tempa\@urltype
6108 \special{!%
6109 \a href <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6110 \a <\Hy@setpdfborder /C [\CurrentBorderColor]>%
6111 }%
6112 \else
6113 \protected@edef\Hy@testname{#2}%
6114 \ifx\Hy@testname\@empty
6115 \let\Hy@testname\Hy@undefinedname
6116 \fi
6117 \special{!%
6118 \a href \Hy@testname;%
6119 \a <\Hy@setpdfborder /C [\CurrentBorderColor]>%
6120 }%
6121 \fi
6122 }
6123 \def\hyper@linkend{%
6124 \special{!endaref}%
6125 \Hy@endcolorlink
6126 }
6127 \def\hyper@linkfile#1#2#3{%
6128 \leavevmode
6129 \special{!%
6130 \a href <%
6131 \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
6132 f=#2>#3;%
6133 \a <\Hy@setpdfborder /C [\@filebordercolor]>%
6134 }%
6135 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6136 \special{!endaref}%

```

```

6137 }
6138 \def\hyper@linkurl#1#2{%
6139   \begingroup
6140     \Hy@pstringdef\Hy@pstringURI{#2}%
6141     \hyper@chars
6142     \leavevmode
6143     \special{!%
6144       aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6145       a=<\Hy@setpdfborder /C [\urlbordercolor]>%
6146     }%
6147     \Hy@colorlink\urlcolor#1\Hy@endcolorlink
6148     \special{!endaref}%
6149   \endgroup
6150 }
6151 \def\hyper@link#1#2#3{%
6152   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6153   \leavevmode
6154   \protected@edef\Hy@testname{#2}%
6155   \ifx\Hy@testname\@empty
6156     \let\Hy@testname\Hy@undefinedname
6157   \fi
6158   \special{!%
6159     aref \Hy@testname;%
6160     a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6161   }%
6162   \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
6163   \special{!endaref}%
6164 }
6165 \def\hyper@image#1#2{%
6166   \hyper@linkurl{#2}{#1}%
6167 }
6168 \def\@hyper@launch run:#1\#2#3{%
6169   \Hy@pstringdef\Hy@pstringF{#1}%
6170   \Hy@pstringdef\Hy@pstringP{#3}%
6171   \leavevmode
6172   \special{!aref
6173     <u=%
6174       /Type /Action
6175       /S /Launch
6176       /F (\Hy@pstringF)
6177       \ifHy@newwindow /NewWindow true \fi
6178       \ifx\#3\\\else /Win << /F (\Hy@pstringF) /P (\Hy@pstringP) >> \fi%
6179     >;%
6180     a=<\Hy@setpdfborder /C [\runbordercolor]>%
6181   }%
6182   \Hy@colorlink\filecolor#2\Hy@endcolorlink
6183   \special{!endaref}%
6184 }
6185 \def\Acrobatmenu#1#2{%
6186   \leavevmode
6187   \special{!%
6188     aref <u=/S /Named /N /#1>;%
6189     a=<\Hy@setpdfborder /C [\menubordercolor]>%
6190   }%
6191   \Hy@colorlink\menucolor#2\Hy@endcolorlink
6192   \special{!endaref}%
6193 }

```

The following code (transition effects) is made by Alex Kostin.
The code below makes sense for VTeX 7.02 or later.
Please never use `\@ifundefined{VTeXversion}{...}{...}` globally.

```
6194 \ifnum\Hy@VTeXversion<702 %
6195 \else
6196   \def\hyper@pagetransition{%
6197     \ifx\@pdfpagetransition\relax
6198     \else
6199     \ifx\@pdfpagetransition\@empty
```

Standard incantation.

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

```
6200     \else
6201     \hvtex@parse@trans\@pdfpagetransition
6202     \fi
6203   \fi
6204 }
```

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

Syntax of VTeX `\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:

```
6205 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}
6206 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}
6207 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}
6208 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}
6209 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}
6210 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}
6211 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}
```

Optional parameters:

```
6212 \def\hvtex@par@dimension{/Dm}
6213 \def\hvtex@par@direction{/Di}
6214 \def\hvtex@par@duration{/D}
6215 \def\hvtex@par@motion{/M}
```

Tokenizer:

```
6216 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}
```

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

```
6217 \def\hvtex@gettoken@#1 #2\@nil{%
6218   \edef\hvtex@token{#1}%
```

```

6219 \edef\hvtex@buffer{#2}%
6220 }
6221 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

6222 \let\hvtex@trans@code\@empty
6223 \let\hvtex@param@dimension\@empty
6224 \let\hvtex@param@direction\@empty
6225 \let\hvtex@param@duration\@empty
6226 \let\hvtex@param@motion\@empty
6227 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

6228 \hvtex@gettoken
6229 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

6230 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

6231 \else
6232 \hvtex@gettoken
6233 \fi
6234 \fi
6235 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

6236 \hvtex@trans@params
6237 }

```

Reentrant macro to parse optional parameters.

```

6238 \def\hvtex@trans@params{%
6239 \ifx\hvtex@buffer\@empty
6240 \else
6241 \hvtex@gettoken
6242 \let\hvtex@trans@par\hvtex@token
6243 \ifx\hvtex@buffer\@empty
6244 \else
6245 \hvtex@gettoken
6246 \ifx\hvtex@trans@par\hvtex@par@duration

```

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

```

6247 \let\hvtex@param@duration\hvtex@token
6248 \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

6249 \expandafter\edef\expandafter\hvtex@param@motion
6250 \expandafter{\expandafter\@gobble\hvtex@token}%
6251 \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

6252 \expandafter\edef\expandafter\hvtex@param@dimension
6253 \expandafter{\expandafter\@gobble\hvtex@token}%
6254 \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).

```

6255 \let\hvtex@param@direction\hvtex@token
6256 \fi\fi\fi\fi
6257 \fi
6258 \fi

```

```

6259 \ifx\hvtex@buffer\@empty
6260 \let\next\hvtex@produce@trans
6261 \else
6262 \let\next\hvtex@trans@params
6263 \fi
6264 \next
6265 }

```

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

```

6266 \def\hvtex@produce@trans{%
6267 \let\vtex@trans@special\@empty
6268 \if S\hvtex@trans@code
6269 \edef\vtex@trans@special{\hvtex@trans@code
6270 \hvtex@param@dimension\hvtex@param@motion}%
6271 \else \if B\hvtex@trans@code
6272 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@dimension}%
6273 \else \if X\hvtex@trans@code
6274 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@motion}%
6275 \else \if W\hvtex@trans@code
6276 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6277 \else \if D\hvtex@trans@code
6278 \let\vtex@trans@special\hvtex@trans@code
6279 \else \if R\hvtex@trans@code
6280 \let\vtex@trans@special\hvtex@trans@code
6281 \else \if G\hvtex@trans@code
6282 \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6283 \fi\fi\fi\fi\fi\fi\fi
6284 \ifx\vtex@trans@special\@empty
6285 \else
6286 \ifx\hvtex@param@duration\@empty
6287 \else
6288 \setlength{\dimen@}{\hvtex@param@duration\p}%

```

I'm not guilty of possible overflow.

```

6289 \multiply\dimen@\@m
6290 \edef\vtex@trans@special{\vtex@trans@special,\strip@pt\dimen@}%
6291 \fi

```

And all the mess is just for this.

```

6292 \special{!trans \vtex@trans@special}%
6293 \fi
6294 }

6295 \def\hyper@pageduration{%
6296 \ifx\@pdfpageduration\relax
6297 \else
6298 \ifx\@pdfpageduration\@empty
6299 \special{!duration-}%
6300 \else
6301 \special{!duration \@pdfpageduration}%
6302 \fi
6303 \fi
6304 }

6305 \def\hyper@pagehidden{%
6306 \ifHy@useHidKey
6307 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
6308 \fi
6309 }

```

6310 \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

```

6311 \ifx\@pdfproducer\relax
6312   \def\@pdfproducer{VTeX}
6313   \ifnum\Hy@VTeXversion>\z@
6314     \count@VTeXversion
6315     \divide\count@ 100
6316     \edef\@pdfproducer{\@pdfproducer\space v\the\count@}
6317     \multiply\count@ -100
6318     \advance\count@VTeXversion
6319     \edef\@pdfproducer{%
6320       \@pdfproducer
6321       .\ifnum\count@<10 0\fi\the\count@
6322       \ifx\VTeXOS\@undefined\else
6323         \ifnum\VTeXOS>0 %
6324           \ifnum\VTeXOS<6 %
6325             \space%
6326             \ifcase\VTeXOS
6327               \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
6328             \fi
6329           )%
6330         \fi
6331       \fi
6332     \fi
6333     ,\space
6334     \ifnum\OpMode=\@ne PDF\else PS\fi
6335     \space backend%
6336     \ifx\gexmode\@undefined\else
6337       \ifnum\gexmode>\z@\space with GeX\fi
6338     \fi
6339   }
6340 \fi
6341 \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).

```

6342 \def\PDF@SetupDoc{%
6343   \ifx\@pdfpagescrop\@empty
6344   \else
6345     \special{!pdfinfo b=<\@pdfpagescrop>}%
6346   \fi
6347   \special{!onopen Page\@pdfstartpage}%
6348   \special{!pdfinfo p=<\@pdfpagemode>}%
6349   \ifx\@baseurl\@empty
6350   \else
6351     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
6352   \fi
6353   \special{!pdfinfo v=<<<%
6354     \ifHy@toolbar\else /HideToolbar true\fi
6355     \ifHy@menubar\else /HideMenubar true\fi
6356     \ifHy>windowui\else /HideWindowUI true\fi
6357     \ifHy@fitwindow /FitWindow true\fi
6358     \ifHy@centerwindow /CenterWindow true\fi
6359     \ifHy@displaydoctitle /DisplayDocTitle true\fi
6360     \ifx\@pdfnonfullscreenpagemode\@empty
6361     \else
6362       /NonFullScreenPageMode\@pdfnonfullscreenpagemode
6363     \fi
6364     \ifx\@pdfprintscaling\@empty
6365     \else
6366       /PrintScaling\@pdfprintscaling
6367     \fi
6368   >>>}%
6369   \ifx\pdf@pagelayout\@empty
6370   \else
6371     \special{!pdfinfo l=</\pdf@pagelayout\space>}%
6372   \fi
6373 }%
6374 \def\PDF@FinishDoc{%
6375   \Hy@UseMaketitleInfos
6376   \special{!pdfinfo a=<\@pdfauthor>}%
6377   \special{!pdfinfo t=<\@pdftitle>}%
6378   \special{!pdfinfo s=<\@pdfsubject>}%
6379   \special{!pdfinfo c=<\@pdfcreator>}%
6380   \ifx\@pdfproducer\relax
6381   \else
6382     \special{!pdfinfo r=<\@pdfproducer>}%
6383   \fi
6384   \special{!pdfinfo k=<\@pdfkeywords>}%
6385   \Hy@DisableOption{pdfauthor}%
6386   \Hy@DisableOption{pdftitle}%
6387   \Hy@DisableOption{pdfsubject}%
6388   \Hy@DisableOption{pdfcreator}%
6389   \Hy@DisableOption{pdfcreationdate}%
6390   \Hy@DisableOption{pdfmoddate}%
6391   \Hy@DisableOption{pdfproducer}%
6392   \Hy@DisableOption{pdfkeywords}%
6393 }
6394 \end{document}

```

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.

```
6395 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%  
6396 <package>\providecommand*\Hy@DistillerDestFix{}%  
6397 <*pdfmark | dviwindo>  
6398 \def\Hy@DistillerDestFix{%  
6399   \begingroup  
6400     \let\x\literalps@out
```

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

```
6401   \ifnum \@ifundefined{OpMode}{0}{%  
6402     \@ifundefined{gexmode}{0}{%  
6403       \ifnum\gexmode>0 \OpMode\else 0\fi  
6404     }}>1 %  
6405   \def\x##1{%  
6406     \immediate\special{!=##1}%  
6407   }%  
6408   \fi  
6409   \x{%  
6410     /product where{%  
6411       pop %  
6412       product(Distiller)search{%  
6413         pop pop pop %  
6414         version(.)search{%  
6415           exch pop exch pop%  
6416           (3011)eq{%  
6417             gsave %  
6418             newpath 0 0 moveto closepath clip%  
6419             /Courier findfont 10 scalefont setfont %  
6420             72 72 moveto(.)show %  
6421             grestore%  
6422           }if%  
6423         }{pop}ifelse%  
6424       }{pop}ifelse%  
6425     }if%  
6426   }%  
6427   \endgroup  
6428 }  
6429 </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

```

6430 <*pdfmark | dvipdf>
6431 \def\hyper@anchor#1{%
6432   \Hy@SaveLastskip
6433   \begingroup
6434     \pdfmark[\anchor@spot]{%
6435       pdfmark=/DEST,%
6436       linktype=anchor,%
6437       View=/\@pdfview \@pdfviewparams,%
6438       DestAnchor={#1}%
6439     }%
6440   \endgroup
6441   \Hy@RestoreLastskip
6442 }
6443 <*dvipdf>
6444 \def\hyper@anchorstart#1{\Hy@activeanchortrue}
6445 \def\hyper@anchorend{\Hy@activeanchorfalse}
6446 \def\hyper@linkstart#1#2{%
6447   \expandafter\Hy@colorlink\csname @#1color\endcsname
6448   \xdef\hyper@currentanchor{#2}%
6449 }
6450 \def\hyper@linkend{%
6451   \Hy@endcolorlink
6452 }
6453 </dvipdf>
6454 <*pdfmark>
6455 \ifundefined{hyper@anchorstart}{\endinput}
6456 \def\hyper@anchorstart#1{%
6457   \Hy@SaveLastskip
6458   \literalps@out{H.S}%
6459   \xdef\hyper@currentanchor{#1}%
6460   \Hy@activeanchortrue
6461 }
6462 \def\hyper@anchorend{%
6463   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
6464   \pdfmark{%
6465     pdfmark=/DEST,%
6466     linktype=anchor,%
6467     View=/\@pdfview \@pdfviewparams,%
6468     DestAnchor=\hyper@currentanchor,%
6469     Raw=H.B%
6470   }%
6471   \Hy@activeanchorfalse
6472   \Hy@RestoreLastskip
6473 }
6474 \def\hyper@linkstart#1#2{%
6475   \ifHy@breaklinks
6476   \else
6477     \leavevmode\hbox\bgroup
6478     \fi
6479   \expandafter\Hy@colorlink\csname @#1color\endcsname

```

```

6480 \literalps@out{H.S}%
6481 \xdef\hyper@currentanchor{#2}%
6482 \gdef\hyper@currentlinktype{#1}%
6483 }
6484 \def\hyper@linkend{%
6485 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
6486 \edef\Hy@tempcolor{\csname @\hyper@currentlinktype bordercolor\endcsname}%
6487 \pdfmark{%
6488 pdfmark=/ANN,%
6489 linktype=link,%
6490 Subtype=/Link,%
6491 Dest=\hyper@currentanchor,%
6492 AcroHighlight=\@pdfhighlight,%
6493 Border=\@pdfborder,%
6494 BorderStyle=\@pdfborderstyle,%
6495 Color=\Hy@tempcolor,%
6496 Raw=H.B%
6497 }%
6498 \Hy@endcolorlink
6499 \ifHy@breaklinks
6500 \else
6501 \egroup
6502 \fi
6503 }
6504 \<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.

```

6505 \begingroup
6506 \catcode'P=12
6507 \catcode'T=12
6508 \lowercase{\endgroup
6509 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
6510 }
6511 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
6512 \</pdfmark>

```

\hyper@pagetransition

```

6513 \def\hyper@pagetransition{%
6514 \ifx\@pdfpagetransition\relax
6515 \else
6516 \ifx\@pdfpagetransition\@empty
6517 % 1. Does an old entry have to be deleted?
6518 % 2. If 1=yes, how to delete?
6519 \else
6520 \pdfmark{%
6521 pdfmark=/PUT,%
6522 Raw={%
6523 \string{ThisPage\string}%
6524 <</Trans << /S /\@pdfpagetransition\space >> >>%
6525 }%
6526 }%
6527 \fi
6528 \fi
6529 }

```

\hyper@pageduration

```
6530 \def\hyper@pageduration{%
6531   \ifx\@pdfpageduration\relax
6532   \else
6533     \ifx\@pdfpageduration\@empty
6534       % 1. Does an old entry have to be deleted?
6535       % 2. If 1=yes, how to delete?
6536     \else
6537       \pdfmark{%
6538         pdfmark=/PUT,%
6539         Raw={%
6540           \string{ThisPage\string}%
6541           <</Dur \@pdfpageduration>>%
6542         }%
6543       }%
6544     \fi
6545   \fi
6546 }
```

\hyper@pagehidden

```
6547 \def\hyper@pagehidden{%
6548   \ifHy@useHidKey
6549     \pdfmark{%
6550       pdfmark=/PUT,%
6551       Raw={%
6552         \string{ThisPage\string}%
6553         <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
6554       }%
6555     }%
6556   \fi
6557 }

6558 </pdfmark>
6559 \def\hyper@image#1#2{%
6560   \hyper@linkurl{#2}{#1}}
6561 \def\Hy@undefinedname{UNDEFINED}
6562 \def\hyper@link#1#2#3{%
6563   \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
6564   \begingroup
6565     \protected@edef\Hy@testname{#2}%
6566     \ifx\Hy@testname\@empty
6567       \let\Hy@testname\Hy@undefinedname
6568     \fi
6569   <*dvipdf>
6570   \pdfmark[{#3}]{%
6571     pdfmark=/LNK,%
6572     {},%
6573     linktype={#1},%
6574     AcroHighlight=\@pdfhighlight,%
6575     Border=\@pdfborder,%
6576     BorderStyle=\@pdfborderstyle,%
6577     Color=\Hy@tempcolor,%
6578     Dest=\Hy@testname
6579   }%
6580 </dvipdf>
6581 <*pdfmarkbase>
6582   \pdfmark[{#3}]{%
```

```

6583     Color=\Hy@tempcolor,%
6584     linktype={#1},%
6585     AcroHighlight=\@pdfhighlight,%
6586     Border=\@pdfborder,%
6587     BorderStyle=\@pdfborderstyle,%
6588     pdfmark=/ANN,%
6589     Subtype=/Link,%
6590     Dest=\Hy@testname
6591 }%
6592 </pdfmarkbase>
6593 \endgroup
6594 }
6595 \newtoks\pdf@docset
6596 \def\PDF@FinishDoc{%
6597   \Hy@UseMaketitleInfos
6598   \let\Hy@temp\@empty
6599   \ifx\@pdfcreationdate\@empty
6600   \else
6601     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
6602   \fi
6603   \ifx\@pdfmoddate\@empty
6604   \else
6605     \expandafter\def\expandafter\Hy@temp\expandafter{%
6606       \Hy@temp
6607       ModDate=\@pdfmoddate,%
6608     }%
6609   \fi
6610   \ifx\@pdfproducer\relax
6611   \else
6612     \expandafter\def\expandafter\Hy@temp\expandafter{%
6613       \Hy@temp
6614       Producer=\@pdfproducer,%
6615     }%
6616   \fi
6617   \expandafter
6618   \pdfmark\expandafter{%
6619     \Hy@temp
6620     pdfmark=/DOCINFO,%
6621     Title=\@pdftitle,%
6622     Subject=\@pdfsubject,%
6623     Creator=\@pdfcreator,%
6624     Author=\@pdfauthor,%
6625     Keywords=\@pdfkeywords
6626   }%
6627   \Hy@DisableOption{pdfauthor}%
6628   \Hy@DisableOption{pdftitle}%
6629   \Hy@DisableOption{pdfsubject}%
6630   \Hy@DisableOption{pdfcreator}%
6631   \Hy@DisableOption{pdfcreationdate}%
6632   \Hy@DisableOption{pdfmoddate}%
6633   \Hy@DisableOption{pdfproducer}%
6634   \Hy@DisableOption{pdfkeywords}%
6635 }
6636 \def\PDF@SetupDoc{%
6637   \pdfmark{%
6638     pdfmark=/DOCVIEW,%
6639     Page=\@pdfstartpage,%

```

```

6640     View=\@pdfstartview,%
6641     PageMode=\@pdfpagemode
6642 }%
6643 \ifx\@pdfpagescrop\@empty
6644 \else
6645     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
6646 \fi
6647 \edef\Hy@temp{%
6648     \ifHy@toolbar\else /HideToolbar true\fi
6649     \ifHy@menubar\else /HideMenubar true\fi
6650     \ifHy>windowui\else /HideWindowUI true\fi
6651     \ifHy@fitwindow /FitWindow true\fi
6652     \ifHy@centerwindow /CenterWindow true\fi
6653     \ifHy@displaydoctitle /DisplayDocTitle true\fi
6654     \ifx\@pdfnonfullscreenpagemode\@empty
6655     \else
6656         /NonFullScreenPageMode\@pdfnonfullscreenpagemode
6657     \fi
6658     \ifx\@pdfprintscaling\@empty
6659     \else
6660         /PrintScaling\@pdfprintscaling
6661     \fi
6662 }%
6663 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6664 \pdfmark{%
6665     pdfmark=/PUT,%
6666     Raw={%
6667         \string{Catalog\string} <<
6668         \ifx\Hy@temp\@empty
6669         \else
6670             /ViewerPreferences<<\Hy@temp>>%
6671         \fi
6672         \ifx\pdf@pagelayout\@empty
6673         \else
6674             /PageLayout /\pdf@pagelayout\space
6675         \fi
6676         \ifx\@baseurl\@empty
6677         \else
6678             /URI << /Base (\Hy@pstringB) >>%
6679         \fi
6680     >>%
6681 }%
6682 }%
6683 }
6684 </pdfmark | dvipdf>
6685 <*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.

```

6686 \newif\ifHy@pdfmarkerror
6687 \def\pdfmark{\@ifnextchar [{\pdfmark@}{\pdfmark@[]}}
6688 \def\pdfmark@[#1]#2{%
6689     \Hy@pdfmarkerrorfalse
6690     \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%

```

```

6691 \@processme
6692 \let\pdf@type\relax
6693 \setkeys{PDF}{#2}%
6694 \ifHy@pdfmarkerror
6695 \else
6696   \ifx\pdf@type\relax
6697     \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
6698     \ifx\#1\\\relax\else\pdf@rect{#1}\fi
6699   \else
6700     \ifx\#1\\\relax
6701 \pdfmarkbase\literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark}%
6702 \dvipdf\literalps@out{/ANN >>}%
6703   \else
6704     \ifundefined{@\pdf@linktype color}{%
6705       \Hy@colorlink\@linkcolor
6706     }{%
6707       \expandafter\Hy@colorlink
6708         \csname @\pdf@linktype color\endcsname
6709     }%
6710     \pdf@rect{#1}%
6711 \pdfmarkbase\literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark}%
6712 \dvipdf\literalps@out{/ANN >>}%
6713     \Hy@endcolorlink
6714   \fi
6715 \fi
6716 \fi
6717 }

```

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 (toby@net-space.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}

```

```

6718 \newsavebox{\pdf@box}
6719 \providecommand{\Hy@setouterhbox}{\sbox}
6720 \providecommand{\Hy@breaklinksunhbox}{\unhbox}
6721 \def\pdf@rect#1{%
6722 \dvipdf\literalps@out{/ANN \pdf@type\space\the\pdf@toks\space <<#1%
6723 \leavevmode
6724 \ifHy@breaklinks
6725   \Hy@setouterhbox\pdf@box{#1}%
6726 \else
6727   \sbox\pdf@box{#1}%
6728 \fi
6729 \dimen@ht\pdf@box
6730 \ifdim\dp\pdf@box=z@
6731   \literalps@out{H.S}%
6732 \else
6733   \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
6734 \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...).

```

6735 \ifHy@breaklinks
6736 \expandafter\Hy@breaklinksunhbox
6737 \else
6738 \expandafter\box
6739 \fi
6740 \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

```

```

6741 \ifdim\dimen@=\z@
6742 \literalps@out{H.R}%
6743 \else
6744 \raise\dimen@hbox{\literalps@out{H.R}}%
6745 \fi
6746 \pdf@addtoksx{H.B}%
6747 }

```

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.

```

6748 \newtoks\pdf@toks
6749 \newtoks\pdf@defaulttoks
6750 \pdf@defaulttoks={}%
6751 \def\pdf@addtoks#1#2{%
6752 \edef\@processme{\pdf@toks{\the\pdf@toks\space /#2 #1}}%
6753 \@processme
6754 }
6755 \def\pdf@addtoksx#1{%
6756 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
6757 \@processme
6758 }
6759 \def\PDFdefaults#1{%
6760 \pdf@defaulttoks={#1}%
6761 }

```

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

```

6762 % what is the type of pdfmark?
6763 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
6764 % what is the link type?
6765 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
6766 \def\pdf@linktype{link}
6767 % parameter is a stream of PDF
6768 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
6769 % parameter is a name
6770 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
6771 % parameter is a array
6772 \define@key{PDF}{Border}{%
6773 \edef\Hy@temp{#1}%
6774 \ifx\Hy@temp\@empty
6775 \else
6776 \pdf@addtoks{[#1]}{Border}%
6777 \fi
6778 }
6779 % parameter is a dictionary
6780 \define@key{PDF}{BorderStyle}{%
6781 \edef\Hy@temp{#1}%

```

```

6782 \ifx\Hy@temp\@empty
6783 \else
6784 \pdf@addtoks{<<#1>>}{BS}%
6785 \fi
6786 }
6787 % parameter is a array
6788 \define@key{PDF}{Color}{\pdf@addtoks{[#1]}{Color}}
6789 % parameter is a string
6790 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
6791 % parameter is a integer
6792 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
6793 % parameter is a array
6794 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}
6795 % parameter is a string
6796 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
6797 % parameter is a string or file
6798 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
6799 % parameter is a destination
6800 \define@key{PDF}{Dest}{%
6801 \Hy@pstringdef\Hy@pstringDest{#1}%
6802 \ifx\Hy@pstringDest\@empty
6803 \Hy@pdfmarkerrortrue
6804 \Hy@Warning{Destination with empty name ignored}%
6805 \else
6806 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
6807 \fi
6808 }
6809 \define@key{PDF}{DestAnchor}{%
6810 \Hy@pstringdef\Hy@pstringDest{#1}%
6811 \ifx\Hy@pstringDest\@empty
6812 \Hy@pdfmarkerrortrue
6813 \Hy@Warning{Destination with empty name ignored}%
6814 \else
6815 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
6816 \fi
6817 }
6818 % parameter is a string
6819 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
6820 % parameter is a string
6821 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
6822 % parameter is a int
6823 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
6824 % parameter is a name
6825 \define@key{PDF}{AcroHighlight}{\pdf@addtoks{#1}{H}}
6826 % parameter is a string
6827 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}
6828 % parameter is a string
6829 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
6830 % parameter is a string
6831 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
6832 % parameter is a string
6833 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
6834 % parameter is a Boolean
6835 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
6836 % parameter is a integer or name
6837 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
6838 % parameter is a name

```



```

6839 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
6840 % parameter is a string
6841 \define@key{PDF}{Params}{\pdf@addtoks{#1}{Params}}
6842 % parameter is a array
6843 \define@key{PDF}{Rect}{\pdf@addtoks{#1}{Rect}}
6844 % parameter is a integer
6845 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
6846 % parameter is a name
6847 \pdfmarkbase\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
6848 \dvipdf\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{}}
6849 % parameter is a string
6850 \define@key{PDF}{Title}{\pdf@addtoks{#1}{Title}}
6851 % parameter is a string
6852 \define@key{PDF}{Unix}{\pdf@addtoks{#1}{Unix}}
6853 % parameter is a string
6854 \define@key{PDF}{UnixFile}{\pdf@addtoks{#1}{UnixFile}}
6855 % parameter is an array
6856 \define@key{PDF}{View}{\pdf@addtoks{#1}{View}}
6857 % parameter is a string
6858 \define@key{PDF}{WinFile}{\pdf@addtoks{#1}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

6859 \define@key{PDF}{Author}{\pdf@addtoks{#1}{Author}}
6860 \define@key{PDF}{Creator}{\pdf@addtoks{#1}{Creator}}
6861 \define@key{PDF}{CreationDate}{\pdf@addtoks{#1}{CreationDate}}
6862 \define@key{PDF}{ModDate}{\pdf@addtoks{#1}{ModDate}}
6863 \define@key{PDF}{Producer}{\pdf@addtoks{#1}{Producer}}
6864 \define@key{PDF}{Subject}{\pdf@addtoks{#1}{Subject}}
6865 \define@key{PDF}{Keywords}{\pdf@addtoks{#1}{Keywords}}
6866 \define@key{PDF}{ModDate}{\pdf@addtoks{#1}{ModDate}}
6867 \define@key{PDF}{Base}{\pdf@addtoks{#1}{Base}}
6868 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
6869 \pdfmarkbase | dvipdf
6870 \*pdfmark | dvipdf
6871 \def\Acrobatmenu#1#2{%
6872   \pdfmark[{#2}] {%
6873     linktype=menu,%
6874     pdfmark=/ANN,%
6875     AcroHighlight=\@pdfhighlight,%
6876     Border=\@pdfborder,%
6877     BorderStyle=\@pdfborderstyle,%
6878     Action={<< /Subtype /Named /N /#1 >>},%
6879     Subtype=/Link%
6880   }%
6881 }

```

And now for some useful examples:

```

6882 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
6883 \def\PDFNextPage@[#1]#2{%
6884   \pdfmark[{#2}] {%
6885     #1,%
6886     Border=\@pdfborder,%
6887     BorderStyle=\@pdfborderstyle,%
6888     Color=.2 .1 .5,%
6889     pdfmark=/ANN,%
6890     Subtype=/Link,%
6891     Page=/Next%
6892   }%

```

```

6893 }
6894 \def\PDFPreviousPage{%
6895   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
6896 }
6897 \def\PDFPreviousPage@[#1]#2{%
6898   \pdfmark[#{#2}]{%
6899     #1,%
6900     Border=\@pdfborder,%
6901     BorderStyle=\@pdfborderstyle,%
6902     Color=.4 .4 .1,%
6903     pdfmark=/ANN,%
6904     Subtype=/Link,%
6905     Page=/Prev%
6906   }%
6907 }
6908 \def\PDFOpen#1{%
6909   \pdfmark{#1,pdfmark=/DOCVIEW}%
6910 }

```

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!

```

6911 \def\PDFPage{\@ifnextchar[{\PDFPage@}{\PDFPage@[]}}
6912 \def\PDFPage@[#1]#2#3{%
6913   \let\pageref\simple@pageref
6914   \pdfmark[#{#3}]{%
6915     #1,%
6916     Page={#2},%
6917     AcroHighlight=\@pdfhighlight,%
6918     Border=\@pdfborder,%
6919     BorderStyle=\@pdfborderstyle,%
6920     Color=\@pagebordercolor,%
6921     pdfmark=/ANN,%
6922     Subtype=/Link%
6923   }%
6924 }
6925 \def\simple@pageref#1{%
6926   \expandafter\ifx\csname r@#1\endcsname\relax
6927     0%
6928   \else
6929     \expandafter\expandafter\expandafter
6930       \@secondoffive\csname r@#1\endcsname
6931   \fi}

```

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

```

6932 \def\hyper@linkurl#1#2{%
6933   \begingroup
6934     \Hy@pstringdef\Hy@pstringURI{#2}%
6935     \hyper@chars
6936     \leavevmode
6937     \pdfmarkbase)
6938     \pdfmark[#{#1}]{%
6939       pdfmark=/ANN,%
6940       linktype=url,%
6941       AcroHighlight=\@pdfhighlight,%
6942       Border=\@pdfborder,%
6943       BorderStyle=\@pdfborderstyle,%
6944       Color=\@urlbordercolor,%

```

```

6945     Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
6946     Subtype=/Link%
6947   }%
6948 </pdfmarkbase>
6949 <*dvipdf>
6950   \pdfmark[{#1}]{%
6951     pdfmark=/LNK,%
6952     linktype=url,%
6953     AcroHighlight=\@pdfhighlight,%
6954     Border=\@pdfborder,%
6955     BorderStyle=\@pdfborderstyle,%
6956     Color=\@urlbordercolor,%
6957     Action={URI /URI <\Hy@hstringURI>}%
6958   }%
6959 </dvipdf>
6960 \endgroup
6961 }
6962 \def\hyper@linkfile#1#2#3{%
6963   \begingroup
6964     \Hy@pstringdef\Hy@pstringF{#2}%
6965     \Hy@pstringdef\Hy@pstringD{#3}%
6966     \leavevmode
6967 <*pdfmark>
6968   \pdfmark[{#1}]{%
6969     pdfmark=/ANN,%
6970     Subtype=/Link,
6971     AcroHighlight=\@pdfhighlight,%
6972     Border=\@pdfborder,%
6973     BorderStyle=\@pdfborderstyle,%
6974     linktype=file,%
6975     Color=\@filebordercolor,%
6976     Action={<<
6977       /S /GoToR
6978       \ifHy@newwindow /NewWindow true \fi
6979       /F (\Hy@pstringF)
6980       /D \ifx\#3\@0 \pdfstartview\else(\Hy@pstringD) cvn\fi
6981     >>}%
6982   }%
6983 </pdfmark>
6984 <*dvipdf>
6985   \pdfmark[{#1}]{%
6986     pdfmark=/LNK,%
6987     linktype=file,
6988     AcroHighlight=\@pdfhighlight,%
6989     Border=\@pdfborder,%
6990     BorderStyle=\@pdfborderstyle,%
6991     Color=\@filebordercolor,%
6992     Action={<<
6993       /S /GoToR
6994       \ifHy@newwindow /NewWindow true \fi
6995       /F (\Hy@pstringF)
6996       /D \ifx\#3\@0 \pdfstartview\else(\Hy@pstringD) cvn\fi
6997     >>}%
6998   }%
6999 </dvipdf>
7000 \endgroup
7001 }

```

```

7002 \def\@hyper@launch run:#1\|#2#3{%
7003   \begingroup
7004     \Hy@pstringdef\Hy@pstringF{#1}%
7005     \Hy@pstringdef\Hy@pstringP{#3}%
7006     \leavevmode
7007 \<*pdfmark>
7008   \pdfmark[{#2}]{%
7009     pdfmark=/ANN,%
7010     Subtype=/Link,%
7011     AcroHighlight=\@pdfhighlight,%
7012     Border=\@pdfborder,%
7013     BorderStyle=\@pdfborderstyle,%
7014     linktype=file,%
7015     Color=\@filebordercolor,%
7016     Action={<<
7017       /S /Launch
7018       \ifHy@newwindow /NewWindow true \fi
7019       /F (\Hy@pstringF)
7020       \ifx\|#3\|
7021         \else
7022           /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
7023         \fi
7024       >>}%
7025   }%
7026 \</pdfmark>
7027 \<*dvipdf>
7028   \pdfmark[{#2}]{%
7029     pdfmark=/LNK,%
7030     linktype=file,%
7031     AcroHighlight=\@pdfhighlight,%
7032     Border=\@pdfborder,%
7033     BorderStyle=\@pdfborderstyle,%
7034     Color=\@filebordercolor,%
7035     Action={<<
7036       /S /GoToR
7037       \ifHy@newwindow /NewWindow true \fi
7038       /F (\Hy@pstringF)
7039       \ifx\|#3\|
7040         \else
7041           /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
7042         \fi
7043       >>}%
7044   }%
7045 \</dvipdf>
7046 \endgroup
7047 }
7048 \</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.

```

7049 \<*dvips>

```

```

7050 \input{pdfmark.def}%
7051 \ifx\@pdfproducer\relax
7052   \def\@pdfproducer{dvips + Distiller}
7053 \fi
7054 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
7055 \def\headerps@out#1{\special{! #1}}%
7056 \providecommand\@pdfborder{0 0 12}
7057 \providecommand*\@pdfborderstyle{}
7058 \providecommand\@pdfview{XYZ}
7059 \providecommand\@pdfviewparams{ H.V}

7060 \AtBeginDvi{%
7061   \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 <mge@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.

```

7062   /DvipsToPDF { 72.27 mul Resolution div } def
7063   /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.

```

7064   /HyperBorder { 1 PDFToDvips } def
7065   /H.V {pdf@hoff pdf@voff null} def
7066   /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

```

7067   /H.S {
7068     currentpoint
7069     HyperBorder add /pdf@lly exch def
7070     dup DvipsToPDF /pdf@hoff exch def
7071     HyperBorder sub /pdf@llx exch def
7072   } def

```

The calculation of upper left *y* is done without raising the point in $\text{\TeX}$, 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

```

7073   /H.L {
7074     2 sub dup
7075     /HyperBasePt exch def
7076     PDFToDvips /HyperBaseDvips exch def
7077     currentpoint
7078     HyperBaseDvips sub /pdf@ury exch def
7079     /pdf@urx exch def

```

```

7080     } def
7081     /H.A {
7082         H.L
7083 % | /pdf@voff| = the distance from the top of the page to a point
7084 % | \baselineskip| above the current point in PDF coordinates
7085         currentpoint exch pop
7086         vsize 72 sub exch DvipsToPDF
7087         HyperBasePt sub % baseline skip
7088         sub /pdf@voff exch def
7089     } def
7090     /H.R {
7091         currentpoint
7092         HyperBorder sub /pdf@ury exch def
7093         HyperBorder add /pdf@urx exch def
7094 % | /pdf@voff| = the distance from the top of the page to the current point, in
7095 % PDF coordinates
7096         currentpoint exch pop vsize 72 sub
7097         exch DvipsToPDF sub /pdf@voff exch def
7098     } def
7099     systemdict /pdfmark known
7100     {
7101         userdict /?pdfmark systemdict /exec get put
7102     }{
7103         userdict /?pdfmark systemdict /pop get put
7104         userdict /pdfmark systemdict /cleartomark get put
7105     }
7106     ifelse
7107 }%
7108 }
7109 \AfterBeginDocument{%
7110 \ifx\special@paper\@empty\else
7111 \ifHy@setpagesize
7112 \special{papersize=\special@paper}%
7113 \fi
7114 \Hy@DisableOption{setpagesize}%
7115 \fi
7116 }
7117 </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.

```

7118 <*vtexpdfmark>
7119 \input{pdfmark.def}%
7120 \ifx\@pdfproducer\relax
7121 \ifnum\OpMode=\@ne
7122 \def\@pdfproducer{VTeX}
7123 \else
7124 \def\@pdfproducer{VTeX + Distiller}
7125 \fi
7126 \fi
7127 \def\literalps@out#1{\special{pS:#1}}%
7128 \def\headerps@out#1{\immediate\special{pS:#1}}%

```

```

7129 \providecommand\@pdfborder{0 0 1}
7130 \providecommand*\@pdfborderstyle{}
7131 \providecommand\@pdfview{XYZ}
7132 \providecommand\@pdfviewparams{ H.V}

7133 \AtBeginDvi{%
7134   \headerps@out{%
7135     /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.

```

7136   /HyperBorder {1} def
7137   /H.V {pdf@hoff pdf@voff null} def
7138   /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: pdf@lly = $Y_c - \text{HyperBorder}$, pdf@hoff = $X_c + 72$, pdf@llx = $X_c - \text{HyperBorder}$

```

7139   /H.S {
7140     currentpoint
7141     HyperBorder sub
7142     /pdf@lly exch def
7143     dup 72 add /pdf@hoff exch def
7144     HyperBorder sub
7145     /pdf@llx exch def
7146   } def

```

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

```

7147   /H.L {
7148     2 sub
7149     /HyperBasePt exch def
7150     currentpoint
7151     HyperBasePt add HyperBorder add
7152     /pdf@ury exch def
7153     HyperBorder add
7154     /pdf@urx exch def
7155   } def
7156   /H.A {
7157     H.L
7158     currentpoint exch pop
7159     vsize 72 sub exch
7160     HyperBasePt add add
7161     /pdf@voff exch def
7162   } def

```

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

```

7163   /H.R {
7164     currentpoint
7165     HyperBorder add
7166     /pdf@ury exch def
7167     HyperBorder add
7168     /pdf@urx exch def
7169     currentpoint exch pop vsize 72 sub add
7170     /pdf@voff exch def
7171   } def
7172   systemdict /pdfmark known
7173   {
7174     userdict /?pdfmark systemdict /exec get put

```

```

7175   }{
7176       userdict /?pdfmark systemdict /pop get put
7177       userdict /pdfmark systemdict /cleartomark get put
7178   }
7179   ifelse
7180 }%
7181 }
7182 </vtexpdfmark>

```

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.

```

7183 <*textures>
7184 \begingroup
7185   \obeylines %
7186   \gdef\Hy@ps@CR{\noexpand
7187   }%
7188 \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`.

```

7189 \def\literalps@out#1{%
7190   \special{postscript 0 0 transform}%
7191   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
7192 }%
7193 %

```

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.

```

7194 \def\headerps@out#1{%
7195   \special{%
7196     prepostscript TeXdict begin\Hy@ps@CR
7197     #1\Hy@ps@CR
7198     end%
7199   }%
7200 }%
7201 %

```

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.


```

7202 \AtBeginDvi{%
7203   \headerps@out{%
7204     /betterpdfmark {%
7205       systemdict begin
7206         dup /BP eq
7207         {cleartomark gsave nulldevice []
7208         {dup /EP eq
7209           {cleartomark cleartomark grestore}
7210           {cleartomark}
7211           ifelse
7212         }ifelse
7213       end
7214     }def\Hy@ps@CR
7215     __pdfmark__ not{/pdfmark /betterpdfmark load def}if
7216     systemdict /pdfmark known
7217     {
7218       userdict /?pdfmark systemdict /load get put
7219     }{
7220       userdict /?pdfmark systemdict /pop get put
7221     }
7222     ifelse
7223   }% end of \headerps@out
7224 }% end of \AtBeginDvi
7225 %
7226 \input{pdfmark.def}%
7227 %
7228 \ifx\@pdfproducer\relax
7229   \def\@pdfproducer{Textures + Distiller}%
7230 \fi
7231 \providecommand\@pdfborder{0 0 1}
7232 \providecommand*\@pdfborderstyle{}
7233 \providecommand\@pdfview{XYZ}
7234 \providecommand\@pdfviewparams{ H.V}
7235 %

```

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 $\TeX$.

```
7236 \headerps@out{%
```

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

```

7237 /vsize {\Hy@pageheight} def
7238 /DvipsToPDF {} def
7239 /PDFToDvips {} def
7240 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
7241 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
7242 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
7243 /H.S {
7244   currentpoint
7245   HyperBorder add /pdf@lly exch def
7246   dup DvipsToPDF /pdf@hoff exch def
7247   HyperBorder sub /pdf@llx exch def
7248 } def\Hy@ps@CR
7249 /H.L {
7250   2 sub
7251   PDFToDvips /HyperBase exch def

```

```

7252     currentpoint
7253     HyperBase sub /pdf@ury exch def
7254     /pdf@urx exch def
7255 } def\Hy@ps@CR
7256 /H.A {
7257     H.L
7258     currentpoint exch pop
7259     vsize 72 sub exch DvipsToPDF
7260     HyperBase sub % baseline skip
7261     sub /pdf@voff exch def
7262 } def\Hy@ps@CR
7263 /H.R {
7264     currentpoint
7265     HyperBorder sub /pdf@ury exch def
7266     HyperBorder add /pdf@urx exch def
7267     currentpoint exch pop vsize 72 sub
7268     exch DvipsToPDF sub /pdf@voff exch def
7269 } def\Hy@ps@CR
7270 }

7271 \AfterBeginDocument{%
7272     \ifHy@colorlinks
7273         \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
7274     \fi
7275 }

```

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.

```

7276 \expandafter\let\expandafter\keepPDF@SetupDoc
7277     \csname PDF@SetupDoc\endcsname
7278 \def\PDF@SetupDoc{%
7279     \ifx\@baseurl\@empty
7280     \else
7281         \special{html:<base href="\@baseurl">}%
7282     \fi
7283     \keepPDF@SetupDoc
7284 }

7285 \def\hyper@anchor#1{%
7286     \Hy@SaveLastskip
7287     \begingroup
7288         \let\protect=\string
7289         \special{html:<a name=\hyper@quote #1\hyper@quote>}%
7290     \endgroup
7291     \Hy@activeanchortrue
7292     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7293     \special{html:</a>}%
7294     \Hy@activeanchorfalse
7295     \Hy@RestoreLastskip
7296 }

7297 \def\hyper@anchorstart#1{%
7298     \Hy@SaveLastskip
7299     \begingroup
7300         \hyper@chars
7301         \special{html:<a name=\hyper@quote#1\hyper@quote>}%
7302     \endgroup
7303     \Hy@activeanchortrue
7304 }
7305 \def\hyper@anchorend{%

```

```

7306 \special{html:</a>}}%
7307 \Hy@activeanchorfalse
7308 \Hy@RestoreLastskip
7309 }
7310 \def\@urltype{url}
7311 \def\hyper@linkstart#1#2{%
7312 \expandafter\Hy@colorlink\csname @#1color\endcsname
7313 \def\Hy@tempa{#1}%
7314 \ifx\Hy@tempa\@urltype
7315 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
7316 \else
7317 \begingroup
7318 \hyper@chars
7319 \special{html:<a href=\hyper@quote\##2\hyper@quote>}}%
7320 \endgroup
7321 \fi
7322 }
7323 \def\hyper@linkend{%
7324 \special{html:</a>}}%
7325 \Hy@endcolorlink
7326 }
7327 \def\hyper@linkfile#1#2#3{%
7328 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
7329 }
7330 \def\hyper@linkurl#1#2{%
7331 \leavevmode
7332 \ifHy@raiselinks
7333 \setbox\@tempboxa=\color@hbox #1\color@endbox
7334 \@linkdim\dp\@tempboxa
7335 \lower\@linkdim\hbox{%
7336 \hyper@chars
7337 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
7338 }%
7339 \Hy@colorlink\@urlcolor#1%
7340 \@linkdim\ht\@tempboxa
7341 \advance\@linkdim by -6.5\p@
7342 \raise\@linkdim\hbox{\special{html:</a>}}}%
7343 \Hy@endcolorlink
7344 \else
7345 \begingroup
7346 \hyper@chars
7347 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
7348 \Hy@colorlink\@urlcolor#1%
7349 \special{html:</a>}}%
7350 \Hy@endcolorlink
7351 \endgroup
7352 \fi
7353 }
7354 \def\hyper@link#1#2#3{%
7355 \hyper@linkurl{#3}{\##2}%
7356 }
7357 \def\hyper@image#1#2{%
7358 \begingroup
7359 \hyper@chars
7360 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
7361 \endgroup
7362 }

```

7363 </textures>

45.12 dvipsone

```
7364% \subsection{dvipsone driver}
7365% Over-ride the default setup macro in pdfmark driver to use Y\&Y
7366% |\special| commands.
7367 <*dvipsone>
7368 \providecommand\@pdfborder{0 0 65781}
7369 \providecommand*\@pdfborderstyle{}
7370 \input{pdfmark.def}%
7371 \ifx\@pdfproducer\relax
7372   \def\@pdfproducer{dvipsone + Distiller}
7373 \fi
7374 \def\literalps@out#1{\special{ps:#1}}%
7375 \def\headerps@out#1{\special{! #1}}%
7376 \def\PDF@FinishDoc{%
7377   \Hy@UseMaketitleInfos
7378   \special{PDF: Keywords \@pdfkeywords}%
7379   \special{PDF: Title \@pdftitle}%
7380   \special{PDF: Creator \@pdfcreator}%
7381   \ifx\@pdfcreationdate\empty
7382   \else
7383     \special{PDF: CreationDate \@pdfcreationdate}%
7384   \fi
7385   \ifx\@pdfmoddate\empty
7386   \else
7387     \special{PDF: ModDate \@pdfmoddate}%
7388   \fi
7389   \special{PDF: Author \@pdfauthor}%
7390   \ifx\@pdfproducer\relax
7391   \else
7392     \special{PDF: Producer \@pdfproducer}%
7393   \fi
7394   \special{PDF: Subject \@pdfsubject}%
7395   \Hy@DisableOption{pdfauthor}%
7396   \Hy@DisableOption{pdftitle}%
7397   \Hy@DisableOption{pdfsubject}%
7398   \Hy@DisableOption{pdfcreator}%
7399   \Hy@DisableOption{pdfcreationdate}%
7400   \Hy@DisableOption{pdfmoddate}%
7401   \Hy@DisableOption{pdfproducer}%
7402   \Hy@DisableOption{pdfkeywords}%
7403 }
7404 \def\PDF@SetupDoc{%
7405   \pdfmark{%
7406     pdfmark=/DOCVIEW,
7407     Page=\@pdfstartpage,
7408     View=\@pdfstartview,
7409     PageMode=\@pdfpagemode
7410   }%
7411   \ifx\@pdfpagescrop\empty
7412   \else
7413     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7414   \fi
7415   \edef\Hy@temp{%
7416     \ifHy@toolbar\else /HideToolbar true\fi
```

```

7417 \ifHy@menubar\else /HideMenubar true\fi
7418 \ifHy@windowui\else /HideWindowUI true\fi
7419 \ifHy@fitwindow /FitWindow true\fi
7420 \ifHy@centerwindow /CenterWindow true\fi
7421 \ifHy@displaydoctitle /DisplayDocTitle true\fi
7422 \ifx\@pdfnonfullscreenpagemode\@empty
7423 \else
7424 /NonFullScreenPageMode\@pdfnonfullscreenpagemode
7425 \fi
7426 \ifx\@pdfprintscaling\@empty
7427 \else
7428 /PrintScaling\@pdfprintscaling
7429 \fi
7430 }%
7431 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7432 \pdfmark{%
7433 pdfmark=/PUT,%
7434 Raw={%
7435 \string{Catalog\string} <<
7436 \ifx\Hy@temp\@empty
7437 \else
7438 /ViewerPreferences<<\Hy@temp>>%
7439 \fi
7440 \ifx\pdf@pagelayout\@empty
7441 \else
7442 /PageLayout /\pdf@pagelayout\space
7443 \fi
7444 \ifx\@baseurl\@empty
7445 \else
7446 /URI << /Base (\Hy@pstringB) >>%
7447 \fi
7448 >>%
7449 }%
7450 }%
7451 }
7452 \providecommand\@pdfview{XYZ}
7453 \providecommand\@pdfviewparams{ %
7454 gsave revscl currentpoint grestore
7455 72 add exch pop null exch null
7456 }

```

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

```
7457 \special{headertext=
```

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

```

7458 /DvipsToPDF { 65781 div } def
7459 /PDFToDvips { 65781 mul } def
7460 /HyperBorder { 1 PDFToDvips } def
7461 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def
7462 /H.S {
7463 currentpoint
7464 HyperBorder add /pdf@lly exch def
7465 dup DvipsToPDF /pdf@hoff exch def
7466 HyperBorder sub /pdf@llx exch def

```

```

7467 } def
7468 /H.L {
7469   2 sub
7470   PDFToDvips /HyperBase exch def
7471   currentpoint
7472   HyperBase sub /pdf@ury exch def
7473   /pdf@urx exch def
7474 } def
7475 /H.A {
7476   H.L
7477   currentpoint exch pop
7478   HyperBase sub % baseline skip
7479   DvipsToPDF /pdf@voff exch def
7480 } def
7481 /H.R {
7482   currentpoint
7483   HyperBorder sub /pdf@ury exch def
7484   HyperBorder add /pdf@urx exch def
7485   currentpoint exch pop DvipsToPDF /pdf@voff exch def
7486 } def
7487 systemdict
7488 /pdfmark known
7489 {
7490   userdict /?pdfmark /exec load put
7491 }{
7492   userdict /?pdfmark /pop load put
7493   userdict /pdfmark systemdict /cleartomark get put
7494 }
7495 ifelse
7496 }
7497 </dvipsone>
7498 <*dvipdf>
7499 \def\literalps@out#1{\special{pdf: #1}}%
7500 \providecommand\@pdfborder{0 0 1}
7501 \providecommand*\@pdfborderstyle{}
7502 </dvipdf>

```

45.13 TeX4ht

```

7503 <*tex4ht>
7504 \@ifpackageloaded{tex4ht}
7505 {\typeout{hyperref tex4ht: tex4ht already loaded}}%
7506 {\RequirePackage[hTeX4ht]{tex4ht}}
7507 \def\PDF@FinishDoc{}
7508 \def\PDF@SetupDoc{%
7509   \ifx\@baseurl\@empty
7510   \else
7511     \special{t4ht=<base href="\@baseurl">}%
7512   \fi
7513 }
7514 \def\hyper@anchor#1{%
7515   \Hy@SaveLastskip
7516   \begingroup
7517     \let\protect=\string
7518     \special{t4ht=<a name=\hyper@quote #1\hyper@quote>}%
7519   \endgroup
7520   \Hy@activeanchortrue
7521   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink

```

```

7522 \special{t4ht=</a>}}%
7523 \Hy@activeanchorfalse
7524 \Hy@RestoreLastskip
7525 }
7526 \def\hyper@anchorstart#1{%
7527 \Hy@SaveLastskip
7528 \begingroup
7529 \hyper@chars\special{t4ht=<a name=\hyper@quote#1\hyper@quote>}}%
7530 \endgroup
7531 \Hy@activeanchortrue
7532 }
7533 \def\hyper@anchorend{%
7534 \special{t4ht=</a>}}%
7535 \Hy@activeanchorfalse
7536 \Hy@RestoreLastskip
7537 }
7538 \def\@urltype{url}
7539 \def\hyper@linkstart#1#2{%
7540 \expandafter\Hy@colorlink\csname @#1color\endcsname
7541 \def\Hy@tempa{#1}%
7542 \ifx\Hy@tempa\@urltype
7543 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
7544 \else
7545 {\hyper@chars\special{t4ht=<a href=\hyper@quote\##2\hyper@quote>}}}%
7546 \fi
7547 }
7548 \def\hyper@linkend{%
7549 \special{t4ht=</a>}}%
7550 \Hy@endcolorlink
7551 }
7552 \def\hyper@linkfile#1#2#3{%
7553 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
7554 }
7555 \def\hyper@linkurl#1#2{%
7556 \leavevmode
7557 \ifHy@raiselinks
7558 \setbox\@tempboxa=\color@hbox #1\color@endbox
7559 \@linkdim\dp\@tempboxa
7560 \lower\@linkdim\hbox{%
7561 \begingroup
7562 \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
7563 \endgroup
7564 }%
7565 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7566 \@linkdim\ht\@tempboxa
7567 \advance\@linkdim by -6.5\p@
7568 \raise\@linkdim\hbox{\special{t4ht=</a>}}}%
7569 \else
7570 \begingroup
7571 \hyper@chars
7572 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
7573 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7574 \special{t4ht=</a>}}%
7575 \endgroup
7576 \fi
7577 }
7578 \def\hyper@link#1#2#3{%

```

```

7579 \hyper@linkurl{#3}{\##2}%
7580 }
7581 \def\hyper@image#1#2{%
7582   \begingroup
7583     \hyper@chars
7584     \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
7585   \endgroup
7586 }
7587 \let\autoref\ref
7588 \ifx \rEfLiNK \UnDef
7589   \def\rEfLiNK #1#2{#2}%
7590 \fi
7591 \def\backref#1{}
7592 </tex4ht>
7593 <*tex4htcfg>
7594 \IfFileExists{\jobname.cfg}{\endinput}{}
7595 \Preamble{html}
7596   \begin{document}
7597 \EndPreamble
7598 \def\TeX{\TeX}
7599 \def\OMEGA{\Omega}
7600 \def\LaTeX{\LaTeX}
7601 \def\LaTeXe{\LaTeX2e}
7602 \def\eTeX{e-TeX}
7603 \def\MF{Metafont}
7604 \def\MP{Metapost}
7605 </tex4htcfg>

```

46 Driver-specific form support

46.1 pdfmarks

```

7606 <*pdfmark>
7607 \long\def\@Form[#1]{%
7608 \AtBeginDvi{%
7609   \headerps@out{%
7610 [ /_objdef {pdfDocEncoding}
7611 /type /dict
7612 /OBJ pdfmark
7613 [ {pdfDocEncoding}
7614 << /Type /Encoding
7615   /Differences [ 24 /breve /caron /circumflex /dotaccent
7616 /hungarumlaut /ogonek /ring /tilde 39 /quotesingle 96 /grave 128
7617 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin /fraction
7618 /guilsinglleft /guilsinglright /minus /perthousand /quotedblbase
7619 /quotedblleft /quotedblright /quoteleft /quoteright /quotesinglbase
7620 /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis /Zcaron /dotlessi
7621 /lslash /oe /scaron /zcaron 164 /currency 166 /brokenbar 168 /dieresis
7622 /copyright /ordfeminine 172 /logicalnot /.notdef /registered /macron
7623 /degree /plusminus /twosuperior /threesuperior /acute /mu 183
7624 /periodcentered /cedilla /onesuperior /ordmasculine 188 /onequarter
7625 /onehalf /threequarters 192 /Agrave /Aacute /Acircumflex /Atilde
7626 /Adieresis /Aring /AE /Ccedilla /Egrave /Eacute /Ecircumflex
7627 /Edieresis /Igrave /Iacute /Icircumflex /Idieresis /Eth /Ntilde
7628 /Ograve /Oacute /Ocircumflex /Otilde /Odieresis /multiply /Oslash
7629 /Ugrave /Uacute /Ucircumflex /Udieresis /Yacute /Thorn /germandbls
7630 /agrave /aacute /acircumflex /atilde /adieresis /aring /ae /cedilla
7631 /egrave /eacute /ecircumflex /edieresis /igrave /iacute /icircumflex

```



```

7632 /idieresis /eth /ntilde /ograde /oacute /ocircumflex /otilde
7633 /odieresis /divide /oslash /ugrave /uacute /ucircumflex /udieresis
7634 /yacute /thorn /ydieresis ]
7635 >>
7636 /PUT pdfmark
7637 [ /_objdef {ZaDb}
7638 /type /dict
7639 /OBJ pdfmark
7640 [ {ZaDb}
7641 <<
7642 /Type /Font
7643 /Subtype /Type1
7644 /Name /ZaDb
7645 /BaseFont /ZapfDingbats
7646 >>
7647 /PUT pdfmark
7648 [ /_objdef {Helv}
7649 /type /dict
7650 /OBJ pdfmark
7651 [ {Helv}
7652 <<
7653 /Type /Font
7654 /Subtype /Type1
7655 /Name /Helv
7656 /BaseFont /Helvetica
7657 /Encoding {pdfDocEncoding}
7658 >>
7659 /PUT pdfmark
7660 [ /_objdef {aform}
7661 /type /dict
7662 /OBJ pdfmark
7663 [ /_objdef {afields}
7664 /type /array
7665 /OBJ pdfmark
7666 {
7667 [/BBox [0 0 100 100] /_objdef {Check} /BP pdfmark
7668 1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (4) show
7669 [/EP pdfmark
7670 [/BBox [0 0 100 100] /_objdef {Cross} /BP pdfmark
7671 1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (8) show
7672 [/EP pdfmark
7673 [/BBox [0 0 250 100] /_objdef {Submit} /BP pdfmark 0.6 setgray 0 0 250
7674 100 rectfill 1 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246 96
7675 lineto 4 96 lineto 4 4 lineto fill 0.34 setgray 248 98 moveto 248 2
7676 lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
7677 /Helvetica 76 selectfont 0 setgray 8 22.5 moveto (Submit) show
7678 [/EP pdfmark
7679 [/BBox [0 0 250 100] /_objdef {SubmitP} /BP pdfmark 0.6 setgray 0 0
7680 250 100 rectfill 0.34 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246
7681 96 lineto 4 96 lineto 4 4 lineto fill 1 setgray 248 98 moveto 248 2
7682 lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
7683 /Helvetica 76 selectfont 0 setgray 10 20.5 moveto (Submit) show
7684 [/EP pdfmark
7685 } ?pdfmark
7686 [ {aform}
7687 <<
7688 /Fields {afields}

```

```

7689 /DR << /Font << /ZaDb {ZaDb} /Helv {Helv} >> >>
7690 /DA (/Helv 10 Tf 0 g )
7691 /CO {corder}
7692 /NeedAppearances true
7693 >>
7694 /PUT pdfmark
7695 [ \string{Catalog\string}
7696 <<
7697 /AcroForm {aform}
7698 >>
7699 /PUT pdfmark
7700 [ /_objdef {corder} /type /array /OBJ pdfmark % dps
7701 }}%
7702 \setkeys{Form}{#1}%
7703 }
7704 \def\@endForm{}
7705 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7706 \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
7707 }
7708 \def\@TextField[#1]#2{% parameters, label
7709 \def\Fld@name{#2}%
7710 \def\Fld@default{}%
7711 \let\Fld@value\@empty
7712 \def\Fld@width{\DefaultWidthofText}%
7713 \def\Fld@height{\DefaultHeightofText}%
7714 \ifFld@multiline
7715 \begingroup
7716 \dimen@=\DefaultHeightofText
7717 \dimen@=4\dimen@
7718 \edef\x{\endgroup
7719 \def\noexpand\Fld@height{\the\dimen@}%
7720 }%
7721 \x
7722 \fi
7723 \bgroup
7724 \Field@toks={ }%
7725 \setkeys{Field}{#1}%
7726 \ifFld@hidden\def\Fld@width{1sp}\fi
7727 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
7728 \LayoutTextField{#2}{%
7729 \Hy@escapeform\PDFForm@Text
7730 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
7731 pdfmark=/ANN,Raw={\PDFForm@Text}%
7732 }%
7733 }%
7734 \egroup
7735 }
7736 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7737 \def\Fld@name{#2}%
7738 \def\Fld@default{}%
7739 \def\Fld@width{\DefaultWidthofChoiceMenu}%
7740 \def\Fld@height{\DefaultHeightofChoiceMenu}%
7741 \bgroup
7742 \Fld@menulength=0
7743 \@tempdima\z@
7744 \@for\@curropt:=#3\do{%
7745 \expandafter\Fld@checkequals\@curropt==\%

```

```

7746      \Hy@StepCount\Fld@menulength
7747      \settowidth{\@tempdimb}{\@currDisplay}%
7748      \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
7749  }%
7750  \advance\@tempdima by 15\p@
7751  \Field@toks={ }%
7752  \setkeys{Field}{#1}%
7753  \ifFld@hidden\def\Fld@width{1sp}\fi
7754  \LayoutChoiceField{#2}{%
7755    \ifFld@radio
7756      \@@Radio{#3}%
7757    \else
7758      {%
7759        \ifdim\Fld@width<\@tempdima
7760          \ifdim\@tempdima<1cm\@tempdima1cm\fi
7761          \edef\Fld@width{\the\@tempdima}%
7762        \fi
7763        \def\Fld@flags{%
7764          \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
7765          \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
7766          \ifx\Fld@flags\@empty
7767            \@tempdima=\the\Fld@menulength\Fld@charsize
7768            \advance\@tempdima by \Fld@borderwidth bp
7769            \advance\@tempdima by \Fld@borderwidth bp
7770            \edef\Fld@height{\the\@tempdima}%
7771          \fi
7772          \@@ListBox{#3}%
7773        }%
7774      \fi
7775    }%
7776  \egroup
7777 }
7778 \def\@@Radio#1{%
7779   \Fld@listcount=0
7780   \@for\@curropt:=#1\do{%
7781     \expandafter\Fld@checkequals\@curropt==\%
7782     \Hy@StepCount\Fld@listcount
7783     \@currDisplay\space
7784     \Hy@escapeform\PDFForm@Radio
7785     \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
7786       pdfmark=/ANN,%
7787       Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
7788     } % deliberate space between radio buttons
7789   }%
7790 }
7791 \newcount\Fld@listcount
7792 \def\@@ListBox#1{%
7793   \Choice@toks={ }%
7794   \Fld@listcount=0
7795   \@for\@curropt:=#1\do{%
7796     \expandafter\Fld@checkequals\@curropt==\%
7797     \Hy@StepCount\Fld@listcount
7798     \edef\@processme{%
7799       \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
7800     }\@processme
7801   }%
7802   \Hy@escapeform\PDFForm@List

```

```

7803 \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
7804 pdfmark=/ANN,Raw={\PDFForm@List}%
7805 }%
7806 }
7807 \def\@PushButton[#1]#2{% parameters, label
7808 \def\Fld@name{#2}%
7809 \bgroup
7810 \Field@toks={ }%
7811 \setkeys{Field}{#1}%
7812 \ifFld@hidden\def\Fld@width{1sp}\fi
7813 \LayoutPushButtonField{%
7814 \Hy@escapeform\PDFForm@Push
7815 \pdfmark[\MakeButtonField{#2}]{%
7816 pdfmark=/ANN,Raw={\PDFForm@Push}%
7817 }%
7818 }%
7819 \egroup
7820 }
7821 \def\@Submit[#1]#2{%
7822 \Field@toks={ }%
7823 \def\Fld@width{\DefaultWidthofSubmit}%
7824 \def\Fld@height{\DefaultHeightofSubmit}%
7825 \bgroup
7826 \def\Fld@name{Submit}%
7827 \setkeys{Field}{#1}%
7828 \ifFld@hidden\def\Fld@width{1sp}\fi
7829 \Hy@escapeform\PDFForm@Submit
7830 \pdfmark[\MakeButtonField{#2}]{%
7831 pdfmark=/ANN,%
7832 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
7833 }%
7834 \egroup
7835 }
7836 \def\@Reset[#1]#2{%
7837 \Field@toks={ }%
7838 \def\Fld@width{\DefaultWidthofReset}%
7839 \def\Fld@height{\DefaultHeightofReset}%
7840 \bgroup
7841 \def\Fld@name{Reset}%
7842 \setkeys{Field}{#1}%
7843 \ifFld@hidden\def\Fld@width{1sp}\fi
7844 \Hy@escapeform\PDFForm@Reset
7845 \pdfmark[\MakeButtonField{#2}]{%
7846 pdfmark=/ANN,Raw={\PDFForm@Reset}%
7847 }%
7848 \egroup
7849 }
7850 \def\@CheckBox[#1]#2{% parameters, label
7851 \def\Fld@name{#2}%
7852 \def\Fld@default{0}%
7853 \bgroup
7854 \def\Fld@width{\DefaultWidthofCheckBox}%
7855 \def\Fld@height{\DefaultHeightofCheckBox}%
7856 \Field@toks={ }%
7857 \setkeys{Field}{#1}%
7858 \ifFld@hidden\def\Fld@width{1sp}\fi
7859 \LayoutCheckField{#2}{%

```

```

7860      \Hy@escapeform\PDFForm@Check
7861      \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
7862      pdfmark=/ANN,Raw={\PDFForm@Check}%
7863      }%
7864    }%
7865  \egroup
7866 }
7867 </pdfmark>

```

46.2 dvipdf

```

7868 < *dvipdf>
7869 \def\@Form[#1]{\typeout{Sorry, I do not support FORMs}}
7870 \def\@endForm{}
7871 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7872 \typeout{Sorry, dvipdf does not support FORM gauges}%
7873 }
7874 \def\@TextField[#1]#2{% parameters, label
7875 \typeout{Sorry, dvipdf does not support FORM text fields}%
7876 }
7877 \def\@CheckBox[#1]#2{% parameters, label
7878 \typeout{Sorry, dvipdf does not support FORM checkboxes}%
7879 }
7880 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7881 \typeout{Sorry, dvipdf does not support FORM choice menus}%
7882 }
7883 \def\@PushButton[#1]#2{% parameters, label
7884 \typeout{Sorry, dvipdf does not support FORM pushbuttons}%
7885 }
7886 \def\@Reset[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
7887 \def\@Submit[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
7888 </dvipdf>

```

46.3 HyperTeX

```

7889 < *hypertex>
7890 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
7891 \def\@endForm{}
7892 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7893 \typeout{Sorry, HyperTeX does not support FORM gauges}%
7894 }
7895 \def\@TextField[#1]#2{% parameters, label
7896 \typeout{Sorry, HyperTeX does not support FORM text fields}%
7897 }
7898 \def\@CheckBox[#1]#2{% parameters, label
7899 \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
7900 }
7901 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7902 \typeout{Sorry, HyperTeX does not support FORM choice menus}%
7903 }
7904 \def\@PushButton[#1]#2{% parameters, label
7905 \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
7906 }
7907 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
7908 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
7909 </hypertex>

```

46.4 TeX4ht

```

7910 < *tex4ht>

```

```

7911 \def \@Form[#1]{%
7912   \setkeys{Form}{#1}%
7913   \HCode{<form action="\Form@action" method="\Form@method">%
7914 }
7915 \def \@endForm{\HCode{</form>}}
7916 \def \@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7917   \typeout{Sorry, TeX4ht does not support gauges}%
7918 }
7919 \def \@TextField[#1]#2{% parameters, label
7920   \let\Hy@reserved@a\@empty
7921   \def\Fld@name{#2}%
7922   \def\Fld@default{}%
7923   \bgroup
7924     \Field@toks={ }%
7925     \setkeys{Field}{#1}%
7926     \HCode{<label for="\Fld@name">#2</label>%
7927     \ifFld@password
7928       \@@PasswordField
7929     \else
7930       \@@TextField
7931     \fi
7932   \egroup
7933 }
7934 \def \@@PasswordField{%
7935   \HCode{%
7936     <input type="password"
7937       id="\Fld@name"
7938       name="\Fld@name"
7939       \ifFld@hidden type="hidden"\fi
7940       value="\Fld@default"
7941       \the\Field@toks
7942     >%
7943   }%
7944 }
7945 \def \@@TextField{%
7946   \ifFld@multiline
7947     \HCode{<textarea
7948       \ifFld@readonly readonly \fi
7949       id="\Fld@name"
7950       name="\Fld@name"
7951       \ifFld@hidden type="hidden"\fi
7952       \the\Field@toks>%
7953   }%
7954   \Fld@default
7955   \HCode{</textarea>}%
7956 \else
7957   \HCode{<input type="text"
7958     \ifFld@readonly readonly \fi
7959     id="\Fld@name"
7960     name="\Fld@name"
7961     \ifFld@hidden type="hidden"\fi
7962     value="\Fld@default" \the\Field@toks>
7963   }%
7964 \fi
7965 }
7966 \def \@ChoiceMenu[#1]#2#3{% parameters, label, choices
7967   \def\Fld@name{#2}%

```

```

7968 \def\Fld@default{}%
7969 \let\Hy@reserved@a\relax
7970 \bgroup
7971 \expandafter\Fld@findlength#3\\%
7972 \Field@toks={ }%
7973 \setkeys{Field}{#1}%
7974 #2%
7975 \ifFld@radio
7976 \expandafter\@@Radio#3\\%
7977 \else
7978 \expandafter\@@Menu#3\\%
7979 \fi
7980 \egroup
7981 }
7982 \def\Fld@findlength#1\\{%
7983 \Fld@menulength=0
7984 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
7985 }
7986 \def\@@Menu#1\\{%
7987 \HCode{<select size="\the\Fld@menulength"
7988 name="\Fld@name" \the\Field@toks>}%
7989 \@for\@curropt:=#1\do{%
7990 \expandafter\Fld@checkequals\@curropt==\\%
7991 \HCode{<option
7992 \ifx\@curropt\Fld@default selected \fi
7993 value="\@currValue">\@currDisplay</option>%
7994 }%
7995 }%
7996 \HCode{</select>}}%
7997 }
7998 \def\@@Radio#1\\{%
7999 \@for\@curropt:=#1\do{%
8000 \expandafter\Fld@checkequals\@curropt==\\%
8001 \HCode{<input type="radio"
8002 \ifx\@curropt\Fld@default checked \fi
8003 name="\Fld@name"
8004 value="\@currValue"
8005 \the\Field@toks>%
8006 }%
8007 \@currDisplay
8008 }%
8009 }
8010 \def\@PushButton[#1]#2{% parameters, label
8011 \def\Fld@name{#2}%
8012 \bgroup
8013 \Field@toks={ }%
8014 \setkeys{Field}{#1}%
8015 \HCode{<input type="button"
8016 name="\Fld@name"
8017 value="#2"
8018 \the\Field@toks>%
8019 }%
8020 \HCode{</button>}}%
8021 \egroup
8022 }
8023 \def\@Submit[#1]#2{%
8024 \HCode{<button type="submit">#2</button>}}%

```

```

8025 }
8026 \def\@Reset[#1]#2{%
8027   \HCode{<button type="reset">#2</button>}%
8028 }
8029 \def\@CheckBox[#1]#2{% parameters, label
8030   \let\Hy@reserved@a\@empty
8031   \def\Fld@name{#2}%
8032   \def\Fld@default{0}%
8033   \bgroup
8034     \Field@toks={ }%
8035     \setkeys{Field}{#1}%
8036     \HCode{<input type="checkbox"
8037       \ifFld@checked checked \fi
8038       \ifFld@disabled disabled \fi
8039       \ifFld@readonly readonly \fi
8040       name="\Fld@name"
8041       \ifFld@hidden type="hidden"\fi
8042       value="\Fld@default"
8043       \the\Field@toks>%
8044     #2%
8045   }%
8046 \egroup
8047 }
8048 </tex4ht>

```

46.5 pdfTeX

```

8049 <*pdfTeX>
8050 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8051   \typeout{Sorry, pdfTeX does not support FORM gauges}%
8052 }
8053 \def\MakeFieldObject#1#2{\sbox0{#1}%
8054   \immediate\pdfxform0 %
8055   \expandafter\edef\csname #2object\endcsname{%
8056     \the\pdflastxform\space 0 R%
8057   }%
8058   % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
8059 }%
8060 \def\@Form[#1]{%
8061   \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
8062   \setkeys{Form}{#1}%
8063   \ifnum\pdfTeXversion>13
8064     \pdfrefobj\OBJ@pdfdocencoding
8065     \pdfrefobj\OBJ@ZaDb
8066     \pdfrefobj\OBJ@Helv
8067     \pdfrefobj\OBJ@acroform
8068   \fi
8069   \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
8070   \MakeFieldObject%

```

Same as \ding{123} of package pifont.

```

8071   \begingroup
8072     \fontfamily{pzd}%
8073     \fontencoding{U}%
8074     \fontseries{m}%
8075     \fontshape{n}%
8076     \selectfont
8077     \char123 %
8078   \endgroup

```



```

8079 }{Ding}%
8080 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{Submit}}}}{Submit}%
8081 \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{SubmitP}}}}{SubmitP}%
8082 }
8083 \def\@endForm{}
8084 \def\@TextField[#1]#2{% parameters, label
8085   \def\Fld@name{#2}%
8086   \def\Fld@default{}%
8087   \let\Fld@value\@empty
8088   \def\Fld@width{\DefaultWidthofText}%
8089   \def\Fld@height{\DefaultHeightofText}%
8090   \ifFld@multiline
8091     \begingroup
8092       \dimen@=\DefaultHeightofText
8093       \dimen@=4\dimen@
8094       \edef\x{\endgroup
8095         \def\noexpand\Fld@height{\the\dimen@}%
8096       }%
8097     \x
8098   \fi
8099   \bgroup
8100     \Field@toks={ }%
8101     \setkeys{Field}{#1}%
8102     \ifFld@hidden\def\Fld@width{1sp}\fi
8103     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
8104     \LayoutTextField{#2}{%
8105       \Hy@escapeform\PDFForm@Text
8106       \pdfstartlink user {\PDFForm@Text}\relax
8107       \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
8108     }%
8109   \egroup
8110 }
8111 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8112   \def\Fld@name{#2}%
8113   \def\Fld@default{}%
8114   \def\Fld@width{\DefaultWidthofChoiceMenu}%
8115   \def\Fld@height{\DefaultHeightofChoiceMenu}%
8116   \bgroup
8117     \Fld@menulength=0
8118     \@tempdima\z@
8119     \@for\@curropt:=#3\do{%
8120       \expandafter\Fld@checkequals\@curropt==\%
8121       \Hy@StepCount\Fld@menulength
8122       \settowidth{\@tempdimb}{\@currDisplay}%
8123       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8124     }%
8125     \advance\@tempdima by 15\p@
8126     \Field@toks={ }%
8127     \setkeys{Field}{#1}%
8128     \ifFld@hidden\def\Fld@width{1sp}\fi
8129     \LayoutChoiceField{#2}{%
8130       \ifFld@radio
8131         \@Radio{#3}%
8132       \else
8133         {%
8134           \ifdim\Fld@width<\@tempdima
8135             \ifdim\@tempdima<1cm\@tempdima1cm\fi

```

```

8136         \edef\Fld@width{\the\@tempdima}%
8137     \fi
8138     \def\Fld@flags{}%
8139     \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8140     \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8141     \ifx\Fld@flags\@empty
8142         \@tempdima=\the\Fld@menulength\Fld@charsize
8143         \advance\@tempdima by \Fld@borderwidth bp
8144         \advance\@tempdima by \Fld@borderwidth bp
8145         \edef\Fld@height{\the\@tempdima}%
8146     \fi
8147     \@@ListBox{#3}%
8148 }%
8149 \fi
8150 }%
8151 \egroup
8152 }
8153 \def\@@Radio#1{%
8154     \Fld@listcount=0
8155     \@for\@curropt:=#1\do{%
8156         \expandafter\Fld@checkequals\@curropt==\%
8157         \Hy@StepCount\Fld@listcount
8158         \@currDisplay\space
8159         \leavevmode
8160         \Hy@escapeform\PDFForm@Radio
8161         \pdfstartlink user {%
8162             \PDFForm@Radio
8163             /AP <<
8164             /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.

```

8165         /\@currValue\space \DingObject
8166     >>
8167     >>
8168 }%
8169 \relax
8170 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
8171 \space% deliberate space between radio buttons
8172 }%
8173 }
8174 \newcount\Fld@listcount
8175 \def\@@ListBox#1{%
8176     \Choice@toks={ }%
8177     \Fld@listcount=0
8178     \@for\@curropt:=#1\do{%
8179         \expandafter\Fld@checkequals\@curropt==\%
8180         \Hy@StepCount\Fld@listcount
8181         \edef\@processme{%
8182             \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8183         }\@processme
8184     }%
8185     \leavevmode
8186     \Hy@escapeform\PDFForm@List
8187     \pdfstartlink user {\PDFForm@List}\relax
8188     \MakeChoiceField{\Fld@width}{\Fld@height}%
8189     \pdfendlink

```

```

8190 }
8191 \def\@PushButton[#1]#2{% parameters, label
8192   \def\Fld@name{#2}%
8193   \bgroup
8194     \Field@toks={ }%
8195     \setkeys{Field}{#1}%
8196     \ifFld@hidden\def\Fld@width{1sp}\fi
8197     \LayoutPushButtonField{%
8198       \leavevmode
8199       \Hy@escapeform\PDFForm@Push
8200       \pdfstartlink user {\PDFForm@Push}\relax
8201       \MakeButtonField{#2}%
8202       \pdfendlink
8203     }%
8204   \egroup
8205 }
8206 \def\@Submit[#1]#2{%
8207   \Field@toks={ }%
8208   \def\Fld@width{\DefaultWidthofSubmit}%
8209   \def\Fld@height{\DefaultHeightofSubmit}%
8210   \bgroup
8211     \def\Fld@name{Submit}%
8212     \setkeys{Field}{#1}%
8213     \ifFld@hidden\def\Fld@width{1sp}\fi
8214     \leavevmode
8215     \Hy@escapeform\PDFForm@Submit
8216     \pdfstartlink user {%
8217       \PDFForm@Submit
8218       /AP << /N \SubmitObject\space /D \SubmitPObject >>
8219     }%
8220     \relax
8221     \MakeButtonField{#2}%
8222     \pdfendlink
8223   \egroup
8224 }
8225 \def\@Reset[#1]#2{%
8226   \Field@toks={ }%
8227   \def\Fld@width{\DefaultWidthofReset}%
8228   \def\Fld@height{\DefaultHeightofReset}%
8229   \bgroup
8230     \def\Fld@name{Reset}%
8231     \setkeys{Field}{#1}%
8232     \ifFld@hidden\def\Fld@width{1sp}\fi
8233     \leavevmode
8234     \Hy@escapeform\PDFForm@Reset
8235     \pdfstartlink user {\PDFForm@Reset}\relax
8236     \MakeButtonField{#2}%
8237     \pdfendlink
8238   \egroup
8239 }
8240 \def\@CheckBox[#1]#2{% parameters, label
8241   \def\Fld@name{#2}%
8242   \def\Fld@default{0}%
8243   \bgroup
8244     \def\Fld@width{\DefaultWidthofCheckBox}%
8245     \def\Fld@height{\DefaultHeightofCheckBox}%
8246     \Field@toks={ }%

```

```

8247 \setkeys{Field}{#1}%
8248 \ifFld@hidden\def\Fld@width{1sp}\fi
8249 \LayoutCheckField{#2}{%
8250 \Hy@escapeform\PDFForm@Check
8251 \pdfstartlink user {\PDFForm@Check}\relax
8252 \MakeCheckField{\Fld@width}{\Fld@height}%
8253 \pdfendlink
8254 }%
8255 \egroup
8256 }
8257 \pdfobj { << /Type /Encoding /Differences [ 24 /breve /caron
8258 /circumflex /dotaccent /hungarumlaut /ogonek /ring /tilde 39
8259 /quotesingle 96 /grave 128 /bullet /dagger /daggerdbl /ellipsis
8260 /emdash /endash /florin /fraction /guilsinglleft /guilsinglright
8261 /minus /perthousand /quotedblbase /quotedblleft /quotedblright
8262 /quoteleft /quoteright /quotesinglbase /trademark /fi /fl /lslash /OE
8263 /Scaron /Ydieresis /Zcaron /dotlessi /lslash /oe /scaron /zcaron 164
8264 /currency 166 /brokenbar 168 /dieresis /copyright /ordfeminine 172
8265 /logicalnot /.notdef /registered /macron /degree /plusminus
8266 /twosuperior /threesuperior /acute /mu 183 /periodcentered /cedilla
8267 /onesuperior /ordmasculine 188 /onequarter /onehalf /threequarters 192
8268 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE /Ccedilla
8269 /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute /Icircumflex
8270 /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex /Otilde
8271 /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex /Udieresis
8272 /Yacute /Thorn /germandbls /agrave /aacute /acircumflex /atilde
8273 /adieresis /aring /ae /ccedilla /egrave /eacute /ecircumflex
8274 /edieresis /igrave /iacute /icircumflex /idieresis /eth /ntilde
8275 /ograde /oacute /ocircumflex /otilde /odieresis /divide /oslash
8276 /ugrave /uacute /ucircumflex /udieresis /yacute /thorn /ydieresis ] >>
8277 }
8278 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
8279 \pdfobj {
8280 <<
8281 /Type /Font
8282 /Subtype /Type1
8283 /Name /ZaDb
8284 /BaseFont /ZapfDingbats
8285 >>
8286 }
8287 \edef\OBJ@ZaDb{\the\pdflastobj}
8288 \pdfobj { <<
8289 /Type /Font
8290 /Subtype /Type1
8291 /Name /Helv
8292 /BaseFont /Helvetica
8293 /Encoding \OBJ@pdfdocencoding\space 0 R
8294 >>
8295 }
8296 \edef\OBJ@Helv{\the\pdflastobj}
8297 \pdfobj {
8298 <<
8299 /Fields []
8300 /DR <<
8301 /Font << /ZaDb \OBJ@ZaDb\space 0 R /Helv \OBJ@Helv\space 0 R >>
8302 >>
8303 /DA (/Helv 10 Tf 0 g )

```

```

8304     /NeedAppearances true
8305   >>
8306 }
8307 \edef\OBJ@acroform{\the\pdflastobj}
8308 </pdfTeX>

```

46.6 dvipdfm

D. P. Story adapted the pdf_TE_X forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```
8309 <(*dvipdfm)>
```

\@Gauge

```

8310 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8311   \typeout{Sorry, dvipdfm does not support FORM gauges}%
8312 }

```

\@Form

```

8313 \def\@Form[#1]{%
8314   \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
8315   \setkeys{Form}{#1}%
8316   \@pdfm@mark{obj @afields [ ]}%
8317   \@pdfm@mark{obj @corder [ ]}%
8318   \@pdfm@mark{%
8319     obj @aform <<
8320       /Fields @afields
8321       /DR << /Font << /ZaDb @OBJZaDb /Helv @OBJHelv >> >>
8322       /DA (/Helv 10 Tf 0 g )
8323       /CO @corder
8324       /NeedAppearances true
8325     >>%
8326   }%
8327   \@pdfm@mark{put @catalog << /AcroForm @aform >>}%
8328 }

```

\@endForm

```
8329 \def\@endForm{}
```

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

```

8330 \def\dvipdfm@setdim{%
8331   height \the\ht\pdfm@box\space
8332   width \the\wd\pdfm@box\space
8333   depth \the\dp\pdfm@box\space
8334 }

```

\@TextField

```

8335 \def\@TextField[#1]#2{% parameters, label
8336   \def\Fld@name{#2}%
8337   \def\Fld@default{}%
8338   \let\Fld@value\@empty
8339   \def\Fld@width{\DefaultWidthofText}%
8340   \def\Fld@height{\DefaultHeightofText}%
8341   \ifFld@multiline
8342     \begingroup
8343       \dimen@=\DefaultHeightofText
8344       \dimen@=4\dimen@
8345       \edef\x{\endgroup

```

```

8346         \def\noexpand\Fld@height{\the\dimen@}%
8347     }%
8348     \x
8349 \fi
8350 \bgroup
8351     \Field@toks={ }%
8352     \setkeys{Field}{#1}%
8353     \ifFld@hidden\def\Fld@width{1sp}\fi
8354     \ifx\Fld@value\empty\def\Fld@value{\Fld@default}\fi
8355     \setbox\pdfm@box=\hbox{%
8356         \MakeTextField{\Fld@width}{\Fld@height}%
8357     }%
8358     \LayoutTextField{#2}{%
8359         \Hy@escapeform\PDFForm@Text
8360         \@pdfm@mark{%
8361             ann @\Fld@name\space \dvipdfm@setdim << \PDFForm@Text >>%
8362         }%
8363     }%
8364     \unhbox\pdfm@box
8365     \@pdfm@mark{put @afields @\Fld@name}% record in @afields array
8366 \egroup
8367 }

```

\@ChoiceMenu

```

8368 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8369     \def\Fld@name{#2}%
8370     \def\Fld@default{}%
8371     \def\Fld@width{\DefaultWidthofChoiceMenu}%
8372     \def\Fld@height{\DefaultHeightofChoiceMenu}%
8373     \bgroup
8374         \Fld@menulength=0
8375         \@tempdima\z@
8376         \@for\@curropt:=#3\do{%
8377             \expandafter\Fld@checkequals\@curropt==\%
8378             \Hy@StepCount\Fld@menulength
8379             \settowidth{\@tempdimb}{\@currDisplay}%
8380             \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8381         }%
8382         \advance\@tempdima by 15\p@
8383         \Field@toks={ }%
8384         \setkeys{Field}{#1}%
8385         \ifFld@hidden\def\Fld@width{1sp}\fi
8386         \LayoutChoiceField{#2}{%
8387             \ifFld@radio
8388                 \@Radio{#3}%
8389             \else
8390                 {%
8391                     \ifdim\Fld@width<\@tempdima
8392                         \ifdim\@tempdima<1cm\@tempdima1cm\fi
8393                         \edef\Fld@width{\the\@tempdima}%
8394                     \fi
8395                     \def\Fld@flags{}%
8396                     \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8397                     \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8398                     \ifx\Fld@flags\empty
8399                         \@tempdima=\the\Fld@menulength\Fld@charsize
8400                         \advance\@tempdima by \Fld@borderwidth bp

```

```

8401         \advance\@tempdima by \Fld@borderwidth bp
8402         \edef\Fld@height{\the\@tempdima}%
8403     \fi
8404     \@@ListBox{#3}%
8405 }%
8406 \fi
8407 }%
8408 \egroup
8409 }

\@@Radio

8410 \def\@@Radio#1{%
8411     \Fld@listcount=0
8412     \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
8413     \@for\@curropt:=#1\do{%
8414         \expandafter\Fld@checkequals\@curropt==\%
8415         \Hy@StepCount\Fld@listcount
8416         \@currDisplay\space
8417         \leavevmode
8418         \Hy@escapeform\PDFForm@Radio
8419         \@pdfm@mark{%
8420             ann \ifnum\Fld@listcount=1 @\Fld@name\space\fi
8421             \dvipdfm@setdim
8422             <<
8423             \PDFForm@Radio\space
8424             /AP << /N << /\@currValue /null >> >>
8425             >>%
8426         }%
8427         \unhcopy\pdfm@box\space% deliberate space between radio buttons
8428         \ifnum\Fld@listcount=1\@pdfm@mark{put @afields @\Fld@name}\fi
8429     }%
8430 }

\Fld@listcount

8431 \newcount\Fld@listcount

\@@ListBox

8432 \def\@@ListBox#1{%
8433     \Choice@toks={ }%
8434     \Fld@listcount=0
8435     \@for\@curropt:=#1\do{%
8436         \expandafter\Fld@checkequals\@curropt==\%
8437         \Hy@StepCount\Fld@listcount
8438         \edef\@processme{%
8439             \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8440         }\@processme
8441     }%
8442     \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
8443     \leavevmode
8444     \Hy@escapeform\PDFForm@List
8445     \@pdfm@mark{%
8446         ann @\Fld@name\space\dvipdfm@setdim
8447         << \PDFForm@List >>%
8448     }%
8449     \unhbox\pdfm@box
8450     \@pdfm@mark{put @afields @\Fld@name}%
8451 }

```

\@PushButton

```
8452 \def\@PushButton[#1]#2{% parameters, label
8453   \def\Fld@name{#2}%
8454   \bgroup
8455     \Field@toks={ }%
8456     \setkeys{Field}{#1}%
8457     \ifFld@hidden\def\Fld@width{1sp}\fi
8458     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8459     \LayoutPushButtonField{%
8460       \leavevmode
8461       \Hy@escapeform\PDFForm@Push
8462       \@pdfm@mark{%
8463         ann @\Fld@name\space\dvipdfm@setdim
8464         << \PDFForm@Push >>%
8465       }%
8466     }%
8467     \unhbox\pdfm@box
8468     \@pdfm@mark{put @afields @\Fld@name}%
8469   \egroup
8470 }
```

\@Submit

```
8471 \def\@Submit[#1]#2{%
8472   \Field@toks={ }%
8473   \def\Fld@width{\DefaultWidthofSubmit}%
8474   \def\Fld@height{\DefaultHeightofSubmit}%
8475   \bgroup
8476     \def\Fld@name{Submit}%
8477     \setkeys{Field}{#1}%
8478     \ifFld@hidden\def\Fld@width{1sp}\fi
8479     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8480     \leavevmode
8481     \Hy@escapeform\PDFForm@Submit
8482     \@pdfm@mark{%
8483       ann @\Fld@name\space\dvipdfm@setdim
8484       << \PDFForm@Submit >>%
8485     }%
8486     \unhbox\pdfm@box%
8487     \@pdfm@mark{put @afields @\Fld@name}%
8488   \egroup
8489 }
```

\@Reset

```
8490 \def\@Reset[#1]#2{%
8491   \Field@toks={ }%
8492   \def\Fld@width{\DefaultWidthofReset}%
8493   \def\Fld@height{\DefaultHeightofReset}%
8494   \bgroup
8495     \def\Fld@name{Reset}%
8496     \setkeys{Field}{#1}%
8497     \ifFld@hidden\def\Fld@width{1sp}\fi
8498     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8499     \leavevmode
8500     \Hy@escapeform\PDFForm@Reset
8501     \@pdfm@mark{%
8502       ann @\Fld@name\space\dvipdfm@setdim
8503       << \PDFForm@Reset >>%
8504     }%
8505   \egroup
8506 }
```



```

8504    }%
8505    \unhbox\pdfm@box
8506    \@pdfm@mark{put @afields @\Fld@name}%
8507  \egroup
8508 }

```

\@CheckBox

```

8509 \def\@CheckBox[#1]#2{% parameters, label
8510   \def\Fld@name{#2}%
8511   \def\Fld@default{0}%
8512   \bgroup
8513     \def\Fld@width{\DefaultWidthofCheckBox}%
8514     \def\Fld@height{\DefaultHeightofCheckBox}%
8515     \Field@toks={ }%
8516     \setkeys{Field}{#1}%
8517     \ifFld@hidden\def\Fld@width{1sp}\fi
8518     \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
8519     \LayoutCheckField{#2}%
8520     \Hy@escapeform\PDFForm@Check
8521     \@pdfm@mark{%
8522       ann @\Fld@name\space\dvipdfm@setdim
8523       << \PDFForm@Check >>%
8524     }%
8525     \unhbox\pdfm@box
8526     \@pdfm@mark{put @afields @\Fld@name}%
8527   }%
8528 \egroup
8529 }

8530 \@pdfm@mark{obj @OBJpdfdocencoding << /Type /Encoding /Differences [%
8531   24 /breve /caron /circumflex /dotaccent /hungarumlaut /ogonek /ring
8532   /tilde
8533   39 /quotesingle
8534   96 /grave
8535   128 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin
8536   /fraction /guilsinglleft /guilsinglright /minus /perthousand
8537   /quotedblbase /quotedblleft /quotedblright /quoteleft /quoteright
8538   /quotesinglbase /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis
8539   /Zcaron /dotlessi /lslash /oe /scaron /zcaron
8540   164 /currency
8541   166 /brokenbar
8542   168 /dieresis /copyright /ordfeminine
8543   172 /logicalnot /.notdef /registered /macron /degree /plusminus
8544   /twosuperior /threesuperior /acute /mu
8545   183 /periodcentered /cedilla /onesuperior /ordmasculine
8546   188 /onequarter /onehalf /threequarters
8547   192 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE
8548   /Ccedilla /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute
8549   /Icircumflex /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex
8550   /Otilde /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex
8551   /Udieresis /Yacute /Thorn /germandbls /agrave /aacute /acircumflex
8552   /atilde /adieresis /aring /ae /ccedilla /egrave /eacute
8553   /ecircumflex /edieresis /igrave /iacute /icircumflex /idieresis
8554   /eth /ntilde /ograde /oacute /ocircumflex /otilde /odieresis
8555   /divide /oslash /ugrave /uacute /ucircumflex /udieresis /yacute
8556   /thorn /ydieresis%
8557 ] >>
8558 }

```

```

8559 \@pdfm@mark{obj @OBJZaDb
8560 <<
8561   /Type /Font
8562   /Subtype /Type1
8563   /Name /ZaDb
8564   /BaseFont /ZapfDingbats
8565 >>
8566 }
8567 \@pdfm@mark{obj @OBJHelv
8568 <<
8569   /Type /Font
8570   /Subtype /Type1
8571   /Name /Helv
8572   /BaseFont /Helvetica
8573   /Encoding @OBJpdfdocencoding
8574 >>
8575 }
8576 </dvipdfm>

```

46.7 Common forms part

```

8577 <*pdfform>

```

\Hy@escapestring

```

8578 \begingroup\expandafter\expandafter\expandafter\endgroup
8579 \expandafter\ifx\csname pdfescapestring\endcsname\relax
8580   \let\Hy@escapestring\@firstofone
8581   \def\Hy@escapeform#1{%
8582     \ifHy@escapeform
8583       \def\Hy@escapestring##1{%
8584         \noexpand\Hy@escapestring{\noexpand##1}%
8585       }%
8586       \edef\Hy@temp{#1}%
8587       \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{ }\@nil
8588       \def\Hy@escapestring##1{%
8589         \@ifundefined{Hy@esc@\string##1}{%
8590           ##1%
8591           \ThisShouldNotHappen
8592         }{%
8593           \csname Hy@esc@\string##1\endcsname
8594         }%
8595       }%
8596     \else
8597       \let\Hy@escapestring\@firstofone
8598     \fi
8599   }%
8600   \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
8601     \ifx\#3\%
8602       \else
8603         \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
8604         \Hy@ReturnAfterFi{%
8605           \Hy@@escapeform#3\@nil
8606         }%
8607       \fi
8608     }%
8609   \else
8610     \def\Hy@escapeform#1{%

```

```

8611 \ifHy@escapeform
8612 \let\Hy@escapestring\pdfescapestring
8613 \else
8614 \let\Hy@escapestring\@firstofone
8615 \fi
8616 }%
8617 \Hy@escapeform{}%
8618 \fi

```

\PDFForm@Check

```

8619 \def\PDFForm@Check{%
8620 /Subtype /Widget
8621 \ifFld@hidden /F 6 \else /F 4 \fi
8622 /T (\Hy@escapestring{\Fld@name})
8623 /Q \Fld@align\space
8624 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8625 /MK <<
8626 /BC [\Fld@bordercolor]
8627 \ifx\Fld@bcolor\@empty
8628 \else
8629 /BG [\Fld@bcolor]
8630 \fi
8631 /CA (\Hy@escapestring{\Fld@cbsymbol})
8632 >>
8633 /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
8634 /FT /Btn
8635 /H /P
8636 \ifFld@checked /V /Yes \else /V /Off \fi
8637 }

```

\PDFForm@Push

```

8638 \def\PDFForm@Push{%
8639 /Subtype /Widget
8640 \ifFld@hidden /F 6 \else /F 4 \fi
8641 /T (\Hy@escapestring{\Fld@name})
8642 /FT /Btn
8643 /Ff 65540
8644 /H /P
8645 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8646 /MK <<
8647 /BC [\Fld@bordercolor]
8648 >>
8649 /A << /S /JavaScript /JS (\Hy@escapestring{\Fld@onclick}) >>
8650 }

```

\Fld@additionalactions

```

8651 \def\Fld@additionalactions{%
8652 /AA <<

```

K input (keystroke) format

```

8653 \ifx\Fld@keystroke@code\@empty
8654 \else
8655 /K << /S /JavaScript /JS (\Hy@escapestring{\Fld@keystroke@code}) >>
8656 \fi

```

F display format

```

8657 \ifx\Fld@format@code\@empty

```

```

8658     \else
8659         /F << /S /JavaScript /JS (\Hy@escapestring{\Fld@format@code}) >>
8660     \fi

```

V validation

```

8661     \ifx\Fld@validate@code\@empty
8662     \else
8663         /V << /S /JavaScript /JS (\Hy@escapestring{\Fld@validate@code}) >>
8664     \fi

```

C calculation

```

8665     \ifx\Fld@calculate@code\@empty
8666     \else
8667         /C << /S /JavaScript /JS (\Hy@escapestring{\Fld@calculate@code}) >>
8668     \fi

```

Fo receiving the input focus

```

8669     \ifx\Fld@onfocus@code\@empty
8670     \else
8671         /Fo << /S /JavaScript /JS (\Hy@escapestring{\Fld@onfocus@code}) >>
8672     \fi

```

Bl loosing the input focus (blurred)

```

8673     \ifx\Fld@onblur@code\@empty
8674     \else
8675         /Bl << /S /JavaScript /JS (\Hy@escapestring{\Fld@onblur@code}) >>
8676     \fi

```

D pressing the mouse button (down)

```

8677     \ifx\Fld@onmousedown@code\@empty
8678     \else
8679         /D << /S /JavaScript /JS (\Hy@escapestring{\Fld@onmousedown@code}) >>
8680     \fi

```

U releasing the mouse button (up)

```

8681     \ifx\Fld@onmouseup@code\@empty
8682     \else
8683         /U << /S /JavaScript /JS (\Hy@escapestring{\Fld@onmouseup@code}) >>
8684     \fi

```

E cursor enters the annotation's active area.

```

8685     \ifx\Fld@onenter@code\@empty
8686     \else
8687         /E << /S /JavaScript /JS (\Hy@escapestring{\Fld@onenter@code}) >>
8688     \fi

```

X cursor exits the annotation's active area.

```

8689     \ifx\Fld@onexit@code\@empty
8690     \else
8691         /X << /S /JavaScript /JS (\Hy@escapestring{\Fld@onexit@code}) >>
8692     \fi
8693 >>
8694 }

```

\PDFForm@List

```

8695 \def\PDFForm@List{%
8696 /Subtype /Widget
8697 \ifFld@hidden /F 6 \else /F 4 \fi
8698 /T (\Hy@escapestring{\Fld@name})
8699 /FT /Ch

```

```

8700 /Q \Fld@align\space
8701 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8702 /MK <<
8703 /BC [\Fld@bordercolor]
8704 \ifx\Fld@bcolor\@empty
8705 \else
8706 /BG [\Fld@bcolor]
8707 \fi
8708 >>
8709 /DA (/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg )
8710 /Opt [\the\Choice@toks]
8711 /DV (\Hy@escapestring{\Fld@default})
8712 \Fld@additionalactions
8713 \Fld@flags
8714 }

```

\PDFForm@Radio

```

8715 \def\PDFForm@Radio{%
8716 /Subtype /Widget
8717 \ifFld@hidden /F 6 \else /F 4 \fi
8718 /T (\Hy@escapestring{\Fld@name})
8719 /FT /Btn
8720 /Ff 49152
8721 /H /P
8722 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8723 /MK <<
8724 /BC [\Fld@bordercolor]
8725 \ifx\Fld@bcolor\@empty
8726 \else
8727 /BG [\Fld@bcolor]
8728 \fi
8729 /CA (H)
8730 >>
8731 /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
8732 \ifx\@currValue\Fld@default
8733 /V /\Fld@default\space
8734 \else
8735 /V /Off
8736 \fi
8737 \Fld@additionalactions
8738 }

```

\PDFForm@Text

```

8739 \def\PDFForm@Text{%
8740 /Subtype /Widget
8741 \ifFld@hidden /F 6 \else /F 4 \fi
8742 /T (\Hy@escapestring{\Fld@name})
8743 /Q \Fld@align\space
8744 /FT /Tx
8745 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8746 /MK <<
8747 /BC [\Fld@bordercolor]
8748 \ifx\Fld@bcolor\@empty
8749 \else
8750 /BG [\Fld@bcolor]
8751 \fi
8752 >>

```

```

8753 /DA (/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg )
8754 /DV (\Hy@escapestring{\Fld@default})
8755 /V (\Hy@escapestring{\Fld@value})
8756 \Fld@additionalactions
8757 \ifFld@multiline
8758   \ifFld@readonly /Ff 4097 \else /Ff 4096 \fi
8759 \else
8760   \ifFld@password
8761     \ifFld@readonly /Ff 8193 \else /Ff 8192 \fi
8762   \else
8763     \ifFld@readonly /Ff 1 \fi
8764   \fi
8765 \fi
8766 \ifnum\Fld@maxlen>0/MaxLen \Fld@maxlen \fi
8767 }

```

\PDFForm@Submit

```

8768 \def\PDFForm@Submit{%
8769   /Subtype /Widget
8770   \ifFld@hidden /F 6 \else /F 4 \fi
8771   /T (\Hy@escapestring{\Fld@name})
8772   /FT /Btn
8773   /Ff 65540
8774   /H /P
8775   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8776   /MK <<
8777     /BC [\Fld@bordercolor]
8778   >>
8779   /A <<
8780     /S /SubmitForm
8781     /F <<
8782       /FS /URL
8783       /F (\Hy@escapestring{\Form@action})
8784     >>
8785   \ifForm@html /Flags 4 \fi
8786   >>
8787 }

```

\PDFForm@Reset

```

8788 \def\PDFForm@Reset{%
8789   /Subtype /Widget
8790   \ifFld@hidden /F 6 \else /F 4 \fi
8791   /T (\Hy@escapestring{\Fld@name})
8792   /FT /Btn
8793   /H /P
8794   /DA (/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)
8795   /Ff 65540
8796   /MK <<
8797     /BC [\Fld@bordercolor]
8798     /CA (Clear)
8799     /AC (Done)
8800   >>
8801   /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
8802   /A << /S /ResetForm >>
8803 }

8804 </pdfform>
8805 <*package>

```

47 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in $\text{\LaTeX}$ macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the 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`

```
8806 \def\phantomsection{%
8807   \Hy@GlobalStepCount\Hy@linkcounter
8808   \xdef\@currentHref{section*.\the\Hy@linkcounter}%
8809   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
8810 }
8811 \</package>
```

47.1 Bookmarks

```
8812 \<*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`.

```
8813 \def\Hy@writebookmark#1#2#3#4#5{% section number, text, label, level, file
8814   \ifx\WriteBookmarks\relax%
8815   \else
8816     \ifnum#4>\Hy@bookmarksdepth\relax
8817     \else
8818       \@writetorep{#1}{#2}{#3}{#4}{#5}%
8819     \fi
8820   \fi}
8821 \def\Hy@currentbookmarklevel{0}
8822 \def\Hy@numberline#1{#1 }
8823 \def\@writetorep#1#2#3#4#5{%
8824   \begingroup
8825     \edef\Hy@tempa{#5}%
8826     \ifx\Hy@tempa\Hy@bookmarkstype
8827       \edef\Hy@level{#4}%
8828       \ifx\Hy@levelcheck Y%
8829         \@tempcnta\Hy@level\relax
8830         \advance\@tempcnta by -1
8831         \ifnum\Hy@currentbookmarklevel<\@tempcnta
8832           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
8833           \advance\@tempcnta by 1
8834           \Hy@Warning{%
8835             Difference (\the\@tempcnta) between bookmark levels is %
8836             greater \MessageBreak than one, level fixed%
8837           }%
8838           \@tempcnta\Hy@currentbookmarklevel
8839           \advance\@tempcnta by 1
8840           \edef\Hy@level{\the\@tempcnta}%
8841         \fi
8842       \else
```

```

8843     \global\let\Hy@levelcheck Y%
8844 \fi
8845 \global\let\Hy@currentbookmarklevel\Hy@level
8846 \@tempcnta\Hy@level\relax
8847 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
8848 \advance\@tempcnta by -1
8849 \edef\Hy@tempa{#3}%
8850 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
8851 \ifx\Hy@tempa\Hy@tempb
8852   \Hy@Warning{%
8853     The anchor of a bookmark and its parent's must not%
8854     \MessageBreak be the same. Added a new anchor%
8855   }%
8856   \phantomsection
8857 \fi
8858 \ifHy@bookmarksnumbered
8859   \let\numberline\Hy@numberline
8860   \let\partnumberline\Hy@numberline
8861   \let\chapternumberline\Hy@numberline
8862 \else
8863   \let\numberline\@gobble
8864   \let\partnumberline\@gobble
8865   \let\chapternumberline\@gobble
8866 \fi
8867 \pdfstringdef\Hy@tempa{#2}%
8868 \if@filesw
8869   \protected@write\@outlinefile{%
8870     \protect\BOOKMARK
8871     [\Hy@level] [\@bookmarkopenstatus{\Hy@level}] {#3}%
8872     {\Hy@tempa}{\Hy@tempb}%
8873   }%
8874 \fi
8875 \fi
8876 \endgroup
8877 }

```

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

```

8878 \newcommand{\currentpdfbookmark}{%
8879   \pdfbookmark[\Hy@currentbookmarklevel]%
8880 }
8881 \newcommand{\subpdfbookmark}{%
8882   \@tempcnta\Hy@currentbookmarklevel
8883   \Hy@StepCount\@tempcnta
8884   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
8885 }
8886 \newcommand{\belowpdfbookmark}[2]{%
8887   \@tempcnta\Hy@currentbookmarklevel
8888   \Hy@StepCount\@tempcnta
8889   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
8890   \advance\@tempcnta by -1
8891   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
8892 }

```

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.

```

8893 \renewcommand\pdfbookmark[3][0]{%

```



```

8894 \Hy@writebookmark{#{#2}{#3.#1}{#1}{toc}%
8895 \hyper@anchorstart{#3.#1}\hyper@anchorend
8896 }
8897 \def\BOOKMARK{\ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}}
8898 \def\@BOOKMARK[#1]{\ifnextchar[{\@@BOOKMARK[#1]}{\@@BOOKMARK[#1][-]}}

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the texinfo.pdf macros.

The VTEX section was written originally by VTEX, but then amended by Denis Girou (denis.girou@idris.fr), then by Taco Hoekwater (taco.hoekwater@wkap.nl). The problem is that VTEX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping \ and the like.

```

8899 <*vtx>
8900 \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.

```

8901 \begin{group}
8902 \catcode'\'=12
8903 \ifnum\Hy@VTeXversion<650 %
8904 \catcode'\=12
8905 \gdef\hv@pdf@char#1#2#3{%
8906 \char
8907 \ifcase'#1#2#3
8908 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
8909 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
8910 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
8911 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
8912 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
8913 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
8914 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
8915 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
8916 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
8917 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
8918 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
8919 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
8920 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
8921 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
8922 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
8923 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
8924 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
8925 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
8926 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
8927 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
8928 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
8929 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
8930 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
8931 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
8932 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
8933 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
8934 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
8935 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
8936 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
8937 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
8938 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
8939 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
8940 \fi

```

```

8941 }
8942 \else
8943 \gdef\hv@pdf@char{\char'}
8944 \fi
8945 \endgroup

```

\@@BOOKMARK

```

8946 \def\@@BOOKMARK[#1][#2]#3#4#5{%
8947 \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
8948 \edef\@mycount{\the\@serial@counter}%
8949 \Hy@StepCount\@serial@counter
8950 \edef\@parcount{%
8951 \expandafter\ifx\csname @count@#5\endcsname\relax
8952 0%
8953 \else
8954 \csname @count@#5\endcsname
8955 \fi
8956 }%
8957 \immediate\special{!outline #3;p=\@parcount,i=\@mycount,s=\ifx#2-c\else
8958 o\fi,t=#4}%
8959 }%

```

\ReadBookmarks

```

8960 \def\ReadBookmarks{%
8961 \begingroup
8962 \def\0{\hv@pdf@char 0}%
8963 \def\1{\hv@pdf@char 1}%
8964 \def\2{\hv@pdf@char 2}%
8965 \def\3{\hv@pdf@char 3}%
8966 \def\({}%
8967 \def\)}%
8968 \def\do##1{%
8969 \ifnum\the\catcode'##1=\active
8970 \makeoother##1%
8971 \fi
8972 }%
8973 \dospecials
8974 \InputIfFileExists{\jobname.out}{\}{}%
8975 \endgroup
8976 \ifx\WriteBookmarks\relax
8977 \else
8978 \if@filesw
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 }

8987 </vtx>
8988 <*\vtx>
8989 \def\ReadBookmarks{%
8990 \begingroup
8991 \escapechar='\\%
8992 \let\escapechar\@gobble %

```

```

8993 \def\@@BOOKMARK [##1][##2]##3##4##5{\calc@bm@number{##5}}%
8994 \InputIfFileExists{\jobname.out}{\relax}%
8995 \ifx\WriteBookmarks\relax
8996 \global\let\WriteBookmarks\relax
8997 \fi
8998 \def\@@BOOKMARK [##1][##2]##3##4##5{%
8999 \def\Hy@temp{##4}%
9000 \<pdfTex>
9001 \Hy@pstringdef\Hy@pstringName{##3}%
9002 \Hy@OutlineName{\Hy@pstringName}%
9003 ##2\check@bm@number{##3}%
9004 }{%
9005 \expandafter\strip@prefix\meaning\Hy@temp
9006 }%
9007 \</pdfTex>
9008 \<pdfmark>
9009 \Hy@pstringdef\Hy@pstringName{##3}%
9010 \pdfmark{%
9011 pdfmark=/OUT,%
9012 Count={##2\check@bm@number{##3}},%
9013 Dest={\Hy@pstringName},%
9014 Title=\expandafter\strip@prefix\meaning\Hy@temp
9015 }%
9016 \</pdfmark>
9017 \<dvipdfm>
9018 \Hy@pstringdef\Hy@pstringName{##3}%
9019 \@pdfm@mark{%
9020 outline ##1 <<
9021 /Title (\expandafter\strip@prefix\meaning\Hy@temp)
9022 /A <<
9023 /S /GoTo
9024 /D (\Hy@pstringName)
9025 >>
9026 >>
9027 }%
9028 \</dvipdfm>
9029 }%
9030 {%
9031 \def\WriteBookmarks{0}%
9032 \InputIfFileExists{\jobname.out}{\relax}%
9033 }%
9034 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{\relax}}%
9035 \ifx\WriteBookmarks\relax
9036 \else
9037 \if@files
9038 \newwrite\@outlinefile
9039 \immediate\openout\@outlinefile=\jobname.out
9040 \ifHy@typexml
9041 \immediate\write\@outlinefile{<relaxxml>\relax}%
9042 \fi
9043 \fi
9044 \fi
9045 \endgroup
9046 }
9047 \<pdfTex>
9048 \def\Hy@OutlineName#1#2#3#4{%
9049 \pdfoutline goto name{#2}count#3{#4}%

```

```

9050 }
9051 </pdfTeX>
9052 \def\check@bm@number#1{%
9053   \expandafter\ifx\csname B_#1\endcsname\relax
9054     0%
9055   \else
9056     \csname B_#1\endcsname
9057   \fi
9058 }
9059 \def\calc@bm@number#1{%
9060   \@tempcnta=\check@bm@number{#1}\relax
9061   \advance\@tempcnta by1
9062   \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
9063 }
9064 </!vTeX>

```

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

```

9065 \ifHy@implicit
9066 \else
9067   \def\@begindvi{%
9068     \unvbox\@begindvibox
9069     \HyPL@EveryPage
9070     \global\let\@begindvi\HyPL@EveryPage
9071   }%
9072   \expandafter\endinput
9073 \fi

9074 </outlines>
9075 <*outlines | hypertex>

9076 \let\H@old@ssect\@ssect
9077 \def\@ssect#1#2#3#4#5{%
9078   \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
9079   \phantomsection
9080 }
9081 \let\H@old@schapter\@schapter
9082 \def\@schapter#1{%
9083   \H@old@schapter{#1}%
9084   \begingroup
9085     \let\@mkboth\@gobbletwo
9086     \Hy@GlobalStepCount\Hy@linkcounter
9087     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9088     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9089   \endgroup
9090 }

```

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:

```

9091 \ifundefined{@chapter}{-}{-}%
9092 \let\Hy@org@chapter\@chapter
9093 \def\@chapter{%
9094   \def\Hy@next{%
9095     \Hy@GlobalStepCount\Hy@linkcounter
9096     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9097     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9098   }%
9099   \ifnum\c@secnumdepth>\m@ne

```

```

9100 \ifundefined{if@mainmatter}%
9101 \iftrue{\csname if@mainmatter\endcsname}
9102 \let\Hy@next\relax
9103 \fi
9104 \fi
9105 \Hy@next
9106 \Hy@org@chapter
9107 }%
9108 }

9109 \let\H@old@part\@part
9110 \begingroup\expandafter\expandafter\expandafter\endgroup
9111 \expandafter\ifx\csname chapter\endcsname\relax
9112 \let\Hy@secnum@part\z@
9113 \else
9114 \let\Hy@secnum@part\m@ne
9115 \fi
9116 \def\@part{%
9117 \ifnum\Hy@secnum@part>\c@secnumdepth
9118 \phantomsection
9119 \fi
9120 \H@old@part
9121 }

9122 \let\H@old@spart\@spart
9123 \def\@spart#1{%
9124 \H@old@spart{#1}%
9125 \Hy@GlobalStepCount\Hy@linkcounter
9126 \xdef\@currentHref{part*.\the\Hy@linkcounter}%
9127 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9128 }

9129 \let\H@old@sect\@sect
9130 \def\@sect#1#2#3#4#5#6[#7]#8{%
9131 \ifnum #2>\c@secnumdepth
9132 \Hy@GlobalStepCount\Hy@linkcounter
9133 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
9134 \fi
9135 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}%
9136 \ifnum #2>\c@secnumdepth
9137 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9138 \fi
9139 }

9140 </outlines | hypertex>
9141 <*outlines>

9142 \expandafter\def\csname Parent-4\endcsname{}
9143 \expandafter\def\csname Parent-3\endcsname{}
9144 \expandafter\def\csname Parent-2\endcsname{}
9145 \expandafter\def\csname Parent-1\endcsname{}
9146 \expandafter\def\csname Parent0\endcsname{}
9147 \expandafter\def\csname Parent1\endcsname{}
9148 \expandafter\def\csname Parent2\endcsname{}
9149 \expandafter\def\csname Parent3\endcsname{}
9150 \expandafter\def\csname Parent4\endcsname{}
9151 </outlines>

```

48 Compatibility with koma-script classes

9152 <*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 komascript versions since 2001/01/01, because Markus Kohm supports hyperref in komascript.

```
9153 \def\Hy@tempa{%
9154   \def\@addchap[##1]##2{%
9155     \typeout{##2}%
9156     \if@twoside
9157       \mkboth{##1}{}%
9158     \else
9159       \mkboth{}{##1}%
9160     \fi
9161     \addtocontents{lof}{\protect\addvspace{10\p@}}%
9162     \addtocontents{lot}{\protect\addvspace{10\p@}}%
9163     \Hy@GlobalStepCount\Hy@linkcounter
9164     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9165     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9166     \if@twocolumn
9167       \topnewpage[\@makeschapterhead{##2}]%
9168     \else
9169       \@makeschapterhead{##2}%
9170       \afterheading
9171     \fi
9172     \addcontentsline{toc}{chapter}{##1}%
9173   }%
9174 }
9175 \@ifclassloaded{scrbook}{%
9176   \@ifclasslater{scrbook}{2001/01/01}{%
9177     \let\Hy@tempa\@empty
9178   }{}%
9179 }{%
9180   \@ifclassloaded{scrreprt}{%
9181     \@ifclasslater{scrreprt}{2001/01/01}{%
9182       \let\Hy@tempa\@empty
9183     }{}%
9184   }{}%
9185   \let\Hy@tempa\@empty
9186 }%
9187 }%
9188 \Hy@tempa
9189 </outlines | hypertex>
```

49 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek oberdiek@ruf.uni-freiburg.de

49.1 PD1 encoding

```
9190 <*pd1enc>
9191 \DeclareFontEncoding{PD1}{}{}
```

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

```
9192 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
9193 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
9194 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
9195 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
9196 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed
```

Accents

```

9197 \DeclareTextAccent{'}{PD1}{\textgrave}
9198 \DeclareTextAccent{'\'}{PD1}{\textacute}
9199 \DeclareTextAccent{\`}{PD1}{\textcircumflex}
9200 \DeclareTextAccent{\~}{PD1}{\texttilde}
9201 \DeclareTextAccent{"}{PD1}{\textdieresis}
9202 \DeclareTextAccent{\r}{PD1}{\textring}
9203 \DeclareTextAccent{\v}{PD1}{\textcaron}
9204 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
9205 \DeclareTextAccent{\c}{PD1}{\textcedilla}
9206 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textgrave}
9207 \DeclareTextCompositeCommand{'\'}{PD1}{\@empty}{\textacute}
9208 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textcircumflex}
9209 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
9210 \DeclareTextCompositeCommand{"}{PD1}{\@empty}{\textdieresis}
9211 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
9212 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}
9213 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
9214 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
9215 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}

```

Accent glyph names

```

9216 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve
9217 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
9218 \DeclareTextCommand{\textcircumflex}{PD1}{\032} % circumflex
9219 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
9220 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
9221 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
9222 \DeclareTextCommand{\textring}{PD1}{\036} % ring
9223 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde

```

\040: space

\041: exclam

```

9224 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042
9225 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign
9226 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar
9227 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent
9228 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand

```

\047: quotesingle

```

9229 \DeclareTextCommand{\textparenleft}{PD1}{\string\({} % parenleft \050
9230 \DeclareTextCommand{\textparenright}{PD1}{\string\)} % parenright \051

```

\052: asterisk

\053: plus

\054: comma

\055: hyphen

\056: period

\057: slash

\060... \071: 0...9

\072: colon

\073: semicolon

```

9231 \DeclareTextCommand{\textless}{PD1}{<} % less \074

```

\075: equal

```

9232 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076

```

\077: question

\100: at

\101... \132: A...Z

\133: bracketleft

```

9233 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash
\135: bracketright
9234 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum
9235 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
9236 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave
\141... \172: a...z
9237 \DeclareTextCompositeCommand{\.}{PD1}{i}{i} % i
9238 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
9239 \DeclareTextCommand{\textbar}{PD1}{|} % bar
9240 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
9241 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde
No glyph \177 in PDFDocEncoding.
9242 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
9243 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
9244 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl
9245 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis
9246 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
9247 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
9248 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
9249 \DeclareTextCommand{\textfractionmark}{PD1}{/} % fraction, \207
9250 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft
9251 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
9252 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
9253 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
9254 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
9255 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
9256 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright
9257 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
9258 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
9259 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
9260 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark
9261 \DeclareTextCommand{\textfi}{PD1}{fi} % fi ?? \223
9262 \DeclareTextCommand{\textfl}{PD1}{fl} % fl ?? \224
9263 \DeclareTextCommand{\L}{PD1}{L} % Lslash, \225
9264 \DeclareTextCommand{\OE}{PD1}{\226} % OE
9265 \DeclareTextCompositeCommand{\v}{PD1}{S}{S} % Scaron
9266 \DeclareTextCompositeCommand{\"}{PD1}{Y}{\230} % Ydieresis
9267 \DeclareTextCommand{\IJ}{PD1}{\230}
9268 \DeclareTextCompositeCommand{\v}{PD1}{Z}{Z} % Zcaron, \231
9269 \DeclareTextCommand{\i}{PD1}{i} % dotlessi, \232
9270 \DeclareTextCommand{\l}{PD1}{l} % lslash, \233
9271 \DeclareTextCommand{\oe}{PD1}{\234} % oe
9272 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
9273 \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.

```

9274 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
9275 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown
9276 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
9277 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
9278 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
9279 \DeclareTextCommand{\textyen}{PD1}{\245} % yen
9280 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
9281 \DeclareTextCommand{\textsection}{PD1}{\247} % section
9282 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
9283 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright

```


9284 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
 9285 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
 9286 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

No glyph \255 in PDFDocEncoding.

9287 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
 9288 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
 9289 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
 9290 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
 9291 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
 9292 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
 9293 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
 9294 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
 9295 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
 9296 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
 9297 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
 9298 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior
 9299 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine
 9300 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright
 9301 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter
 9302 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf
 9303 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters
 9304 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown
 9305 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300} % Agrave
 9306 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301} % Aacute
 9307 \DeclareTextCompositeCommand{\~}{PD1}{A}{\302} % Acircumflex
 9308 \DeclareTextCompositeCommand{\`}{PD1}{A}{\303} % Atilde
 9309 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304} % Adieresis
 9310 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring
 9311 \DeclareTextCommand{\AE}{PD1}{\306} % AE
 9312 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla
 9313 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310} % Egrave
 9314 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311} % Eacute
 9315 \DeclareTextCompositeCommand{\~}{PD1}{E}{\312} % Ecircumflex
 9316 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313} % Edieresis
 9317 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314} % Igrave
 9318 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315} % Iacute
 9319 \DeclareTextCompositeCommand{\~}{PD1}{I}{\316} % Icircumflex
 9320 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317} % Idieresis
 9321 \DeclareTextCommand{\DH}{PD1}{\320} % Eth
 9322 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth
 9323 \DeclareTextCompositeCommand{\`}{PD1}{N}{\321} % Ntilde
 9324 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322} % Ograve
 9325 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323} % Oacute
 9326 \DeclareTextCompositeCommand{\~}{PD1}{O}{\324} % Ocircumflex
 9327 \DeclareTextCompositeCommand{\`}{PD1}{O}{\325} % Otilde
 9328 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326} % Odieresis
 9329 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply
 9330 \DeclareTextCommand{\O}{PD1}{\330} % Oslash
 9331 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331} % Ugrave
 9332 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute
 9333 \DeclareTextCompositeCommand{\~}{PD1}{U}{\333} % Ucircumflex
 9334 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis
 9335 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335} % Yacute
 9336 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn
 9337 \DeclareTextCommand{\ss}{PD1}{\337} % germandbls
 9338 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340} % agrave
 9339 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute

```

9340 \DeclareTextCompositeCommand{\`}{PD1}{a}{\342} % acircumflex
9341 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343} % atilde
9342 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344} % adieresis
9343 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring
9344 \DeclareTextCommand{\ae}{PD1}{\346} % ae
9345 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla
9346 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350} % egrave
9347 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute
9348 \DeclareTextCompositeCommand{\`}{PD1}{e}{\352} % ecircumflex
9349 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353} % edieresis
9350 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354} % igrave
9351 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
9352 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
9353 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
9354 \DeclareTextCompositeCommand{\`}{PD1}{i}{\356} % icircumflex
9355 \DeclareTextCompositeCommand{\`}{PD1}{i}{\356} % icircumflex
9356 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
9357 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
9358 \DeclareTextCommand{\dh}{PD1}{\360} % eth
9359 \DeclareTextCompositeCommand{\`}{PD1}{n}{\361} % ntilde
9360 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362} % ograve
9361 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363} % oacute
9362 \DeclareTextCompositeCommand{\`}{PD1}{o}{\364} % ocircumflex
9363 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365} % otilde
9364 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366} % odieresis
9365 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
9366 \DeclareTextCommand{\o}{PD1}{\370} % oslash
9367 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371} % ugrave
9368 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372} % uacute
9369 \DeclareTextCompositeCommand{\`}{PD1}{u}{\373} % ucircumflex
9370 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374} % udieresis
9371 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375} % yacute
9372 \DeclareTextCommand{\th}{PD1}{\376} % thorn
9373 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377} % ydieresis
9374 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

9375 \DeclareTextCommand{\SS}{PD1}{SS}
9376 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

9377 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
9378 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
9379 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
9380 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
9381 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
9382 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
9383 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
9384 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

9385 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
9386 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
9387 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
9388 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
9389 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
9390 \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;

```

9391 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
9392 \DeclareTextCompositeCommand{\'}{PD1}{c}{c} % cacute
9393 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
9394 \DeclareTextCompositeCommand{\'}{PD1}{n}{n} % nacute
9395 \DeclareTextCompositeCommand{\'}{PD1}{s}{s} % sacute
9396 \DeclareTextCompositeCommand{\'}{PD1}{z}{z} % zacute
9397 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot
9398 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
9399 \DeclareTextCompositeCommand{\'}{PD1}{C}{C} % Cacute
9400 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
9401 \DeclareTextCompositeCommand{\'}{PD1}{N}{N} % Nacute
9402 \DeclareTextCompositeCommand{\'}{PD1}{S}{S} % Sacute
9403 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z} % Zacute
9404 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot
9405 </pdlenc>

```

49.2 PU encoding

```

9406 <*puenc>
9407 \DeclareFontEncoding{PU}{-}{-}

```

49.2.1 Basic Latin

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

```

9408 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
9409 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
9410 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
9411 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
9412 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed

```

Accents

```

9413 \DeclareTextAccent{\'}{PU}{\textgrave}
9414 \DeclareTextAccent{\'}{PU}{\textacute}
9415 \DeclareTextAccent{\~}{PU}{\textcircumflex}
9416 \DeclareTextAccent{\~}{PU}{\texttilde}
9417 \DeclareTextAccent{"}{PU}{\textdieresis}
9418 \DeclareTextAccent{\r}{PU}{\textring}
9419 \DeclareTextAccent{\v}{PU}{\textcaron}
9420 \DeclareTextAccent{\.}{PU}{\textdotaccent}
9421 \DeclareTextAccent{\c}{PU}{\textcedilla}
9422 \DeclareTextAccent{\U}{PU}{\textbreve}
9423 \DeclareTextAccent{\C}{PU}{\textdoublegrave}
9424 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textgrave}
9425 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
9426 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textcircumflex}
9427 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
9428 \DeclareTextCompositeCommand{"}{PU}{\@empty}{\textdieresis}
9429 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
9430 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
9431 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
9432 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
9433 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
9434 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}
9435 \DeclareTextCommand{\=}{PU}[1]{\TextSymbolUnavailable{\={#1}}#1}
9436 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
9437 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
9438 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}

```

Accent glyph names

```

9439 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
9440 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
9441 \DeclareTextCommand{\textcirc{circumflex}}{PU}{\80\032} % circumflex
9442 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
9443 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
9444 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
9445 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
9446 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
9447 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave

\040: space
\041: exclam

9448 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
9449 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
9450 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
9451 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
9452 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand

\047: quotesingle

9453 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft
9454 \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

9455 \DeclareTextCommand{\textless}{PU}{<} % less \80\074

\075: equal

9456 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076

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

9457 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash

\135: bracketright

9458 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum
9459 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore
9460 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave

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

9461 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % i
9462 \DeclareTextCommand{\j}{PU}{j} % jdotless
9463 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft
9464 \DeclareTextCommand{\textbar}{PU}{|} % bar
9465 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright
9466 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde

No glyph \177 in PDFDocEncoding.

```

49.2.2 Latin-1 Supplement

```
9467 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212
9468 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223
9469 \DeclareTextCommand{\textfl}{PU}{fl} % fl ?? \80\224
```

There are two positions for the glyphs from \80\225 until \80\236. See the test files testbmoe., testbml, testbmisc, testbmzc, and testbmyi for details. Problematic are all positions, but especially \OE, \oe, and \i.

```
9470 \DeclareTextCommand{\OE}{PU}{OE} % OE
9471 \DeclareTextCommand{\oe}{PU}{oe} % oe
```

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

```
9472 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown
9473 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent
9474 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling
9475 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency
9476 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen
9477 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar
9478 \DeclareTextCommand{\textsection}{PU}{\80\247} % section
9479 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis
9480 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright
9481 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine
9482 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft
9483 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot
```

No glyph \255 in PDFDocEncoding.

```
9484 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered
9485 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron
9486 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree
9487 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus
9488 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior
9489 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior
9490 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute
9491 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu
9492 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph
9493 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered
9494 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla
9495 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior
9496 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine
9497 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright
9498 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter
9499 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf
9500 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters
9501 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown
9502 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300} % Agrave
9503 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute
9504 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302} % Acircumflex
9505 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303} % Atilde
9506 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis
9507 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring
9508 \DeclareTextCommand{\AE}{PU}{\80\306} % AE
9509 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla
9510 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310} % Egrave
9511 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311} % Eacute
9512 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312} % Ecircumflex
9513 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis
9514 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314} % Igrave
9515 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315} % Iacute
9516 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316} % Icircumflex
```

```

9517 \DeclareTextCompositeCommand{"}{PU}{I}{\80\317} % Idieresis
9518 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth
9519 \DeclareTextCompositeCommand{~}{PU}{N}{\80\321} % Ntilde
9520 \DeclareTextCompositeCommand{'}{PU}{O}{\80\322} % Ograve
9521 \DeclareTextCompositeCommand{'}{PU}{O}{\80\323} % Oacute
9522 \DeclareTextCompositeCommand{^}{PU}{O}{\80\324} % Ocircumflex
9523 \DeclareTextCompositeCommand{~}{PU}{O}{\80\325} % Otilde
9524 \DeclareTextCompositeCommand{"}{PU}{O}{\80\326} % Odieresis
9525 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply
9526 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash
9527 \DeclareTextCompositeCommand{'}{PU}{U}{\80\331} % Ugrave
9528 \DeclareTextCompositeCommand{'}{PU}{U}{\80\332} % Uacute
9529 \DeclareTextCompositeCommand{^}{PU}{U}{\80\333} % Ucircumflex
9530 \DeclareTextCompositeCommand{"}{PU}{U}{\80\334} % Udieresis
9531 \DeclareTextCompositeCommand{'}{PU}{Y}{\80\335} % Yacute
9532 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn
9533 \DeclareTextCommand{\ss}{PU}{\80\337} % germandbls
9534 \DeclareTextCompositeCommand{'}{PU}{a}{\80\340} % agrave
9535 \DeclareTextCompositeCommand{'}{PU}{a}{\80\341} % aacute
9536 \DeclareTextCompositeCommand{^}{PU}{a}{\80\342} % acircumflex
9537 \DeclareTextCompositeCommand{~}{PU}{a}{\80\343} % atilde
9538 \DeclareTextCompositeCommand{"}{PU}{a}{\80\344} % adieresis
9539 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
9540 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
9541 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
9542 \DeclareTextCompositeCommand{'}{PU}{e}{\80\350} % egrave
9543 \DeclareTextCompositeCommand{'}{PU}{e}{\80\351} % eacute
9544 \DeclareTextCompositeCommand{^}{PU}{e}{\80\352} % ecircumflex
9545 \DeclareTextCompositeCommand{"}{PU}{e}{\80\353} % edieresis
9546 \DeclareTextCompositeCommand{'}{PU}{i}{\80\354} % igrave
9547 \DeclareTextCompositeCommand{'}{PU}{i}{\80\354} % igrave
9548 \DeclareTextCompositeCommand{'}{PU}{i}{\80\355} % iacute
9549 \DeclareTextCompositeCommand{'}{PU}{i}{\80\355} % iacute
9550 \DeclareTextCompositeCommand{^}{PU}{i}{\80\356} % icircumflex
9551 \DeclareTextCompositeCommand{~}{PU}{i}{\80\356} % icircumflex
9552 \DeclareTextCompositeCommand{"}{PU}{i}{\80\357} % idieresis
9553 \DeclareTextCompositeCommand{"}{PU}{i}{\80\357} % idieresis
9554 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
9555 \DeclareTextCompositeCommand{~}{PU}{n}{\80\361} % ntilde
9556 \DeclareTextCompositeCommand{'}{PU}{o}{\80\362} % ograve
9557 \DeclareTextCompositeCommand{'}{PU}{o}{\80\363} % oacute
9558 \DeclareTextCompositeCommand{^}{PU}{o}{\80\364} % ocircumflex
9559 \DeclareTextCompositeCommand{~}{PU}{o}{\80\365} % otilde
9560 \DeclareTextCompositeCommand{"}{PU}{o}{\80\366} % odieresis
9561 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
9562 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
9563 \DeclareTextCompositeCommand{'}{PU}{u}{\80\371} % ugrave
9564 \DeclareTextCompositeCommand{'}{PU}{u}{\80\372} % uacute
9565 \DeclareTextCompositeCommand{^}{PU}{u}{\80\373} % ucircumflex
9566 \DeclareTextCompositeCommand{"}{PU}{u}{\80\374} % udieresis
9567 \DeclareTextCompositeCommand{'}{PU}{y}{\80\375} % yacute
9568 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
9569 \DeclareTextCompositeCommand{"}{PU}{y}{\80\377} % ydieresis
9570 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```
9571 \DeclareTextCommand{\SS}{PU}{SS}
```

Aliases (german.sty)

```

9572 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
9573 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
9574 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
9575 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
9576 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
9577 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
9578 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
9579 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

9580 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
9581 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
9582 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
9583 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
9584 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

49.2.3 Latin Extended-A

```

9585 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% Amacron
9586 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% amacron
9587 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% Abreve
9588 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% abreve
9589 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% Aogonek
9590 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% aogonek
9591 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% Cacute
9592 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% cacute
9593 \DeclareTextCompositeCommand{\~}{PU}{C}{\81\010}% Ccircumflex
9594 \DeclareTextCompositeCommand{\~}{PU}{c}{\81\011}% ccircumflex
9595 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% Cdot
9596 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% cdot
9597 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% Ccaron
9598 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% ccaron
9599 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% Dcaron
9600 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% dcaron
9601 \DeclareTextCommand{\DJ}{PU}{\81\020}% Dslash
9602 \DeclareTextCommand{\dj}{PU}{\81\021}% dslash
9603 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% Emacron
9604 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% emacron
9605 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% Ebreve
9606 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% ebreve
9607 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% Edot
9608 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% edot
9609 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% Eogonek
9610 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% eogonek
9611 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% Ecaron
9612 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% ecaron
9613 \DeclareTextCompositeCommand{\~}{PU}{G}{\81\034}% Gcircumflex
9614 \DeclareTextCompositeCommand{\~}{PU}{g}{\81\035}% gcircumflex
9615 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% Gbreve
9616 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% gbreve
9617 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% Gdot
9618 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% gdot
9619 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% Gcedilla
9620 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% gcedilla
9621 \DeclareTextCompositeCommand{\~}{PU}{H}{\81\044}% Hcircumflex
9622 \DeclareTextCompositeCommand{\~}{PU}{h}{\81\045}% hcircumflex
9623 \DeclareTextCommand{\textHslash}{PU}{\81\046}% Hslash
9624 \DeclareTextCommand{\textHslash}{PU}{\81\047}% hslash
9625 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% Itilde

```

```

9626 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde
9627 \DeclareTextCompositeCommand{\`}{PU}{i}{\81\051} % itilde
9628 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052} % Imacron
9629 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053} % imacron
9630 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053} % imacron
9631 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054} % Ibreve
9632 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
9633 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
9634 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056} % Iogonek
9635 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
9636 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
9637 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060} % Idot
9638 \DeclareTextCommand{\i}{PU}{\81\061} % idotless
9639 % IJlig
9640 % ijlig
9641 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064} % Jcircumflex
9642 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
9643 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
9644 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
9645 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
9646 % kgreen
9647 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
9648 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
9649 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
9650 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
9651 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
9652 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
9653 % L middle dot
9654 % l middle dot
9655 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
9656 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
9657 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute
9658 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
9659 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
9660 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
9661 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
9662 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
9663 % n apostrophe
9664 \DeclareTextCommand{\NG}{PU}{\81\112} % NG
9665 \DeclareTextCommand{\ng}{PU}{\81\113} % ng
9666 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114} % Omacron
9667 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115} % omacron
9668 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve
9669 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
9670 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
9671 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
9672 \DeclareTextCommand{\OE}{PU}{\81\122} % OE
9673 \DeclareTextCommand{\oe}{PU}{\81\123} % oe
9674 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
9675 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
9676 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
9677 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
9678 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
9679 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
9680 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
9681 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
9682 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134} % Scircumflex

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9683 \DeclareTextCompositeCommand{\~}{PU}{s}{\81\135} % scircumflex
9684 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
9685 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
9686 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
9687 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
9688 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
9689 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
9690 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
9691 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
9692 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
9693 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
9694 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150} % Utilde
9695 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151} % utilde
9696 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152} % Umacron
9697 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153} % umacron
9698 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
9699 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
9700 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring
9701 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
9702 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
9703 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute
9704 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Uogonek
9705 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % uogonek
9706 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164} % Wcircumflex
9707 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165} % wcircumflex
9708 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166} % Ycircumflex
9709 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167} % ycircumflex
9710 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170} % Ydieresis
9711 \DeclareTextCommand{\IJ}{PU}{\81\170}
9712 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
9713 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
9714 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
9715 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
9716 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
9717 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

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49.2.4 Latin Extended-B

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9718 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
9719 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
9720 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
9721 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
9722 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
9723 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
9724 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
9725 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
9726 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
9727 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
9728 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
9729 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
9730 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
9731 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
9732 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
9733 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
9734 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Oogonek
9735 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

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49.2.5 Greek

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9736 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
9737 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
9738 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}
9739 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
9740 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
9741 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
9742 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
9743 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
9744 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}
9745 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
9746 \DeclareTextCommand{\textBeta}{PU}{\83\222}
9747 \DeclareTextCommand{\textGamma}{PU}{\83\223}
9748 \DeclareTextCommand{\textDelta}{PU}{\83\224}
9749 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
9750 \DeclareTextCommand{\textZeta}{PU}{\83\226}
9751 \DeclareTextCommand{\textEta}{PU}{\83\227}
9752 \DeclareTextCommand{\textTheta}{PU}{\83\230}
9753 \DeclareTextCommand{\textIota}{PU}{\83\231}
9754 \DeclareTextCommand{\textKappa}{PU}{\83\232}
9755 \DeclareTextCommand{\textLambda}{PU}{\83\233}
9756 \DeclareTextCommand{\textMu}{PU}{\83\234}
9757 \DeclareTextCommand{\textNu}{PU}{\83\235}
9758 \DeclareTextCommand{\textXi}{PU}{\83\236}
9759 \DeclareTextCommand{\textOmicron}{PU}{\83\237}
9760 \DeclareTextCommand{\textPi}{PU}{\83\240}
9761 \DeclareTextCommand{\textRho}{PU}{\83\241}
9762 \DeclareTextCommand{\textSigma}{PU}{\83\243}
9763 \DeclareTextCommand{\textTau}{PU}{\83\244}
9764 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}
9765 \DeclareTextCommand{\textPhi}{PU}{\83\246}
9766 \DeclareTextCommand{\textChi}{PU}{\83\247}
9767 \DeclareTextCommand{\textPsi}{PU}{\83\250}
9768 \DeclareTextCommand{\textOmega}{PU}{\83\251}
9769 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}
9770 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}
9771 \DeclareTextCompositeCommand{\'}{PU}{\textalpha}{\83\254}
9772 \DeclareTextCompositeCommand{\'}{PU}{\textepsilon}{\83\255}
9773 \DeclareTextCompositeCommand{\'}{PU}{\texteta}{\83\256}
9774 \DeclareTextCompositeCommand{\'}{PU}{\textiota}{\83\257}
9775 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}
9776 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}
9777 \DeclareTextCommand{\textalpha}{PU}{\83\261}
9778 \DeclareTextCommand{\textbeta}{PU}{\83\262}
9779 \DeclareTextCommand{\textgamma}{PU}{\83\263}
9780 \DeclareTextCommand{\textdelta}{PU}{\83\264}
9781 \DeclareTextCommand{\textepsilon}{PU}{\83\265}
9782 \DeclareTextCommand{\textzeta}{PU}{\83\266}
9783 \DeclareTextCommand{\texteta}{PU}{\83\267}
9784 \DeclareTextCommand{\texttheta}{PU}{\83\270}
9785 \DeclareTextCommand{\textiota}{PU}{\83\271}
9786 \DeclareTextCommand{\textkappa}{PU}{\83\272}
9787 \DeclareTextCommand{\textlambda}{PU}{\83\273}
9788 \DeclareTextCommand{\textmu}{PU}{\83\274}
9789 \DeclareTextCommand{\textnu}{PU}{\83\275}
9790 \DeclareTextCommand{\textxi}{PU}{\83\276}
9791 \DeclareTextCommand{\textomicron}{PU}{\83\277}
9792 \DeclareTextCommand{\textpi}{PU}{\83\300}

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9793 \DeclareTextCommand{\textrho}{PU}{\83\301}
9794 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
9795 \DeclareTextCommand{\textsigma}{PU}{\83\303}
9796 \DeclareTextCommand{\texttau}{PU}{\83\304}
9797 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
9798 \DeclareTextCommand{\textphi}{PU}{\83\306}
9799 \DeclareTextCommand{\textchi}{PU}{\83\307}
9800 \DeclareTextCommand{\textpsi}{PU}{\83\310}
9801 \DeclareTextCommand{\textomega}{PU}{\83\311}
9802 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}
9803 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}
9804 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}
9805 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}
9806 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}
9807 \DeclareTextCommand{\textvartheta}{PU}{\83\321}
9808 \DeclareTextCommand{\textvarphi}{PU}{\83\325}
9809 \DeclareTextCommand{\textvarpi}{PU}{\83\326}
9810 \DeclareTextCommand{\textdigamma}{PU}{\83\334}
9811 \DeclareTextCommand{\textvarkappa}{PU}{\83\360}
9812 \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.

```

9813 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
9814 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}%
9815 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
9816 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% GJE
9817 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
9818 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
9819 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
9820 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI
9821 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
9822 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
9823 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE
9824 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
9825 \DeclareTextCompositeCommand{'}{PU}{\CYRK}{\84\014}% KJE
9826 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
9827 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
9828 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A
9829 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
9830 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
9831 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
9832 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
9833 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
9834 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
9835 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
9836 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I
9837 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
9838 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}%
9839 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
9840 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
9841 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM
9842 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN
9843 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O
9844 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE
9845 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER

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9846 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES
 9847 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE
 9848 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U
 9849 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF
 9850 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA
 9851 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE
 9852 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE
 9853 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA
 9854 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA
 9855 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN
 9856 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU
 9857 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN
 9858 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E
 9859 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU
 9860 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA
 9861 \DeclareTextCommand{\cyra}{PU}{\84\060}% a
 9862 \DeclareTextCommand{\cyrb}{PU}{\84\061}% be
 9863 \DeclareTextCommand{\cyrv}{PU}{\84\062}% ve
 9864 \DeclareTextCommand{\cyrg}{PU}{\84\063}% ghe
 9865 \DeclareTextCommand{\cyrd}{PU}{\84\064}% de
 9866 \DeclareTextCommand{\cyre}{PU}{\84\065}% ie
 9867 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% zhe
 9868 \DeclareTextCommand{\cyrz}{PU}{\84\067}% ze
 9869 \DeclareTextCommand{\cyrj}{PU}{\84\070}% i
 9870 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i
 9871 \DeclareTextCompositeCommand{\U}{PU}{\cyrj}{\84\071}%
 9872 \DeclareTextCommand{\cyrk}{PU}{\84\072}% ka
 9873 \DeclareTextCommand{\cyrk}{PU}{\84\073}% el
 9874 \DeclareTextCommand{\cyrm}{PU}{\84\074}% em
 9875 \DeclareTextCommand{\cyrn}{PU}{\84\075}% en
 9876 \DeclareTextCommand{\cyro}{PU}{\84\076}% o
 9877 \DeclareTextCommand{\cyrp}{PU}{\84\077}% pe
 9878 \DeclareTextCommand{\cyrr}{PU}{\84\100}% er
 9879 \DeclareTextCommand{\cyrj}{PU}{\84\101}% es
 9880 \DeclareTextCommand{\cyrk}{PU}{\84\102}% te
 9881 \DeclareTextCommand{\cyru}{PU}{\84\103}% u
 9882 \DeclareTextCommand{\cyrf}{PU}{\84\104}% ef
 9883 \DeclareTextCommand{\cyrh}{PU}{\84\105}% ha
 9884 \DeclareTextCommand{\cyrc}{PU}{\84\106}% tse
 9885 \DeclareTextCommand{\cyrch}{PU}{\84\107}% che
 9886 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% sha
 9887 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% shcha
 9888 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% hard sign
 9889 \DeclareTextCommand{\cyrery}{PU}{\84\113}% yeru
 9890 \DeclareTextCommand{\cyrstsn}{PU}{\84\114}% soft sign
 9891 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% e
 9892 \DeclareTextCommand{\cyrju}{PU}{\84\116}% yu
 9893 \DeclareTextCommand{\cyrja}{PU}{\84\117}% ya
 9894 \DeclareTextCommand{\cyrjo}{PU}{\84\121}% io
 9895 \DeclareTextCompositeCommand{\ }{PU}{\cyre}{\84\121}%
 9896 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% dje
 9897 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% gje
 9898 \DeclareTextCommand{\cyrie}{PU}{\84\124}% ukrainian ie
 9899 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% dze
 9900 \DeclareTextCommand{\cyrj}{PU}{\84\126}% byelorussian-ukrainian i
 9901 \DeclareTextCommand{\cyrji}{PU}{\84\127}% yi
 9902 \DeclareTextCommand{\cyrje}{PU}{\84\130}% je

9903 \DeclareTextCommand{\cyr lje}{PU}{\84\131}% lje
 9904 \DeclareTextCommand{\cyr nje}{PU}{\84\132}% nje
 9905 \DeclareTextCommand{\cyr tshe}{PU}{\84\133}% tshe
 9906 \DeclareTextCompositeCommand{\'}{PU}{\cyr k}{\84\134}% kje
 9907 \DeclareTextCommand{\cyr shr t}{PU}{\84\136}% short u
 9908 \DeclareTextCommand{\cyr dzhe}{PU}{\84\137}% dzhe
 9909 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA
 9910 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega
 9911 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT
 9912 \DeclareTextCommand{\cyryat}{PU}{\84\143}% yat
 9913 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E
 9914 \DeclareTextCommand{\cyriote}{PU}{\84\145}% iotified e
 9915 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS
 9916 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% little yus
 9917 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS
 9918 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% iotified little yus
 9919 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS
 9920 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% big yus
 9921 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS
 9922 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% iotified big yus
 9923 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI
 9924 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% ksi
 9925 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI
 9926 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi
 9927 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA
 9928 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita
 9929 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA
 9930 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa
 9931 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave
 9932 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave
 9933 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK
 9934 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk
 9935 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA
 9936 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega
 9937 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo
 9938 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo
 9939 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT
 9940 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot
 9941 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA
 9942 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa
 9943 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign
 9944 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO
 9945 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION
 9946 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA
 9947 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA
 9948 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn
 9949 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn
 9950 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke
 9951 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke
 9952 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook
 9953 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook
 9954 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender
 9955 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender
 9956 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender
 9957 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender
 9958 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender
 9959 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% ka descender

9960 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke
 9961 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke
 9962 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke
 9963 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% ka stroke
 9964 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA
 9965 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka
 9966 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender
 9967 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender
 9968 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE
 9969 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe
 9970 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook
 9971 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook
 9972 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA
 9973 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha
 9974 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender
 9975 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% es descender
 9976 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender
 9977 \DeclareTextCommand{\cyrtldsc}{PU}{\84\255}% te descender
 9978 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U
 9979 \DeclareTextCommand{\cyry}{PU}{\84\257}% straight u
 9980 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke
 9981 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% straight u stroke
 9982 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender
 9983 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% ha descender
 9984 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE
 9985 \DeclareTextCommand{\cyrtdtse}{PU}{\84\265}% ligature te tse
 9986 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender
 9987 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender
 9988 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke
 9989 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% che vertical stroke
 9990 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA
 9991 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha
 9992 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhasian CHE
 9993 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhasian che
 9994 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% abkhasian CHE descender
 9995 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhasian che descender
 9996 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% palochka
 9997 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve
 9998 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% zhe breve
 9999 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook
 10000 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% ka hook
 10001 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook
 10002 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% en hook
 10003 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE
 10004 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che
 10005 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve
 10006 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve
 10007 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% A diaeresis
 10008 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% a diaeresis
 10009 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE
 10010 \DeclareTextCommand{\cyrae}{PU}{\84\325}% ligature a ie
 10011 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve
 10012 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve
 10013 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA
 10014 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% schwa
 10015 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis
 10016 \DeclareTextCompositeCommand{\U}{PU}{\cyrswa}{\84\333}% schwa diaeresis

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10017 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% ZHE diaeresis
10018 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% zhe diaeresis
10019 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% ZE diaeresis
10020 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% ze diaeresis
10021 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhasian DZE
10022 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhasian dze
10023 \DeclareTextCompositeCommand{=}{PU}{\CYRI}{\84\342}% I macron
10024 \DeclareTextCompositeCommand{=}{PU}{\cyri}{\84\343}% i macron
10025 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% I diaeresis
10026 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% i diaeresis
10027 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% O diaeresis
10028 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% o diaeresis
10029 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O
10030 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% barred o
10031 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% barred O diaeresis
10032 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% barred o diaeresis
10033 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U macron
10034 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% u macron
10035 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U diaeresis
10036 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% u diaeresis
10037 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U double acute
10038 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% u double acute
10039 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% CHE diaeresis
10040 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% che diaeresis
10041 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% YERU diaeresis
10042 \DeclareTextCompositeCommand{"}{PU}{\cyrery}{\84\371}% yeru diaeresis

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49.2.7 Symbols

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10043 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash
10044 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash
10045 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030} % quoteleft
10046 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright
10047 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase
10048 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
10049 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
10050 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
10051 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
10052 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
10053 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet
10054 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
10055 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
10056 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
10057 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
10058 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
10059 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
10060 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
10061 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}
10062 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
10063 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
10064 % \DeclareTextCommand{\cyrlangle}{PU}{\9043\051}
10065 % \DeclareTextCommand{\cyrrangle}{PU}{\9043\052}

10066 \puenc)

```

49.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

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10067 \DeclareTextCommand{*puvnenc}
10068 \DeclareTextCommand{\abreve}{PU}{\81\003}
10069 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
10070 \DeclareTextCommand{\dj}{PU}{\81\021}
10071 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
10072 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
10073 \DeclareTextCommand{\ohorn}{PU}{\81\241}
10074 \DeclareTextCommand{\uhorn}{PU}{\81\260}
10075 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
10076 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
10077 \DeclareTextCommand{\DJ}{PU}{\81\020}
10078 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
10079 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
10080 \DeclareTextCommand{\OHORN}{PU}{\81\240}
10081 \DeclareTextCommand{\UHORN}{PU}{\81\257}

10082 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
10083 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
10084 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
10085 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
10086 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
10087 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
10088 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
10089 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
10090 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
10091 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
10092 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
10093 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
10094 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
10095 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}
10096 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}
10097 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}
10098 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}
10099 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}
10100 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}
10101 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}
10102 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}
10103 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}
10104 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}
10105 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}
10106 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}
10107 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}
10108 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}
10109 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}
10110 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}
10111 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}
10112 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}
10113 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}
10114 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}
10115 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}
10116 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}
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10118 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}
10119 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}
10120 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}
10121 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}
10122 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}
10123 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}

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10124 \DeclareTextCompositeCommand{'}{PU}{\ohorn}{\9036\335}
10125 \DeclareTextCompositeCommand{h}{PU}{\ohorn}{\9036\337}
10126 \DeclareTextCompositeCommand{~}{PU}{\ohorn}{\9036\341}
10127 \DeclareTextCompositeCommand{'}{PU}{u}{\80\372}
10128 \DeclareTextCompositeCommand{d}{PU}{u}{\9036\345}
10129 \DeclareTextCompositeCommand{'}{PU}{u}{\80\371}
10130 \DeclareTextCompositeCommand{h}{PU}{u}{\9036\347}
10131 \DeclareTextCompositeCommand{~}{PU}{u}{\81\151}
10132 \DeclareTextCompositeCommand{'}{PU}{\uhorn}{\9036\351}
10133 \DeclareTextCompositeCommand{d}{PU}{\uhorn}{\9036\361}
10134 \DeclareTextCompositeCommand{'}{PU}{\uhorn}{\9036\353}
10135 \DeclareTextCompositeCommand{h}{PU}{\uhorn}{\9036\355}
10136 \DeclareTextCompositeCommand{~}{PU}{\uhorn}{\9036\357}
10137 \DeclareTextCompositeCommand{'}{PU}{y}{\80\375}
10138 \DeclareTextCompositeCommand{d}{PU}{y}{\9036\365}
10139 \DeclareTextCompositeCommand{'}{PU}{y}{\9036\363}
10140 \DeclareTextCompositeCommand{h}{PU}{y}{\9036\367}
10141 \DeclareTextCompositeCommand{~}{PU}{y}{\9036\371}
10142 \DeclareTextCompositeCommand{'}{PU}{A}{\80\301}
10143 \DeclareTextCompositeCommand{d}{PU}{A}{\9036\240}
10144 \DeclareTextCompositeCommand{'}{PU}{A}{\80\300}
10145 \DeclareTextCompositeCommand{h}{PU}{A}{\9036\242}
10146 \DeclareTextCompositeCommand{~}{PU}{A}{\80\303}
10147 \DeclareTextCompositeCommand{'}{PU}{\ABREVE}{\9036\256}
10148 \DeclareTextCompositeCommand{d}{PU}{\ABREVE}{\9036\266}
10149 \DeclareTextCompositeCommand{'}{PU}{\ABREVE}{\9036\260}
10150 \DeclareTextCompositeCommand{h}{PU}{\ABREVE}{\9036\262}
10151 \DeclareTextCompositeCommand{~}{PU}{\ABREVE}{\9036\264}
10152 \DeclareTextCompositeCommand{'}{PU}{\ACIRCUMFLEX}{\9036\244}
10153 \DeclareTextCompositeCommand{d}{PU}{\ACIRCUMFLEX}{\9036\254}
10154 \DeclareTextCompositeCommand{'}{PU}{\ACIRCUMFLEX}{\9036\246}
10155 \DeclareTextCompositeCommand{h}{PU}{\ACIRCUMFLEX}{\9036\250}
10156 \DeclareTextCompositeCommand{~}{PU}{\ACIRCUMFLEX}{\9036\252}
10157 \DeclareTextCompositeCommand{'}{PU}{E}{\80\311}
10158 \DeclareTextCompositeCommand{d}{PU}{E}{\9036\270}
10159 \DeclareTextCompositeCommand{'}{PU}{E}{\80\310}
10160 \DeclareTextCompositeCommand{h}{PU}{E}{\9036\272}
10161 \DeclareTextCompositeCommand{~}{PU}{E}{\9036\274}
10162 \DeclareTextCompositeCommand{'}{PU}{\ECIRCUMFLEX}{\9036\276}
10163 \DeclareTextCompositeCommand{d}{PU}{\ECIRCUMFLEX}{\9036\306}
10164 \DeclareTextCompositeCommand{'}{PU}{\ECIRCUMFLEX}{\9036\300}
10165 \DeclareTextCompositeCommand{h}{PU}{\ECIRCUMFLEX}{\9036\302}
10166 \DeclareTextCompositeCommand{~}{PU}{\ECIRCUMFLEX}{\9036\304}
10167 \DeclareTextCompositeCommand{'}{PU}{I}{\80\315}
10168 \DeclareTextCompositeCommand{d}{PU}{I}{\9036\312}
10169 \DeclareTextCompositeCommand{'}{PU}{I}{\80\314}
10170 \DeclareTextCompositeCommand{h}{PU}{I}{\9036\310}
10171 \DeclareTextCompositeCommand{~}{PU}{I}{\81\050}
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10174 \DeclareTextCompositeCommand{'}{PU}{O}{\80\322}
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10176 \DeclareTextCompositeCommand{~}{PU}{O}{\80\325}
10177 \DeclareTextCompositeCommand{'}{PU}{\OCIRCUMFLEX}{\9036\320}
10178 \DeclareTextCompositeCommand{d}{PU}{\OCIRCUMFLEX}{\9036\330}
10179 \DeclareTextCompositeCommand{'}{PU}{\OCIRCUMFLEX}{\9036\322}
10180 \DeclareTextCompositeCommand{h}{PU}{\OCIRCUMFLEX}{\9036\324}

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10181 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}
10182 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}
10183 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}
10184 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}
10185 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}
10186 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
10187 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
10188 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
10189 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}
10190 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
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10193 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
10194 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
10195 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
10196 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
10197 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}
10198 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
10199 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
10200 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
10201 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
10202 </puvnenc>

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9402, 9403, 9414,	\@ListBox 7772, 7792,	7895, 7919, 8084,
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