

Hypertext marks in \LaTeX

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1 Documentation overview for `hyperref`

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

Manual The user documentation is also available as HTML.

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

ChangeLog This file records the version history.

Options This file provides a short option summary.

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

Bookmark talk, paper The paper version of the talk.

Source code documentation:

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

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

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

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3 File hycheck.tex

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

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

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

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

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

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

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

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

`\HyC@checkPackage`

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

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

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

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

```

4 Package options and setup

4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

\Hy@RestoreCatcodes

```

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

```

```

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

```

```
230 \Hy@SetCatcodes
```

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

```

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

```

4.2 Compatibility with format dumps

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

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

```

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

```

4.3 Switches

```

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

```

```

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

```

Defaults for the switches are now set.

```

280 \Hy@backreffalse
281 \Hy@bookmarksnumberedfalse
282 \Hy@bookmarksopenfalse
283 \Hy@bookmarkstrue
284 \Hy@breaklinksfalse
285 \Hy@centerwindowfalse
286 \Hy@CJKbookmarksfalse
287 \Hy@escapeformfalse
288 \Hy@figuresfalse
289 \Hy@fitwindowfalse
290 \Hy@hyperfootnotesttrue
291 \Hy@hyperindextrue
292 \Hy@hypertextnamesttrue
293 \Hy@implicittrue
294 \Hy@linktocpagefalse
295 \Hy@menubartrue
296 \Hy@naturalnamesfalse
297 \Hy@nestingfalse
298 \Hy@newwindowfalse
299 \Hy@pageanchortrue
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 T_EX'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 T_EX 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 T_EX 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 T_EX, 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 (vtex driver, Unicode support).

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

```
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 \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
460 \let\autoref\HyPsd@autoref
```

Miscellaneous commands.

```
461 \let\leavevmode\@empty
462 \let\mbox\@empty
```

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

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

Patch for `cjk` bookmarks.

```
464 \ifHy@CJKbookmarks
465 \HyPsd@CJKhook
466 \fi
```

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

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

```
467 \Hy@pdfstringtrue
468 \pdfstringdefPreHook
```

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

```
469 \HyPsd@LetUnexpandableSpace\space
470 \HyPsd@LetUnexpandableSpace\%
471 \HyPsd@LetUnexpandableSpace~%
472 \HyPsd@LetUnexpandableSpace\nobreakspace
```

Package xspace.

```
473 \ifundefined{xspace}{%
474 \let\xspace\HyPsd@ITALCORR
475 }{%
476 \let\xspace\HyPsd@XSPACE
477 }%
478 \let\/\HyPsd@ITALCORR
479 \let\bgroup\/%
480 \let\egroup\/%
```

Redefinitions of miscellaneous commands. Hyphenation does not make sense.

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

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

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

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

```
482 \let\@ifnextchar\HyPsd@ifnextchar
483 \let\@ifnextchar\HyPsd@new@ifnextchar
484 \let\@protected@testopt\HyPsd@protected@testopt
```

6.2.2 Expansion

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

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

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

\edef This version uses this standard form for expansion. It is stronger than L^AT_EX's \protected@edef. So the font encoding mechanism works and the glyph commands are converted to the correct tokens for PDF strings with the definitions of the PD1 encoding. Because the protecting mechanism of L^AT_EX 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).

```
485 \begingroup
486 \let\GenericError\@gobblefour
487 \let\GenericWarning\@gobbletwo
488 \let\GenericInfo\@gobbletwo
```

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

```
489 \ifx\nofrenchguillemets\undefined
490 \else
491 \nofrenchguillemets
492 \fi
```

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

```
493 \let\Hy@temp\xdef
494 \let\def\HyPsd@DefCommand
495 \let\gdef\HyPsd@DefCommand
496 \let\edef\HyPsd@DefCommand
497 \let\xdef\HyPsd@DefCommand
498 \let\futurelet\HyPsd@LetCommand
499 \let\let\HyPsd@LetCommand
500 \Hy@temp#1{#2}%
501 \endgroup
```

6.2.3 Postprocessing

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

```
502 \ifx#1\@empty
503 \else
```

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

- \TeX does not accept a space as an undelimited argument, it cancels space tokens while looking for an undelimited argument. Therefore we must protect the spaces now.
- An argument can be a single token or a group of many tokens. And within curly braces tokens aren't find by \TeX 's argument scanning process. Third curly braces as grouping characters cannot be expanded further, so they don't vanish by the string expansion above. So these characters with catcode 1 and 2 are removed in the following and replaced by an marker for the xspace support.

- \TeX silently removes the outmost pair of braces of an argument. To prevent this on unwanted places, in the following the character | is appended to the string to make an outer brace to an inner one.

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

```

504      \HyPsd@ProtectSpaces#1%
505      \let\HyPsd@String\@empty
506      \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
507      \global\let#1\HyPsd@String

```

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

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

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

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

```

508      \let\HyPsd@SPACEOPTI\relax
509      {%
510          \let\HyPsd@String\@empty
511          \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
512          \global\let#1\HyPsd@String
513      }%
514      \expandafter\HyPsd@RemoveMask\expandafter
515          \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.

```

516      \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
517      \let\HyPsd@String\@empty
518      \expandafter\HyPsd@GlyphProcess#1\relax\@empty
519      \global\let#1\HyPsd@String

```

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

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

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

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

```

521 \ifHy@unicode
522 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
523 \HyPsd@SPACEOPTI#1%
524 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
525 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
526 {\HyPsd@SPACEOPTI\80\273}#1%
527 \else
528 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
529 \expandafter\HyPsd@Subst\expandafter{%
530 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
531 \string\273}\HyPsd@SPACEOPTI\273}#1%
532 \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.

```

533 \ifHy@unicode
534 \HyPsd@StringSubst{\}){\80\051}#1%
535 \HyPsd@Subst){\80\051}#1%
536 \let\HyPsd@empty\relax
537 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
538 {\HyPsd@empty\80\051}#1%
539 \else
540 \HyPsd@StringSubst{\}){\051}#1%
541 \HyPsd@Subst){\051}#1%
542 \let\HyPsd@empty\relax
543 \HyPsd@StringSubst{\051}\HyPsd@empty\string\})#1%
544 \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`.

```

545 \expandafter\HyPsd@Subst\expandafter{\//}\HyPsd@empty#1%
546 \@ifundefined{xspace}{%
547 }{%
548 \let\HyPsd@xspace\relax

```

```

549      \expandafter\HyPsd@Subst\expandafter
550      {\HyPsd@XSPACE}\HyPsd@xspace#1%
551      \let\HyPsd@xspace\HyPsd@doxspace
552  }%
553  \xdef#1{#1\HyPsd@empty}%

```

Ligatures. T_EX forms ligatures in its stomach, but the PDF strings are treated only by T_EX'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.

```

554 %      \HyPsd@Subst{---}\textemdash#1%
555 %      \HyPsd@Subst{--}\textendash#1%
556 %      \HyPsd@Subst{fi}\textfi#1%
557 %      \HyPsd@Subst{fl}\textfl#1%
558 %      \HyPsd@Subst{!'}\textexclamdown#1%
559 %      \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

560      \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 T_EX memory and time.

```

561      \ifHy@unicode
562      \HyPsd@StringSubst\(\textparenleft#1%
563      \HyPsd@Subst(\textparenleft#1%
564  \else
565      \HyPsd@StringSubst\({\050}#1%
566      \HyPsd@Subst({\050}#1%
567      \HyPsd@StringSubst{\050}{\string\()}#1%
568  \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.

```

569      \ifHy@unicode
570      \edef\HyPsd@SPACEOPTI{\80\040}%
571  \else
572      \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
573  \fi
574  \xdef#1{#1\@empty}%
575  \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.

```

576      \ifHy@unicode
577      \HyPsd@ConvertToUnicode#1%

```



```
578 \fi
```

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

```
579 \pdfstringdefPostHook#1%
580 \endgroup
581 }
```

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.

```
582 \@ifundefined{T@PD1}{\input{pd1enc.def}}{}
583 \DeclareFontFamily{PD1}{pdf}{}
584 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
585 \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`.

```
586 \def\HyPsd@InitUnicode{%
587 \ifundefined{T@PU}{\input{puenc.def}}{}%
588 \DeclareFontFamily{PU}{pdf}{}%
589 \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
590 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
591 \let\HyPsd@InitUnicode\relax
592 }
```

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.

```
593 \newcommand*{\texorpdfstring}{%
594 \ifHy@pdfstring
595 \expandafter\@secondoftwo
596 \else
597 \expandafter\@firstoftwo
598 \fi
599 }
```

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`.

```
600 \@ifundefined{pdfstringdefPreHook}{%
601   \let\pdfstringdefPreHook\@empty
602 }{}
603 \@ifundefined{pdfstringdefPostHook}{%
604   \let\pdfstringdefPostHook\@gobble
605 }{}
```

`\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 \LaTeX commands like `\@gobble` or `\@firstofone`.

```
606 \def\pdfstringdefDisableCommands{%
607   \begingroup
608     \makeatletter
609     \HyPsd@DisableCommands
610 }
```

`\HyPsd@DisableCommands`

```
611 \long\def\HyPsd@DisableCommands#1{%
612   \toks0=\expandafter{\pdfstringdefPreHook}%
613   \toks1={#1}%
614   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
615   \endgroup
616 }
```

`\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`.

```
617 \def\pdfstringdefWarn#1{%
618   \expandafter\noexpand\csname\<>-string#1\endcsname
619 }
```

6.5 Help macros for expansion

6.5.1 Babel languages

```

620 \newif\ifHy@next

    Nothing to do for english.
621 \@ifpackagewith{babel}{danish}{%
622   \def\HyPsd@babel@danish{%
623     \declare@shorthand{danish}{"}{|}%
624     \declare@shorthand{danish}{"}{~}{-}%
625   }%
626 }{}
627 \Hy@nextfalse
628 \@ifpackagewith{babel}{dutch}{\Hy@nexttrue}{}%
629 \@ifpackagewith{babel}{afrikaans}{\Hy@nexttrue}{}%
630 \ifHy@next
631   \def\HyPsd@babel@dutch{%
632     \declare@shorthand{dutch}{"}{|}%
633     \declare@shorthand{dutch}{"}{~}{-}%
634   }%
635 \fi
636 \@ifpackagewith{babel}{finnish}{%
637   \def\HyPsd@babel@finnish{%
638     \declare@shorthand{finnish}{"}{|}%
639   }%
640 }{}
641 \Hy@nextfalse
642 \@ifpackagewith{babel}{frenchb}{\Hy@nexttrue}{%
643 \@ifpackagewith{babel}{français}{\Hy@nexttrue}{%
644 \ifHy@next
645   \def\HyPsd@babel@frenchb{%
646     \def\guill@spacing{ }%
647   }%
648 \fi
649 \Hy@nextfalse
650 \@ifpackagewith{babel}{german}{\Hy@nexttrue}{}%
651 \@ifpackagewith{babel}{germanb}{\Hy@nexttrue}{}%
652 \@ifpackagewith{babel}{austrian}{\Hy@nexttrue}{}%
653 \ifHy@next
654   \def\HyPsd@babel@german{%
655     \declare@shorthand{german}{"}{f}{f}%
656     \declare@shorthand{german}{"}{|}%
657     \declare@shorthand{german}{"}{~}{-}%
658   }%
659 \fi
660 \Hy@nextfalse
661 \@ifpackagewith{babel}{ngerman}{\Hy@nexttrue}{}%
662 \@ifpackagewith{babel}{ngermanb}{\Hy@nexttrue}{}%
663 \@ifpackagewith{babel}{naustrian}{\Hy@nexttrue}{}%
664 \ifHy@next
665   \def\HyPsd@babel@ngerman{%
666     \declare@shorthand{german}{"}{|}%
667     \declare@shorthand{german}{"}{~}{-}%
668   }%
669 \fi
670 \Hy@nextfalse
671 \@ifpackagewith{babel}{usorbian}{\Hy@nexttrue}{}%
672 \@ifpackagewith{babel}{uppersorbian}{\Hy@nexttrue}{}%
673 \ifHy@next
674   \def\HyPsd@babel@usorbian{%
675     \declare@shorthand{usorbian}{"}{f}{f}%

```

```

676 \declare@shorthand{usorbian}{"}{}%
677 }%
678 \fi
679 \Hy@nextfalse
680 \@ifpackagewith{babel}{brazil}{\Hy@nexttrue}{}%
681 \@ifpackagewith{babel}{brazilian}{\Hy@nexttrue}{}%
682 \@ifpackagewith{babel}{portuges}{\Hy@nexttrue}{}%
683 \@ifpackagewith{babel}{portuguese}{\Hy@nexttrue}{}%
684 \ifHy@next
685 \def\HyPsd@babel@portuges{%
686 \declare@shorthand{portuges}{"}{}%
687 }%
688 \fi
689 \Hy@nextfalse
690 \@ifpackagewith{babel}{russian}{\Hy@nexttrue}{}
691 \@ifpackagewith{babel}{russianb}{\Hy@nexttrue}{}
692 \ifHy@next
693 \def\HyPsd@babel@russian{%
694 \declare@shorthand{russian}{"}{}%
695 \declare@shorthand{russian}{"}{}%
696 }%
697 \fi
698 \Hy@nextfalse
699 \@ifpackagewith{babel}{ukrainian}{\Hy@nexttrue}{}
700 \@ifpackagewith{babel}{ukraineb}{\Hy@nexttrue}{}
701 \ifHy@next
702 \def\HyPsd@babel@ukrainian{%
703 \declare@shorthand{ukrainian}{"}{}%
704 \declare@shorthand{ukrainian}{"}{}%
705 }%
706 \fi
707 \@ifpackagewith{babel}{macedonian}{%
708 \def\HyPsd@babel@macedonian{%
709 \declare@shorthand{macedonian}{"}{}%
710 \declare@shorthand{macedonian}{"}{}%
711 }%
712 }{}
713 \@ifpackagewith{babel}{slovene}{%
714 \def\HyPsd@babel@slovene{%
715 \declare@shorthand{slovene}{"}{}%
716 }%
717 }{}
718 \@ifpackagewith{babel}{swedish}{%
719 \def\HyPsd@babel@swedish{%
720 \declare@shorthand{swedish}{"}{}%
721 \declare@shorthand{swedish}{"}{}%
722 }%
723 }{}

```

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 ($\geq 0x40$).

```

724 \begingroup
725   \catcode"7F=\active
726   \toks@{%
727     \let\CJK@ignorespaces\empty
728     \def\CJK@char#1{\@gobbletwo}%
729     \let\CJK@charx\@gobblefour
730     \let\CJK@punctchar\@gobblefour
731     \def\CJK@punctcharx#1{\@gobblefour}%
732     \catcode"7F=\active
733     \def^^7f#1^^7f#2^^7f{%
734       \string #1\HyPsd@DecimalToOctal{#2}%
735     }%
736     % ... ?
737     \ifHy@unicode
738       \def\Hy@cjkpu{\80}%
739     \else
740       \let\Hy@cjkpu\@empty
741     \fi
742     \HyPsd@CJKActiveChars
743   }%
744   \count@=127
745   \@whilenum\count@<255 \do{%
746     \advance\count@ by 1
747     \lccode'\~= \count@
748     \lowercase{%
749       \toks@\expandafter{\the\toks@ ~}%
750     }%
751   }%
752   \toks@\expandafter{\the\toks@ !}%
753   \xdef\HyPsd@CJKhook{\the\toks@}%
754 \endgroup

```

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

```

755 \def\HyPsd@CJKActiveChars#1{%
756   \ifx#1!%
757     \let\HyPsd@CJKActiveChars\relax
758   \else
759     \edef#1{\noexpand\Hy@cjkpu\string#1}%
760   \fi
761   \HyPsd@CJKActiveChars
762 }

```

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

```

763 \def\HyPsd@DecimalToOctal#1{%
764   \ifcase #1 %
765     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
766     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
767     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
768     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
769     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
770     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
771     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
772     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
773     \or @\or A\or B\or C\or D\or E\or F\or G%

```

```

774 \or H\or I\or J\or K\or L\or M\or N\or O%
775 \or P\or Q\or R\or S\or T\or U\or V\or W%
776 \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
777 \or \140\or a\or b\or c\or d\or e\or f\or g%
778 \or h\or i\or j\or k\or l\or m\or n\or o%
779 \or p\or q\or r\or s\or t\or u\or v\or w%
780 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
781 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
782 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
783 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
784 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
785 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
786 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
787 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
788 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
789 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
790 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
791 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
792 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
793 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
794 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
795 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
796 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
797 \fi
798 }

```

6.5.3 \@inmathwarn-Patch

`\HyPsd@inmathwarn` The patch of `\@inmathwarn` is needed to get rid of the infinite error loop with glyphs of other encodings (see the explanation above). Potentially the patch is dangerous, if the code in `ltoutenc.dtx` changes. Checked with \LaTeX 2_ε versions [1998/06/01] and [1998/12/01]. I expect that versions below [1995/12/01] don't work.

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

```

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

799 \def\HyPsd@inmathwarn#1#2{%
800   \ifx#2\expandafter
801     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
802       \HyPsd@GLYPHERR
803       \expandafter\@gobble\string#1%
804       >%
805       \expandafter\expandafter\expandafter\HyPsd@EndWithElse
806     \else
807       \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
808     \fi
809   \else
810     \expandafter#2%
811   \fi
812 }
813 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
814 \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

815 \def\HyPsd@add@accent#1#2{%
816   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
817   #2%
818 }%

```

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.

```

819 \def\HyPsd@LetUnexpandableSpace#1{%
820   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
821 }

```

\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.

```

822 \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.

```
823 \edef\HyPsd@XSPACE{\string#\string X}
824 \edef\HyPsd@ITALCORR{\string#\string I}
825 \edef\HyPsd@GLYPHERR{\string#\string G}
```

6.5.7 `\hspace` fix

`\HyPsd@hspace`

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

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

```
827 \def\HyPsd@@hspace#1*#2\END{%
828   \ifx\#2\%
829     \HyPsd@hspacetest{#1}%
830   \else
831     \expandafter\HyPsd@hspacetest
832   \fi
833 }
```

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

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

6.5.8 Fix for AMS classes

```
835 \@ifundefined{tocsection}{%
836   \let\HyPSD@AMSclassfix\relax
837 }{%
838   \def\HyPSD@AMSclassfix{%
839     \let\tocpart\HyPSD@tocsection
840     \let\tocchapter\HyPSD@tocsection
841     \let\tocappendix\HyPSD@tocsection
842     \let\tocsection\HyPSD@tocsection
843     \let\tocsubsection\HyPSD@tocsection
844     \let\tocsubsubsection\HyPSD@tocsection
845     \let\tocparagraph\HyPSD@tocsection
846   }%
847   \def\HyPSD@tocsection#1#2#3{%
848     \if @#2@\else\if @#1@\else#1 \fi#2. \fi
849     #3%
850   }%
851 }
```

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.

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

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

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



```

854 \ifx\#2\%
855 \HyPsd@@@ref{#1}%
856 \else
857 \expandafter\HyPsd@@@ref
858 \fi
859 }%

```

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

```

860 \def\HyPsd@@@ref#1{%
861 \expandafter\ifx\csname r@#1\endcsname\relax
862 ??%
863 \else
864 \expandafter\expandafter\expandafter\@car\csname r@#1\endcsname\@nil
865 \fi
866 }

```

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

```

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

```

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

```

868 \def\HyPsd@@pageref#1*#2END{%
869 \ifx\#2\%
870 \HyPsd@@@pageref{#1}%
871 \else
872 \expandafter\HyPsd@@@pageref
873 \fi
874 }

```

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

```

875 \def\HyPsd@@@pageref#1{%
876 \expandafter\ifx\csname r@#1\endcsname\relax
877 ??%
878 \else
879 \expandafter\expandafter\expandafter\expandafter
880 \expandafter\expandafter\expandafter\@car
881 \expandafter\expandafter\expandafter\@gobble
882 \csname r@#1\endcsname\@nil
883 \fi
884 }

```

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

```

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

```

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

```

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

```

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

```

893 \def\HyPsd@@@autoref#1{%

```

```

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

```

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

```

902 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
903   \ifx\#4\%
904   \else
905     \HyPsd@@autorefname#4.\@nil
906   \fi
907 }

```

`\HyPsd@@autorefname`

```

908 \def\HyPsd@@autorefname#1.#2\@nil{%
909   \@ifundefined{#1autorefname}{%
910     \@ifundefined{#1name}{%
911       }{%
912         \csname#1name\endcsname\space
913       }%
914     }{%
915       \csname#1autorefname\endcsname\space
916     }%
917 }

```

6.5.10 Redefining the defining commands

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

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

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

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

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

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

```

\HyPsd@DefCommand
\HyPsd@LetCommand 918 \begingroup
919   \def\x#1#2{%
920     \endgroup
921     \let#1\def
922     \def\HyPsd@DefCommand##1##2##3{%
923       #1%
924       \expandafter\noexpand
925       \csname\expandafter\@gobble\string##1\@empty\endcsname
926       \@gobble
927     }%
928     \let#2\let
929     \def\HyPsd@@LetCommand##1{%
930       \expandafter\ifx\csname##1\expandafter\endcsname
931         \csname iftrue\endcsname
932         \pdfstringdefWarn\let
933         \expandafter\@gobble
934       \else
935         \expandafter\ifx\csname##1\expandafter\endcsname
936           \csname iffalse\endcsname
937           \pdfstringdefWarn\let
938           \expandafter\expandafter\expandafter\@gobble
939         \else
940           #2%
941           \expandafter\noexpand
942           \csname##1\expandafter\expandafter\expandafter\endcsname
943         \fi
944       \fi
945     }%
946   }%
947   \expandafter\x\csname <def>-command\expandafter\endcsname
948     \csname <let>-command\endcsname
949   \def\HyPsd@LetCommand#1{%
950     \expandafter\expandafter\expandafter\HyPsd@@LetCommand
951     \expandafter\expandafter\expandafter{%
952       \expandafter\@gobble\string#1\@empty
953     }%
954   }

```

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.

```

955 \def\HyPsd@ifnextchar{%
956   \pdfstringdefWarn\@ifnextchar
957   \expandafter\@gobbletwo\@gobble
958 }

```

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

```

959 \def\HyPsd@new@ifnextchar{%

```

```

960 \pdfstringdefWarn\new@ifnextchar
961 \expandafter\@gobbletwo\@gobble
962 }

```

6.5.12 \@protected@testopt@ifnextchar

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

```

963 \def\HyPsd@protected@testopt#1{%
964   \pdfstringdefWarn#1%
965   \@gobbletwo
966 }

```

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:

```

967 \def\HyPsd@Warning#1{%
968   \begingroup
969   \def\space{ }%
970   \Hy@Warning{#1}%
971   \endgroup
972 }

```

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`.

```

973 \def\HyPsd@ProtectSpaces#1{%
974   \expandafter\HyPsd@@ProtectSpaces
975   \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
976 }

```

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

```

977 \def\HyPsd@@ProtectSpaces#1 #2\HyPsd@End#3{%
978   \ifx\scrollmode#2\scrollmode
979     \HyPsd@RemoveMask#1\HyPsd@End#3%
980   \else
981     \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
982     \Hy@ReturnAfterFi{%
983       \expandafter\HyPsd@@ProtectSpaces#3\HyPsd@End#3%
984     }%
985   \fi
986 }

```

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.

```
987 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
988   \toks@\expandafter{#1}%
989   \xdef#2{\the\toks@}%
990 }
```

6.6.3 Remove grouping braces

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

```
991 \def\HyPsd@RemoveBraces#1{%
992   \ifx\scrollmode#1\scrollmode
993   \else
994     \Hy@ReturnAfterFi{%
995       \HyPsd@@RemoveBraces#1\HyPsd@End{#1}%
996     }%
997   \fi
998 }
```

`\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`.

```
999 \def\HyPsd@@RemoveBraces#1#2\HyPsd@End#3{%
1000   \def\Hy@temp@A{#1#2}%
1001   \def\Hy@temp@B{#3}%
1002   \ifx\Hy@temp@A\Hy@temp@B
1003     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1004       \HyPsd@String#1%
1005     }%
1006     \Hy@ReturnAfterElseFi{%
1007       \ifx\scrollmode#2\scrollmode
1008       \else
1009         \Hy@ReturnAfterFi{%
1010           \HyPsd@RemoveBraces{#2}%
1011         }%
1012       \fi
1013     }%
1014   \else
1015     \def\Hy@temp@A{#1}%
1016     \HyPsd@AppendItalcorr\HyPsd@String
1017     \Hy@ReturnAfterFi{%
1018       \ifx\Hy@temp@A\@empty
1019         \Hy@ReturnAfterElseFi{%
1020           \HyPsd@RemoveBraces{#2}%
1021         }%
1022       \else
1023         \Hy@ReturnAfterFi{%
1024           \HyPsd@ProtectSpaces\Hy@temp@A
```

```

1025         \HyPsd@AppendItalcorr\Hy@temp@A
1026         \expandafter\HyPsd@RemoveBraces\expandafter
1027         {\Hy@temp@A#2}%
1028     }%
1029 \fi
1030 }%
1031 \fi
1032 }

```

\HyPsd@AppendItalcorr The string can contain commands yet, so it is better to use \def instead of a shorter \HyPsd@@AppendItalcorr \edef. The two help macros limit the count of \expandafter.

```

1033 \def\HyPsd@AppendItalcorr#1{%
1034     \expandafter\HyPsd@@AppendItalcorr\expandafter{/}#1%
1035 }
1036 \def\HyPsd@@AppendItalcorr#1#2{%
1037     \expandafter\def\expandafter#2\expandafter{#2#1}%
1038 }

```

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).

```

1039 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1040     \global\let\HyPsd@Rest\relax
1041     \ifcat\relax\noexpand#1\relax
1042         \ifx#1\protect
1043         \else
1044             \ifx#1\penalty
1045                 \setbox\z@=\hbox{%
1046                     \afterassignment\HyPsd@AfterCountRemove
1047                     \count@=#2\HyPsd@End
1048                 }%
1049             \else
1050                 \ifx#1\kern
1051                     \setbox\z@=\hbox{%
1052                         \afterassignment\HyPsd@AfterDimenRemove
1053                         \dimen@=#2\HyPsd@End
1054                     }%
1055                 \else
1056                     \ifx#1\hskip
1057                         \setbox\z@=\hbox{%
1058                             \afterassignment\HyPsd@AfterSkipRemove
1059                             \skip@=#2\HyPsd@End
1060                         }%
1061                     \else
1062                         \HyPsd@CatcodeWarning{#1}%
1063                     \fi

```

```

1064         \fi
1065     \fi
1066 \fi
1067 \else
1068     \ifcat#1 %SPACE
1069         \expandafter\def\expandafter\HyPsd@String\expandafter{%
1070             \HyPsd@String\HyPsd@SPACEOPTI
1071         }%
1072 \else
1073     \ifcat$#1%
1074         \HyPsd@CatcodeWarning{math shift}%
1075 \else
1076     \ifcat&#1%
1077         \HyPsd@CatcodeWarning{alignment tab}%
1078 \else
1079     \ifcat^#1%
1080         \HyPsd@CatcodeWarning{superscript}%
1081 \else
1082     \ifcat_#1%
1083         \HyPsd@CatcodeWarning{subscript}%
1084 \else
1085         \expandafter\def\expandafter\HyPsd@String\expandafter{%
1086             \HyPsd@String#1%
1087         }%
1088     \fi
1089 \fi
1090 \fi
1091 \fi
1092 \fi
1093 \fi
1094 \ifx\HyPsd@Rest\relax
1095     \Hy@ReturnAfterElseFi{%
1096         \ifx\scrollmode#2\scrollmode
1097         \else
1098             \Hy@ReturnAfterFi{%
1099                 \HyPsd@CheckCatcodes#2\HyPsd@end
1100             }%
1101         \fi
1102     }%
1103 \else
1104     \Hy@ReturnAfterFi{%
1105         \ifx\HyPsd@Rest\@empty
1106         \else
1107             \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@end
1108         \fi
1109     }%
1110 \fi
1111 }

```

Remove counts, dimens, skips.

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

```

1112 \def\HyPsd@AfterCountRemove#1\HyPsd@end{%
1113     \gdef\HyPsd@Rest{#1}%
1114 }

```

`\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.

```

1115 \def\HyPsd@AfterDimenRemove#1\HyPsd@end{%
1116   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex
1117     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1118     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1119   \else
1120     \ifdim\dimen@=\z@
1121     \else
1122       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1123     \fi
1124     \gdef\HyPsd@Rest{#1}%
1125   \fi
1126 }

```

`\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).

```

1127 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1128   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex
1129     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1130     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1131   \else
1132     \ifdim\skip@=\z@
1133     \else
1134       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1135     \fi
1136     \gdef\HyPsd@Rest{#1}%
1137   \fi
1138 }

```

Catcode warnings.

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

```

1139 \def\HyPsd@CatcodeWarning#1{%
1140   \HyPsd@Warning{%
1141     Token not allowed in a PDFDocEncoded string,%
1142     \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1143   }%
1144 }
1145 \begingroup
1146   \catcode'\|=0
1147   \catcode'\|=12
1148   \gdef\HyPsd@RemoveCmdPrefix#1{%
1149     \expandafter\HyPsd@@RemoveCmdPrefix
1150     \string#1\@empty\<>-|\@empty|\@empty
1151   }%
1152   \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2|\@empty#3|\@empty{#1#2}%
1153 \endgroup

```

`\HyPsd@RemoveSpaceWarning`

```

1154 \def\HyPsd@RemoveSpaceWarning#1{%
1155   \HyPsd@Warning{%
1156     Token not allowed in a PDFDocEncoded string:%
1157     \MessageBreak #1\MessageBreak
1158     removed%

```



```

1159 }%
1160 }

```

`\HyPsd@ReplaceSpaceWarning`

```

1161 \def\HyPsd@ReplaceSpaceWarning#1{%
1162   \HyPsd@Warning{%
1163     Token not allowed in a PDFDocEncoded string:%
1164     \MessageBreak #1\MessageBreak
1165     replaced by space%
1166   }%
1167 }

```

6.6.5 Check for wrong glyphs

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

```

1168 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1169   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1170     \HyPsd@String#1%
1171   }%
1172   \ifx\#2\%
1173   \else
1174     \Hy@ReturnAfterFi{%
1175       \HyPsd@GlyphProcessWarning#2\@empty
1176     }%
1177   \fi
1178 }
1179 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1180   \HyPsd@Warning{%
1181     Glyph not defined in %
1182     P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1183     removing '\@backslashchar#1'%
1184   }%
1185   \HyPsd@GlyphProcess#2\@empty
1186 }

```

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`.

```

1187 \def\HyPsd@spaceopti#1{ % first space
1188   \ifx\HyPsd@spaceopti#1%
1189     \040%
1190   \else
1191     #1%
1192   \fi
1193 }%

```

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.

```

1194 \def\HyPsd@Subst#1#2#3{%
1195   \def\HyPsd@@Replace##1#1##2\END{%
1196     ##1%
1197     \ifx\##2\%
1198     \else
1199       #2%
1200       \Hy@ReturnAfterFi{%
1201         \HyPsd@@Replace##2\END
1202       }%
1203     \fi
1204   }%
1205   \xdef#3{%
1206     \expandafter\HyPsd@@Replace#3#1\END
1207   }%
1208 }

```

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

```

1209 \def\HyPsd@StringSubst#1{%
1210   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1211 }

```

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.

```

1212 \def\HyPsd@doxspace#1{%
1213   \ifx#1\relax\else
1214     \ifx#1.\else
1215       \ifx#1:\else
1216         \ifx#1,\else
1217           \ifx#1;\else
1218             \ifx#1!\else
1219               \ifx#1?\else
1220                 \ifx#1/\else
1221                   \ifx#1-\else
1222                     \ifx#1'\else
1223                       \HyPsd@SPACEOPTI
1224                     \fi
1225                   \fi
1226                 \fi
1227               \fi
1228             \fi
1229           \fi
1230         \fi
1231       \fi
1232     \fi
1233   \fi
1234   #1%
1235 }%

```

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.

```
1236 \begingroup
1237 \catcode'\|=0
1238 \catcode'\|=12
```

\HyPsd@ConvertToUnicode

```
1239 |gdef|HyPsd@ConvertToUnicode#1{%
1240 |xdef#1{%
1241 |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1242 }%
1243 |xdef#1{%
1244 |ifx#1|@empty
1245 |else
1246 \376\377%
1247 #1%
1248 |fi
1249 }%
1250 }
```

\HyPsd@DoConvert

```
1251 |gdef|HyPsd@DoConvert#1{%
1252 |ifx#1|@empty
1253 |else
1254 |Hy@ReturnAfterFi{%
1255 |ifx#1\%
1256 \%
1257 |expandafter|HyPsd@DoEscape
1258 |else
1259 \000#1%
1260 |expandafter|HyPsd@DoConvert
1261 |fi
1262 }%
1263 |fi
1264 }
```

\HyPsd@DoEscape

```
1265 |gdef|HyPsd@DoEscape#1{%
1266 |ifx#19%
1267 |expandafter|HyPsd@GetTwoBytes
1268 |else
1269 |Hy@ReturnAfterFi{%
1270 |ifx#18%
1271 00%
1272 |expandafter|HyPsd@GetTwoBytes
1273 |else
1274 #1%
1275 |expandafter|HyPsd@GetOneByte
1276 |fi
1277 }%
1278 |fi
1279 }
```

\HyPsd@GetTwoBytes

```
1280 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1281 #1\#2#3#4%
1282 |HyPsd@DoConvert
1283 }
```

\HyPsd@GetOneByte

```

1284 |gdef|HyPsd@GetOneByte#1#2{%
1285   #1#2%
1286   |HyPsd@DoConvert
1287 }
1288 |endgroup

```

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

```

1289 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1290   \xdef#4{#4#1#2}%
1291   \HyPsd@@ConvertToUnicode#3\END#4%
1292 }

```

6.6.9 Support for UTF-8 input encoding

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

This calculation must be done in an expandable context, so we use e_T_EXhere 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

```

1293 \begingroup\expandafter\expandafter\expandafter\endgroup
1294 \expandafter\ifx\csname numexpr\endcsname\relax
1295   \let\HyPsd@UTFviii\relax
1296 \else
1297   \def\HyPsd@UTFviii{%
1298     \let\UTFviii@two@octets\HyPsd@UTFviii@two
1299     \let\UTFviii@three@octets\HyPsd@UTFviii@three
1300     \let\unichar\HyPsd@unichar
1301   }%

```

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.

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

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

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

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

$$(5)$$

```

1302 \def\HyPsd@UTFviii@two#1#2{%
1303   \expandafter\HyPsd@UTFviii@two
1304   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1305   \number'#1\expandafter|%
1306   \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|%
1307   \number'#2 \@nil
1308 }%
1309 \def\HyPsd@UTFviii@two#1|#2|#3|#4\@nil{%
1310   \expandafter\8%
1311   \number\numexpr #1-48\expandafter\relax

```

```

1312 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1313 \number\numexpr #3-8*%
1314 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1315 \number\numexpr #4-8*#3\relax
1316 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

1317 \def\HyPsd@UTFviii@three#1#2#3{%
1318 \expandafter\HyPsd@UTFviii@three
1319 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1320 \number'#1\expandafter|%
1321 \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter|%
1322 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|%
1323 \number'#2\expandafter|%
1324 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|%
1325 \number'#3 \@nil
1326 }%
1327 \def\HyPsd@UTFviii@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1328 \expandafter\9%
1329 \number\numexpr #1-56\expandafter\relax
1330 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1331 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1332 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1333 \number\numexpr #6-16\expandafter\relax
1334 \number\numexpr #7-8*#6\relax
1335 }%

```

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

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

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

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

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

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

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

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

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

$$(21)$$

```

1336 \def\HyPsd@UTFviii@four#1{%
1337 \expandafter\HyPsd@UTFviii@four\number'#1|%
1338 }%

```

```

1339 \def\HyPsd@UTFviii@@four#1|#2|#3|#4{%
1340   \expandafter\HyPsd@UTFviii@@@four\number#1\expandafter|{%
1341     \number'#2\expandafter|
1342     \number\dimexpr.03125\dimexpr'#2sp\expandafter|{%
1343       \number'#3\expandafter|{%
1344         \number\dimexpr.03125\dimexpr'#3sp\expandafter|{%
1345           \number'#4\expandafter|{%
1346             \number\dimexpr.125\dimexpr'#4|{%
1347       }%
1348 \def\HyPsd@UTFviii@@@four#1|#2|#3|#4|#5|#6|#7|{%
1349   \931%
1350   \number\numexpr\dimexpr.5\dimexpr#1sp\relax\relax -120\relax
1351   \csname\number\numexpr\ifodd#1 2\else 0\fi +#3-4\relax\endcsname
1352   \number\dimexpr.25\dimexpr #2sp - 32\dimexpr#3sp\relax\relax\relax
1353   % ...
1354 }%

```

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

```

1355 \def\HyPsd@unichar#1{%
1356   \ifHy@unicode
1357     \ifnum#1>"10FFFF %
1358       \HyPsd@UnicodeReplacementCharacter % illegal
1359     \else
1360       \ifnum#1>"FFFF %

```

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

```

1361   \expandafter\HyPsd@unichar\expandafter{%
1362     \number\numexpr 55296+{%
1363       \dimexpr.0009765625\dimexpr\number#1sp-\p@
1364       \relax\relax\relax
1365     }%

```

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

```

1366   \expandafter\HyPsd@unichar\expandafter{%
1367     \number\numexpr#1-9216%
1368     -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1369     \relax\relax\relax
1370   }%
1371   \else
1372     \ifnum#1>"7FF %
1373       \9%
1374       \expandafter\HyPsd@unichar@first@byte\expandafter{%
1375         \number
1376         \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1377       }%
1378     \else
1379       \8%
1380       \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
1381     \fi
1382     \expandafter\HyPsd@unichar@second@byte\expandafter{%
1383       \number
1384       \numexpr#1-256*\number
1385       \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
1386     }%
1387   \fi
1388 \fi
1389 \else
1390   .% unsupported (Unicode -> PDF Doc Encoding)

```

```

1391 \fi
1392 }%
1393 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}
1394 \def\HyPsd@unichar@first@byte#1{%
1395 \number\dimexpr.015625\dimexpr#1sp\relax\relax
1396 \expandafter\HyPsd@unichar@octtwo\expandafter{%
1397 \number
1398 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp\relax\relax\relax
1399 }%
1400 }%
1401 \def\HyPsd@unichar@second@byte#1{%
1402 \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
1403 \expandafter\HyPsd@unichar@octtwo\expandafter{%
1404 \number
1405 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp\relax\relax\relax
1406 }%
1407 }%
1408 \def\HyPsd@unichar@octtwo#1{%
1409 \number\dimexpr.125\dimexpr#1sp\relax\relax
1410 \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp\relax\relax\relax
1411 }%
1412 \fi

```

7 Support of other packages

7.1 Class memoir

```

1413 \@ifclassloaded{memoir}{%
1414 \AtEndOfPackage{\RequirePackage{memhfixc}}%
1415 }{}

```

7.2 Package subfigure

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

```

1416 \@ifpackageloaded{subfigure}{%
1417 \ifundefined{sub@label}{%
1418 \Hy@hypertextnamesfalse
1419 }{%
1420 \renewcommand*{\sub@label}[1]{%
1421 \@bsphack
1422 \subfig@oldlabel{#1}%
1423 \if@filesw
1424 \begingroup
1425 \edef\@currentlabstr{%
1426 \expandafter\strip@prefix\meaning\@currentlabelname
1427 }%
1428 \protected@write\@auxout{}{%
1429 \string\newlabel{sub@#1}{%
1430 {\@nameuse{@thesub\@capttype}}%
1431 {\thepage}%
1432 {\expandafter\strip@period\@currentlabstr\relax.\relax\@@@}%
1433 {\@currentHref}%
1434 }%
1435 }%
1436 }%
1437 \endgroup
1438 \fi

```

```

1439     \@esphack
1440   }%
1441   \@ifpackagelater{subfigure}{2002/03/26}{}%
1442     \providecommand*{\toclevel@subfigure}{1}%
1443     \providecommand*{\toclevel@subtable}{1}%
1444   }%
1445 }%
1446 {}

```

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:

```

1447 \@ifundefined{XR@addURL}{%
1448 }{%

```

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.

```

1449   \def\XR@addURL#1{\XR@dURL#1{}{}{}{}\\}%
1450   \def\XR@dURL#1#2#3#4#5\\{%
1451     {#1}{#2}%
1452     \if!#4!%
1453     \else
1454       {#3}{#4}{\XR@URL}%
1455     \fi
1456   }%
1457 }

1458 \def\Hy@true{true}
1459 \def\Hy@false{false}

```

Providing dummy definitions.

```

1460 \let\literalps@out@gobble
1461 \newcommand\pdfbookmark[3][]{ }
1462 \let\Acrobatmenu@gobble
1463 \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

```

1464 \let\HyperRaiseLinkLength\@tempdima
1465 \let\HyperRaiseLinkHook\@empty
1466 \def\HyperRaiseLinkDefault{\baselineskip}

```

\HyperRaiseLinkHook allows the user to reassign \HyperRaiseLinkLength.

```

1467 \def\Hy@raisedlink#1{%

```



```

1468 \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1469 \HyperRaiseLinkHook
1470 \ifvmode
1471   #1%
1472 \else
1473   \penalty\@M
1474   \smash{\raise\HyperRaiseLinkLength\hbox{#1}}%
1475 \fi
1476 }

```

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

```

1477 \def\Hy@SaveLastskip{%
1478   \let\Hy@RestoreLastskip\relax
1479   \ifvmode
1480     \ifdim\lastskip=\z@
1481       \let\Hy@RestoreLastskip\nobreak
1482     \else
1483       \begingroup
1484         \skip@=-\lastskip
1485         \edef\x{%
1486           \endgroup
1487           \def\noexpand\Hy@RestoreLastskip{%
1488             \noexpand\ifvmode
1489               \noexpand\nobreak
1490               \vskip\the\skip@
1491               \vskip\the\lastskip\relax
1492             \noexpand\fi
1493           }%
1494         }%
1495       \x
1496     \fi
1497   \else
1498     \ifhmode
1499       \ifdim\lastskip=\z@
1500         \let\Hy@RestoreLastskip\nobreak
1501       \else
1502         \begingroup
1503           \skip@=-\lastskip
1504           \edef\x{%
1505             \endgroup
1506             \def\noexpand\Hy@RestoreLastskip{%
1507               \noexpand\ifhmode
1508                 \noexpand\nobreak
1509                 \hskip\the\skip@
1510                 \hskip\the\lastskip\relax
1511             \noexpand\fi
1512           }%
1513         }%
1514       \x
1515     \fi
1516   \fi
1517 \fi
1518 }%

```

9 Options

9.1 Help macros

`\Hy@boolkey`

```

1519 \def\Hy@boolkey{\@dblarg\Hy@boolkey}
1520 \def\Hy@@boolkey[#1]#2#3{%
1521   \lowercase{\def\Hy@tempa{#3}}%
1522   \ifx\Hy@tempa\@empty
1523     \let\Hy@tempa\Hy@true
1524   \fi
1525   \ifx\Hy@tempa\Hy@true
1526   \else
1527     \ifx\Hy@tempa\Hy@false
1528     \else
1529       \let\Hy@tempa\relax
1530     \fi
1531   \fi
1532   \ifx\Hy@tempa\relax
1533     \Hy@WarnOptionValue{#3}-{#1}{'true' or 'false'}%
1534   \else
1535     \Hy@Info{Option '#1' set '\Hy@tempa'}%
1536     \csname Hy@#2\Hy@tempa\endcsname
1537   \fi
1538 }
```

`\Hy@WarnOptionValue`

```

1539 \def\Hy@WarnOptionValue#1#2#3{%
1540   \Hy@Warning{%
1541     Unexpected value '#1'\MessageBreak
1542     of option '#2' instead of\MessageBreak
1543     #3%
1544   }
1545 }
```

`\Hy@DisableOption`

```

1546 \def\Hy@DisableOption#1{%
1547   \@ifundefined{KV@Hyp@#1@default}{%
1548     \define@key{Hyp}{#1}%
1549   }{%
1550     \define@key{Hyp}{#1}[]%
1551   }%
1552   {\Hy@WarnOptionDisabled{#1}}%
1553 }
```

`\Hy@WarnOptionDisabled`

```

1554 \def\Hy@WarnOptionDisabled#1{%
1555   \Hy@Warning{%
1556     Option '#1' has already been used,\MessageBreak
1557     setting the option has no effect%
1558   }%
1559 }
```

`\Hy@CheckOptionValue`

Some options take a string value out of a limited set of values. Macro `\Hy@CheckOptionValue` checks whether the given value #1 for option #2 is a member of the value list #3.

```

1560 \def\Hy@CheckOptionValue#1#2#3{%
```

```

1561 \begingroup
1562   \edef\x{#1}%
1563   \@onelevel@sanitize\x
1564   \let\y=y%
1565   \def\do##1##2{%
1566     \def\z{##1}%
1567     \@onelevel@sanitize\z
1568     \ifx\x\z
1569       \let\y=n%
1570       \let\do\@gobbletwo
1571     \fi
1572   }%
1573   #3%
1574   \ifx\y y%
1575     \def\do##1##2{%
1576       * '##1'%
1577       \ifx\\##2\\ \else\space(##2)\fi
1578       \MessageBreak
1579     }%
1580     \Hy@Warning{%
1581       Values of option '#2':\MessageBreak
1582       #3%
1583       * An empty value disables the option.\MessageBreak
1584       Unknown value '\x'%
1585     }%
1586   \fi
1587 \endgroup
1588 }

```

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

```

1589 \def\Hy@DefNameKey#1{%
1590   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
1591 }

```

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

```

1592 \def\Hy@@DefNameKey#1#2#3{%
1593   \define@key{Hyp}{#2}{%
1594     \edef#1{##1}%
1595     \ifx#1\@empty
1596     \else
1597       \Hy@CheckOptionValue{##1}{#2}{#3}%
1598     \fi
1599   }%
1600   \let#1\@empty
1601 }

```

`\Hy@UseNameKey`

```

1602 \def\Hy@UseNameKey#1#2{%
1603   \ifx#2\@empty
1604   \else
1605     /#1/#2%
1606   \fi
1607 }

```

9.2 Defining the options

```
1608 \define@key{Hyp}{implicit}[true]{%
1609   \Hy@boolkey{implicit}{#1}%
1610 }
1611 \define@key{Hyp}{draft}[true]{%
1612   \Hy@boolkey{draft}{#1}%
1613 }
1614 \define@key{Hyp}{final}[true]{%
1615   \Hy@boolkey{final}{#1}%
1616 }
1617 \let\KV@Hyp@nolinks\KV@Hyp@draft
1618 \define@key{Hyp}{a4paper}[true]{%
1619   \def\special@paper{210mm,297mm}%
1620   \def\Hy@pageheight{842}%
1621 }
1622 \define@key{Hyp}{a5paper}[true]{%
1623   \def\special@paper{148mm,210mm}%
1624   \def\Hy@pageheight{595}%
1625 }
1626 \define@key{Hyp}{b5paper}[true]{%
1627   \def\special@paper{176mm,250mm}%
1628   \def\Hy@pageheight{709}%
1629 }
1630 \define@key{Hyp}{letterpaper}[true]{%
1631   \def\special@paper{8.5in,11in}%
1632   \def\Hy@pageheight{792}%
1633 }
1634 \define@key{Hyp}{legalpaper}[true]{%
1635   \def\special@paper{8.5in,14in}%
1636   \def\Hy@pageheight{1008}%
1637 }
1638 \define@key{Hyp}{executivepaper}[true]{%
1639   \def\special@paper{7.25in,10.5in}%
1640   \def\Hy@pageheight{720}%
1641 }
1642 \define@key{Hyp}{setpagesize}[true]{%
1643   \Hy@boolkey{setpagesize}{#1}%
1644 }
1645 \define@key{Hyp}{debug}[true]{%
1646   \Hy@boolkey{debug}{verbose}{#1}%
1647 }
1648 \define@key{Hyp}{linktopage}[true]{%
1649   \Hy@boolkey{linktopage}{#1}%
1650 }
1651 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1652 \def\XR@ext{dvi}
1653 \define@key{Hyp}{verbose}[true]{%
1654   \Hy@boolkey{verbose}{#1}%
1655 }
1656 \define@key{Hyp}{typexml}[true]{%
1657   \Hy@boolkey{typexml}{#1}%
1658 }
```

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.

```

1659 \define@key{Hyp}{raiselinks}[true]{%
1660   \Hy@boolkey{raiselinks}{#1}%
1661 }

```

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

```

1662 \define@key{Hyp}{breaklinks}[true]{%
1663   \Hy@boolkey{breaklinks}{#1}%
1664 }

```

Determines whether an automatic anchor is put on each page

```

1665 \define@key{Hyp}{pageanchor}[true]{%
1666   \Hy@boolkey{pageanchor}{#1}%
1667 }

```

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.

```

1668 \define@key{Hyp}{plainpages}[true]{%
1669   \Hy@boolkey{plainpages}{#1}%
1670 }

```

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

```

1671 \define@key{Hyp}{naturalnames}[true]{%
1672   \Hy@boolkey{naturalnames}{#1}%
1673 }

```

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

```

1674 \define@key{Hyp}{hypertexnames}[true]{%
1675   \Hy@boolkey{hypertexnames}{#1}%
1676 }

```

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

```

1677 \define@key{Hyp}{nesting}[true]{%
1678   \Hy@boolkey{nesting}{#1}%
1679 }

```

```

1680 \define@key{Hyp}{unicode}[true]{%
1681   \Hy@boolkey{unicode}{#1}%
1682   \HyPsd@InitUnicode
1683 }

```

10 Options for different drivers

```

1684 \define@key{Hyp}{hyperref}[true]{%
1685 \define@key{Hyp}{tex4ht}[true]{%
1686   \def\XR@ext{html}%
1687   \Hy@texhttrue
1688   \def\Hy@raisedlink{}%
1689   \setkeys{Hyp}{colorlinks=true}%
1690   \def\BeforeTeXIVht{\usepackage{color}}%
1691   \def\Hy@driver{htex4ht}%
1692   \def\MaybeStopEarly{%
1693     \typeout{Hyperref stopped early}%
1694     \AfterBeginDocument{\PDF@FinishDoc}%
1695     \endinput
1696   }%
1697 }
1698 \define@key{Hyp}{pdftex}[true]{%
1699   \def\Hy@driver{hpdftex}%
1700   \def\XR@ext{pdf}%
1701   \PassOptionsToPackage{pdftex}{color}%

```

```

1702 \Hy@breaklinkstrue
1703 }
1704 \define@key{Hyp}{dvipdf}[true]{%
1705   \Hy@WarningNoLine{%
1706     Option 'dvipdf' is deprecated.\MessageBreak
1707     See the user manual for available driver options%
1708   }%
1709 }
1710 \define@key{Hyp}{nativepdf}[true]{%
1711   \def\Hy@driver{hdvips}%
1712   \def\Hy@raisedlink{}%
1713   \def\XR@ext{pdf}%
1714 }
1715 \define@key{Hyp}{dvipdfm}[true]{%
1716   \def\Hy@driver{hdvipdfm}%
1717   \def\XR@ext{pdf}%
1718   \Hy@breaklinkstrue
1719 }
1720 \define@key{Hyp}{dvipdfmx}[true]{%
1721   \def\Hy@driver{hdvipdfm}%
1722   \def\XR@ext{pdf}%
1723   \Hy@breaklinkstrue
1724 }
1725 \define@key{Hyp}{xetex}[true]{%
1726   \def\Hy@driver{hdvipdfm}%
1727   \def\XR@ext{pdf}%
1728   \Hy@breaklinkstrue
1729 }
1730 \define@key{Hyp}{pdfmark}[true]{%
1731   \def\Hy@driver{hdvips}%
1732   \def\Hy@raisedlink{}%
1733   \def\XR@ext{pdf}%
1734 }
1735 \define@key{Hyp}{dvips}[true]{%
1736   \def\Hy@driver{hdvips}%
1737   \def\Hy@raisedlink{}%
1738   \def\XR@ext{pdf}%
1739 }
1740 \define@key{Hyp}{hypertex}[true]{%
1741   \def\Hy@driver{hypertex}%
1742 }
1743 \let\Hy@MaybeStopNow\relax
1744 \define@key{Hyp}{vtex}[true]{%
1745   \begingroup\expandafter\expandafter\expandafter\endgroup
1746   \expandafter\ifx\csname OpMode\endcsname\relax
1747     \@latex@error{Non-VTeX processor}{}%
1748     \global\let\Hy@MaybeStopNow\endinput
1749     \endinput
1750   \else
1751     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1752       \def\XR@ext{pdf}%
1753       \def\Hy@driver{hvtex}%
1754     \else
1755       \ifnum\OpMode=10\relax
1756         \def\XR@ext{htm}%
1757         \def\Hy@driver{hvtexhtm}%
1758       \def\MaybeStopEarly{%

```

```

1759         \typeout{Hyperref stopped early}%
1760         \AfterBeginDocument{\PDF@FinishDoc}%
1761         \endinput
1762     }%
1763     \else
1764         \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1765         \global\let\Hy@MaybeStopNow\endinput
1766         \endinput
1767     \fi
1768 \fi
1769 \fi
1770 }
1771 \define@key{Hyp}{vtxpdfmark}[true]{%
1772     \begingroup\expandafter\expandafter\expandafter\endgroup
1773     \expandafter\ifx\csname OpMode\endcsname\relax
1774         \@latex@error{Non-VTeX processor}{}%
1775         \let\Hy@MaybeStopNow\endinput
1776         \endinput
1777     \else
1778         \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
1779         \def\XR@ext{pdf}%
1780         \def\Hy@driver{hvtexmrk}%
1781         \def\Hy@raisedlink{}%
1782     \else
1783         \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
1784         \let\Hy@MaybeStopNow\endinput
1785         \endinput
1786     \fi
1787 \fi
1788 }
1789 \define@key{Hyp}{dviwindo}[true]{%
1790     \def\Hy@driver{hdviwind}%
1791     \setkeys{Hyp}{colorlinks}%
1792     \PassOptionsToPackage{dviwindo}{color}%
1793 }
1794 \define@key{Hyp}{dvipsone}[true]{%
1795     \def\XR@ext{pdf}%
1796     \def\Hy@driver{hdvipson}%
1797     \def\Hy@raisedlink{}%
1798 }
1799 \define@key{Hyp}{textures}[true]{%
1800     \def\XR@ext{pdf}%
1801     \def\Hy@driver{htexture}%
1802 }
1803 \define@key{Hyp}{latex2html}[true]{%
1804     \AtBeginDocument{\@latex2htmlX}%
1805 }

```

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

```

1806 \define@key{Hyp}{ps2pdf}[true]{%
1807     \def\Hy@driver{hdvips}%
1808     \def\Hy@raisedlink{}%
1809     \providecommand*\@pdfborder{0 0 1}%
1810 }

```

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.

```
1811 \define@key{Hyp}{hyperfigures}[true]{%
1812   \Hy@boolkey[hyperfigures]{figures}{#1}%
1813 }
```

The automatic footnote linking can be disabled by option hyperfootnotes.

```
1814 \define@key{Hyp}{hyperfootnotes}[true]{%
1815   \Hy@boolkey[hyperfootnotes]{#1}%
1816 }
```

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

```
1817 \def\back@none{none}
1818 \def\back@section{section}
1819 \def\back@page{page}
1820 \def\back@slide{slide}
1821 \define@key{Hyp}{backref}[section]{%
1822   \lowercase{\def\Hy@tempa{#1}}%
1823   \ifx\Hy@tempa\@empty
1824     \let\Hy@tempa\back@section
1825   \fi
1826   \ifx\Hy@tempa\Hy@false
1827     \let\Hy@tempa\back@none
1828   \fi
1829   \ifx\Hy@tempa\back@slide
1830     \let\Hy@tempa\back@section
1831   \fi
1832   \ifx\Hy@tempa\back@page
1833     \PassOptionsToPackage{hyperpageref}{backref}%
1834     \Hy@backreftrue
1835   \else
1836     \ifx\Hy@tempa\back@section
1837       \PassOptionsToPackage{hyperref}{backref}%
1838       \Hy@backreftrue
1839     \else
1840       \ifx\Hy@tempa\back@none
1841         \Hy@backreffalse
1842       \else
1843         \Hy@WarnOptionValue{#1}{backref}{%
1844           'section', 'slide', 'page', 'none', \MessageBreak
1845           or 'false'}%
1846       \fi
1847     \fi
1848   \fi
1849 }
1850 \define@key{Hyp}{pagebackref}[true]{%
1851   \lowercase{\def\Hy@tempa{#1}}%
1852   \ifx\Hy@tempa\@empty
1853     \let\Hy@tempa\Hy@true
1854   \fi
1855   \ifx\Hy@tempa\Hy@true
1856     \PassOptionsToPackage{hyperpageref}{backref}%
1857     \Hy@backreftrue
1858   \else
1859     \ifx\Hy@tempa\Hy@false
1860       \Hy@backreffalse
```



```

1861 \else
1862 \HyWarnOptionValue{#1}{pagebackref}{‘true’ or ‘false’}%
1863 \fi
1864 \fi
1865 }

```

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

```

1866 \define@key{Hyp}{hyperindex}[true]{%
1867 \Hy@boolkey{hyperindex}{#1}%
1868 }

```

Configuration of encap char.

```

1869 \define@key{Hyp}{encap}[\\]{%
1870 \def\HyInd@EncapChar{#1}%
1871 }

```

12 Language options

The `\autoref` feature depends on the language.

```

1872 \def\HyLang@english{%
1873 \def\equationautorefname{Equation}%
1874 \def\footnoteautorefname{footnote}%
1875 \def\itemautorefname{item}%
1876 \def\figureautorefname{Figure}%
1877 \def\tableautorefname{Table}%
1878 \def\partautorefname{Part}%
1879 \def\appendixautorefname{Appendix}%
1880 \def\chapterautorefname{chapter}%
1881 \def\sectionautorefname{section}%
1882 \def\subsectionautorefname{subsection}%
1883 \def\subsubsectionautorefname{subsubsection}%
1884 \def\paragraphautorefname{paragraph}%
1885 \def\subparagraphautorefname{subparagraph}%
1886 \def\FancyVerbLineautorefname{line}%
1887 \def\theoremautorefname{Theorem}%
1888 }
1889 \def\HyLang@german{%
1890 \def\equationautorefname{Gleichung}%
1891 \def\footnoteautorefname{Fu\ss note}%
1892 \def\itemautorefname{Punkt}%
1893 \def\figureautorefname{Abbildung}%
1894 \def\tableautorefname{Tabelle}%
1895 \def\partautorefname{Teil}%
1896 \def\appendixautorefname{Anhang}%
1897 \def\chapterautorefname{Kapitel}%
1898 \def\sectionautorefname{Abschnitt}%
1899 \def\subsectionautorefname{Unterabschnitt}%
1900 \def\subsubsectionautorefname{Unterunterabschnitt}%
1901 \def\paragraphautorefname{Absatz}%
1902 \def\subparagraphautorefname{Unterabsatz}%
1903 \def\FancyVerbLineautorefname{Zeile}%
1904 \def\theoremautorefname{Theorem}%
1905 }
1906 \def\HyLang@portuges{%
1907 \def\equationautorefname{Equa\c c\~ao}%
1908 \def\footnoteautorefname{Nota de rodap\’e}%

```

```

1909 \def\itemautorefname{Item}%
1910 \def\figureautorefname{Figura}%
1911 \def\tableautorefname{Tabela}%
1912 \def\partautorefname{Parte}%
1913 \def\appendixautorefname{Ap\`endice}%
1914 \def\chapterautorefname{Cap\'itulo}%
1915 \def\sectionautorefname{Se\c c\~ao}%
1916 \def\subsectionautorefname{Subse\c c\~ao}%
1917 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
1918 \def\paragraphautorefname{par\'agrafo}%
1919 \def\subparagraphautorefname{subpar\'agrafo}%
1920 \def\FancyVerbLineautorefname{linha}%
1921 \def\theoremautorefname{Teorema}%
1922 }
1923 \def\HyLang@spanish{%
1924 \def\equationautorefname{Ecuaci\'on}%
1925 \def\footnoteautorefname{Nota a pie de p\'agina}%
1926 \def\itemautorefname{Elemento}%
1927 \def\figureautorefname{Figura}%
1928 \def\tableautorefname{Tabla}%
1929 \def\partautorefname{Parte}%
1930 \def\appendixautorefname{Ap\'endice}%
1931 \def\chapterautorefname{Cap\'itulo}%
1932 \def\sectionautorefname{Secci\'on}%
1933 \def\subsectionautorefname{Subsecci\'on}%
1934 \def\subsubsectionautorefname{Subsubsecci\'on}%
1935 \def\paragraphautorefname{P\'arrafo}%
1936 \def\subparagraphautorefname{Subp\'arrafo}%
1937 \def\FancyVerbLineautorefname{L\'inea}%
1938 \def\theoremautorefname{Teorema}%
1939 }
1940 \def\HyLang@afrikaans{%
1941 \def\equationautorefname{Vergelyking}%
1942 \def\footnoteautorefname{Voetnota}%
1943 \def\itemautorefname{Item}%
1944 \def\figureautorefname{Figuur}%
1945 \def\tableautorefname{Tabel}%
1946 \def\partautorefname{Deel}%
1947 \def\appendixautorefname{Bylae}%
1948 \def\chapterautorefname{Hoofstuk}%
1949 \def\sectionautorefname{Afdeling}%
1950 \def\subsectionautorefname{Subafdeling}%
1951 \def\subsubsectionautorefname{Subsubafdeling}%
1952 \def\paragraphautorefname{Paragraaf}%
1953 \def\subparagraphautorefname{Subparagraaf}%
1954 \def\FancyVerbLineautorefname{Lyn}%
1955 \def\theoremautorefname{Teorema}%
1956 }
1957 \def\HyLang@french{%
1958 \def\equationautorefname{\`Equation}%
1959 \def\footnoteautorefname{note}%
1960 \def\itemautorefname{item}%
1961 \def\figureautorefname{Figure}%
1962 \def\tableautorefname{Tableau}%
1963 \def\partautorefname{Partie}%
1964 \def\appendixautorefname{Appendice}%
1965 \def\chapterautorefname{chapitre}%

```

```

1966 \def\sectionautorefname{section}%
1967 \def\subsectionautorefname{sous-section}%
1968 \def\subsubsectionautorefname{sous-sous-section}%
1969 \def\paragraphautorefname{paragraphe}%
1970 \def\subparagraphautorefname{sous-paragraphe}%
1971 \def\FancyVerbLineautorefname{ligne}%
1972 \def\theoremautorefname{Th\'eor\'eme}%
1973 }
1974 \def\HyLang@vietnamese{%
1975 \def\equationautorefname{Ph\uhorn{}}\ohorn{ng tr\'inh}%
1976 \def\footnoteautorefname{Ch\'u th\'ich}%
1977 \def\itemautorefname{m\du{c}}%
1978 \def\figureautorefname{H\'inh}%
1979 \def\tableautorefname{B\h{a}ng}%
1980 \def\partautorefname{Ph\`acircumflex{n}}%
1981 \def\appendixautorefname{Ph\du{ } l\du{c}}%
1982 \def\chapterautorefname{ch\uhorn{}}\ohorn{ng}%
1983 \def\sectionautorefname{m\du{c}}%
1984 \def\subsectionautorefname{m\du{c}}%
1985 \def\subsubsectionautorefname{m\du{c}}%
1986 \def\paragraphautorefname{\dj{ }o\du{a}n}%
1987 \def\subparagraphautorefname{\dj{ }o\du{a}n}%
1988 \def\FancyVerbLineautorefname{d\'ong}%
1989 \def\theoremautorefname{DJ{\du{i}nh l\'y}}%
1990 }

```

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

```

1991 \def\HyLang@addto#1#2{%
1992 #2%
1993 \@temptokena{#2}%
1994 \ifx#1\relax
1995 \let#1\@empty
1996 \fi
1997 \ifx#1\undefined
1998 \edef#1{\the\@temptokena}%
1999 \else
2000 \toks@\expandafter{#1}%
2001 \edef#1{\the\toks@\the\@temptokena}%
2002 \fi
2003 \@temptokena{\toks@\@temptokena
2004 }
2005 \def\HyLang@DeclareLang#1#2{%
2006 \begingroup
2007 \edef\x##1##2{%
2008 \noexpand\ifx##2\relax
2009 \errmessage{No definitions for language #2' found!}%
2010 \noexpand\fi
2011 \endgroup
2012 \noexpand\define@key{Hyp}{#1}[]{%
2013 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
2014 }%
2015 }%
2016 \expandafter\x\csname extras#1\expandafter\endcsname
2017 \csname HyLang@#2\endcsname
2018 }
2019 \HyLang@DeclareLang{english}{english}

```

```

2020 \HyLang@DeclareLang{UKenglish}{english}
2021 \HyLang@DeclareLang{british}{english}
2022 \HyLang@DeclareLang{USenglish}{english}
2023 \HyLang@DeclareLang{american}{english}
2024 \HyLang@DeclareLang{german}{german}
2025 \HyLang@DeclareLang{austrian}{german}
2026 \HyLang@DeclareLang{ngerman}{german}
2027 \HyLang@DeclareLang{naustrian}{german}
2028 \HyLang@DeclareLang{brazil}{portuges}
2029 \HyLang@DeclareLang{brazilian}{portuges}
2030 \HyLang@DeclareLang{portuguese}{portuges}
2031 \HyLang@DeclareLang{spanish}{spanish}
2032 \HyLang@DeclareLang{afrikaans}{afrikaans}
2033 \HyLang@DeclareLang{french}{french}
2034 \HyLang@DeclareLang{frenchb}{french}
2035 \HyLang@DeclareLang{français}{french}
2036 \HyLang@DeclareLang{acadian}{french}
2037 \HyLang@DeclareLang{canadien}{french}

```

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

```

2038 \define@key{Hyp}{vietnamese}[]{}%
2039 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
2040 \AtEndOfPackage{%
2041   \ifundefined{T@PU}{}{}%
2042   \input{puvnenc.def}%
2043 }%
2044 }%
2045 }
2046 \define@key{Hyp}{vietnam}[]{}%
2047 \HyLang@addto\extravietnam\HyLang@vietnamese
2048 \AtEndOfPackage{%
2049   \ifundefined{T@PU}{}{}%
2050   \input{puvnenc.def}%
2051 }%
2052 }%
2053 }

```

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

```

2054 \define@key{Hyp}{arabic}[]{}%
2055 \AtEndOfPackage{%
2056   \ifundefined{T@PU}{}{}%
2057   \input{puarenc.def}%
2058 }%
2059 }%
2060 }

```

13 Options to change appearance of links

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

```

2061 \define@key{Hyp}{colorlinks}[true]{}%
2062 \Hy@boolkey{colorlinks}{#1}%
2063 \ifHy@colorlinks
2064   \def\pdfborder{0 0 0}%
2065   \let\pdfborderstyle\empty
2066 \fi
2067 }
2068 \define@key{Hyp}{frenchlinks}[true]{}%

```

```

2069 \Hy@boolkey{frenchlinks}{#1}%
2070 }

```

14 Bookmarking

```

2071 \define@key{Hyp}{bookmarks}[true]{%
2072   \Hy@boolkey{bookmarks}{#1}%
2073 }

2074 \define@key{Hyp}{bookmarksopen}[true]{%
2075   \Hy@boolkey{bookmarksopen}{#1}%
2076 }

```

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.

```

2077 \let\Hy@bookmarksdepth\c@tocdepth
2078 \define@key{Hyp}{bookmarksdepth}[]{%
2079   \begingroup
2080     \edef\x{#1}%
2081     \ifx\x\empty
2082       \global\let\Hy@bookmarksdepth\c@tocdepth
2083     \else
2084       \ifundefined{toclevel@\x}{%
2085         \@onelevel@sanitize\x
2086         \edef\y{\expandafter\@car\x\@nil}%
2087         \ifcase 0\expandafter\ifx\y-1\fi
2088           \expandafter\ifnum\expandafter'\y>47 %
2089             \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
2090           \Hy@Warning{Unknown document division name (\x)}%
2091         \else
2092           \setbox\z@=\hbox{%
2093             \count@=\x
2094             \xdef\Hy@bookmarksdepth{\the\count@}%
2095           }%
2096         \fi
2097       }{%
2098         \setbox\z@=\hbox{%
2099           \count@=\csname toclevel@\x\endcsname
2100           \xdef\Hy@bookmarksdepth{\the\count@}%
2101         }%
2102       }%
2103     \fi
2104   \endgroup
2105 }

```

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

```

2106 \define@key{Hyp}{bookmarksopenlevel}{%
2107   \def\@bookmarksopenlevel{#1}%
2108 }

```

```

2109 \def\@bookmarksopenlevel{\maxdimen}
2110 % 'bookmarkstype' to specify which 'toc' file to mimic
2111 \define@key{Hyp}{bookmarkstype}{%
2112   \def\Hy@bookmarkstype{#1}%
2113 }
2114 \def\Hy@bookmarkstype{toc}

```

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

```

2115 \define@key{Hyp}{bookmarksnumbered}[true]{%
2116   \Hy@boolkey{bookmarksnumbered}{#1}%
2117 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2118 \define@key{Hyp}{CJKbookmarks}[true]{%
2119   \Hy@boolkey{CJKbookmarks}{#1}%
2120 }

2121 \define@key{Hyp}{linkcolor}{\def\@linkcolor{#1}}
2122 \define@key{Hyp}{anchorcolor}{\def\@anchorcolor{#1}}
2123 \define@key{Hyp}{citecolor}{\def\@citecolor{#1}}
2124 \define@key{Hyp}{urlcolor}{\def\@urlcolor{#1}}
2125 \define@key{Hyp}{menucolor}{\def\@menucolor{#1}}
2126 \define@key{Hyp}{filecolor}{\def\@filecolor{#1}}
2127 \define@key{Hyp}{pagecolor}{\def\@pagecolor{#1}}

```

Default values:

```

2128 \def\@linkcolor{red}
2129 \def\@anchorcolor{black}
2130 \def\@citecolor{green}
2131 \def\@filecolor{cyan}
2132 \def\@urlcolor{magenta}
2133 \def\@menucolor{red}
2134 \def\@pagecolor{red}
2135 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2136 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2137 \let\@baseurl\empty
2138 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2139 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2140 \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.

```

2141 \let\@pdfpagetransition\relax
2142 \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.

```

2143 \let\@pdfpageduration\relax
2144 \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.

```

2145 \newif\ifHy@useHidKey
2146 \Hy@useHidKeyfalse
2147 \define@key{Hyp}{pdfpagehidden}[true]{%
2148   \Hy@boolkey{pdfpagehidden}{#1}%
2149   \ifHy@pdfpagehidden
2150     \global\Hy@useHidKeytrue
2151   \fi
2152 }

```

The value of the `bordercolor` options are not processed by the color package. Therefore the value consists of space separated rgb numbers in the range 0 until 1.

Package `xcolor` provides `\XC@bordercolor` since version 1.1. If the two spaces in the color specification are missing, then the value is processed as color specification from package `xcolor` by using `\XC@bordercolor` (since `xcolor` 2004/05/09 v1.11, versions 2005/03/24 v2.02 until 2006/11/28 v2.10 do not work because of a bug that is fixed in 2007/01/21 v2.11).

```

2153 \def\Hy@ColorList{cite,file,link,menu,page,run,url}
2154 \@for\Hy@temp:=\Hy@ColorList\do{%
2155   \edef\Hy@temp{%
2156     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2157       \noexpand\Hy@bordercolor{\Hy@temp}{##1}{ }%
2158     }%
2159   }%
2160   \Hy@temp
2161 }
2162 \def\Hy@bordercolor#1#2#3{%
2163   \begingroup
2164     \Hy@safe@activetrue
2165     \@ifundefined{XC@edef}{\edef}{\XC@edef}\x{#2}%
2166     \expandafter\Hy@CheckColorSpec\x#3#3\@nil{#1}{#2}%
2167 }
2168 \def\Hy@CheckColorSpec#1 #2 #3\@nil#4#5{%
2169   \ifx\#3\%
2170     \@ifundefined{XC@bordercolor}{%
2171       \Hy@Warning{%
2172         Unsupported color specification (#4bordercolor).\MessageBreak
2173         Load package ‘xcolor’ (version >= 2.11) first.\MessageBreak
2174         Ignoring color specification%
2175       }%
2176     \endgroup
2177   }{%
2178     \endgroup
2179     \XC@bordercolor{#4}{#5}%
2180   }%
2181   \else
2182     \endgroup
2183     \@namedef{@#4bordercolor}{#5}%
2184   \fi
2185 }
2186 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2187 \Hy@DefNameKey{pdfhighlight}{%
2188   \do{/I}{Invert}%
2189   \do{/N}{None}%
2190   \do{/O}{Outline}%
2191   \do{/P}{Push}%
2192 }
2193 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}

```

```

2194 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2195 \def\Hy@setpdfborder{%
2196   \ifx\@pdfborder\@empty
2197   \else
2198     /Border[\@pdfborder]%
2199   \fi
2200   \ifx\@pdfborderstyle\@empty
2201   \else
2202     /BS<<\@pdfborderstyle>>%
2203   \fi
2204 }
2205 \Hy@DefNameKey{pdfpagemode}{%
2206   \do{UseNone}{}%
2207   \do{UseOutlines}{}%
2208   \do{UseThumbs}{}%
2209   \do{FullScreen}{}%
2210   \do{UseOC}{PDF 1.5}%
2211   \do{UseAttachments}{PDF 1.6}%
2212 }
2213 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2214   \do{UseNone}{}%
2215   \do{UseOutlines}{}%
2216   \do{UseThumbs}{}%
2217   \do{FullScreen}{}%
2218   \do{UseOC}{PDF 1.5}%
2219   \do{UseAttachments}{PDF 1.6}%
2220 }
2221 \Hy@DefNameKey{pdfdirection}{%
2222   \do{L2R}{Left to right}%
2223   \do{R2L}{Right to left}%
2224 }
2225 \Hy@DefNameKey{pdfviewarea}{%
2226   \do{MediaBox}{}%
2227   \do{CropBox}{}%
2228   \do{BleedBox}{}%
2229   \do{TrimBox}{}%
2230   \do{ArtBox}{}%
2231 }
2232 \Hy@DefNameKey{pdfviewclip}{%
2233   \do{MediaBox}{}%
2234   \do{CropBox}{}%
2235   \do{BleedBox}{}%
2236   \do{TrimBox}{}%
2237   \do{ArtBox}{}%
2238 }
2239 \Hy@DefNameKey{pdfprintarea}{%
2240   \do{MediaBox}{}%
2241   \do{CropBox}{}%
2242   \do{BleedBox}{}%
2243   \do{TrimBox}{}%
2244   \do{ArtBox}{}%
2245 }
2246 \Hy@DefNameKey{pdfprintclip}{%
2247   \do{MediaBox}{}%
2248   \do{CropBox}{}%
2249   \do{BleedBox}{}%
2250   \do{TrimBox}{}%

```



```

2251 \do{ArtBox}{}%
2252 }
2253 \Hy@DefNameKey{pdfprintscaling}{%
2254 \do{AppDefault}{}%
2255 \do{None}{}%
2256 }
2257 \Hy@DefNameKey{pdfduplex}{%
2258 \do{Simplex}{}%
2259 \do{DuplexFlipShortEdge}{}%
2260 \do{DuplexFlipLongEdge}{}%
2261 }
2262 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
2263 \do{true}{}%
2264 \do{false}{}%
2265 }
2266 \define@key{Hyp}{pdfprintpagerange}{%
2267 \def\@pdfprintpagerange{#1}%
2268 }
2269 \Hy@DefNameKey{pdfnumcopies}{%
2270 \do{2}{two copies}%
2271 \do{3}{three copies}%
2272 \do{4}{four copies}%
2273 \do{5}{five copies}%
2274 }
2275 \define@key{Hyp}{pdfusetitle}[true]{%
2276 \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2277 }
2278 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2279 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2280 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2281 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2282 \define@key{Hyp}{pdfcreationdate}{\pdfstringdef\@pdfcreationdate{#1}}
2283 \define@key{Hyp}{pdfmoddate}{\pdfstringdef\@pdfmoddate{#1}}
2284 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2285 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2286 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
2287 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2288 \let\setpdflinkmargin\@gobble
2289 \def\calculate@pdfview#1 #2\{%
2290 \def\@pdfview{#1}%
2291 \ifx\#2\%
2292 \def\@pdfviewparams{ -32768}%
2293 \else
2294 \def\@pdfviewparams{ #2}%
2295 \fi
2296 }
2297 \define@key{Hyp}{pdfstartpage}{\def\@pdfstartpage{#1}}
2298 \define@key{Hyp}{pdfstartview}{%
2299 \ifx\#1\%
2300 \def\@pdfstartview{}%
2301 \else
2302 \hypercalcbpdef\@pdfstartview{ /#1 }%
2303 \fi
2304 }
2305 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
2306 \define@key{Hyp}{pdftoolbar}[true]{%
2307 \Hy@boolkey[pdftoolbar]{toolbar}{#1}%

```

```

2308 }
2309 \define@key{Hyp}{pdfmenubar}[true]{%
2310   \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2311 }
2312 \define@key{Hyp}{pdfwindowui}[true]{%
2313   \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2314 }
2315 \define@key{Hyp}{pdffitwindow}[true]{%
2316   \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2317 }
2318 \define@key{Hyp}{pdfcenterwindow}[true]{%
2319   \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2320 }
2321 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2322   \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2323 }
2324 \define@key{Hyp}{pdfnewwindow}[true]{%
2325   \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2326 }
2327 \Hy@DefNameKey{pdfpagelayout}{%
2328   \do{SinglePage}{}%
2329   \do{OneColumn}{}%
2330   \do{TwoColumnLeft}{}%
2331   \do{TwoColumnRight}{}%
2332   \do{TwoPageLeft}{PDF 1.5}%
2333   \do{TwoPageRight}{PDF 1.5}%
2334 }
2335 \define@key{Hyp}{pdflang}{%
2336   \def\@pdflang{#1}%
2337 }
2338 \define@key{Hyp}{pdfpagelabels}[true]{%
2339   \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2340 }
2341 \define@key{Hyp}{pdfescapeform}[true]{%
2342   \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2343 }

```

Default values:

```

2344 \def\@linkbordercolor{1 0 0}
2345 \def\@urlbordercolor{0 1 1}
2346 \def\@menubordercolor{1 0 0}
2347 \def\@filebordercolor{0 .5 .5}
2348 \def\@runbordercolor{0 .7 .7}
2349 \def\@citebordercolor{0 1 0}
2350 \def\@pagebordercolor{1 1 0}
2351 \def\@pdfhighlight{/I}
2352 \def\@pdftitle{}
2353 \def\@pdfauthor{}
2354 \let\@pdfproducer\relax
2355 \def\@pdfcreator{LaTeX with hyperref package}
2356 \def\@pdfcreationdate{}
2357 \def\@pdfmoddate{}
2358 \def\@pdfsubject{}
2359 \def\@pdfkeywords{}
2360 \def\@pdfpagescrop{}
2361 \def\@pdfstartview{/Fit }
2362 \def\@pdfstartpage{1}
2363 \def\@pdfprintpagerange{}

```

```

2364 \def\@pdflang{}
2365 \let\PDF@SetupDoc\@empty
2366 \let\PDF@FinishDoc\@empty
2367 \let\phantomsection\@empty
2368 \@ifundefined{stockwidth}{%
2369   \edef\special@paper{\the\paperwidth,\the\paperheight}
2370 }{%
2371   \edef\special@paper{\the\stockwidth,\the\stockheight}
2372 }
2373 \begingroup
2374   \dimen@=\@ifundefined{stockheight}{\paperheight}{\stockheight}\relax
2375   \dimen@=0.99626401\dimen@
2376   \xdef\Hy@pageheight{\strip@pt\dimen@}
2377 \endgroup
2378 \def\HyInd@EncapChar{\|}
2379 \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.

```

2380 \let\hyper@normalise\ExecuteOptions
2381 \let\ExecuteOptions\hypersetup
2382 \Hy@RestoreCatcodes
2383 \InputIfFileExists{hyperref.cfg}{-}{-}
2384 \Hy@SetCatcodes
2385 \let\ExecuteOptions\hyper@normalise
2386 \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`.

```

2387 \RequirePackage{kvoptions}[2006/08/17]

```

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

```

2388 \@ifpackageloaded{tex4ht}{%
2389   \@ifpackagewith{hyperref}{tex4ht}{-}{-}%
2390   \PassOptionsToPackage{tex4ht}{hyperref}%
2391 }%
2392 {}

```

```

2393 \let\ReadBookmarks\relax
2394 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2395 \AtBeginDocument{%
2396   \ifHy@draft
2397     \let\hyper@@anchor\@gobble
2398     \gdef\hyper@link#1#2#3{#3}%
2399     \let\hyper@anchorstart\@gobble
2400     \let\hyper@anchorend\@empty
2401     \let\hyper@linkstart\@gobbletwo
2402     \let\hyper@linkend\@empty
2403     \def\hyper@linkurl#1#2{#1}%
2404     \def\hyper@linkfile#1#2#3{#1}%
2405     \def\Acrobatmenu#1#2{#2}%
2406     \let\PDF@SetupDoc\@empty
2407     \let\PDF@FinishDoc\@empty

```

```

2408 \let\@fifthoffive\@secondoftwo
2409 \let\@secondoffive\@secondoftwo
2410 \let\ReadBookmarks\relax
2411 \let\WriteBookmarks\relax
2412 \Hy@WarningNoLine{ draft mode on}%
2413 \fi
2414 \Hy@DisableOption{draft}%
2415 \Hy@DisableOption{nolinks}%
2416 \Hy@DisableOption{final}%
2417 }%

```

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.

```

2418 \ifx\HyPsd@InitUnicode\relax
2419 \define@key{Hyp}{unicode}[true]{%
2420 \Hy@boolkey{unicode}{#1}%
2421 }
2422 \else
2423 \define@key{Hyp}{unicode}[true]{%
2424 \Hy@boolkey{unicode}{#1}%
2425 \ifHy@unicode
2426 \Hy@WarningNoLine{Set package option ‘unicode’ first\MessageBreak
2427 in order to load unicode support%
2428 }%
2429 \Hy@unicodedefalse
2430 \fi
2431 }
2432 \fi

```

The macro \HyPsd@InitUnicode is no longer needed.

```

2433 \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.

```

2434 \Hy@nextfalse
2435 \@ifpackagewith{babel}{spanish}{\Hy@nexttrue}{}
2436 \@ifpackagewith{babel}{galician}{\Hy@nexttrue}{}
2437 \@ifpackagewith{babel}{estonian}{\Hy@nexttrue}{}
2438 \ifHy@next
2439 \let\texttilde\~%
2440 \fi

2441 \ifHy@figures
2442 \Hy@Info{Hyper figures ON}
2443 \else
2444 \Hy@Info{Hyper figures OFF}
2445 \fi

2446 \ifHy@nesting
2447 \Hy@Info{Link nesting ON}
2448 \else
2449 \Hy@Info{Link nesting OFF}
2450 \fi

2451 \ifHy@hyperindex
2452 \Hy@Info{Hyper index ON}
2453 \else

```

```

2454 \Hy@Info{Hyper index OFF}
2455 \fi
2456 \ifHy@plainpages
2457 \Hy@Info{Plain pages ON}
2458 \else
2459 \Hy@Info{Plain pages OFF}
2460 \fi
2461 \ifHy@backref
2462 \Hy@Info{Backreferencing ON}
2463 \else
2464 \Hy@Info{Backreferencing OFF}
2465 \fi
2466 \ifHy@typexml
2467 \AtEndOfPackage{\RequirePackage{color}\RequirePackage{nameref}}
2468 \fi
2469 \Hy@DisableOption{typexml}
2470 \ifHy@implicit
2471 \typeout{Implicit mode ON; LaTeX internals redefined}%
2472 \else
2473 \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
2474 \def\MaybeStopEarly{%
2475 \typeout{Hyperref stopped early}%
2476 \AfterBeginDocument{\PDF@FinishDoc}%
2477 \endinput
2478 }%
2479 \AtBeginDocument{%
2480 \let\autoref\ref
2481 \ifx\@pdfpagemode\@empty
2482 \gdef\@pdfpagemode{UseNone}%
2483 \fi
2484 \global\Hy@backreffalse
2485 }%
2486 \AtEndOfPackage{%
2487 \global\let\ReadBookmarks\relax
2488 \global\let\WriteBookmarks\relax
2489 }%
2490 \fi
2491 \Hy@DisableOption{implicit}

```

15.1.1 Driver loading

```

2492 \AtEndOfPackage{%
2493 \@ifpackageloaded{tex4ht}{%
2494 \def\Hy@driver{htex4ht}%
2495 \Hy@texhttrue
2496 }{}%
2497 \ifx\Hy@driver\@empty
2498 \providecommand*{\Hy@defaultdriver}{hypertex}%
2499 \begingroup\expandafter\expandafter\expandafter\endgroup
2500 \expandafter\ifx\csname pdfoutput\endcsname\relax
2501 \begingroup\expandafter\expandafter\expandafter\endgroup
2502 \expandafter\ifx\csname OpMode\endcsname\relax
2503 \begingroup\expandafter\expandafter\expandafter\endgroup
2504 \expandafter\ifx\csname XeTeXversion\endcsname\relax
2505 \let\Hy@driver\Hy@defaultdriver
2506 \else
2507 \def\Hy@driver{hdvipdfm}%

```

```

2508     \fi
2509   \else
2510     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2511     \def\Hy@driver{hvtex}%
2512     \def\XR@ext{pdf}%
2513   \else
2514     \ifnum\OpMode=10\relax
2515     \def\XR@ext{htm}%
2516     \def\Hy@driver{hvtexhtm}%
2517     \def\MaybeStopEarly{%
2518       \typeout{Hyperref stopped early}%
2519       \AfterBeginDocument{\PDF@FinishDoc}%
2520     \endinput
2521     }%
2522   \else
2523     \let\Hy@driver\Hy@defaultdriver
2524   \fi
2525 \fi
2526 \fi
2527 \else
2528   \ifnum\pdfoutput<1 %
2529     \let\Hy@driver\Hy@defaultdriver
2530   \else
2531     \def\Hy@driver{hpdftex}%
2532     \def\XR@ext{pdf}%
2533     \PassOptionsToPackage{pdftex}{color}%
2534     \Hy@breaklinkstrue
2535   \fi
2536 \fi
2537 \ifx\Hy@driver\Hy@defaultdriver
2538   \def\Hy@temp{hdvips}%
2539   \ifx\Hy@temp\Hy@driver
2540     \def\Hy@raisedlink{}%
2541     \def\XR@ext{pdf}%
2542   \fi
2543   \def\Hy@temp{hdvipdfm}%
2544   \ifx\Hy@temp\Hy@driver
2545     \def\XR@ext{pdf}%
2546     \Hy@breaklinkstrue
2547   \fi
2548   \def\Hy@temp{hdviwind}%
2549   \ifx\Hy@temp\Hy@driver
2550     \setkeys{Hyp}{colorlinks}%
2551     \PassOptionsToPackage{dviwindo}{color}%
2552   \fi
2553   \def\Hy@temp{hdvipson}%
2554   \ifx\Hy@temp\Hy@driver
2555     \def\XR@ext{pdf}%
2556     \def\Hy@raisedlink{}%
2557   \fi
2558   \def\Hy@temp{textures}%
2559   \ifx\Hy@temp\Hy@driver
2560     \def\XR@ext{pdf}%
2561   \fi
2562 \fi
2563 \typeout{*hyperref using default driver \Hy@driver*}%
2564 \else

```

```

2565 \typeout{*hyperref using driver \Hy@driver*}%
2566 \fi
2567 \input{\Hy@driver.def}%
2568 \let\@unprocessedoptions\relax
2569 \Hy@RestoreCatcodes
2570 }
2571 \Hy@DisableOption{tex4ht}
2572 \Hy@DisableOption{pdftex}
2573 \Hy@DisableOption{dvipdf}
2574 \Hy@DisableOption{nativepdf}
2575 \Hy@DisableOption{dvipdfm}
2576 \Hy@DisableOption{pdfmark}
2577 \Hy@DisableOption{dvips}
2578 \Hy@DisableOption{hypertex}
2579 \Hy@DisableOption{vtex}
2580 \Hy@DisableOption{vtexpdfmark}
2581 \Hy@DisableOption{dviwindo}
2582 \Hy@DisableOption{dvipsone}
2583 \Hy@DisableOption{textures}
2584 \Hy@DisableOption{latex2html}
2585 \Hy@DisableOption{ps2pdf}
2586 \Hy@DisableOption{xetex}

```

15.1.2 Bookmarks

```

2587 \def\WriteBookmarks{0}
2588 \def\@bookmarkopenstatus#1{%
2589 \ifHy@bookmarksopen

```

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

```

2590 \ifnum#1<\expandafter\@firstofone\expandafter
2591 \{\number\@bookmarkopenlevel\} % explicit space
2592 \else
2593 -%
2594 \fi
2595 \else
2596 -%
2597 \fi
2598 }
2599 \ifHy@bookmarks
2600 \Hy@Info{Bookmarks ON}%
2601 \ifx\@pdfpagemode\@empty
2602 \def\@pdfpagemode{UseOutlines}%
2603 \fi
2604 \else
2605 \def\@bookmarkopenstatus#1{%
2606 \Hy@Info{Bookmarks OFF}%
2607 \AtEndOfPackage{%
2608 \global\let\ReadBookmarks\relax
2609 \global\let\WriteBookmarks\relax
2610 }
2611 \ifx\@pdfpagemode\@empty
2612 \def\@pdfpagemode{UseNone}%
2613 \fi
2614 \fi
2615 \Hy@DisableOption{bookmarks}

```

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

```

2616 \AtBeginDocument{%
2617   \ifHy@colorlinks
2618     \ifHy@typexml\else\RequirePackage{color}\fi
2619     \def\Hy@colorlink#1{%
2620       \begingroup
2621         \expandafter\Hy@colorscan\expandafter#1#1\@nil%
2622       }%
2623     \def\Hy@colorscan#1{%
2624       \@ifnextchar[% ]
2625       {%
2626         \Hy@@colorscan
2627       }{%
2628         \expandafter\color\expandafter#1\@car{}%
2629       }%
2630     }%
2631     \def\Hy@@colorscan#1\@nil{\color#1}%
2632     \def\Hy@endcolorlink{\endgroup}%
2633     \Hy@Info{Link coloring ON}%
2634   \else
2635     \ifHy@frenchlinks
2636       \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
2637       \def\Hy@endcolorlink{\endgroup}%
2638       \Hy@Info{French linking ON}%
2639     \else
for grouping consistency:
2640       \def\Hy@colorlink#1{\begingroup}%
2641       \def\Hy@endcolorlink{\endgroup}%
2642       \Hy@Info{Link coloring OFF}%
2643     \fi
2644   \fi
2645   \Hy@DisableOption{colorlinks}%
2646   \Hy@DisableOption{frenchlinks}%
2647   \ifHy@texht
2648     \long\def\@firstoffive#1#2#3#4#5{#1}%
2649     \long\def\@secondoffive#1#2#3#4#5{#2}%
2650     \long\def\@thirdoffive#1#2#3#4#5{#3}%
2651     \long\def\@fourthoffive#1#2#3#4#5{#4}%
2652     \long\def\@fifthoffive#1#2#3#4#5{#5}%
2653     \providecommand*\@safe@activetrue{}%
2654     \providecommand*\@safe@activesfalse{}%
2655     \def\T@ref#1{%
2656       \Hy@safe@activetrue
2657       \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
2658       \Hy@safe@activesfalse
2659     }%
2660     \def\T@pageref#1{%
2661       \Hy@safe@activetrue
2662       \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
2663       \Hy@safe@activesfalse
2664     }%
2665   \else
2666     \ifHy@typexml\else\RequirePackage{nameref}\fi
2667   \fi
2668   \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
2669   \DeclareRobustCommand\pageref{%
2670     \@ifstar\@pagerefstar\T@pageref
2671   }%

```



```

2672 }
2673 \AfterBeginDocument{%
2674   \ifHy@texht
2675   \else
2676     \ReadBookmarks
2677   \fi
2678 }

2679 \ifHy@backref
2680   \RequirePackage{backref}
2681 \else
2682   \let\Hy@backout\@gobble
2683 \fi
2684 \Hy@DisableOption{backref}
2685 \Hy@DisableOption{pagebackref}

2686 \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.

```

2687 \begingroup
2688   \endlinechar=-1
2689   \catcode'\^M\active
2690   \catcode'\%\active
2691   \catcode'\#\active
2692   \catcode'\_\active
2693   \catcode'\$\active
2694   \gdef\hyper@normalise{
2695     \begingroup
2696     \catcode'\^M\active
2697     \def^^M{ }
2698     \catcode'\%\active
2699     \let%\@percentchar
2700     \let\%\@percentchar
2701     \catcode'\#\active
2702     \def#{\hyper@hash}
2703     \def\#{\hyper@hash}
2704     \@makeother\&
2705     \edef\textunderscore{\string_}
2706     \let\_ \textunderscore
2707     \catcode'\_\active
2708     \let\_ \textunderscore
2709     \let~\hyper@tilde
2710     \let\~\hyper@tilde
2711     \let\textasciitilde\hyper@tilde
2712     \let\\ \@backslashchar
2713     \edef$\{\string$\}
2714     \Hy@safe@activetrue
2715     \hyper@n@rmalise
2716   }
2717   \catcode'\#=6
2718   \gdef\hyper@n@rmalise#1#2{

```

```

2719 \edef\Hy@tempa{
2720 \endgroup
2721 \noexpand#1{\Hy@RemovePercentCr#2%^~M\@nil}
2722 }
2723 \Hy@tempa
2724 }
2725 \gdef\Hy@RemovePercentCr#1%^~M#2\@nil{
2726 #1
2727 \ifx\limits#2\limits
2728 \else
2729 \Hy@ReturnAfterFi{
2730 \Hy@RemovePercentCr #2\@nil
2731 }
2732 \fi
2733 }
2734 \endgroup
2735 \providecommand*{\hyper@chars{%
2736 \let#\hyper@hash
2737 \let%\@percentchar
2738 }

2739 \def\hyperlink#1#2{%
2740 \hyper@@link{#1}{#2}%
2741 }

2742 \DeclareRobustCommand*{\href}{\hyper@normalise\href@}
2743 \begingroup
2744 \catcode'\$=6
2745 \catcode'\#=12
2746 \gdef\href@#1{\expandafter\href@split$1##\}
2747 \gdef\href@split$1#$2#$3\{\{
2748 \hyper@@link{$1}{$2}%
2749 }
2750 \endgroup

```

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

```

2751 \RequirePackage{url}
2752 \let\HyOrg@url\url
2753 \def\Hurl{\begingroup \Url}
2754 \let\nolinkurl\Hurl
2755 \DeclareRobustCommand*{\url}{\hyper@normalise\url@}
2756 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

2757 \DeclareRobustCommand*{\hyperimage}{\hyper@normalise\hyper@image}
2758 \providecommand\hyper@image[2]{#2}

2759 \def\hypertarget#1#2{%
2760 \ifHy@nesting
2761 \hyper@@anchor{#1}{#2}%
2762 \else
2763 \hyper@@anchor{#1}{\relax}#2%
2764 \fi
2765 }

```

`\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.

```

2766 \DeclareRobustCommand*\hyperref{%
2767   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
2768 }
2769 \def\Hy@babelnormalise#1[#2]{%
2770   \begingroup
2771     \Hy@safe@activetrue
2772     \edef\Hy@tempa{%
2773       \endgroup
2774       \noexpand#1[#{#2}]%
2775     }%
2776     \Hy@tempa
2777 }
2778 \def\@hyperref{\hyper@normalise\@hyperref}
2779 \def\@hyperref#1#2#3{%
2780   \edef\ref@one{\ifx\\#2\\\else#2.\fi#3}%
2781   \expandafter\tryhyper@link\ref@one\{#1}%
2782 }
2783 \def\tryhyper@link#1\#2{%
2784   \hyper@@link{#2}{#1}%
2785 }

2786 \def\hyperdef{\@ifnextchar[{\label@hyperdef}\@hyperdef}}
2787 \def\@hyperdef#1#2#3{%, category, name, text
2788   \ifHy@nesting
2789     \hyper@@anchor{#1.#2}{#3}%
2790   \else
2791     \hyper@@anchor{#1.#2}{\relax}#3%
2792   \fi
2793 }

```

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.

```

2794 \def\label@hyperref[#1]{%
2795   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
2796 }%
2797 \def\label@@hyperref#1#2#3{%
2798   \ifx#1\relax
2799     \protect\G@refundefinedtrue
2800     \@latex@warning{%
2801       Hyper reference ‘#2’ on page \thepage \space undefined%
2802     }%
2803     \hyper@@link{}{??}{#3}%
2804   \else
2805     \hyper@@link{\expandafter\@fifthoffive#1}%
2806       {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
2807   \fi
2808 }
2809 \def\label@hyperdef[#1]#2#3#4{ label name, category, name,
2810                               % anchor text
2811   \@bsphack
2812   \if@filesw
2813     \protected@write\@auxout{%
2814       {\string\newlabel{#1}{\{#\} \{#\} \{#\} \{#\} \{#\} \{#\}}}%
2815     \fi
2816   \@esphack
2817   \ifHy@nesting
2818     \hyper@@anchor{#2.#3}{#4}%
2819   \else

```

```

2820 \hyper@@anchor{#2.#3}{\relax}#4%
2821 \fi
2822 }

```

17 Underlying basic hypertext macros

Links have an optional type, a filename (possibly a URL), an internal name, and some marked text. (Caution: the internal name may contain babel shorthand characters.) If the second parameter is empty, it's an internal link, otherwise we need to open another file or a URL. A link start has a type, and a URL.

```

2823 \def\hyper@link{\let\Hy@reserved@a\relax
2824 \@ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
2825 }
2826 \def\hyper@link@[#1]#2#3#4{%
2827 \begingroup
2828 \protected@edef\Hy@tempa{#2}%
2829 \Hy@safe@activestrue
2830 \edef\x{#3}%
2831 \ifx\Hy@tempa\@empty
2832 \toks0{\hyper@link{#1}}%
2833 \else
2834 \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
2835 \fi
2836 \toks2{#4}%
2837 \edef\Hy@tempa{\the\toks2}%
2838 \edef\x{\endgroup
2839 \ifx\Hy@tempa\@empty
2840 \noexpand\Hy@Warning{Suppressing empty link}%
2841 \else
2842 \the\toks0 \{x}{\the\toks2}}%
2843 \fi
2844 }%
2845 \x
2846 }

```

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.

```

2847 \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.

```

2848 \expandafter\hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
2849 }

```

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

```
2850 \def\@pdftempwordfile{file}%
2851 \def\@pdftempwordrun{run}%
2852 \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:

```
2853 \ifx\\#6\\%
2854 \expandafter\@hyper@linkfile file:#7\\{#3}{#2}%
2855 \else
2856 \ifx\\#4\\%
2857 \expandafter\@hyper@linkfile file:#7\\{#3}{#2}%
2858 \else
```

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

```
2859 \def\@pdftempa{#4}%
2860 \ifx\@pdftempa\@pdftempwordfile
2861 \expandafter\@hyper@linkfile#7\\{#3}{#2}%
2862 \else
```

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

```
2863 \ifx\@pdftempa\@pdftempwordrun
2864 \expandafter\@hyper@launch#7\\{#3}{#2}%
2865 \else
```

otherwise its a URL

```
2866 \hyper@linkurl{#3}{#7\ifx\\#2\\%else\hyper@hash#2\fi}%
2867 \fi
2868 \fi
2869 \fi
2870 \fi
2871 }
```

By default, turn run: into file:

```
2872 \def\@hyper@launch run:#1\\#2#3{% filename, anchor text, linkname
2873 \hyper@linkurl{#2}{\Hy@linkfileprefix#1\ifx\\#3\\%else\hyper@hash#3\fi}%
2874 }
```

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

```
2875 \def\@hyper@linkfile file:#1\\#2#3{%
2876 %file url,link string, name
2877 \filename@parse{#1}%
2878 \ifx\filename@ext\relax
2879 \edef\filename@ext{\XR@ext}%
2880 \fi
2881 \def\use@file{\filename@area\filename@base.\filename@ext}%
2882 \ifx\filename@ext\XR@ext
2883 \hyper@linkfile{#2}{\use@file}{#3}%
2884 \else
2885 \ifx\@baseurl\@empty
2886 \hyper@linkurl{#2}{%
2887 \Hy@linkfileprefix\use@file\ifx\\#3\\%else\hyper@hash#3\fi
2888 }%
2889 \else
```

```

2890     \hyper@linkurl{#2}{\use@file\ifx\\#3\\\else\hyper@hash#3\fi}%
2891     \fi
2892 \fi
2893 }

```

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.

```

2894 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
2895 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
2896   \ifx\\#1\\%
2897     #2\Hy@WarningNoLine{empty link? #1: #2#3}%
2898   \else
2899     \def\anchor@spot{#2#3}%
2900     \let\put@me@back\@empty
2901     \ifx\relax#2\relax
2902     \else
2903       \ifHy@nesting
2904       \else
2905         \ifcat a\noexpand#2\relax
2906         \else
2907           \ifcat O\noexpand#2 \relax
2908           \else
2909             \typeout{Anchor start is not alphanumeric %
2910               on input line\the\inputlineno%
2911             }%
2912             \let\anchor@spot\@empty
2913             \def\put@me@back{#2#3}%
2914           \fi
2915         \fi
2916       \fi
2917     \ifHy@activeanchor
2918       \anchor@spot
2919     \else
2920       \hyper@anchor{#1}%
2921     \fi
2922     \expandafter\put@me@back
2923   \fi
2924   \let\anchor@spot\@empty
2925 }
2926 }

```

18 Compatibility with the *LaTeX2html* 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.

```

2927 \let\htmladding\hyperimage

```

```

2928 \def\htmladdnormallink#1#2{\href{#2}{#1}}
2929 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
2930 \def\htmlref#1#2{% anchor text, label
2931   \label@hyperref[{#2}]{#1}%
2932 }

```

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

```

2933 \def\@latexhtmlX{%
2934   \let\hyperref\hyperref
2935   \def\hyperref##1##2##3##4{% anchor text for HTML
2936                                     % text to print before label in print
2937                                     % label
2938                                     % post-label text in print
2939     ##2\ref{##4}##3%
2940   }%
2941 }

```

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.

```

2942 \newif\ifFld@checked
2943 \newif\ifFld@hidden
2944 \newif\ifFld@multiline
2945 \newif\ifFld@readonly
2946 \newif\ifFld@disabled
2947 \newif\ifFld@password
2948 \newif\ifFld@radio
2949 \newif\ifFld@combo
2950 \newif\ifFld@popdown
2951 \Fld@multilinefalse
2952 \Fld@checkedfalse
2953 \Fld@hiddenfalse
2954 \Fld@readonlyfalse
2955 \Fld@disabledfalse
2956 \Fld@radiofalse
2957 \Fld@combofalse
2958 \Fld@popdownfalse
2959 \Fld@passwordfalse
2960 \newcount\Fld@menulength
2961 \newdimen\Fld@Width
2962 \newdimen\Fld@charsize
2963 \Fld@charsize=10\p@
2964 \def\Fld@maxlen{0}
2965 \def\Fld@align{0}
2966 \def\Fld@color{0 0 0}
2967 \def\Fld@bcolor{1 1 1}
2968 \def\Fld@bordercolor{1 0 0}
2969 \def\Fld@bordersep{1\p@}
2970 \def\Fld@borderwidth{1}
2971 \def\Fld@borderstyle{S}
2972 \def\Fld@cbsymbol{4}

```

```

2973 \newtoks\Choice@toks
2974 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
2975 \def\endForm{\@endForm}
2976 \newif\ifForm@html
2977 \Form@htmlfalse
2978 \def\Form@boolkey#1#2{%
2979   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
2980 }
2981 \define@key{Form}{action}{%
2982   \hyper@normalise\Hy@DefFormAction{#1}%
2983 }
2984 \def\Hy@DefFormAction{\def\Form@action}
2985 \def\enc@html{html}
2986 \define@key{Form}{encoding}{%
2987   \def\Hy@tempa{#1}%
2988   \ifx\Hy@tempa\enc@html
2989     \Form@htmltrue
2990   \else
2991     \typeout{hyperref: form 'encoding' key set to #1 %
2992       -- unknown type%
2993     }%
2994     \Form@htmlfalse
2995   \fi
2996 }
2997 \define@key{Form}{method}{%
2998   \def\Form@method{#1}%
2999 }
3000 \def\Form@method{}
3001 \def\Field@boolkey#1#2{%
3002   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
3003 }
3004 \newtoks\Field@toks
3005 \Field@toks={ }%
3006 \def\Field@addtoks#1#2{%
3007   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
3008   \@processme
3009 }
3010 \def\Fld@checkequals#1=#2=#3\{%
3011   \def\@currDisplay{#1}%
3012   \ifx\@#2\%
3013     \def\@currValue{#1}%
3014   \else
3015     \def\@currValue{#2}%
3016   \fi
3017 }
3018 \define@key{Field}{loc}{%
3019   \def\Fld@loc{#1}%
3020 }
3021 \define@key{Field}{multiline}[true]{%
3022   \lowercase{\Field@boolkey{#1}}{multiline}%
3023 }
3024 \define@key{Field}{checked}[true]{%
3025   \lowercase{\Field@boolkey{#1}}{checked}%
3026 }
3027 \define@key{Field}{hidden}[true]{%
3028   \lowercase{\Field@boolkey{#1}}{hidden}%
3029 }

```



```

3030 \define@key{Field}{readonly}[true]{%
3031   \lowercase{\Field@boolkey{#1}}{readonly}%
3032 }
3033 \define@key{Field}{disabled}[true]{%
3034   \lowercase{\Field@boolkey{#1}}{disabled}%
3035 }
3036 \define@key{Field}{password}[true]{%
3037   \lowercase{\Field@boolkey{#1}}{password}%
3038 }
3039 \define@key{Field}{radio}[true]{%
3040   \lowercase{\Field@boolkey{#1}}{radio}%
3041 }
3042 \define@key{Field}{combo}[true]{%
3043   \lowercase{\Field@boolkey{#1}}{combo}%
3044 }
3045 \define@key{Field}{popdown}[true]{%
3046   \lowercase{\Field@boolkey{#1}}{popdown}%
3047 }
3048 \define@key{Field}{accesskey}{%
3049   \Field@addtoks{accesskey}{#1}%
3050 }
3051 \define@key{Field}{tabkey}{%
3052   \Field@addtoks{tabkey}{#1}%
3053 }
3054 \define@key{Field}{name}{%
3055   \def\Fld@name{#1}%
3056 }
3057 \define@key{Field}{width}{%
3058   \def\Fld@width{#1}%
3059   \Field@Width#1\setbox0=\hbox{m}%
3060 }
3061 \define@key{Field}{maxlen}{%
3062   \def\Fld@maxlen{#1}%
3063 }
3064 \define@key{Field}{menulength}{%
3065   \Fld@menulength=#1\relax
3066 }
3067 \define@key{Field}{height}{%
3068   \def\Fld@height{#1}%
3069 }
3070 \define@key{Field}{charsize}{%
3071   \Fld@charsize#1%
3072 }
3073 \define@key{Field}{fillcolor}{%
3074   \def\Fld@fillcolor{#1}%
3075 }
3076 \define@key{Field}{borderwidth}{%
3077   \def\Fld@borderwidth{#1}%
3078 }
3079 \define@key{Field}{borderstyle}{%
3080   \def\Fld@borderstyle{#1}%
3081 }
3082 \define@key{Field}{bordersep}{%
3083   \def\Fld@bordersep{#1}%
3084 }
3085 \define@key{Field}{default}{%
3086   \def\Fld@default{#1}%

```

```

3087 }
3088 \define@key{Field}{align}{%
3089   \def\Fld@align{#1}%
3090 }
3091 \define@key{Field}{value}{%
3092   \def\Fld@value{#1}%
3093 }
3094 \define@key{Field}{checkboxsymbol}{%
3095   \def\Fld@cbsymbol{#1}%
3096 }
3097 \define@key{Field}{backgroundcolor}{%
3098   \Hy@fieldcolor{bcolor}{#1}{ }{backgroundcolor}%
3099 }
3100 \define@key{Field}{bordercolor}{%
3101   \Hy@fieldcolor{bordercolor}{#1}{ }{bordercolor}%
3102 }
3103 \define@key{Field}{color}{%
3104   \Hy@fieldcolor{color}{#1}{ }{color}%
3105 }
3106 \def\Hy@fieldcolor#1#2#3#4{%
3107   \begingroup
3108     \Hy@safe@activetrue
3109     \@ifundefined{XC@edef}{\edef}{\XC@edef}\x{#2}%
3110     \expandafter\Hy@FieldCheckColorSpec\x#3#3\@nil{#1}{#2}{#4}%
3111 }
3112 \def\Hy@FieldCheckColorSpec#1 #2 #3\@nil#4#5#6{%
3113   \ifx\#3\%
3114     \@ifundefined{XC@bordercolor}{%
3115       \Hy@Warning{%
3116         Unsupported color specification (#6).\MessageBreak
3117         Load package 'xcolor' (version >= 2.11) first.\MessageBreak
3118         Ignoring color specification%
3119       }%
3120     \endgroup
3121   }{%
3122     \endgroup
3123     \XC@bordercolor{temp}{#5}%
3124     \expandafter\let\csname Fld@#4\endcsname\@tempbordercolor
3125   }%
3126   \else
3127     \endgroup
3128     \@namedef{Fld@#4}{#5}%
3129   \fi
3130 }
3131 \def\Fld@format@code{}
3132 \def\Fld@validate@code{}
3133 \def\Fld@calculate@code{}
3134 \def\Fld@keystroke@code{}
3135 \def\Fld@onfocus@code{}
3136 \def\Fld@onblur@code{}
3137 \def\Fld@onmousedown@code{}
3138 \def\Fld@onmouseup@code{}
3139 \def\Fld@onenter@code{}
3140 \def\Fld@onexit@code{}
3141 \define@key{Field}{keystroke}{%
3142   \def\Fld@keystroke@code{#1}%
3143 }

```

```

3144 \define@key{Field}{format}{%
3145   \def\Fld@format@code{#1}%
3146 }
3147 \define@key{Field}{validate}{%
3148   \def\Fld@validate@code{#1}%
3149 }
3150 \define@key{Field}{calculate}{%
3151   \def\Fld@calculate@code{#1}%
3152 }
3153 \define@key{Field}{onfocus}{%
3154   \def\Fld@onfocus@code{#1}%
3155 }
3156 \define@key{Field}{onblur}{%
3157   \def\Fld@onblur@code{#1}%
3158 }
3159 \define@key{Field}{onenter}{%
3160   \def\Fld@onenter@code{#1}%
3161 }
3162 \define@key{Field}{onexit}{%
3163   \def\Fld@onexit@code{#1}%
3164 }
3165 \define@key{Field}{onselect}{%
3166   \Field@addtoks{onselect}{#1}%
3167 }
3168 \define@key{Field}{onchange}{%
3169   \Field@addtoks{onchange}{#1}%
3170 }
3171 \define@key{Field}{onclick}{%
3172   \def\Fld@onclick{#1}%
3173   \Field@addtoks{onclick}{#1}%
3174 }
3175 \define@key{Field}{ondblclick}{%
3176   \Field@addtoks{ondblclick}{#1}%
3177 }
3178 \define@key{Field}{onmousedown}{%
3179   \Field@addtoks{onmousedown}{#1}%
3180 }
3181 \define@key{Field}{onmouseup}{%
3182   \Field@addtoks{onmouseup}{#1}%
3183 }
3184 \define@key{Field}{onmouseover}{%
3185   \Field@addtoks{onmouseover}{#1}%
3186 }
3187 \define@key{Field}{onmousemove}{%
3188   \Field@addtoks{onmousemove}{#1}%
3189 }
3190 \define@key{Field}{onmouseout}{%
3191   \Field@addtoks{onmouseout}{#1}%
3192 }
3193 \define@key{Field}{onkeypress}{%
3194   \Field@addtoks{onkeypress}{#1}%
3195 }
3196 \define@key{Field}{onkeydown}{%
3197   \Field@addtoks{onkeydown}{#1}%
3198 }
3199 \define@key{Field}{onkeyup}{%
3200   \Field@addtoks{onkeyup}{#1}%

```

```

3201 }
3202 %
3203 \DeclareRobustCommand\TextField{%
3204   \@ifnextchar[{\@TextField}{\@TextField[]}%
3205 }
3206 \DeclareRobustCommand\ChoiceMenu{%
3207   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
3208 }
3209 \DeclareRobustCommand\CheckBox{%
3210   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
3211 }
3212 \DeclareRobustCommand\PushButton{%
3213   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
3214 }
3215 \DeclareRobustCommand\Gauge{%
3216   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
3217 }
3218 \DeclareRobustCommand\Submit{%
3219   \@ifnextchar[{\@Submit}{\@Submit[]}%
3220 }
3221 \DeclareRobustCommand\Reset{%
3222   \@ifnextchar[{\@Reset}{\@Reset[]}%
3223 }
3224 \def\LayoutTextField#1#2{% label, field
3225   #1 #2%
3226 }
3227 \def\LayoutChoiceField#1#2{% label, field
3228   #1 #2%
3229 }
3230 \def\LayoutCheckField#1#2{% label, field
3231   #1 #2%
3232 }
3233 \def\LayoutPushButtonField#1{% button
3234   #1%
3235 }
3236 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3237 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3238 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3239 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
3240 \def\MakeButtonField#1{%
3241   \sbox0{%
3242     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
3243   }%
3244   \@tempdima\ht0
3245   \advance\@tempdima by \Fld@borderwidth bp
3246   \advance\@tempdima by \Fld@borderwidth bp
3247   \ht0\@tempdima
3248   \@tempdima\dp0
3249   \advance\@tempdima by \Fld@borderwidth bp
3250   \advance\@tempdima by \Fld@borderwidth bp
3251   \dp0\@tempdima
3252   \box0\relax
3253 }
3254 \def\DefaultHeightofSubmit{14pt}
3255 \def\DefaultWidthofSubmit{2cm}
3256 \def\DefaultHeightofReset{14pt}
3257 \def\DefaultWidthofReset{2cm}

```

```

3258 \def\DefaultHeightofCheckBox{\baselineskip}
3259 \def\DefaultWidthofCheckBox{\baselineskip}
3260 \def\DefaultHeightofChoiceMenu{\baselineskip}
3261 \def\DefaultWidthofChoiceMenu{\baselineskip}
3262 \def\DefaultHeightofText{\baselineskip}
3263 \def\DefaultWidthofText{3cm}

```

20 Setup

```

3264 \ifHy@figures
3265   \Hy@Info{Hyper figures ON}
3266 \else
3267   \Hy@Info{Hyper figures OFF}
3268 \fi
3269 \ifHy@nesting
3270   \Hy@Info{Link nesting ON}
3271 \else
3272   \Hy@Info{Link nesting OFF}
3273 \fi
3274 \ifHy@hyperindex
3275   \Hy@Info{Hyper index ON}
3276 \else
3277   \Hy@Info{Hyper index OFF}
3278 \fi
3279 \ifHy@backref
3280   \Hy@Info{backreferencing ON}
3281 \else
3282   \Hy@Info{backreferencing OFF}
3283 \fi
3284 \ifHy@colorlinks
3285   \Hy@Info{Link coloring ON}
3286 \else
3287   \Hy@Info{Link coloring OFF}
3288 \fi

```

21 Low-level utility macros

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

```

3289 \edef\hyper@hash{\string#}
3290 \edef\hyper@tilde{\string~}
3291 \edef\hyper@quote{\string"}
3292 \let\@currentHref\@empty
3293 \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.

```

3294 \AfterBeginDocument{%
3295   \Hy@pdfstringtrue
3296   \PDF@SetupDoc
3297   \let\PDF@SetupDoc\@empty
3298   \Hy@DisableOption{pdfpagescrop}%
3299   \Hy@DisableOption{pdfpagemode}%
3300   \Hy@DisableOption{pdfnonfullscreenpagemode}%
3301   \Hy@DisableOption{pdfdirection}%
3302   \Hy@DisableOption{pdfviewarea}%
3303   \Hy@DisableOption{pdfviewclip}%

```

```

3304 \Hy@DisableOption{pdfprintarea}%
3305 \Hy@DisableOption{pdfprintclip}%
3306 \Hy@DisableOption{pdfprintscaling}%
3307 \Hy@DisableOption{pdfduplex}%
3308 \Hy@DisableOption{pdfpicktraybypdfsize}%
3309 \Hy@DisableOption{pdfprintpagerange}%
3310 \Hy@DisableOption{pdfnumcopies}%
3311 \Hy@DisableOption{pdfstartview}%
3312 \Hy@DisableOption{pdfstartpage}%
3313 \Hy@DisableOption{pdftoolbar}%
3314 \Hy@DisableOption{pdfmenubar}%
3315 \Hy@DisableOption{pdfwindowui}%
3316 \Hy@DisableOption{pdfwindow}%
3317 \Hy@DisableOption{pdfcenterwindow}%
3318 \Hy@DisableOption{pdfdisplaydoctitle}%
3319 \Hy@DisableOption{pdfpagelayout}%
3320 \Hy@DisableOption{pdflang}%
3321 \Hy@DisableOption{baseurl}%
3322 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
3323 \Hy@pdfstringfalse
3324 }

```

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.

```

3325 \def\NoHyper{%
3326   \def\hyper@link@{##1}##2##3##4{##4}%
3327   \def\hyper@@anchor##1{%
3328     \global\let\hyper@livelink\hyper@link
3329     \gdef\hyper@link##1##2##3{##3}%
3330     \def\hyper@anchorstart##1{%
3331       \let\hyper@anchorend\@empty
3332       \def\hyper@linkstart##1##2{%
3333         \let\hyper@linkend\@empty
3334         \def\hyper@linkurl##1##2{##1}%
3335         \def\hyper@linkfile##1##2##3{##1}%
3336         \let\Hy@backout\@gobble
3337       }
3338     \def\stop@hyper{%
3339       \def\hyper@link@{##1}##2##3##4{##4}%
3340       \let\Hy@backout\@gobble
3341       \def\hyper@@anchor##1{%
3342         \def\hyper@link##1##2##3{##3}%
3343         \def\hyper@anchorstart##1{%
3344           \let\hyper@anchorend\@empty
3345           \def\hyper@linkstart##1##2{%
3346             \let\hyper@linkend\@empty
3347             \def\hyper@linkurl##1##2{##1}%
3348             \def\hyper@linkfile##1##2##3{##1}%
3349           }
3350         \def\endNoHyper{%
3351           \global\let\hyper@link\hyper@livelink
3352         }

```

3353 `\package`

23 Package nohyperref

This package is introduced by Sebastian Rahtz.

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

Some low-level commands:

```
3354 \*nohyperref
3355 \let\hyper@@anchor\@gobble
3356 \def\hyper@link#1#2#3{#3}%
3357 \let\hyper@anchorstart\@gobble
3358 \let\hyper@anchorend\@empty
3359 \let\hyper@linkstart\@gobbletwo
3360 \let\hyper@linkend\@empty
3361 \def\hyper@linkurl#1#2{#1}%
3362 \def\hyper@linkfile#1#2#3{#1}%
3363 \let\PDF@SetupDoc\@empty
3364 \let\PDF@FinishDoc\@empty
```

Some top-level commands:

```
3365 \let\Acrobatmenu\@gobble
3366 \let\pdfstringdefDisableCommands\@gobbletwo
3367 \let\texorpdfstring\@firstoftwo
3368 \let\pdfbookmark\@undefined
3369 \newcommand\pdfbookmark[3][]{}
3370 \let\phantomsection\@empty
3371 \let\hypersetup\@gobble
3372 \let\hyperbaseurl\@gobble
3373 \let\href\@gobble
3374 \let\hyperdef\@gobbletwo
3375 \let\hyperlink\@gobble
3376 \let\hypertarget\@gobble
3377 \def\hyperref{\@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}}}
3378 \long\def\@gobbleopt[#1]{}%
3379 \let\hyperpage\@empty
3380 \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}`

```
3381 \package
3382 \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.

```
3383 \if@filesw
3384 \ifHy@typexml
3385 \immediate\closeout\@mainaux
3386 \immediate\openout\@mainaux\jobname.aux
```

```

3387 \immediate\write\@auxout{<relaxxml>\relax}%
3388 \fi
3389 \immediate\write\@auxout{%
3390   \string\ifx\string\hyper@anchor\string\@undefined^^J%
3391   \global\let\string\oldcontentsline\string\contentsline^^J%
3392   \gdef\string\contentsline%
3393     \string#1\string#2\string#3\string#4{%
3394     \string\oldcontentsline%
3395     {\string#1}{\string#2}{\string#3}}^^J%
3396   \global\let\string\oldnewlabel\string\newlabel^^J%
3397   \gdef\string\newlabel\string#1\string#2{%
3398     \string\newlabelxx{\string#1}\string#2^^J%
3399   \gdef\string\newlabelxx%
3400     \string#1\string#2\string#3\string#4\string#5\string#6{%
3401     \string\oldnewlabel{\string#1}{\string#2}{\string#3}}^^J%

```

```

3402 \string\AtEndDocument{%
3403 \let\string\contentsline\string\oldcontentsline^^J%
3404 \let\string\newlabel\string\oldnewlabel^^J%

```

```

3405     \string\else^^J%
3406     \global\let\string\hyper@last\relax^^J%
3407     \string\fi^^J%
3408 }%
3409 \fi

```

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

25 Title strings

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

```

3429 \ifHy@usetitle
3430   \let\HyOrg@title\title
3431   \let\HyOrg@author\author
3432   \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
3433   \def\Hy@scanopttitle[#1]{%
3434     \gdef\Hy@title{#1}%
3435     \HyOrg@title[{#1}]%
3436   }%
3437   \def\Hy@scantitle#1{%
3438     \gdef\Hy@title{#1}%
3439     \HyOrg@title{#1}%
3440   }
3441   \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
3442   \def\Hy@scanoptauthor[#1]{%
3443     \gdef\Hy@author{#1}%
3444     \HyOrg@author[{#1}]%
3445   }%
3446   \def\Hy@scanauthor#1{%
3447     \gdef\Hy@author{#1}%
3448     \HyOrg@author{#1}%
3449   }

```

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.

```

3450 \begingroup
3451   \def\process@me#1\@nil#2{%
3452     \expandafter\let\expandafter\x\csname @#2\endcsname
3453     \edef\y{\expandafter\strip@prefix\meaning\x}%
3454     \def\c##1#1##2\@nil{%
3455       \ifx\\##1\\%
3456       \else
3457         \expandafter\gdef\csname Hy@#2\expandafter\endcsname
3458           \expandafter{\x}%
3459       \fi
3460     }%
3461     \expandafter\c\y\relax#1\@nil
3462   }%
3463   \expandafter\process@me\string\@latex@\@nil{title}%
3464   \expandafter\process@me\string\@latex@\@nil{author}%
3465 \endgroup
3466 \fi
3467 \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.

```

3468 \def\Hy@UseMaketitleString#1{%

```

```

3469 \@ifundefined{Hy@#1}{\{%
3470   \begingroup
3471   \let\Hy@saved@hook\pdfstringdefPreHook
3472   \pdfstringdefDisableCommands{%
3473     \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
3474     \let\newline\\%
3475   }%
3476   \expandafter\ifx\csname @pdf#1\endcsname\@empty
3477     \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
3478       \csname Hy@#1\endcsname\@empty
3479     }%
3480   \fi
3481   \global\let\pdfstringdefPreHook\Hy@saved@hook
3482 \endgroup
3483 }%
3484 }
3485 \def\Hy@newline@title#1{ #1}
3486 \def\Hy@newline@author#1{, #1}
3487 \def\Hy@UseMaketitleInfos{%
3488   \Hy@UseMaketitleString{title}%
3489   \Hy@UseMaketitleString{author}%
3490 }

```

26 Page numbers

This stuff is done by Heiko Oberdiek.

26.1 PDF /PageLabels

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

```

3491 \ifHy@pagelabels
3492   \begingroup\expandafter\expandafter\expandafter\endgroup
3493   \expandafter\ifx\csname thepage\endcsname\relax
3494     \Hy@pagelabelsfalse
3495     \Hy@WarningNoLine{%
3496       Option 'pdfpagelabels' is turned off\MessageBreak
3497       because \string\thepage\space is undefined%
3498     }%
3499     \csname fi\endcsname
3500     \csname iffalse\expandafter\endcsname
3501   \fi

```

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

```

3502 \def\thispdfpagelabel#1{%
3503   \gdef\HyPL@thisLabel{#1}%
3504 }
3505 \global\let\HyPL@thisLabel\relax

```

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

```

3506 \def\HyPL@Labels{}

```

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

```

3507 \newcount\Hy@abspage
3508 \Hy@abspage=0

```

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

```
3509 \def\HyPL@LastType{init}%
3510 \def\HyPL@LastNumber{0}%
3511 \def\HyPL@LastPrefix{}
```

Definitions for the PDF names of the \LaTeX pendants.

```
3512 \def\HyPL@arabic{D}%
3513 \def\HyPL@Roman{R}%
3514 \def\HyPL@roman{r}%
3515 \def\HyPL@Alph{A}%
3516 \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.

```
3517 \def\HyPL@EveryPage{%
3518   \begingroup
3519   \ifx\HyPL@thisLabel\relax
3520     \let\HyPL@page\thepage
3521   \else
3522     \let\HyPL@page\HyPL@thisLabel
3523     \global\let\HyPL@thisLabel\relax
3524   \fi
3525   \let\HyPL@Type\relax
3526   \ifnum\the\c@page>0
3527     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
3528   \fi
3529   \let\Hy@temp Y%
3530   \ifx\HyPL@Type\HyPL@LastType
3531   \else
3532     \let\Hy@temp N%
3533   \fi
3534   \ifx\HyPL@Type\relax
3535     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
3536   \else
3537     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
3538   \fi
3539   \ifx\HyPL@Prefix\HyPL@LastPrefix
3540   \else
3541     \let\Hy@temp N%
3542   \fi
3543   \if Y\Hy@temp
3544     \advance\c@page by -1
3545     \ifnum\HyPL@LastNumber=\the\c@page\relax
3546     \else
3547       \let\Hy@temp N%
3548     \fi
3549     \Hy@StepCount\c@page
3550   \fi
3551   \if N\Hy@temp
3552     \ifx\HyPL@Type\relax
3553       \HyPL@StorePageLabel{/P (\HyPL@Prefix)}%
3554     \else
3555       \HyPL@StorePageLabel{%
3556         \ifx\HyPL@Prefix\@empty
3557         \else
3558           /P (\HyPL@Prefix)
3559         \fi
```

```

3560      /S /\csname HyPL\HyPL@Type\endcsname
3561      \ifnum\the\c@page=1
3562      \else
3563      \space/St \the\c@page
3564      \fi
3565      }%
3566      \fi
3567      \fi
3568      \xdef\HyPL@LastNumber{\the\c@page}%
3569      \global\let\HyPL@LastType\HyPL@Type
3570      \global\let\HyPL@LastPrefix\HyPL@Prefix
3571      \endgroup
3572      \Hy@GlobalStepCount\Hy@abspage
3573      }

```

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

```

3574      \def\HyPL@CheckThePage#1\@nil{%
3575      \HyPL@@CheckThePage{#1}\csname\endcsname\c@page\@nil
3576      }

```

`\HyPL@@CheckThePage` The first check is, is `\thepage` is defined such as in L^AT_EX, e. g.: `\csname @arabic\endcsname\c@page`. In the current implemenation the check fails, if there is another `\csname` before.

The second check tries to detect `\arabic{page}` at the end of the definition text of `\thepage`.

```

3577      \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
3578      \def\Hy@tempa{#4}%
3579      \def\Hy@tempb{\csname\endcsname\c@page}%
3580      \ifx\Hy@tempa\Hy@tempb
3581      \expandafter\ifx\csname HyPL#3\endcsname\relax
3582      \else
3583      \def\HyPL@Type{#3}%
3584      \def\HyPL@Prefix{#2}%
3585      \fi
3586      \else
3587      \begingroup
3588      \let\Hy@next\endgroup
3589      \let\HyPL@found\@undefined
3590      \def\arabic{\HyPL@Format{arabic}}%
3591      \def\Roman{\HyPL@Format{Roman}}%
3592      \def\roman{\HyPL@Format{roman}}%
3593      \def\Alph{\HyPL@Format{Alph}}%
3594      \def\alph{\HyPL@Format{alph}}%
3595      \protected@edef\Hy@temp{#1}%
3596      \ifx\HyPL@found\relax
3597      \toks@{\expandafter{\Hy@temp}}%
3598      \edef\Hy@next{\endgroup
3599      \noexpand\HyPL@@@CheckThePage\the\toks@
3600      \noexpand\HyPL@found\relax\noexpand\@nil
3601      }%
3602      \fi
3603      \Hy@next
3604      \fi
3605      }

```

`\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`.

```

3606 \def\HyPL@Format#1#2{%
3607   \ifx\HyPL@found\undefined
3608     \expandafter\ifx\csname c@#2\endcsname\c@page
3609       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
3610     \else
3611       \expandafter\noexpand\csname#1\endcsname{#2}%
3612     \fi
3613   \else
3614     \expandafter\noexpand\csname#1\endcsname{#2}%
3615   \fi
3616 }

```

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

```

3617 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
3618   \def\Hy@tempa{#3}%
3619   \def\Hy@tempb{\HyPL@found\relax}%
3620   \ifx\Hy@tempa\Hy@tempb
3621     \def\HyPL@Type{#2}%
3622     \def\HyPL@Prefix{#1}%
3623   \fi
3624 }

```

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

```

3625 \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`.

```

3626 \def\HyPL@Useless{0 << /S /D >> }%
3627 \@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.

```

3628 \def\HyPL@SetPageLabels{%
3629   \@onelevel@sanitize\HyPL@Labels
3630   \ifx\HyPL@Labels\@empty
3631     \else
3632       \ifx\HyPL@Labels\HyPL@Useless
3633       \else
3634         \Hy@PutCatalog{/PageLabels << /Nums [\HyPL@Labels] >>}%
3635       \fi
3636     \fi
3637 }

```

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

```

3638 \else
3639   \let\HyPL@EveryPage\@empty
3640 \fi

```

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

```

3641 \Hy@DisableOption{pdfpagelabels}
3642 \>/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`

```
3643 <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.

```
3644 <*vTeX>
3645 \edef\Hy@VTeXversion{%
3646   \ifx\VTeXversion\undefined
3647     \z@
3648   \else
3649     \ifx\VTeXversion\relax
3650       \z@
3651     \else
3652       \VTeXversion
3653     \fi
3654   \fi
3655 }
3656 \begingroup
3657   \ifnum\Hy@VTeXversion<660 %
3658     \gdef\Hy@PutCatalog#1{%
3659       \Hy@WarningNoLine{%
3660         VTeX 6.59g or above required for pdfpagelabels%
3661       }%
3662     }
3663   \else
3664     \gdef\Hy@PutCatalog#1{%
3665       \Hy@vt@PutCatalog#1/PageLabels <<>>\@nil
3666     }
3667     \gdef\Hy@vt@PutCatalog#1/PageLabels <<#2>>#3\@nil{%
3668       \ifx\#2\%
3669         \else
3670           \immediate\special{!pdfpagelabels #2}%
3671         \fi
3672       }
3673     \fi
3674 \endgroup
3675 </vTeX>
```

```
3676 <*pdfTeX | vTeX>
```

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

```
3677 \ifHy@pagelabels
3678   \def\HyPL@StorePageLabel#1{%
3679     \toks@{\expandafter{\HyPL@Labels}}%
3680     \xdef\HyPL@Labels{%
3681       \the\toks@
3682       \the\Hy@abspage\space<< #1 >> %
3683     }%
3684   }
```

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.

```
3685 \AtEndDocument{\clearpage\HyPL@SetPageLabels}
3686 \fi
3687 </pdfTeX | vTeX>
```

26.1.2 pdfmarkbase, dvipdfm

`\Hy@PutCatalog`

```
3688 <dvipdfm>\def\Hy@PutCatalog#1{\@pdfmark{docview << #1 >>}}
3689 <*pdfmarkbase>
3690 \def\Hy@PutCatalog#1{%
3691 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
3692 }
3693 </pdfmarkbase>

3694 <*pdfmarkbase | dvipdfm>
3695 \ifHy@pagelabels
```

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

```
3696 \def\HyPL@StorePageLabel#1{%
3697 \if@filesw
3698 \begingroup
3699 \edef\Hy@tempa{\the\Hy@abspage\space<< #1 >> }%
3700 \immediate\write\@mainaux{%
3701 \string\HyPL@Entry{\Hy@tempa}%
3702 }%
3703 \endgroup
3704 \fi
3705 }
```

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.

```
3706 \AfterBeginDocument{%
3707 \if@filesw
3708 \immediate\write\@mainaux{%
3709 \string\providecommand\string*\string\HyPL@Entry[1]{}%
3710 }%
3711 \fi
3712 \ifx\HyPL@Labels\@empty
3713 \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
3714 \else
3715 \HyPL@SetPageLabels
3716 \fi
3717 \let\HyPL@Entry\@gobble
3718 }%
```

`\HyPL@Entry`

```
3719 \def\HyPL@Entry#1{%
3720 \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
3721 \HyPL@Labels
3722 #1%
3723 }%
3724 }
```

```

3725 \fi
3726 \pdfmarkbase | dvipdfm)
3727 \*package)
3728 \MaybeStopEarly

```

27 Automated L^AT_EX hypertext cross-references

Anything which can be referenced advances some counter; we overload this to put in a hypertext starting point (with no visible anchor), and make a note of that for later use in `\label`. This will fail badly if `\theH<name>` does not expand to a sensible reference. This means that classes or package which introduce new elements need to define an equivalent `\theH<name>` for every `\the<name>`. We do make a trap to make `\theH<name>` be the same as `\arabic{<name>}`, if `\theH<name>` is not defined, but this is not necessarily a good idea. Alternatively, the ‘naturalnames’ option uses whatever L^AT_EX provides, which may be useable. But then it's up to you to make sure these are legal PDF and HTML names. The ‘hypertextnames=false’ option just makes up arbitrary names.

All the shenanigans is to make sure section numbers etc are always arabic, separated by dots. Who knows how people will set up `\@currentlabel`? If they put spaces in, or brackets (quite legal) then the hypertext processors will get upset.

But this is flaky, and open to abuse. Styles like `subeqn` will mess it up, for starters. Appendices are an issue, too. We just hope to cover most situations. We can at least cope with the standard sectioning structure, allowing for `\part` and `\chapter`.

Start with a fallback for equations

```

3729 \newcommand\theHequation{\theHsection.\arabic{equation}}
3730 \ifundefined{thepart}{\newcommand\theHpart{\arabic{part}}}{%
3731 \ifundefined{thechapter}{%
3732   \newcommand\theHsection    {\arabic{section}}
3733   \newcommand\theHfigure     {\arabic{figure}}
3734   \newcommand\theHtable      {\arabic{table}}
3735 }{%
3736   \newcommand\theHchapter     {\arabic{chapter}}
3737   \newcommand\theHfigure      {\theHchapter.\arabic{figure}}
3738   \newcommand\theHtable       {\theHchapter.\arabic{table}}
3739   \newcommand\theHsection     {\theHchapter.\arabic{section}}
3740 }
3741 \newcommand\theHsubsection    {\theHsection.\arabic{subsection}}
3742 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
3743 \newcommand\theHparagraph     {\theHsubsubsection.\arabic{paragraph}}
3744 \newcommand\theHsubparagraph  {\theHparagraph.\arabic{subparagraph}}
3745 \newcommand\theHtheorem       {\theHsection.\arabic{theorem}}
3746 \newcommand\theHthm           {\theHsection.\arabic{thm}}

```

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

```

3747 \let\H@item\item
3748 \newcounter{Item}
3749 \def\theHItem{\arabic{Item}}
3750 \def\item{%
3751   \@hyper@itemfalse
3752   \if@nmbbrlist\@hyper@itemtrue\fi
3753   \H@item
3754 }

```



```

3755 \newcommand\theHenumi      {\theHItem}
3756 \newcommand\theHenumii     {\theHItem}
3757 \newcommand\theHenumiii     {\theHItem}
3758 \newcommand\theHenumiv      {\theHItem}
3759 \newcommand\theHHfootnote   {\arabic{Hfootnote}}
3760 \newcommand\theHmpfootnote  {\arabic{mpfootnote}}
3761 \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.

```

3762 \let\H@refstepcounter\refstepcounter
3763 \edef\name@of@eq{equation}%
3764 \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.

```

3765 \newif\if@hyper@item
3766 \newif\if@skiphyperref
3767 \@hyper@itemfalse
3768 \@skiphyperreffalse
3769 \def\refstepcounter#1{%
3770   \ifHy@pdfstring
3771   \else
3772     \H@refstepcounter{#1}%
3773     \edef\This@name{#1}%
3774     \ifx\This@name\name@of@slide
3775     \else
3776       \if@skiphyperref
3777       \else
3778         \if@hyper@item
3779         \stepcounter{Item}%
3780         \hyper@refstepcounter{Item}%
3781       \else
3782         \hyper@refstepcounter{#1}%
3783       \fi
3784     \fi
3785   \fi
3786 \fi
3787 }

```

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.

```

3788 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

3789 \def\hyper@refstepcounter#1{%
3790   \edef\This@name{#1}%
3791   \ifx\This@name\name@of@eq
3792     \make@stripped@name{\theequation}%
3793     \let\theHequation\newname
3794   \fi
3795   \@ifundefined{theH#1}{%
3796     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
3797   }{}%
3798   \hyper@makecurrent{#1}%

```

```

3799 \ifmeasuring@
3800 \else
3801   \Hy@raisedlink{%
3802     \hyper@anchorstart{\@currentHref}\hyper@anchorend
3803   }%
3804 \fi
3805 }

```

After `\appendix` “chapter” (or “section” for classes without chapter) should be replaced by “appendix” to get `\autoref` work. Macro `\Hy@chapapp` contains the current valid name like `\@chapapp`, which cannot be used, because this string depends on the current language.

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

```

3806 \begingroup\expandafter\expandafter\expandafter\endgroup
3807 \expandafter\ifx\csname chapter\endcsname\relax
3808   \def\Hy@chapterstring{section}%
3809 \else
3810   \def\Hy@chapterstring{chapter}%
3811 \fi
3812 \def\Hy@appendixstring{appendix}
3813 \def\Hy@chapapp{\Hy@chapterstring}
3814 \let\HyOrg@appendix\appendix
3815 \def\appendix{%
3816   \@ifundefined{chapter}%
3817     {\gdef\theHsection{\Alph{section}}}%
3818     {\gdef\theHchapter{\Alph{chapter}}}%
3819   \xdef\Hy@chapapp{\Hy@appendixstring}%
3820   \HyOrg@appendix
3821 }

```

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

```

3822 \def\hyper@makecurrent#1{%
3823   \begingroup
3824     \edef\Hy@param{#1}%
3825     \ifx\Hy@param\Hy@chapterstring
3826       \let\Hy@param\Hy@chapapp
3827     \fi
3828     \ifHy@hypertextnames
3829       \let\@number\@firstofone
3830     \ifHy@naturalnames
3831       \let\textlatin\@firstofone
3832     \xdef\@currentHlabel{\csname the#1\endcsname}%
3833   \else
3834     \xdef\@currentHlabel{\csname theH#1\endcsname}%
3835   \fi
3836   \xdef\@currentHref{%
3837     \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
3838   }%
3839   \else
3840     \Hy@GlobalStepCount\Hy@linkcounter
3841     \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
3842   \fi
3843 \endgroup
3844 }

```

```

3845 \@ifpackageloaded{fancyvrb}{%
3846   \def\FV@StepLineNo{%
3847     \FV@SetLineNo
3848     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
3849     \FV@StepLineNo
3850   }%
3851 }{}

```

28 Package lastpage support

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

`\lastpage@putlabel`

```

3852 \AtBeginDocument{%
3853   \@ifpackageloaded{lastpage}{%
3854     \ifHy@pageanchor
3855     \else
3856       \Hy@WarningNoLine{%
3857         The \string\pageref{LastPage} link doesn't work\MessageBreak
3858         with disabled option 'pageanchor'%
3859       }%
3860     \fi
3861     \def\lastpage@putlabel{%
3862       \addtocounter{page}{-1}%
3863       \if@filesw
3864         \begingroup
3865           \let\@number\@firstofone
3866           \ifHy@pageanchor
3867             \ifHy@hypertexnames
3868               \ifHy@plainpages
3869                 \def\Hy@temp{\arabic{page}}%
3870               \else
3871                 \Hy@unicodedefalse
3872                 \pdfstringdef\Hy@temp{\thepage}%
3873               \fi
3874             \else
3875               \def\Hy@temp{\the\Hy@pagecounter}%
3876             \fi
3877           \fi
3878           \immediate\write\@auxout{%
3879             \string\newlabel
3880             {LastPage}{\the\Hy@temp}{\thepage}{\the\Hy@temp}{\the\Hy@temp}{\the\Hy@temp}%
3881             \ifHy@pageanchor page.\Hy@temp\fi}{\the\Hy@temp}%
3882           }%
3883         \endgroup
3884       \fi
3885       \addtocounter{page}{1}%
3886     }%
3887   }{}%
3888 }
3889 \endpackage

```

```

3890 <*check>
3891 \checkpackage{lastpage}[1994/06/25]
3892 \checkcommand\def\lastpage@putlabel{%
3893   \addtocounter{page}{-1}%
3894   \immediate\write\@auxout{%
3895     \string\newlabel{LastPage}{\thepage}%
3896   }%
3897   \addtocounter{page}{1}%
3898 }
3899 </check>
3900 <*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.

```

3901 \def\hypergetref#1{\getrefbykeydefault{#1}{-}{??}}
3902 \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:

```

3903 \@ifpackageloaded{titlesec}{%
3904   \def\ttl@Hy@steplink#1{%
3905     \Hy@GlobalStepCount\Hy@linkcounter
3906     \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
3907     \def\ttl@Hy@saveanchor{%
3908       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
3909     }%
3910   }%
3911   \def\ttl@Hy@refstepcounter#1{%
3912     \let\ttl@b\Hy@raisedlink
3913     \def\Hy@raisedlink##1{\def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}}%
3914     \refstepcounter{#1}%
3915     \let\Hy@raisedlink\ttl@b
3916   }%
3917 }{}

```

Package titletoc support:

```

3918 \@ifpackageloaded{titletoc}{%
3919   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
3920 }{}

```

31 Package varioref support

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

```

3921 \def\Hy@varioref@undefined{???}{??}{-}{-}{-}
3922 \@ifpackageloaded{varioref}{%
3923   \def\vref#1#2{%
3924     \ifundefined{r#2}{%

```

```

3925 \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
3926 }{}%
3927 \edef#1{\getpagerefnumber{#2}}%
3928 }%
3929 }{}

```

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

```

3930 \@ifpackageloaded{longtable}{%
3931 \begingroup
3932 \def\y{\LT@array}%
3933 \@ifundefined{scr@LT@array}{\def\y{\scr@LT@array}}%
3934 \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
3935 \expandafter\endgroup
3936 \expandafter\def\y[#1]##2{%
3937 \H@refstepcounter{#1}%
3938 \hyper@makecurrent{table}%
3939 #2\@sharp####4%
3940 }%
3941 }%
3942 \expandafter\expandafter\expandafter\x\y[#1]{#2}\@nil

```

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

```

3943 \begingroup
3944 \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
3945 \endgroup
3946 \def\LT@start{%
3947 #1%
3948 \hyper@refstepcounter{table}%
3949 \ifvoid\LT@firsthead\copy
3950 #2%
3951 }%
3952 }%
3953 \expandafter\x\LT@start\@nil
3954 }{}

```

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.

```

3955 \let\new@refstepcounter\refstepcounter
3956 \let\H@equation\equation
3957 \let\H@endequation\endequation
3958 \@ifpackageloaded{amsmath}{%
3959 \long\def\Hy@temp{%
3960 \incr@eqnum

```

```

3961 \mathdisplay@push
3962 \st@rredfalse \global\@eqnswtrue
3963 \mathdisplay{equation}%
3964 }%
3965 \ifx\Hy@temp\equation
3966 \expandafter\ifx\csname if@fleqn\expandafter\endcsname
3967 \csname iftrue\endcsname
3968 \else
3969 \long\def\equation{%
3970 \mathdisplay@push
3971 \st@rredfalse \global\@eqnswtrue
3972 \mathdisplay{equation}%
3973 \incr@eqnum
3974 }%
3975 \fi
3976 \fi
3977 }{%
3978 \def\equation{%
3979 \let\refstepcounter\H@refstepcounter
3980 \H@equation
3981 \make@stripped@name{\theequation}%
3982 \let\theHequation\newname
3983 \hyper@makecurrent{equation}%
3984 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
3985 \let\refstepcounter\new@refstepcounter
3986 }%
3987 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
3988 }

```

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.

```

3989 \newif@if@eqnstar
3990 \@eqnstarfalse
3991 \let\H@eqnarray\eqnarray
3992 \let\H@endeqnarray\endeqnarray
3993 \def\eqnarray{%
3994 \let\Hy@reserved@a\relax
3995 \def\@currentHref{}%
3996 \H@eqnarray
3997 \if@eqnstar
3998 \else
3999 \ifx\\\@currentHref\\%
4000 \else
4001 \make@stripped@name{\theequation}%
4002 \let\theHequation\newname
4003 \hyper@makecurrent{equation}%
4004 \hyper@anchorstart{\@currentHref}\hyper@anchorend
4005 \fi
4006 \fi
4007 }
4008 \def\endeqnarray{%
4009 \H@endeqnarray
4010 }

```

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.

```

4011 \@namedef{eqnarray*}{%
4012   \def\@eqnrcr{\nonumber\@seqnrcr}\@eqnstartrue\eqnarray
4013 }
4014 \@namedef{endeqnarray*}{%
4015   \nonumber\endeqnarray\@eqnstarfalse
4016 }

```

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

```

4017 \@ifundefined{subeqnarray}{%
4018   \let\H@subeqnarray\subeqnarray
4019   \let\H@endsubeqnarray\endsubeqnarray
4020   \def\subeqnarray{%
4021     \let\Hy@reserved@a\relax
4022     \H@subeqnarray
4023     \make@stripped@name{\theequation}%
4024     \let\theHequation\newname
4025     \hyper@makecurrent{equation}%
4026     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
4027   }%
4028   \def\endsubeqnarray{%
4029     \H@endsubeqnarray
4030   }%
4031   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
4032 }

```

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

```

4033 \def\make@stripped@name#1{%
4034   \begingroup
4035     \escapechar\m@ne
4036     \global\let\newname\@empty
4037     \protected@edef\Hy@tempa{#1}%
4038     \edef\@tempb{%
4039       \noexpand\@tfor\noexpand\Hy@tempa:=%
4040       \expandafter\strip@prefix\meaning\Hy@tempa
4041     }%
4042     \@tempb\do{%
4043       \if\Hy@tempa\else
4044         \if}\Hy@tempa\else
4045           \xdef\newname{\newname\Hy@tempa}%
4046         \fi
4047       \fi
4048     }%
4049   \endgroup
4050 }

```

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.

```

4051 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}

```

```

4052 \ifHy@hyperfootnotes
4053   \newcounter{Hfootnote}
4054   \let\H@@footnotetext\@footnotetext
4055   \let\H@@footnotemark\@footnotemark
4056   \def\@xfootnotenext[#1]{%
4057     \begingroup
4058       \csname c@\mpfn\endcsname #1\relax
4059       \unrestored@protected@xdef\@thefnmark{\thempfn}%
4060     \endgroup
4061     \ifx\@footnotetext\@mpfootnotetext
4062       \expandafter\H@@mpfootnotetext
4063     \else
4064       \expandafter\H@@footnotetext
4065     \fi
4066   }%
4067   \def\@xfootnotemark[#1]{%
4068     \begingroup
4069       \c@footnote #1\relax
4070       \unrestored@protected@xdef\@thefnmark{\thefnmark}%
4071     \endgroup
4072     \H@@footnotemark
4073   }%
4074   \let\H@@mpfootnotetext\@mpfootnotetext
4075   \long\def\@mpfootnotetext#1{%
4076     \H@@mpfootnotetext{%
4077       \ifHy@nesting
4078         \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
4079       \else
4080         \Hy@raisedlink{%
4081           \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
4082         }#1%
4083       \fi
4084     }%
4085   }%
4086   \long\def\@footnotetext#1{%
4087     \H@@footnotetext{%
4088       \ifHy@nesting
4089         \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
4090       \else
4091         \Hy@raisedlink{%
4092           \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
4093         }%
4094         \let\@currentHlabel\Hy@footnote@currentHlabel
4095         \let\@currentHref\Hy@footnote@currentHref
4096         \let\@currentlabelname\@empty
4097         #1%
4098       \fi
4099     }%
4100   }%

```

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.

```

4101   \def\@footnotemark{%
4102     \leavevmode
4103     \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
4104     \stepcounter{Hfootnote}%

```



```

4105 \global\let\Hy@saved@currentHlabel\@currentHlabel
4106 \global\let\Hy@saved@currentHref\@currentHref
4107 \hyper@makecurrent{Hfootnote}%
4108 \global\let\Hy@footnote@currentHlabel\@currentHlabel
4109 \global\let\Hy@footnote@currentHref\@currentHref
4110 \global\let\@currentHlabel\Hy@saved@currentHlabel
4111 \global\let\@currentHref\Hy@saved@currentHref
4112 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
4113 \@makefnmark
4114 \hyper@linkend
4115 \ifhmode\spacefactor\@x@sf\fi
4116 \relax
4117 }%

```

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.

```

4118 \@ifpackageloaded{longtable}{%
4119 \CheckCommand*{\LT@p@ftntext}[1]{%
4120 \edef\@tempa{%
4121 \the\LT@p@ftn
4122 \noexpand\footnotetext[\the\c@footnote]%
4123 }%
4124 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
4125 }%
4126 \long\def\LT@p@ftntext#1{%
4127 \edef\@tempa{%
4128 \the\LT@p@ftn
4129 \begingroup
4130 \noexpand\c@footnote=\the\c@footnote\relax
4131 \noexpand\protected@xdef
4132 \noexpand\@thefnmark{\noexpand\thempfn}%
4133 \noexpand\protected@xdef\noexpand\@thefnmark{%
4134 \noexpand\thempfn
4135 }%
4136 \expandafter\expandafter\expandafter\noexpand
4137 \expandafter\expandafter\expandafter\Hy@LT@footnotetext
4138 \expandafter\expandafter\expandafter{%
4139 \expandafter\Hy@footnote@currentHref\expandafter
4140 }\expandafter{\Hy@footnote@currentHlabel}%
4141 }%
4142 \global\LT@p@ftn\expandafter{%
4143 \@tempa{#1}%
4144 \endgroup
4145 }%
4146 }%
4147 \long\def\Hy@LT@footnotetext#1#2#3{%
4148 \H@@@footnotetext{%
4149 \ifHy@nesting
4150 \hyper@@anchor{#1}{#3}%
4151 \else
4152 \Hy@raisedlink{%
4153 \hyper@@anchor{#1}{\relax}%
4154 }%
4155 \def\@currentHlabel{#2}%
4156 \def\@currentHref{#1}%
4157 \let\@currentlabelname\@empty

```

```

4158         #3%
4159         \fi
4160     }%
4161 }%
4162 }{}%

```

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.

```

4163 \let\HyOrg@maketitle\maketitle
4164 \def\maketitle{%
4165     \let\Hy@saved@footnotemark\@footnotemark
4166     \let\Hy@saved@footnotetext\@footnotetext
4167     \let\@footnotemark\H@@footnotemark
4168     \let\@footnotetext\H@@footnotetext
4169     \@ifnextchar[\Hy@maketitle@optarg{% ]
4170         \HyOrg@maketitle
4171     \Hy@maketitle@end
4172 }%
4173 }%
4174 \def\Hy@maketitle@optarg[#1]{%
4175     \HyOrg@maketitle[#{1}]%
4176     \Hy@maketitle@end
4177 }%
4178 \def\Hy@maketitle@end{%
4179     \ifx\@footnotemark\H@@footnotemark
4180         \let\@footnotemark\Hy@saved@footnotemark
4181     \fi
4182     \ifx\@footnotetext\H@@footnotetext
4183         \let\@footnotetext\Hy@saved@footnotetext
4184     \fi
4185 }%

```

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

```

4186 \def\realfootnote{%
4187     \@ifnextchar[\@xfootnote{%
4188         \stepcounter{\@mpfn}%
4189         \protected@xdef\@thefnmark{\thempfn}%
4190         \H@@footnotemark\H@@footnotetext
4191     }%
4192 }%

4193 \fi
4194 \Hy@DisableOption{hyperfootnotes}

4195 </package>
4196 <*check>
4197 \checklatex
4198 \checkcommand\def\@xfootnotenext[#1]{%
4199     \begingroup
4200         \csname c@\@mpfn\endcsname #1\relax
4201         \unrestored@protected@xdef\@thefnmark{\thempfn}%
4202     \endgroup
4203     \@footnotetext
4204 }
4205 \checkcommand\def\@xfootnotemark[#1]{%
4206     \begingroup
4207         \c@footnote #1\relax
4208         \unrestored@protected@xdef\@thefnmark{\thefnmark}%

```

```

4209 \endgroup
4210 \@footnotemark
4211 }
4212 \checkcommand\def\@footnotemark{%
4213 \leavevmode
4214 \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
4215 \@makefnmark
4216 \ifhmode\spacefactor\x@sf\fi
4217 \relax
4218 }
4219 </check>
4220 <*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.

```

4221 \def\caption{%
4222 \ifx\@capytype\@undefined
4223 \latex@error{\noexpand\caption outside float}\@ehd
4224 \expandafter\@gobble
4225 \else
4226 \H@refstepcounter\@capytype
4227 \@ifundefined{fst@\@capytype}{%
4228 \let\Hy@tempa\@caption
4229 }{%
4230 \let\Hy@tempa\Hy@float@caption
4231 }%
4232 \expandafter\@firstofone
4233 \fi
4234 {\@dblarg{\Hy@tempa\@capytype}}%
4235 }
4236 \long\def\@caption#1[#2]#3{%
4237 \hyper@makecurrent{\@capytype}%
4238 \def\@currentlabelname{#2}%
4239 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
4240 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
4241 }%
4242 \begingroup
4243 \@parboxrestore
4244 \if@minipage
4245 \setminipage
4246 \fi
4247 \normalsize
4248 \@makecaption{\csname fnum@#1\endcsname}{%
4249 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

4250 \ifHy@nesting
4251 \hyper@@anchor{\@currentHref}{#3}%
4252 \else
4253 \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
4254 \fi
4255 }%
4256 \par
4257 \endgroup
4258 }

```

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.

```

4259 \let\Hy@float@caption\@caption
4260 \ifpackageloaded{float}{%
4261   \def\Hy@float@caption{%
4262     \hyper@makecurrent{\@capttype}%
4263     \float@caption
4264   }
4265   \let\HyOrg@float@makebox\float@makebox
4266   \renewcommand{\float@makebox}[1]{%
4267     \HyOrg@float@makebox{%
4268       #1\relax
4269       \begingroup
4270         \hyper@makecurrent{\@capttype}%
4271         \hyper@@anchor{\@currentHref}{\relax}%
4272       \endgroup
4273     }%
4274   }%
4275 }{}

4276 </package>
4277 <*check>
4278 \checklatex[1999/06/01 - 2000/06/01]
4279 \checkcommand\def\caption{%
4280   \ifx\@capttype\@undefined
4281     \@latex@error{\noexpand\caption outside float}\@ehd
4282     \expandafter\@gobble
4283   \else
4284     \refstepcounter\@capttype
4285     \expandafter\@firstofone
4286   \fi
4287   {\@dblarg{\@caption\@capttype}}%
4288 }
4289 \checkcommand\long\def\@caption#1[#2]#3{%
4290   \par
4291   \addcontentsline{\csname ext@#1\endcsname}{#1}%
4292     {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
4293   \begingroup
4294     \@parboxrestore
4295     \if@minipage
4296       \setminipage
4297     \fi
4298     \normalsize
4299     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
4300   \endgroup
4301 }
4302 </check>
4303 <*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 \bibtex; 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.

```

4304 \def\hyper@natlinkstart#1{%
4305   \Hy@backout{#1}%
4306   \hyper@linkstart{cite}{cite.#1}%
4307   \def\hyper@nat@current{#1}%
4308 }
4309 \def\hyper@natlinkend{%
4310   \hyper@linkend
4311 }
4312 \def\hyper@natlinkbreak#1#2{%
4313   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
4314 }
4315 \def\hyper@natanchorstart#1{%
4316   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
4317 }
4318 \def\hyper@natanchorend{\hyper@anchorend}

```

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

```

4319 \@ifundefined{NAT@parse}{%
4320   \def\bibcite#1#2{%
4321     \newlabel{b}{#1\@extra@binfo}{\hyper@link{cite}{cite.#1}{#2}}%
4322   }%
4323   \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.”.

```

4324 \let\Hy@bibcite\bibcite
4325 \begingroup
4326   \@ifundefined{bbl@cite@choice}{%
4327     \g@addto@macro\bbl@cite@choice{%
4328       \let\bibcite\Hy@bibcite
4329     }%
4330   }%
4331 \endgroup

```

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

```

4332 \providecommand*\@BIBLABEL{\@biblabel}%
4333 \def\@lbibitem[#1]#2{%
4334   \@skiphyperreftrue
4335   \H@item[%
4336     \ifx\Hy@raisedlink\@empty
4337       \hyper@anchorstart{cite.#2}\@BIBLABEL{#1}\hyper@anchorend
4338     \else
4339       \Hy@raisedlink{\hyper@anchorstart{cite.#2}\hyper@anchorend}%
4340       \@BIBLABEL{#1}%
4341     \fi
4342     \hfill
4343   ]%
4344   \@skiphyperreffalse
4345   \if@filesw
4346     \begingroup
4347       \let\protect\noexpand
4348       \immediate\write\@auxout{%
4349         \string\bibcite{#2}{#1}%
4350       }%

```

```

4351     \endgroup
4352     \fi
4353     \ignorespaces
4354 }%

```

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

```

4355 \def\@bibitem#1{%
4356   \@skiphyperreftrue\H@item\@skiphyperreffalse
4357   \Hy@raisedlink{\hyper@anchorstart{cite.#1}\relax\hyper@anchorend}%
4358   \if@filesw
4359     \begingroup
4360       \let\protect\noexpand
4361       \immediate\write\@auxout{%
4362         \string\bibcite{#1}{\the\value{\@listctr}}%
4363       }%
4364     \endgroup
4365   \fi
4366   \ignorespaces
4367 }%
4368 {}

4369 </package>
4370 <*check>
4371 \checklatex
4372 \checkcommand\def\@lbibitem[#1]#2{%
4373   \item[\@biblabel{#1}\hfill]%
4374   \if@filesw
4375     {%
4376       \let\protect\noexpand
4377       \immediate\write\@auxout{%
4378         \string\bibcite{#2}{#1}%
4379       }%
4380     }%
4381   \fi
4382   \ignorespaces
4383 }
4384 \checkcommand\def\@bibitem#1{%
4385   \item
4386   \if@filesw
4387     \immediate\write\@auxout{%
4388       \string\bibcite{#1}{\the\value{\@listctr}}%
4389     }%
4390   \fi
4391   \ignorespaces
4392 }
4393 </check>
4394 <*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.

```

4395 \@ifclassloaded{revtex}{%
4396   \Hy@Info{*** compatibility with revtex **** }%
4397   \def\revtex@checking#1#2{%
4398     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
4399     \expandafter\def\csname b@#1\endcsname{#2}%
4400     \@SetMaxRnhefLabel{#1}%

```

```

4401 \expandafter\let\csname b@#1\endcsname\T@temp
4402 }%

```

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

```

4403 \ifundefined{CITE}{\def\CITE{\@cite}}{}%
4404 \providecommand*{\@extra@b@citeb}{}%
4405 \def\CITEX[#1]#2{%
4406   \let\@citea\@empty
4407   \leavevmode
4408   \unskip
4409   $~{%
4410     \scriptstyle
4411     \CITE{%
4412       \@for\@citeb:=#2\do{%
4413         \@citea
4414         \def\@citea{,\penalty\@m\ }%
4415         \edef\@citeb{\expandafter\@firstofone\@citeb}%
4416         \if@filesw
4417           \immediate\write\@auxout{\string\citation{\@citeb}}%
4418         \fi
4419         \ifundefined{b@\@citeb\extra@b@citeb}{%
4420           \mbox{\reset@font\bfseries ?}%
4421           \G@refundefinedtrue
4422           \@latex@warning{%
4423             Citation ‘\@citeb’ on page \thepage \space undefined%
4424           }%
4425         }{%
4426           {\csname b@\@citeb\@extra@b@citeb\endcsname}%
4427         }%
4428       }%
4429     }{#1}%
4430   }$%
4431 }%

```

No, life is too short. I am not going to understand the Revtex \@collapse macro, I shall just restore the original behaviour of \@citex; sigh. This is SO vile.

```

4432 \def\citex[#1]#2{%
4433   \let\@citea\@empty
4434   \@cite{%
4435     \@for\@citeb:=#2\do{%
4436       \@citea
4437       \def\@citea{,\penalty\@m\ }%
4438       \edef\@citeb{\expandafter\@firstofone\@citeb}%
4439       \if@filesw
4440         \immediate\write\@auxout{\string\citation{\@citeb}}%
4441       \fi
4442       \ifundefined{b@\@citeb\@extra@b@citeb}{%
4443         \mbox{\reset@font\bfseries ?}%
4444         \G@refundefinedtrue
4445         \@latex@warning{%
4446           Citation ‘\@citeb’ on page \thepage \space undefined%
4447         }%
4448       }{%
4449         \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
4450       }%
4451     }%
4452   }{#1}%

```

```

4453 }%
4454 }{}

```

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

```

4455 \@ifpackageloaded{harvard}{%
4456   \AtBeginDocument{%
4457     \Hy@Info{*** compatibility with harvard **** }%
4458     \Hy@raiselinksfalse
4459     \def\harvardcite#1#2#3#4{%
4460       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{}{cite.#1}{#2}}%
4461       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{}{cite.#1}{#3}}%
4462       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{}{cite.#1}{#4}}%
4463       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
4464     }%
4465     \def\HAR@citetoaux#1{%
4466       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
4467       \ifHy@backref
4468         \ifx\@empty\@currentlabel
4469           \else
4470             \@bsphack
4471             \if@filesw
4472               \protected@write\@auxout{}{%
4473                 \string\writefile{brf}{%
4474                   \string\backcite{#1}{%
4475                     {\thepage}{\@currentlabel}{\@currentHref}%
4476                   }%
4477                 }%
4478               }%
4479             \fi
4480             \@esphack
4481           \fi
4482         \fi
4483       }%
4484       \def\harvarditem{%
4485         \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
4486       }%
4487       \def\@harvarditem[#1]#2#3#4#5\par{%
4488         \item[]%
4489         \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
4490         \if@filesw
4491           \begingroup
4492             \def\protect##1{\string ##1\space}%
4493             \ifthenelse{\equal{#1}{\null}}{%
4494               {\def\next{{#4}{#2}{#3}}}%
4495               {\def\next{{#4}{#2}{#1}{#3}}}%
4496             \immediate\write\@auxout{\string\harvardcite\codeof\next}%
4497           \endgroup
4498         \fi
4499         \protect\hspace*{-\labelwidth}%

```



```

4500     \protect\hspace*{-\labelsep}%
4501     \ignorespaces
4502     #5%
4503     \ifHy@backref
4504         \newblock
4505         \backref{\csname br@#4\endcsname}%
4506     \fi
4507     \par
4508 }%

```

`\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`:

```

4509     \long\def\HAR@checkcitations#1#2#3#4{%
4510         \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
4511         \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
4512             \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
4513         \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
4514             \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
4515         \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
4516             \else
4517                 \@tempswatrue
4518             \fi
4519         \else
4520             \@tempswatrue
4521         \fi
4522     \else
4523         \@tempswatrue
4524     \fi
4525 }%
4526 }%

4527 }{}

```

36.2 Package chicago

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

```

4528 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

4529     \def\citeN{%
4530         \def\@citesep{~1000}%
4531         \def\@cite##1##2{##1}%
4532         \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
4533         \@citedata@opt
4534     }%

```

`\shortciteN`

```

4535     \def\shortciteN{%
4536         \def\@citesep{~1000}%
4537         \def\@cite##1##2{##1}%
4538         \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
4539         \@citedata@opt
4540     }%

```

`\@citedata@opt`

```
4541 \def\@citedata@opt{%
4542   \let\@cite@opt\@empty
4543   \ifnextchar [{%
4544     \@tempswatrue
4545     \@citedatax@opt
4546   }{%
4547     \@tempswafalse
4548     \@citedatax[]%
4549   }%
4550 }%
```

`\@citedatax@opt`

```
4551 \def\@citedatax@opt[#1]{%
4552   \def\@cite@opt{, #1}%
4553   \@citedatax[#{#1}]%
4554 }

4555 }{}
```

37 Page numbers

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

```
4556 \def\@begindvi{%
4557   \unvbox \@begindvibox
4558   \Hy@begindvi
4559   \global\let\@begindvi\Hy@begindvi
4560 }
4561 \def\Hy@begindvi{%
4562   \@hyperfixhead
4563   \HyPL@EveryPage
4564 }
4565 \def\pagenumbering#1{%
4566   \global\c@page \@one
4567   \gdef\thepage{\csname @#1\endcsname\c@page}%
4568 }
```

This is needed for some unremembered reason...

```
4569 \let\HYPERPAGEANCHOR\hyperpageanchor
```

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

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

```
4570 \providecommand*\hyper@pagetransition{}
4571 \providecommand*\hyper@pageduration{}
4572 \providecommand*\hyper@pagehidden{}
```

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

\@hyperfixhead

```
4573 \def\@hyperfixhead{%
4574   \Hy@DistillerDestFix
4575   \ifHy@pageanchor
4576     \ifHy@hypertextnames
4577       \ifHy@plainpages
4578         \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
4579       \else
4580         \begingroup
4581           \let\@number\@firstofone
4582           \Hy@unicodetfalse
4583           \pdfstringdef\@the@H@page{\thepage}%
4584         \endgroup
4585         \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
4586       \fi
4587     \else
4588       \Hy@GlobalStepCount\Hy@pagecounter
4589       \gdef\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}%
4590     \fi
4591   \else
4592     \let\Hy@TempPageAnchor\@empty
4593   \fi
4594   \let\H@old@thehead\@thehead
4595   \if~\@thehead~%
4596     \def\H@old@thehead{\hfil}%
4597   \fi
4598   \ifHy@texht
4599     \def\@thehead{}%
4600   \else
4601     \ifHy@seminarslides
4602       \begingroup
4603         \let\leavevmode\relax
4604         \Hy@TempPageAnchor\relax
4605         \hyper@pagetransition
4606         \hyper@pageduration
4607         \hyper@pagehidden
4608       \endgroup
4609     \else
4610       \def\@thehead{%
4611         \Hy@TempPageAnchor\relax
4612         \hyper@pagetransition
4613         \hyper@pageduration
4614         \hyper@pagehidden
4615         \H@old@thehead
4616       }%
4617     \fi
4618   \fi
4619   \ifx\PDF@FinishDoc\@empty
4620   \else
4621     \PDF@FinishDoc
4622     \gdef\PDF@FinishDoc{}%
4623   \fi
4624 }
```

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.

```

4625 \begingroup\expandafter\expandafter\expandafter\endgroup
4626 \expandafter\ifx\csname chapter\endcsname\relax
4627   \def\toclevel@part{0}
4628 \else
4629   \def\toclevel@part{-1}
4630 \fi
4631 \def\toclevel@chapter{0}
4632 \def\toclevel@section{1}
4633 \def\toclevel@subsection{2}
4634 \def\toclevel@subsubsection{3}
4635 \def\toclevel@paragraph{4}
4636 \def\toclevel@subparagraph{5}
4637 \def\toclevel@figure{0}
4638 \def\toclevel@table{0}
4639 \@ifpackageloaded{listings}{%
4640   \providecommand*\theHlstlisting{\thelstlisting}%
4641   \providecommand*\toclevel@lstlisting{0}%
4642 }{}
4643 \@ifpackageloaded{listing}{%
4644   \providecommand*\theHlisting{\thelisting}%
4645   \providecommand*\toclevel@listing{0}%
4646 }{}
4647 \def\addcontentsline#1#2#3{% toc extension, type, tag
4648   \begingroup
4649     \let\label\@gobble
4650     \let\textlatin\@firstofone
4651     \ifx\@currentHref\@empty
4652       \Hy@Warning{%
4653         No destination for bookmark of \string\addcontentsline,%
4654         \MessageBreak destination is added%
4655       }%
4656       \phantomsection
4657     \fi
4658   \expandafter\ifx\csname toclevel@#2\endcsname\relax
4659     \begingroup
4660       \def\Hy@tempa{#1}%
4661       \ifx\Hy@tempa\Hy@bookmarkstype
4662         \Hy@WarningNoLine{bookmark level for unknown #2 defaults to 0}%
4663       \else
4664         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
4665       \fi
4666     \endgroup
4667   \expandafter\gdef\csname toclevel@#2\endcsname{0}%
4668   \fi
4669   \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
4670   \Hy@writebookmark{\csname the#2\endcsname}%
4671     {#3}%
4672     {\@currentHref}%
4673     {\Hy@toclevel}%
4674     {#1}%
4675   \ifHy@verbose
4676     \def\Hy@tempa{#3}%

```

```

4677 \onelevel@sanitize\Hy@tempa
4678 \typeout{pdftex: bookmark at \the\inputlineno:
4679 {\csname the#2\endcsname}
4680 {\Hy@tempa}
4681 {\@currentHref}%
4682 {\Hy@toclevel}%
4683 {#1}%
4684 }%
4685 \fi
4686 \addtocontents{#1}{%
4687 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
4688 }%
4689 \endgroup
4690 }
4691 \def\contentsline#1#2#3#4{%
4692 \ifx\#4\%
4693 \csname l@#1\endcsname{#2}{#3}%
4694 \else
4695 \ifHy@linktocpage
4696 \csname l@#1\endcsname{#2}{%
4697 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
4698 }%
4699 \else
4700 \csname l@#1\endcsname{%
4701 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
4702 }{#3}%
4703 \fi
4704 \fi
4705 }
4706 \end{package}
4707 \check
4708 \checklatex
4709 \checkcommand\def\addcontentsline#1#2#3{%
4710 \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
4711 }
4712 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
4713 \end{check}
4714 \end{package}

```

39 New counters

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

```

4715 \let\H@definecounter\@definecounter
4716 \def\@definecounter#1{%
4717 \H@definecounter{#1}%
4718 \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
4719 }

```

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.

```

4720 \let\H@newctr\@newctr
4721 \def\@newctr#1[#2]{%
4722 \H@newctr#1[#2]%
4723 \expandafter\def\csname theH#1\endcsname{%
4724 \csname the\@ifundefined{theH#2}{H}{H#2}\endcsname.\arabic{#1}%

```

```

4725 }%
4726 }

```

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.

```

4727 \let\Hmake@df@tag@@\make@df@tag@@
4728 \def\make@df@tag@@#1{%
4729   \Hmake@df@tag@@{#1}%
4730   \Hy@GlobalStepCount\Hy@linkcounter
4731   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4732   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4733 }
4734 \let\Hmake@df@tag@@@\make@df@tag@@@
4735 \def\make@df@tag@@@#1{%
4736   \Hmake@df@tag@@@{#1}%
4737   \Hy@GlobalStepCount\Hy@linkcounter
4738   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4739   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4740 }

```

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

```

4741 \@ifpackagewith{hyperref}{pdf $\text{\TeX}$ }{%
4742   \let\H@seteqlabel\@seteqlabel
4743   \def\@seteqlabel#1{%
4744     \H@seteqlabel{#1}%
4745     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
4746     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
4747   }%
4748 }{}

```

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.

```

4749 \let\HyOrg@addtoreset\@addtoreset
4750 \def\@addtoreset#1#2{%
4751   \HyOrg@addtoreset{#1}{#2}%
4752   \expandafter\xdef\csname theH#1\endcsname{%
4753     \expandafter\noexpand

```

```

4754         \csname the\ifundefined{theH#2}{H#2\endcsname
4755         .\noexpand\the\noexpand\value{#1}}%
4756     }%
4757 }

```

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

```

4758 </package>
4759 <*check>
4760 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
4761 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
4762     \ifundefined{c@#2}{\nocounterr{#2}}{%
4763         \ifundefined{c@#3}{\nocnterr{#3}}{%
4764             \addtoreset{#2}{#3}%
4765             \xp\xdef\csname the#2\endcsname{%
4766                 \xp\xnx\csname the#3\endcsname .\nx#1{#2}}%
4767             }%
4768         }%
4769     }%
4770 }%
4771 </check>
4772 <*package>
4773 \ifpackageloaded{amsmath}{%
4774     \ifpackagelater{amsmath}{1999/12/14}{%
4775         \renewcommand*{\numberwithin}[3][\arabic]{%
4776             \ifundefined{c@#2}{\nocounterr{#2}}{%
4777                 \ifundefined{c@#3}{\nocnterr{#3}}{%
4778                     \HyOrg@addtoreset{#2}{#3}%
4779                     \xp\xdef\csname the#2\endcsname{%
4780                         \xp\xnx\csname the#3\endcsname .\nx#1{#2}}%
4781                     }%
4782                     \xp\xdef\csname theH#2\endcsname{%
4783                         \xp\xnx
4784                         \csname the\ifundefined{theH#3}{H#3\endcsname
4785                         .\nx#1{#2}}%
4786                     }%
4787                 }%
4788             }%
4789         }%
4790     }%
4791     \Hy@WarningNoLine{%
4792         \string\numberwithin\space of package 'amsmath'
4793         only fixed\MessageBreak
4794         for version 2000/06/06 v2.12 or newer%
4795     }%
4796 }
4797 }{}

```

41 Included figures

Simply intercept the low level graphics package macro.

```

4798 \ifHy@figures
4799     \let\Hy@Gin@setfile\Gin@setfile
4800     \def\Gin@setfile#1#2#3{%
4801         \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
4802     }

```

```

4803 \fi
4804 \Hy@DisableOption{hyperfigures}

```

42 hyperindex entries

Internal command names are prefixed with `\HyInd@`.

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

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

```

4805 \ifHy@hyperindex
4806   \def\HyInd@ParenLeft{({}%
4807   \def\HyInd@ParenRight{)}}%
4808   \Hy@nextfalse
4809   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
4810   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
4811   \begingroup
4812     \lccode'\|=\expandafter'\HyInd@EncapChar\relax
4813     \lowercase{\endgroup
4814       \ifHy@next
4815         \let\HyInd@org@wrindex\@wrindex
4816         \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
4817         \def\HyInd@@wrindex#1#2|#3|#4\{\%
4818           \ifx\|#3\%
4819             \HyInd@org@wrindex{#1}{#2|hyperpage}%
4820           \else
4821             \def\Hy@temp@A{#3}%
4822             \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4823               \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4824               \relax
4825             \HyInd@org@wrindex{#1}{#2|#3}%
4826           \else
4827             \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
4828           \fi
4829         \fi
4830       }%
4831     \else
4832       \def\@wrindex#1{\@@wrindex#1||\}%
4833       \def\@@wrindex#1|#2|#3\{\%
4834         \iffiles
4835           \ifx\|#2\%
4836             \protected@write\@indexfile{\%
4837               \string\indexentry{#1|hyperpage}{\thepage}%
4838             }%
4839           \else
4840             \def\Hy@temp@A{#2}%
4841             \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
4842               \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
4843               \relax
4844             \protected@write\@indexfile{\%
4845               \string\indexentry{#1|#2}{\thepage}%

```



```

4846         }%
4847         \else
4848             \protected@write\@indexfile{}\{
4849                 \string\indexentry{#1|#2hyperpage}\{thepage}%
4850             }%
4851         \fi
4852     \fi
4853 \fi
4854 \endgroup
4855 \esphack
4856 }%
4857 \fi
4858 }%
4859 \fi
4860 \Hy@DisableOption{hyperindex}
4861 \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.

```

4862 \def\hyperpage#1{\@hyperpage#1----\}
4863 \def\@hyperpage#1--#2--#3\{\%
4864     \ifx\#2\%
4865         \@commahyperpage{#1}%
4866     \else
4867         \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
4868     \fi
4869 }
4870 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
4871 \def\@commahyperpage#1, #2,#3\{\%
4872     \ifx\#2\%
4873         \HyInd@pagelink{#1}%
4874     \else
4875         \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
4876     \fi
4877 }

```

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

```

4878 \def\HyInd@pagelink#1{\%
4879     \begingroup
4880         \toks@={}%
4881         \HyInd@removespaces#1 \@nil
4882     \endgroup
4883 }
4884 \def\HyInd@removespaces#1 #2\@nil{\%
4885     \toks@=\expandafter{\the\toks@#1}%
4886     \ifx\#2\%
4887         \edef\x{\the\toks@}%
4888         \ifx\x\@empty
4889             \else
4890                 \hyperlink{page.\the\toks@}{\the\toks@}%
4891             \fi
4892         \else
4893             \Hy@ReturnAfterFi{\%
4894                 \HyInd@removespaces#2\@nil
4895             }%
4896         \fi
4897 }

```

43 Compatibility with foiltex

```
4898 \@ifclassloaded{foils}{%
4899   \providecommand*\ext@table{lot}%
4900   \providecommand*\ext@figure{lof}%
4901 }{}
```

44 Compatibility with seminar slide package

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

```
4902 \@ifclassloaded{seminar}{%
4903   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}%
4904 }{%
4905   \Hy@seminarslidesfalse
4906 }
4907 \@ifpackageloaded{slidesec}{%
4908   \newcommand\theHslidesection {\arabic{slidesection}}%
4909   \newcommand\theHslidesubsection{%
4910     \theHslidesection.\arabic{slidesubsection}}%
4911   }%
4912   \def\slide@heading[#1]#2{%
4913     \H@refstepcounter{slidesection}%
4914     \@addtoreset{slidesubsection}{slidesection}%
4915     \addtocontents{los}{%
4916       \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
4917       {\@SCTR}{slideheading.\theslidesection}}%
4918     }%
4919     \def\Hy@tempa{#2}%
4920     \ifx\Hy@tempa\@empty
4921     \else
4922       {%
4923         \edef\@currentlabel{%
4924           \csname p@slidesection\endcsname\theslidesection
4925         }%
4926         \makeslideheading{#2}%
4927       }%
4928     \fi
4929     \gdef\theslideheading{#1}%
4930     \gdef\theslidesubheading{}%
4931     \ifHy@bookmarksnumbered
4932       \def\Hy@slidetitle{\theslidesection\space #1}%
4933     \else
4934       \def\Hy@slidetitle{#1}%
4935     \fi
4936     \ifHy@hypertextnames
4937       \ifHy@naturalnames
4938         \hyper@@anchor{slideheading.\theslidesection}{\relax}%
4939         \Hy@writebookmark
4940           {\theslidesection}%
4941           {\Hy@slidetitle}%
4942           {slideheading.\theslidesection}%
4943           {1}%
4944           {toc}%
4945       \else
4946         \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
4947         \Hy@writebookmark
```

```

4948         {\theslidesection}%
4949         {\Hy@slidetitle}%
4950         {slideheading.\theHslidesection}%
4951         {1}%
4952         {toc}%
4953     \fi
4954 \else
4955     \Hy@GlobalStepCount\Hy@linkcounter
4956     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
4957     \Hy@writebookmark
4958         {\theslidesection}%
4959         {\Hy@slidetitle}%
4960         {slideheading.\the\Hy@linkcounter}%
4961         {1}%
4962         {toc}%
4963 \fi
4964 }%
4965 \def\slide@subheading[#1]#2{%
4966     \H@refstepcounter{slidesubsection}%
4967     \addtocontents{los}{%
4968         \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
4969         {\@SCTR}{slideheading.\theslidesubsection}%
4970     }%
4971     \def\Hy@tempa{#2}%
4972     \ifx\Hy@tempa\@empty
4973     \else
4974         {%
4975             \edef\@currentlabel{%
4976                 \csname p@slidesubsection\endcsname\theslidesubsection
4977             }%
4978             \makeslidesubheading{#2}%
4979         }%
4980     \fi
4981     \gdef\theslidesubheading{#1}%
4982     \ifHy@bookmarksnumbered
4983         \def\Hy@slidetitle{\theslidesubsection\space #1}%
4984     \else
4985         \def\Hy@slidetitle{#1}%
4986     \fi
4987     \ifHy@hypertextnames
4988     \ifHy@naturalnames
4989         \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
4990         \Hy@writebookmark
4991             {\theslidesubsection}%
4992             {\Hy@slidetitle}%
4993             {slideheading.\theslidesubsection}%
4994             {2}%
4995             {toc}%
4996     \else
4997         \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
4998         \Hy@writebookmark
4999             {\theslidesubsection}%
5000             {\Hy@slidetitle}%
5001             {slideheading.\theHslidesubsection}%
5002             {2}%
5003             {toc}%
5004     \fi

```

```

5005 \else
5006 \Hy@GlobalStepCount\Hy@linkcounter
5007 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
5008 \Hy@writebookmark
5009 {\theslidesubsection}%
5010 {\Hy@slidetitle}%
5011 {slideheading.\the\Hy@linkcounter}%
5012 {1}%
5013 {toc}%
5014 \fi
5015 }%
5016 \providecommand*{\listslidenam}{List of Slides}%
5017 \def\listofslides{%
5018 \section*{%
5019 \listslidenam
5020 \@mkboth{%
5021 \expandafter\MakeUppercase\listslidenam
5022 }{%
5023 \expandafter\MakeUppercase\listslidenam
5024 }%
5025 }%
5026 \def\l@slide##1##2##3##4{%
5027 \slide@undottedcline{%
5028 \slidenumberline{##3}{\hyperlink{##4}{##2}}%
5029 }{}}%
5030 }%
5031 \let\l@subslide\l@slide
5032 \@startlos
5033 }%
5034 \def\slide@contents{%
5035 \def\l@slide##1##2##3##4{%
5036 \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
5037 }%
5038 \let\l@subslide\@gobblefour
5039 \@startlos
5040 }%
5041 \def\Slide@contents{%
5042 \def\l@slide##1##2##3##4{%
5043 \ifcase\lslide@flag
5044 \message{##1 ** \the\c@slidesection}%
5045 \ifnum##1>\c@slidesection
5046 \def\lslide@flag{1}%
5047 {%
5048 \large
5049 \slide@ccline{%
5050 \slidenumberline{$\rightarrow\bullet$}%
5051 {\hyperlink{##4}{##2}}%
5052 }{##3}%
5053 }%
5054 \else
5055 {%
5056 \large
5057 \slide@ccline{%
5058 \slidenumberline{$\surd\;\bullet$}%
5059 {\hyperlink{##4}{##2}}%
5060 }{##3}%
5061 }%

```

```

5062     \fi
5063   \or
5064     \def\lslide@flag{2}%
5065     {%
5066       \large
5067       \slide@cline{%
5068         \slidenumberline{$\bullet$}%
5069         {\hyperlink{##4}{##2}}%
5070       }{##3}%
5071     }%
5072   \or
5073     {%
5074       \large
5075       \slide@cline{%
5076         \slidenumberline{$\bullet$}%
5077         {\hyperlink{##4}{##2}}%
5078       }{##3}%
5079     }%
5080   \fi
5081 }%
5082 \def\l@subslide##1##2##3##4{%
5083   \ifnum\lslide@flag=1
5084     \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
5085   \fi
5086 }%
5087 \def\lslide@flag{0}%
5088 \@startlos
5089 }%
5090 }{}

```

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.)

```

5091 \ifHy@texht
5092   \expandafter\endinput
5093 \fi
5094 \let\real@setref\@setref
5095 \def\@setref#1#2#3{% csname, extract group, refname
5096   \ifx#1\relax
5097     \protect\G@refundefinedtrue
5098     \nfss@text{\reset@font\bfseries ??}%
5099     \@latex@warning{%
5100       Reference ‘#3’ on page \thepage \space undefined%
5101     }%
5102   \else
5103     \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
5104   \fi
5105 }

```

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

```

5106 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
5107   \begingroup
5108     \toks0={\hyper@@link{#5}{#4}}%
5109     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
5110   \edef\x{\endgroup
5111     \the\toks0 \the\toks1 }%
5112   }%

```

```

5113 \x
5114 }
5115 \def\@pagesetref#1#2#3{% csname, extract macro, ref
5116 \ifx#1\relax
5117 \protect\G@refundefinedtrue
5118 \nfss@text{\reset@font\bfseries ??}%
5119 \@latex@warning{%
5120 Reference ‘#3’ on page \thepage \space undefined%
5121 }%
5122 \else
5123 \protect\hyper@@link
5124 {\expandafter\@fifthoffive#1}%
5125 {page.\expandafter\@secondoffive#1}%
5126 {\expandafter\@secondoffive#1}%
5127 \fi
5128 }

5129 \</package>
5130 \< *check>
5131 \checklatex
5132 \checkcommand\def\@setref#1#2#3{%
5133 \ifx#1\relax
5134 \protect\G@refundefinedtrue
5135 \nfss@text{\reset@font\bfseries ??}%
5136 \@latex@warning{%
5137 Reference ‘#3’ on page \thepage\space undefined%
5138 }%
5139 \else
5140 \expandafter#2#1\<null>
5141 \fi
5142 }
5143 \</check>
5144 \< *package>

```

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

```

5145 \def\@refstar#1{%
5146 \Hy@safe@activetrue
5147 \expandafter\real@setref\csname r@#1\endcsname\@firstoffive{#1}%
5148 \Hy@safe@activetrue
5149 }
5150 \def\@pagerefstar#1{%
5151 \Hy@safe@activetrue
5152 \expandafter\real@setref\csname r@#1\endcsname\@secondoffive{#1}%
5153 \Hy@safe@activetrue
5154 }
5155 \DeclareRobustCommand\autoref{%
5156 \@ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}%
5157 }
5158 \def\HyRef@autoref#1#2{%
5159 \begingroup
5160 \Hy@safe@activetrue
5161 \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
5162 \endgroup
5163 }
5164 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
5165 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
5166 \edef\HyRef@thisref{\expandafter\@fourthoffive#1\@empty\@empty\@empty}%

```

```

5167 \expandafter\HyRef@testreftype\HyRef@thisref\\%
5168 \Hy@safe@activesfalse
5169 #3{%
5170 \expandafter\@fifthoffive#1%
5171 }{%
5172 \expandafter\@fourthoffive#1\@empty\@empty\@empty
5173 }{%
5174 \HyRef@currentHtag
5175 \expandafter\@firstoffive#1\@empty\@empty\@empty
5176 \null
5177 }%
5178 \else
5179 \protect\G@refundefinedtrue
5180 \nfss@text{\reset@font\bfseries ??}%
5181 \@latex@warning{%
5182 Reference ‘#2’ on page \thepage\space undefined%
5183 }%
5184 \fi
5185 }
5186 \def\HyRef@testreftype#1.#2\\{%
5187 \@ifundefined{#1autorefname}{%
5188 \@ifundefined{#1name}{%
5189 \def\HyRef@currentHtag{%
5190 \@latex@warning{no tag name for #1 at \the\inputlineno}%
5191 }{%
5192 \edef\HyRef@currentHtag{%
5193 \expandafter\noexpand\csname#1name\endcsname
5194 \noexpand~%
5195 }%
5196 }%
5197 }{%
5198 \edef\HyRef@currentHtag{%
5199 \expandafter\noexpand\csname#1autorefname\endcsname
5200 \noexpand~%
5201 }%
5202 }%
5203 }
5204 \def\HyRef@currentHtag{}

```

Defaults for the names that \autoref uses.

```

5205 \providecommand*{\AMSautorefname}{\equationautorefname}
5206 \providecommand*{\Hfootnoteautorefname}{\footnoteautorefname}
5207 \providecommand*{\Itemautorefname}{\itemautorefname}
5208 \providecommand*{\itemautorefname}{item}
5209 \providecommand*{\equationautorefname}{Equation}
5210 \providecommand*{\footnoteautorefname}{footnote}
5211 \providecommand*{\itemautorefname}{item}
5212 \providecommand*{\figureautorefname}{Figure}
5213 \providecommand*{\tableautorefname}{Table}
5214 \providecommand*{\partautorefname}{Part}
5215 \providecommand*{\appendixautorefname}{Appendix}
5216 \providecommand*{\chapterautorefname}{chapter}
5217 \providecommand*{\sectionautorefname}{section}
5218 \providecommand*{\subsectionautorefname}{subsection}
5219 \providecommand*{\subsubsectionautorefname}{subsubsection}
5220 \providecommand*{\paragraphautorefname}{paragraph}
5221 \providecommand*{\subparagraphautorefname}{subparagraph}
5222 \providecommand*{\FancyVerbLineautorefname}{line}

```

```

5223 \providecommand*\theoremautorefname{Theorem}
5224 \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`.

```

5225 < *pdfTeX | dvipdfm | vtex | pdfmarkbase | dviwindo >
5226 \begingroup\expandafter\expandafter\expandafter\endgroup
5227 \expandafter\ifx\csname pdfescapestring\endcsname\relax
5228   \begingroup
5229     \catcode'\| = 0 %
5230     \@makeother\| %
5231     \@firstofone{ \endgroup
5232       \def\Hy@pstringdef#1#2{%
5233         \edef#1{#2}%
5234         \@onelevel@sanitize#1%
5235         \edef#1{\expandafter\Hy@ExchangeBackslash#1\|@nil}%
5236         \edef#1{\expandafter\Hy@ExchangeLeftParenthesis#1(\|@nil}%
5237         \edef#1{\expandafter\Hy@ExchangeRightParenthesis#1)\|@nil}%
5238       }%
5239       \def\Hy@ExchangeBackslash#1\#2\|@nil{%
5240         #1%
5241         \ifx\| \#2\| %
5242           \else
5243             \| %
5244             \Hy@ReturnAfterFi{%
5245               \Hy@ExchangeBackslash#2\|@nil
5246             }%
5247           \fi
5248         }%
5249       }
5250       \def\Hy@ExchangeLeftParenthesis#1(\#2\|@nil{%
5251         #1%
5252         \ifx\| \#2\| %
5253           \else
5254             \@backslashchar(%
5255             \Hy@ReturnAfterFi{%
5256               \Hy@ExchangeLeftParenthesis#2\|@nil
5257             }%
5258           \fi
5259         }
5260       \def\Hy@ExchangeRightParenthesis#1)\#2\|@nil{%
5261         #1%
5262         \ifx\| \#2\| %
5263           \else
5264             \@backslashchar)%
5265             \Hy@ReturnAfterFi{%
5266               \Hy@ExchangeRightParenthesis#2\|@nil

```



```

5267     }%
5268     \fi
5269 }
5270 \else
5271   \def\Hy@pstringdef#1#2{%
5272     \edef#1{\pdfescapestring{#2}}%
5273   }%
5274 \fi
5275 </pdfTeX | dvipdfm | vTeX | pdfmarkbase | dviwindo>

```

45.2 pdfTeX

```
5276 <*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:

```

5277 \def\setpdflinkmargin#1{\pdflinkmargin#1}
5278 \ifx\pdfstartlink\@undefined% less than version 14
5279   \let\pdfstartlink\pdfannotlink
5280   \let\pdflinkmargin\@tempdima
5281   \let\pdfxform\pdfform
5282   \let\pdflastxform\pdflastform
5283   \let\pdfrefxform\pdfrefform
5284 \else
5285   \pdflinkmargin1pt
5286 \fi

```

First set up the default linking

```
5287 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```

5288 \def\new@pdflink#1{%
5289   \ifHy@verbose
5290     \typeout{pdfTeX: define anchor at line \the\inputlineno: #1}%
5291   \fi
5292   \Hy@SaveLastskip
5293   \Hy@pstringdef\Hy@pstringDest{#1}%
5294   \Hy@DestName\Hy@pstringDest\@pdfview
5295   \Hy@RestoreLastskip
5296 }
5297 \let\pdf@endanchor\@empty

```

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

```

5298 \def\Hy@DestName#1#2{%
5299   \pdfdest name{#1}#2\relax
5300 }

```

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.

```

5301 \providecommand*\@pdfborder{0 0 1}
5302 \providecommand*\@pdfborderstyle{}
5303 \def\Hy@undefinedname{UNDEFINED}
5304 \def\find@pdflink#1#2{%
5305   \leavevmode

```

```

5306 \protected@edef\Hy@testname{#2}%
5307 \ifx\Hy@testname\@empty
5308 \let\Hy@testname\Hy@undefinedname
5309 \else
5310 \Hy@pstringdef\Hy@testname\Hy@testname
5311 \fi
5312 \Hy@StartlinkName{%
5313 \Hy@setpdfborder
5314 \ifx\@pdfhighlight\@empty
5315 \else
5316 /H\@pdfhighlight
5317 \fi
5318 /C[\CurrentBorderColor]%
5319 }\Hy@testname
5320 \expandafter\Hy@colorlink\csname @#1color\endcsname
5321 }
5322 \def\Hy@StartlinkName#1#2{%
5323 \pdfstartlink attr{#1}goto name{#2}\relax
5324 }
5325 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
5326 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
5327 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
5328 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
5329 \def\hyper@linkstart#1#2{%
5330 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
5331 \find@pdflink{#1}{#2}}
5332 \def\hyper@linkend{\close@pdflink}
5333 \def\hyper@link#1#2#3{%
5334 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
5335 \find@pdflink{#1}{#2}#3\close@pdflink
5336 }
5337 \def\CurrentBorderColor{\@linkbordercolor}
5338 \def\hyper@linkurl#1#2{%
5339 \begingroup
5340 \Hy@pstringdef\Hy@pstringURI{#2}%
5341 \hyper@chars
5342 \leavevmode
5343 \pdfstartlink
5344 attr{%
5345 \Hy@setpdfborder
5346 \ifx\@pdfhighlight\@empty
5347 \else
5348 /H\@pdfhighlight
5349 \fi
5350 /C[\@urlbordercolor]%
5351 }%
5352 user{%
5353 /Subtype/Link%
5354 /A<<%
5355 /Type/Action%
5356 /S/URI%
5357 /URI(\Hy@pstringURI)%
5358 >>%
5359 }%
5360 \relax
5361 \Hy@colorlink\@urlcolor#1%
5362 \close@pdflink

```

```

5363 \endgroup
5364 }
5365 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
5366 \beginngroup
5367 \Hy@pstringdef\Hy@pstringF{#2}%
5368 \Hy@pstringdef\Hy@pstringD{#3}%
5369 \leavevmode
5370 \pdfstartlink
5371 attr{%
5372 \Hy@setpdfborder
5373 \ifx\@pdfhighlight\@empty
5374 \else
5375 /H\@pdfhighlight
5376 \fi
5377 /C[\@filebordercolor]%
5378 }%
5379 user {%
5380 /Subtype/Link%
5381 /A<<%
5382 /F(\Hy@pstringF)%
5383 /S/GoToR%
5384 \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}

5385 \ifx\#3\%
5386 /D[0 \@pdfstartview]%
5387 \else
5388 /D(\Hy@pstringD)%
5389 \fi
5390 >>%
5391 }%
5392 \relax
5393 \Hy@colorlink\@filecolor#1%
5394 \close@pdflink
5395 \endgroup
5396 }
5397 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
5398 \beginngroup
5399 \Hy@pstringdef\Hy@pstringF{#1}%
5400 \Hy@pstringdef\Hy@pstringP{#3}%
5401 \leavevmode
5402 \pdfstartlink
5403 attr{%
5404 \Hy@setpdfborder
5405 \ifx\@pdfhighlight\@empty
5406 \else
5407 /H\@pdfhighlight
5408 \fi

```

```

5409         /C[\@runbordercolor]%
5410     }%
5411     user {%
5412         /Subtype/Link%
5413         /A<<%
5414         /F(\Hy@pstringF)%
5415         /S/Launch%
5416         \ifHy@newwindow /NewWindow true\fi
5417         \ifx\#3\%
5418         \else
5419             /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
5420         \fi
5421     >>%
5422 }%
5423 \relax
5424 \Hy@colorlink\@filecolor#2%
5425 \close@pdflink
5426 \endgroup
5427 }

```

\@pdfproducer

```

5428 \ifx\@pdfproducer\relax
5429 \def\@pdfproducer{pdfTeX}
5430 \ifx\eTeXversion\@undefined
5431 \else
5432     \ifx\eTeXversion\relax
5433     \else
5434         \ifnum\eTeXversion>0 %
5435             \def\@pdfproducer{pdfTeX}
5436         \fi
5437     \fi
5438 \fi
5439 \ifx\pdfTeXversion\@undefined
5440 \else
5441     \ifnum\pdfTeXversion<100 %
5442         \edef\@pdfproducer{%
5443             \@pdfproducer
5444             \the\pdfTeXversion.\pdfTeXrevision
5445         }
5446     \else
5447         \ifnum\pdfTeXversion<130 %
5448             \edef\@pdfproducer{%
5449                 \@pdfproducer-%
5450                 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
5451                 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
5452                 \pdfTeXrevision
5453             }
5454         \else
5455             \ifnum\pdfTeXversion<140 %
5456             \else
5457                 \def\@pdfproducer{pdfTeX}%
5458             \fi
5459             \edef\@pdfproducer{%
5460                 \@pdfproducer-%
5461                 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
5462                 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
5463                 \pdfTeXrevision

```

```

5464     }%
5465     \fi
5466     \fi
5467     \fi
5468 \fi

```

\PDF@SetupDox

```

5469 \def\PDF@SetupDoc{%
5470   \ifx\@pdfpagescrop\@empty
5471   \else
5472     \edef\process@me{%
5473       \pdfpagesattr={%
5474         /CropBox[\@pdfpagescrop]%
5475         \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
5476         \else
5477           ^^J\the\pdfpagesattr
5478         \fi
5479       }%
5480     }%
5481     \process@me
5482   \fi
5483   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
5484   \pdfcatalog{%
5485     /PageMode/\@pdfpagemode
5486     \ifx\@baseurl\@empty
5487     \else
5488       /URI<</Base(\Hy@pstringB)>>%
5489     \fi
5490   }%
5491   \ifx\@pdfstartview\@empty
5492   \else
5493     openaction goto page \@pdfstartpage {\@pdfstartview}%
5494   \fi
5495   \edef\Hy@temp{%
5496     \ifHy@toolbar\else /HideToolbar true\fi
5497     \ifHy@menubar\else /HideMenubar true\fi
5498     \ifHy>windowui\else /HideWindowUI true\fi
5499     \ifHy@fitwindow /FitWindow true\fi
5500     \ifHy@centerwindow /CenterWindow true\fi
5501     \ifHy@displaydoctitle /DisplayDocTitle true\fi
5502     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
5503     \Hy@UseNameKey{Direction}\@pdfdirection
5504     \Hy@UseNameKey{ViewArea}\@pdfviewarea
5505     \Hy@UseNameKey{ViewClip}\@pdfviewclip
5506     \Hy@UseNameKey{PrintArea}\@pdfprintarea
5507     \Hy@UseNameKey{PrintClip}\@pdfprintclip
5508     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
5509     \Hy@UseNameKey{Duplex}\@pdfduplex
5510     \ifx\@pdfpicktraybypdfsize\@empty
5511     \else
5512       /PickTrayByPDFSize \@pdfpicktraybypdfsize
5513     \fi
5514     \ifx\@pdfprintpagerange\@empty
5515     \else
5516       /PrintPageRange[\@pdfprintpagerange]%
5517     \fi
5518     \ifx\@pdfnumcopies\@empty

```

```

5519     \else
5520         /NumCopies \@pdfnumcopies
5521     \fi
5522 }%
5523 \pdfcatalog{%
5524     \ifx\Hy@temp\@empty
5525     \else
5526         /ViewerPreferences<<\Hy@temp>>%
5527     \fi
5528     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
5529     \ifx\@pdflang\@empty
5530     \else
5531         /Lang(\@pdflang)%
5532     \fi
5533 }%
5534 }

```

\PDF@FinishDoc

```

5535 \def\PDF@FinishDoc{%
5536     \Hy@UseMaketitleInfos
5537     \pdfinfo{%
5538         /Author(\@pdfauthor)%
5539         /Title(\@pdftitle)%
5540         /Subject(\@pdfsubject)%
5541         /Creator(\@pdfcreator)%
5542         \ifx\@pdfcreationdate\@empty
5543         \else
5544             /CreationDate(\@pdfcreationdate)%
5545         \fi
5546         \ifx\@pdfmoddate\@empty
5547         \else
5548             /ModDate(\@pdfmoddate)%
5549         \fi
5550         \ifx\@pdfproducer\relax
5551         \else
5552             /Producer(\@pdfproducer)%
5553         \fi
5554         /Keywords(\@pdfkeywords)%
5555     }%
5556     \Hy@DisableOption{pdfauthor}%
5557     \Hy@DisableOption{pdftitle}%
5558     \Hy@DisableOption{pdfsubject}%
5559     \Hy@DisableOption{pdfcreator}%
5560     \Hy@DisableOption{pdfcreationdate}%
5561     \Hy@DisableOption{pdfmoddate}%
5562     \Hy@DisableOption{pdfproducer}%
5563     \Hy@DisableOption{pdfkeywords}%
5564 }

```

\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.

```

5565 \def\hyper@pagetransition{%
5566     \ifx\@pdfpagetransition\relax
5567     \else
5568         \expandafter\Hy@RemoveTransPageAttr\the\pdfpageattr^^J/Trans{}>>\END
5569     \ifx\@pdfpagetransition\@empty

```

```

5570     \else
5571         \edef\@processme{%
5572             \global\pdfpageattr{%
5573                 \the\pdfpageattr
5574                 ^^J/Trans << /S /\@pdfpagetransition\space >>%
5575             }%
5576         }%
5577         \@processme
5578     \fi
5579 \fi
5580 }

```

`\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.

```

5581 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
5582     \ifx\#2\%
5583         \global\pdfpageattr{#1}%
5584     \else
5585         \Hy@RemoveTransPageAttr#1#4\END
5586     \fi
5587 }

```

`\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`.

```

5588 \def\hyper@pageduration{%
5589     \ifx\@pdfpageduration\relax
5590     \else
5591         \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{ } \END
5592         \ifx\@pdfpageduration\@empty
5593         \else
5594             \edef\@processme{%
5595                 \global\pdfpageattr{%
5596                     \the\pdfpageattr
5597                     ^^J/Dur \@pdfpageduration\space
5598                 }%
5599             }%
5600             \@processme
5601         \fi
5602     \fi
5603 }

```

`\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.

```

5604 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
5605     \ifx\#2\%
5606         \global\pdfpageattr{#1}%
5607     \else
5608         \Hy@RemoveDurPageAttr#1#4\END
5609     \fi
5610 }

```

`\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).

```

5611 \def\hyper@pagehidden{%
5612   \ifHy@useHidKey
5613     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
5614     \ifHy@pdfpagehidden
5615       \edef\@processme{%
5616         \global\pdfpageattr{%
5617           \the\pdfpageattr
5618             ^^J/Hid true % SPACE
5619         }%
5620       }%
5621       \@processme
5622     \fi
5623   \fi
5624 }

```

`\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.

```

5625 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
5626   \ifx\#2\%
5627     \global\pdfpageattr{#1}%
5628   \else
5629     \Hy@RemoveHidPageAttr#1#4\END
5630   \fi
5631 }

```

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.

```

5632 \pdfoutput=1
5633 \pdfcompresslevel=9
5634 \AtBeginDocument{%
5635   \ifHy@setpagesize
5636     \expandafter\@firstofone
5637   \else
5638     \expandafter\@gobble
5639   \fi
5640 }%
5641 \@ifclassloaded{seminar}{%
5642   \setlength{\pdfhorigin}{1truein}%
5643   \setlength{\pdfvorigin}{1truein}%
5644   \ifportrait
5645     \ifdim\paperwidth=\z@
5646     \else
5647       \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
5648     \fi
5649     \ifdim\paperheight=\z@
5650     \else
5651       \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
5652     \fi
5653   \else
5654     \ifdim\paperheight=\z@
5655     \else
5656       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%

```



```

5657         \fi
5658         \ifdim\paperwidth=\z@
5659         \else
5660             \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
5661         \fi
5662     \fi
5663 }{%
5664     \@ifundefined{stockwidth}{%
5665         \ifdim\paperwidth=\z@
5666         \else
5667             \setlength{\pdfpagewidth}{\paperwidth}%
5668         \fi
5669         \ifdim\paperheight=\z@
5670         \else
5671             \setlength{\pdfpageheight}{\paperheight}%
5672         \fi
5673     }{%
5674         \ifdim\stockwidth=\z@
5675         \else
5676             \setlength{\pdfpagewidth}{\stockwidth}%
5677         \fi
5678         \ifdim\stockheight=\z@
5679         \else
5680             \setlength{\pdfpageheight}{\stockheight}%
5681         \fi
5682     }%
5683 }%
5684 }%
5685 \Hy@DisableOption{setpagesize}%
5686 }
5687 \def\Acrobatmenu#1#2{%
5688     \leavevmode
5689     \pdfstartlink
5690     attr{%
5691         \Hy@setpdfborder
5692         \ifx\@pdfhighlight\@empty
5693         \else
5694             /H\@pdfhighlight
5695         \fi
5696         /C[\@menubordercolor]%
5697     }%
5698     user{
5699         /Subtype /Link
5700         /A<<%
5701             /S/Named/N/#1%
5702         >>%
5703     }%
5704     \relax
5705     \Hy@colorlink\@menucolor#2\close@pdflink
5706 }
5707 </pdfTeX>
5708 <*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` com-

mands:

href: html:

name: html:

end: html:

image: html:

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

The *href*, *name* and *end* commands are used to do the basic hypertext operations of establishing links between sections of documents. The *image* command is intended (as with current html viewers) to place an image of arbitrary graphical format on the page in the current location. The *base_name* command is be used to communicate to the *dvi* viewer the full (URL) location of the current document so that files specified by relative URL's may be retrieved correctly.

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

```
5709 \def\PDF@FinishDoc{}
5710 \def\PDF@SetupDoc{%
5711   \ifx\@baseurl\@empty
5712   \else
5713     \special{html:<base href="\@baseurl">}%
5714   \fi
5715 }
5716 \def\hyper@anchor#1{%
5717   \Hy@SaveLastskip
5718   \begingroup
5719     \let\protect=\string
5720     \hyper@chars
5721     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
5722   \endgroup
5723   \Hy@activeanchortrue
5724   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5725   \special{html:</a>}%
5726   \Hy@activeanchorfalse
5727   \Hy@RestoreLastskip
5728 }
5729 \def\hyper@anchorstart#1{%
5730   \Hy@SaveLastskip
5731   \begingroup
5732     \hyper@chars
5733     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
5734   \endgroup
5735   \Hy@activeanchortrue
5736 }
```

```

5737 \def\hyper@anchorend{%
5738   \special{html:</a>}}%
5739   \Hy@activeanchorfalse
5740   \Hy@RestoreLastskip
5741 }
5742 \def\@urltype{url}
5743 \def\hyper@linkstart#1#2{%
5744   \expandafter\Hy@colorlink\csname @#1color\endcsname
5745   \def\Hy@tempa{#1}%
5746   \ifx\Hy@tempa\@urltype
5747     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
5748   \else
5749     \begingroup
5750     \hyper@chars
5751     \special{html:<a href=\hyper@quote\##2\hyper@quote>}}%
5752   \endgroup
5753   \fi
5754 }
5755 \def\hyper@linkend{%
5756   \special{html:</a>}}%
5757   \Hy@endcolorlink
5758 }
5759 \def\hyper@linkfile#1#2#3{%
5760   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
5761 }
5762 \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.

```

5763   \leavevmode
5764   \ifHy@raiselinks
5765     \setbox\@tempboxa=\color@hbox #1\color@endbox
5766     \@linkdim\dp\@tempboxa
5767     \lower\@linkdim\hbox{%
5768       \hyper@chars
5769       \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
5770     }%
5771     \Hy@colorlink\@urlcolor#1%
5772     \@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).

```

5773     \advance\@linkdim by -6.5\p@
5774     \raise\@linkdim\hbox{\special{html:</a>}}%
5775     \Hy@endcolorlink
5776   \else
5777     \begingroup
5778     \hyper@chars
5779     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
5780     \Hy@colorlink\@urlcolor#1%
5781     \special{html:</a>}}%
5782     \Hy@endcolorlink
5783   \endgroup
5784   \fi
5785 }
5786 \def\hyper@link#1#2#3{%

```

```

5787 \hyper@linkurl{#3}{\##2}%
5788 }

5789 \def\hyper@image#1#2{%
5790 \begingroup
5791 \hyper@chars
5792 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
5793 \endgroup
5794 }
5795 </hypertex>
5796 <*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.

```

5797 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
5798 \def\hyper@anchor#1{%
5799 \Hy@SaveLastskip
5800 \begingroup
5801 \let\protect=\string
5802 \special{mark: #1}%
5803 \endgroup
5804 \Hy@activeanchortrue
5805 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
5806 \Hy@activeanchorfalse
5807 \Hy@RestoreLastskip
5808 }
5809 \def\hyper@anchorstart#1{%
5810 \Hy@SaveLastskip
5811 \special{mark: #1}%
5812 \Hy@activeanchortrue
5813 }
5814 \def\hyper@anchorend{%
5815 \Hy@activeanchorfalse
5816 \Hy@RestoreLastskip
5817 }
5818 \def\hyper@linkstart#1#2{%
5819 \expandafter\Hy@colorlink\csname @#1color\endcsname
5820 \special{button:
5821 10000000
5822 \number\baselineskip\space
5823 #2%
5824 }%
5825 }
5826 \def\hyper@linkend{%
5827 \Hy@endcolorlink
5828 }
5829 \def\hyper@link#1#2#3{%

```

```

5830 \setbox\@tempboxa=\color@hbox #3\color@endbox
5831 \leavevmode
5832 \ifHy@raiselinks
5833 \@linkdim\dp\@tempboxa
5834 \lower\@linkdim\hbox{%
5835 \special{button:
5836 \number\wd\@tempboxa\space
5837 \number\ht\@tempboxa\space
5838 #2%
5839 }%
5840 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
5841 \Hy@endcolorlink
5842 }%
5843 \@linkdim\ht\@tempboxa
5844 \advance\@linkdim by -6.5\p@
5845 \raise\@linkdim\hbox{}}%
5846 \else
5847 \special{button:
5848 \number\wd\@tempboxa\space
5849 \number\ht\@tempboxa\space
5850 #2%
5851 }%
5852 \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
5853 \fi
5854 }
5855 \def\hyper@linkurl#1#2{%
5856 \begingroup
5857 \hyper@chars
5858 \leavevmode
5859 \setbox\@tempboxa=\color@hbox #1\color@endbox
5860 \ifHy@raiselinks
5861 \@linkdim\dp\@tempboxa
5862 \lower\@linkdim\hbox{%
5863 \special{button:
5864 \number\wd\@tempboxa\space
5865 \number\ht\@tempboxa\space
5866 launch: \wwwbrowser\space
5867 #2%
5868 }%
5869 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5870 }%
5871 \@linkdim\ht\@tempboxa
5872 \advance\@linkdim by -6.5\p@
5873 \raise\@linkdim\hbox{}}%
5874 \else
5875 \special{button:
5876 \number\wd\@tempboxa\space
5877 \number\ht\@tempboxa\space
5878 launch: \wwwbrowser\space
5879 #2%
5880 }%
5881 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
5882 \fi
5883 \endgroup
5884 }
5885 \def\hyper@linkfile#1#2#3{%
5886 \begingroup

```

```

5887 \hyper@chars
5888 \leavevmode
5889 \setbox\@tempboxa=\color@hbox #1\color@endbox
5890 \ifHy@raiselinks
5891 \@linkdim\dp\@tempboxa
5892 \lower\@linkdim\hbox{%
5893 \special{button:
5894 \number\wd\@tempboxa\space
5895 \number\ht\@tempboxa\space
5896 #3,
5897 file: #2%
5898 }%
5899 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5900 }%
5901 \@linkdim\ht\@tempboxa
5902 \advance\@linkdim by -6.5\p@
5903 \raise\@linkdim\hbox{}}%
5904 \else
5905 \special{button:
5906 \number\wd\@tempboxa\space
5907 \number\ht\@tempboxa\space
5908 #3,
5909 file: #2
5910 }%
5911 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
5912 \fi
5913 \endgroup
5914 }
5915 \ifx\@pdfproducer\relax
5916 \def\@pdfproducer{dviwindo + Distiller}
5917 \fi
5918 \def\PDF@FinishDoc{%
5919 \Hy@UseMaketitleInfos
5920 \special{PDF: Keywords \@pdfkeywords}%
5921 \special{PDF: Title \@pdftitle}%
5922 \special{PDF: Creator \@pdfcreator}%
5923 \ifx\@pdfcreationdate\@empty
5924 \else
5925 \special{PDF: CreationDate \@pdfcreationdate}%
5926 \fi
5927 \ifx\@pdfmoddate\@empty
5928 \else
5929 \special{PDF: ModDate \@pdfmoddate}%
5930 \fi
5931 \special{PDF: Author \@pdfauthor}%
5932 \ifx\@pdfproducer\relax
5933 \else
5934 \special{PDF: Producer \@pdfproducer}%
5935 \fi
5936 \special{PDF: Subject \@pdfsubject}%
5937 \Hy@DisableOption{pdfauthor}%
5938 \Hy@DisableOption{pdftitle}%
5939 \Hy@DisableOption{pdfsubject}%
5940 \Hy@DisableOption{pdfcreator}%
5941 \Hy@DisableOption{pdfcreationdate}%
5942 \Hy@DisableOption{pdfmoddate}%
5943 \Hy@DisableOption{pdfproducer}%

```

```

5944 \Hy@DisableOption{pdfkeywords}%
5945 }
5946 \def\PDF@SetupDoc{%
5947 \ifx\@baseurl\@empty
5948 \else
5949 \special{PDF: Base \@baseurl}%
5950 \fi
5951 \ifx\@pdfpagescrop\@empty\else
5952 \special{PDF: BBox \@pdfpagescrop}%
5953 \fi
5954 \pdfmark{pdfmark=/DOCVIEW,
5955 Page=\@pdfstartpage,
5956 View=\@pdfstartview,
5957 PageMode=/\@pdfpagemode
5958 }%
5959 \ifx\@pdfpagescrop\@empty
5960 \else
5961 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
5962 \fi
5963 \edef\Hy@temp{%
5964 \ifHy@toolbar\else /HideToolbar true\fi
5965 \ifHy@menubar\else /HideMenubar true\fi
5966 \ifHy>windowui\else /HideWindowUI true\fi
5967 \ifHy@fitwindow /FitWindow true\fi
5968 \ifHy@centerwindow /CenterWindow true\fi
5969 \ifHy@displaydoctitle /DisplayDocTitle true\fi
5970 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
5971 \Hy@UseNameKey{Direction}\@pdfdirection
5972 \Hy@UseNameKey{ViewArea}\@pdfviewarea
5973 \Hy@UseNameKey{ViewClip}\@pdfviewclip
5974 \Hy@UseNameKey{PrintArea}\@pdfprintarea
5975 \Hy@UseNameKey{PrintClip}\@pdfprintclip
5976 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
5977 \Hy@UseNameKey{Duplex}\@pdfduplex
5978 \ifx\@pdfpicktraybypdfsize\@empty
5979 \else
5980 /PickTrayByPDFSize \@pdfpicktraybypdfsize
5981 \fi
5982 \ifx\@pdfprintpagerange\@empty
5983 \else
5984 /PrintPageRange[\@pdfprintpagerange]%
5985 \fi
5986 \ifx\@pdfnumcopies\@empty
5987 \else
5988 /NumCopies \@pdfnumcopies
5989 \fi
5990 }%
5991 \pdfmark{pdfmark=/PUT,
5992 Raw={%
5993 \string{Catalog}\string} <<
5994 \ifx\Hy@temp\@empty
5995 \else
5996 /ViewerPreferences<<\Hy@temp>>%
5997 \fi
5998 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
5999 \ifx\@pdflang\@empty
6000 \else

```

```

6001         /Lang(\@pdflang)%
6002     \fi
6003     >>%
6004 }%
6005 }%
6006 }
6007 </dviwindo>
6008 <*dvipdfm>

```

45.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

6009 \newsavebox{\pdfm@box}
6010 \def\@pdfm@mark#1{\special{pdf:#1}}
6011 \def\@pdfm@dest#1{%
6012   \Hy@SaveLastskip
6013   \beginingroup
6014     \Hy@pstringdef\Hy@pstringDest{#1}%
6015     \def\x{XYZ}%
6016     \ifx\x\@pdfview
6017       \def\x{XYZ @xpos @ypos null}%
6018     \else
6019       \def\x{FitH}%
6020       \ifx\x\@pdfview
6021         \def\x{FitH @ypos}%
6022       \else
6023         \def\x{FitBH}%
6024         \ifx\x\@pdfview
6025           \def\x{FitBH @ypos}%
6026         \else
6027           \def\x{FitV}%
6028           \ifx\x\@pdfview
6029             \def\x{FitV @xpos}%
6030           \else
6031             \def\x{FitBV}%
6032             \ifx\x\@pdfview
6033               \def\x{FitBV @xpos}%
6034             \else
6035               \def\x{Fit}%
6036               \ifx\x\@pdfview
6037                 \let\x\@pdfview
6038               \else
6039                 \def\x{FitB}%
6040                 \ifx\x\@pdfview
6041                   \let\x\@pdfview
6042                 \else
6043                   \def\x{FitR}%
6044                   \ifx\x\@pdfview
6045                     \Hy@Warning{'pdfview=FitR' is not supported}%
6046                     \def\x{XYZ @xpos @ypos null}%
6047                   \else
6048                     \@onelevel@sanitize\@pdfview
6049                     \Hy@Warning{Unknown value '\@pdfview' for pdfview}%
6050                     \def\x{XYZ @xpos @ypos null}%
6051                 \fi
6052               \fi
6053             \fi

```



```

6054         \fi
6055         \fi
6056         \fi
6057         \fi
6058         \fi
6059         \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
6060     \endgroup
6061     \Hy@RestoreLastskip
6062 }
6063 \providecommand*\@pdfview{XYZ}
6064 \providecommand*\@pdfborder{0 0 1}
6065 \providecommand*\@pdfborderstyle{}
6066 \def\hyper@anchor#1{%
6067     \@pdfm@dest{#1}%
6068 }
6069 \def\hyper@anchorstart#1{%
6070     \Hy@activeanchortrue
6071     \@pdfm@dest{#1}%
6072 }
6073 \def\hyper@anchorend{%
6074     \Hy@activeanchorfalse
6075 }
6076 \def\Hy@undefinedname{UNDEFINED}
6077 \def\hyper@linkstart#1#2{%
6078     \protected@edef\Hy@testname{#2}%
6079     \ifx\Hy@testname\@empty
6080         \let\Hy@testname\Hy@undefinedname
6081     \else
6082         \Hy@pstringdef\Hy@testname\Hy@testname
6083     \fi
6084     \@pdfm@mark{%
6085         bann <<
6086         /Type /Annot
6087         /Subtype /Link
6088         \Hy@setpdfborder
6089         /C [\csname @#1bordercolor\endcsname]
6090         /A <<
6091         /S /GoTo
6092         /D (\Hy@testname)
6093         >>
6094     >>
6095     }%
6096     \expandafter\Hy@colorlink\csname @#1color\endcsname
6097 }
6098 \def\hyper@linkend{%
6099     \Hy@endcolorlink
6100     \@pdfm@mark{eann}%
6101 }
6102 \def\hyper@link#1#2#3{%
6103     \hyper@linkstart{#1}{#2}#3\hyper@linkend
6104 }
6105 \def\hyper@linkfile#1#2#3{%
6106     \Hy@pstringdef\Hy@pstringF{#2}%
6107     \Hy@pstringdef\Hy@pstringD{#3}%
6108     \leavevmode
6109     \@pdfm@mark{%
6110         bann <<

```

```

6111      /Type /Annot
6112      /Subtype /Link
6113      \Hy@setpdfborder
6114      /C [\filebordercolor]
6115      /A <<
6116          /S /GoToR
6117          /F (\Hy@pstringF)
6118          /D \ifx\#3\[0 \pdfstartview]\else(\Hy@pstringD)\fi\space
6119          \ifHy@newwindow /NewWindow true \fi
6120      >>
6121      >>%
6122  }%
6123  \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6124  \@pdfmark{eann}%
6125 }
6126 \def\hyper@launch run:#1\#2#3{% filename, anchor text linkname
6127 \Hy@pstringdef\Hy@pstringF{#1}%
6128 \Hy@pstringdef\Hy@pstringP{#3}%
6129 \leavevmode
6130 \@pdfmark{%
6131     bann <<
6132         /Type /Annot
6133         /Subtype /Link
6134         \Hy@setpdfborder
6135         /C [\filebordercolor]
6136         /A <<
6137             /S /Launch
6138             /F (\Hy@pstringF)
6139             \ifHy@newwindow /NewWindow true \fi
6140             \ifx\#3\%
6141             \else
6142                 /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
6143             \fi
6144         >>
6145     >>%
6146 }%
6147 \Hy@colorlink\@filecolor#2\Hy@endcolorlink
6148 \@pdfmark{eann}%
6149 }
6150 \def\hyper@linkurl#1#2{%
6151 \Hy@pstringdef\Hy@pstringURI{#2}%
6152 \leavevmode
6153 \@pdfmark{%
6154     bann <<
6155         /Type /Annot
6156         /Subtype /Link
6157         \Hy@setpdfborder
6158         /C [\urlbordercolor]
6159         /A <<
6160             /S /URI
6161             /URI (\Hy@pstringURI)
6162         >>
6163     >>%
6164 }%
6165 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6166 \@pdfmark{eann}%
6167 }

```

```

6168 \def\Acrobatmenu#1#2{%
6169   \leavevmode
6170   \@pdfm@mark{%
6171     bann <<
6172     /Type /Annot
6173     /Subtype /Link
6174     /A <<
6175       /S /Named
6176       /N /#1
6177     >>
6178     \Hy@setpdfborder
6179     /C [\@menubordercolor]
6180   >>%
6181 }%
6182 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
6183 \@pdfm@mark{eann}%
6184 }
6185 \ifx\@pdfproducer\relax
6186   \def\@pdfproducer{dvipdfm}
6187 \fi
6188 \def\PDF@FinishDoc{%
6189   \Hy@UseMaketitleInfos
6190   \@pdfm@mark{%
6191     docinfo <<
6192       /Title (\@pdftitle)
6193       /Subject (\@pdfsubject)
6194       /Creator (\@pdfcreator)
6195       \ifx\@pdfcreationdate\@empty
6196       \else
6197         /CreationDate(\@pdfcreationdate) %
6198       \fi
6199       \ifx\@pdfmoddate\@empty
6200       \else
6201         /ModDate(\@pdfmoddate) %
6202       \fi
6203       /Author (\@pdfauthor)
6204       \ifx\@pdfproducer\relax
6205       \else
6206         /Producer (\@pdfproducer)
6207       \fi
6208       /Keywords (\@pdfkeywords)
6209     >>%
6210   }%
6211   \Hy@DisableOption{pdfauthor}%
6212   \Hy@DisableOption{pdftitle}%
6213   \Hy@DisableOption{pdfsubject}%
6214   \Hy@DisableOption{pdfcreator}%
6215   \Hy@DisableOption{pdfcreationdate}%
6216   \Hy@DisableOption{pdfmoddate}%
6217   \Hy@DisableOption{pdfproducer}%
6218   \Hy@DisableOption{pdfkeywords}%
6219 }
6220 \def\PDF@SetupDoc{%
6221   \edef\Hy@temp{%
6222     \ifHy@toolbar\else /HideToolbar true\fi
6223     \ifHy@menubar\else /HideMenubar true\fi
6224     \ifHy@windowui\else /HideWindowUI true\fi

```

```

6225 \ifHy@fitwindow /FitWindow true\fi
6226 \ifHy@centerwindow /CenterWindow true\fi
6227 \ifHy@displaydoctitle /DisplayDocTitle true\fi
6228 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
6229 \Hy@UseNameKey{Direction}\@pdfdirection
6230 \Hy@UseNameKey{ViewArea}\@pdfviewarea
6231 \Hy@UseNameKey{ViewClip}\@pdfviewclip
6232 \Hy@UseNameKey{PrintArea}\@pdfprintarea
6233 \Hy@UseNameKey{PrintClip}\@pdfprintclip
6234 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6235 \Hy@UseNameKey{Duplex}\@pdfduplex
6236 \ifx\@pdfpicktraybypdfsize\@empty
6237 \else
6238 /PickTrayByPDFSize \@pdfpicktraybypdfsize
6239 \fi
6240 \ifx\@pdfprintpagerange\@empty
6241 \else
6242 /PrintPageRange[\@pdfprintpagerange]%
6243 \fi
6244 \ifx\@pdfnumcopies\@empty
6245 \else
6246 /NumCopies \@pdfnumcopies
6247 \fi
6248 }%
6249 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6250 \@pdfm@mark{%
6251 docview <<%
6252 \ifx\@pdfstartview\@empty
6253 \else
6254 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
6255 \fi
6256 \ifx\@baseurl\@empty
6257 \else
6258 /URI<</Base(\Hy@pstringB)>>%
6259 \fi
6260 /PageMode/\@pdfpagemode
6261 \ifx\Hy@temp\@empty
6262 \else
6263 /ViewerPreferences<<\Hy@temp>>%
6264 \fi
6265 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
6266 \ifx\@pdflang\@empty
6267 \else
6268 /Lang(\@pdflang)%
6269 \fi
6270 >>%
6271 }%
6272 \ifx\@pdfpagescrop\@empty
6273 \else
6274 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}
6275 \fi
6276 }
6277 </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.

```
6278 <*vtexhtml>
6279 \RequirePackage{vtexhtml}
6280 \newif\if@Localurl
6281 \def\PDF@FinishDoc{}
6282 \def\PDF@SetupDoc{%
6283   \ifx\@baseurl\@empty
6284   \else
6285     \special{!direct <base href="\@baseurl">}%
6286   \fi
6287 }
6288 \def\@urltype{url}
6289 \def\hyper@link#1#2#3{%
6290   \leavevmode
6291   \special{!direct <a href=\hyper@quote\hyper@hash#2\hyper@quote>}%
6292   #3%
6293   \special{!direct </a>}%
6294 }
6295 \def\hyper@linkurl#1#2{%
6296   \begingroup
6297     \hyper@chars
6298     \leavevmode
6299     \MathBSuppress=1\relax
6300     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
6301     #1%
6302     \MathBSuppress=0\relax
6303     \special{!direct </a>}%
6304   \endgroup
6305 }
6306 \def\hyper@linkfile#1#2#3{%
6307   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
6308 }
6309 \def\hyper@linkstart#1#2{%
6310   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
6311     \@Localurltrue
6312     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
6313   \else
6314     \@Localurlfalse
6315     \begingroup
6316       \hyper@chars
6317       \special{!aref #2}%
6318     \endgroup
6319   \fi
6320 }
6321 \def\hyper@linkend{%
6322   \if@Localurl
6323     \special{!endaref}%
6324   \else
6325     \special{!direct </a>}%
6326   \fi
6327 }
6328 \def\hyper@anchorstart#1{%
6329   \Hy@SaveLastskip
6330   \begingroup
```

```

6331 \hyper@chars
6332 \special{!aname #1}%
6333 \special{!direct <a name=\hyper@quote#1\hyper@quote>}%
6334 \endgroup
6335 \Hy@activeanchortrue
6336 }
6337 \def\hyper@anchorend{%
6338 \special{!direct </a>}%
6339 \Hy@activeanchorfalse
6340 \Hy@RestoreLastskip
6341 }
6342 \def\hyper@anchor#1{%
6343 \Hy@SaveLastskip
6344 \begingroup
6345 \let\protect=\string
6346 \hyper@chars
6347 \leavevmode
6348 \special{!aname #1}%
6349 \special{!direct <a name=\hyper@quote #1\hyper@quote>}%
6350 \endgroup
6351 \Hy@activeanchortrue
6352 \bgroup\anchor@spot\egroup
6353 \special{!direct </a>}%
6354 \Hy@activeanchorfalse
6355 \Hy@RestoreLastskip
6356 }
6357 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
6358 \def\@endForm{}
6359 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
6360 \typeout{Sorry, TeXpider does not yet support FORM gauges}%
6361 }
6362 \def\@TextField[#1]#2{% parameters, label
6363 \typeout{Sorry, TeXpider does not yet support FORM text fields}%
6364 }
6365 \def\@CheckBox[#1]#2{% parameters, label
6366 \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
6367 }
6368 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
6369 \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
6370 }
6371 \def\@PushButton[#1]#2{% parameters, label
6372 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
6373 }
6374 \def\@Reset[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
6375 \def\@Submit[#1]#2{\typeout{Sorry, TeXpider does not yet support FORMs}}
6376 </vtexhtml>
6377 <*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.

```

6378 \ifx\mediaheight\@undefined
6379 \else
6380 \ifx\mediaheight\relax
6381 \else
6382 \ifHy@setpagesize
6383 \providecommand*{\VTeXInitMediaSize}{%

```

```

6384         \ifundefined{stockwidth}{%
6385             \ifdim\paperheight>0pt %
6386                 \setlength\mediaheight\paperheight
6387             \fi
6388             \ifdim\paperheight>0pt %
6389                 \setlength\mediawidth\paperwidth
6390             \fi
6391         }{%
6392             \ifdim\stockheight>0pt %
6393                 \setlength\mediaheight\stockheight
6394             \fi
6395             \ifdim\stockwidth>0pt %
6396                 \setlength\mediawidth\stockwidth
6397             \fi
6398         }%
6399     }%
6400     \AtBeginDocument{\VTeXInitMediaSize}%
6401     \fi
6402     \Hy@DisableOption{setpagesize}%
6403     \fi
6404     \fi

```

Older versions of VTeX require xyz in lower case.

```

6405 \providecommand*\@pdfview{xyz}
6406 \providecommand*\@pdfborder{0 0 1}
6407 \providecommand*\@pdfborderstyle{}
6408 \def\CurrentBorderColor{\@linkbordercolor}
6409 \def\hyper@anchor#1{%
6410     \Hy@SaveLastskip
6411     \begingroup
6412         \let\protect=\string
6413         \hyper@chars
6414         \special{!aname #1;\@pdfview}%
6415     \endgroup
6416     \Hy@activeanchortrue
6417     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6418     \Hy@activeanchorfalse
6419     \Hy@RestoreLastskip
6420 }
6421 \def\hyper@anchorstart#1{%
6422     \Hy@SaveLastskip
6423     \begingroup
6424         \hyper@chars
6425         \special{!aname #1;\@pdfview}%
6426     \endgroup
6427     \Hy@activeanchortrue
6428 }
6429 \def\hyper@anchorend{%
6430     \Hy@activeanchorfalse
6431     \Hy@RestoreLastskip
6432 }
6433 \def\@urltype{url}
6434 \def\Hy@undefinedname{UNDEFINED}
6435 \def\hyper@linkstart#1#2{%
6436     \Hy@opstringdef\Hy@pstringURI{#2}%
6437     \expandafter\Hy@colorlink\csname @#1color\endcsname
6438     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6439     \def\Hy@tempa{#1}%

```

```

6440 \ifx\Hy@tempa\@urltype
6441 \special{!%
6442   \href <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6443   a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6444   }%
6445 \else
6446   \protected@edef\Hy@testname{#2}%
6447   \ifx\Hy@testname\@empty
6448     \let\Hy@testname\Hy@undefinedname
6449   \fi
6450   \special{!%
6451     \href \Hy@testname;%
6452     a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6453     }%
6454   \fi
6455 }
6456 \def\hyper@linkend{%
6457 \special{!endaref}%
6458 \Hy@endcolorlink
6459 }
6460 \def\hyper@linkfile#1#2#3{%
6461 \leavevmode
6462 \special{!%
6463   \href <%
6464     \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
6465     f=#2>#3;%
6466     a=<\Hy@setpdfborder /C [\@filebordercolor]>%
6467     }%
6468   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
6469   \special{!endaref}%
6470 }
6471 \def\hyper@linkurl#1#2{%
6472 \begingroup
6473   \Hy@pstringdef\Hy@pstringURI{#2}%
6474   \hyper@chars
6475   \leavevmode
6476   \special{!%
6477     \href <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
6478     a=<\Hy@setpdfborder /C [\@urlbordercolor]>%
6479     }%
6480   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6481   \special{!endaref}%
6482 \endgroup
6483 }
6484 \def\hyper@link#1#2#3{%
6485 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6486 \leavevmode
6487 \protected@edef\Hy@testname{#2}%
6488 \ifx\Hy@testname\@empty
6489   \let\Hy@testname\Hy@undefinedname
6490 \fi
6491 \special{!%
6492   \href \Hy@testname;%
6493   a=<\Hy@setpdfborder /C [\CurrentBorderColor]>%
6494   }%
6495 \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
6496 \special{!endaref}%

```



```

6497 }
6498 \def\hyper@image#1#2{%
6499   \hyper@linkurl{#2}{#1}%
6500 }
6501 \def\@hyper@launch run:#1\#2#3{%
6502   \Hy@pstringdef\Hy@pstringF{#1}%
6503   \Hy@pstringdef\Hy@pstringP{#3}%
6504   \leavevmode
6505   \special{!aref
6506     <u=%
6507       /Type /Action
6508       /S /Launch
6509       /F (\Hy@pstringF)
6510       \ifHy@newwindow /NewWindow true \fi
6511       \ifx\#3\else /Win << /F (\Hy@pstringF) /P (\Hy@pstringP) >> \fi%
6512     >;%
6513     a=<\Hy@setpdfborder /C [\@runbordercolor]>%
6514   }%
6515   \Hy@colorlink\@filecolor#2\Hy@endcolorlink
6516   \special{!endaref}%
6517 }
6518 \def\Acrobatmenu#1#2{%
6519   \leavevmode
6520   \special{!%
6521     aref <u=/S /Named /N /#1>;%
6522     a=<\Hy@setpdfborder /C [\@menubordercolor]>%
6523   }%
6524   \Hy@colorlink\@menucolor#2\Hy@endcolorlink
6525   \special{!endaref}%
6526 }

```

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

The code below makes sense for V_TE_X 7.02 or later.

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

```

6527 \ifnum\Hy@VTeXversion<702 %
6528 \else
6529   \def\hyper@pagetransition{%
6530     \ifx\@pdfpagetransition\relax
6531     \else
6532       \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

6533   \else
6534     \hvtex@parse@trans\@pdfpagetransition
6535   \fi
6536 \fi
6537 }

```

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

Syntax of V_TE_X `\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:

```

6538 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}
6539 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}
6540 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}
6541 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}
6542 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}
6543 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}
6544 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}

```

Optional parameters:

```

6545 \def\hvtex@param@dimension{/Dm}
6546 \def\hvtex@param@direction{/Di}
6547 \def\hvtex@param@duration{/D}
6548 \def\hvtex@param@motion{/M}

```

Tokenizer:

```

6549 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}

```

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

```

6550 \def\hvtex@gettoken@#1 #2\@nil{%
6551   \edef\hvtex@token{#1}%
6552   \edef\hvtex@buffer{#2}%
6553 }
6554 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

6555 \let\hvtex@trans@code\@empty
6556 \let\hvtex@param@dimension\@empty
6557 \let\hvtex@param@direction\@empty
6558 \let\hvtex@param@duration\@empty
6559 \let\hvtex@param@motion\@empty
6560 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

6561 \hvtex@gettoken
6562 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

6563 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

6564 \else
6565 \hvtex@gettoken
6566 \fi
6567 \fi
6568 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

6569 \hvtex@trans@params
6570 }

```

Reentrant macro to parse optional parameters.

```

6571 \def\hvtex@trans@params{%
6572   \ifx\hvtex@buffer\@empty
6573   \else
6574     \hvtex@gettoken
6575     \let\hvtex@trans@par\hvtex@token
6576     \ifx\hvtex@buffer\@empty
6577     \else
6578       \hvtex@gettoken
6579       \ifx\hvtex@trans@par\hvtex@par@duration

```

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

```

6580       \let\hvtex@param@duration\hvtex@token
6581       \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

6582       \expandafter\edef\expandafter\hvtex@param@motion
6583       \expandafter{\expandafter\@gobble\hvtex@token}%
6584       \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

6585       \expandafter\edef\expandafter\hvtex@param@dimension
6586       \expandafter{\expandafter\@gobble\hvtex@token}%
6587       \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).

```

6588       \let\hvtex@param@direction\hvtex@token
6589       \fi\fi\fi\fi
6590       \fi
6591       \fi
6592       \ifx\hvtex@buffer\@empty
6593       \let\next\hvtex@produce@trans
6594       \else
6595       \let\next\hvtex@trans@params
6596       \fi
6597       \next
6598   }

```

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

```

6599 \def\hvtex@produce@trans{%
6600   \let\vtex@trans@special\@empty
6601   \if S\hvtex@trans@code
6602     \edef\vtex@trans@special{\hvtex@trans@code
6603       \hvtex@param@dimension\hvtex@param@motion}%
6604   \else \if B\hvtex@trans@code
6605     \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@dimension}%
6606   \else \if X\hvtex@trans@code
6607     \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@motion}%
6608   \else \if W\hvtex@trans@code
6609     \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6610   \else \if D\hvtex@trans@code
6611     \let\vtex@trans@special\hvtex@trans@code
6612   \else \if R\hvtex@trans@code
6613     \let\vtex@trans@special\hvtex@trans@code
6614   \else \if G\hvtex@trans@code
6615     \edef\vtex@trans@special{\hvtex@trans@code\hvtex@param@direction}%
6616   \fi\fi\fi\fi\fi\fi\fi

```

```

6617 \ifx\vtex@trans@special\@empty
6618 \else
6619 \ifx\hvtex@param@duration\@empty
6620 \else
6621 \setlength{\dimen@}{\hvtex@param@duration\p@}%
I'm not guilty of possible overflow.
6622 \multiply\dimen@\@m
6623 \edef\vtex@trans@special{\vtex@trans@special,\strip@pt\dimen@}%
6624 \fi

And all the mess is just for this.

6625 \special{!trans \vtex@trans@special}%
6626 \fi
6627 }

6628 \def\hyper@pageduration{%
6629 \ifx\@pdfpageduration\relax
6630 \else
6631 \ifx\@pdfpageduration\@empty
6632 \special{!duration-}%
6633 \else
6634 \special{!duration \@pdfpageduration}%
6635 \fi
6636 \fi
6637 }
6638 \def\hyper@pagehidden{%
6639 \ifHy@useHidKey
6640 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
6641 \fi
6642 }
6643 \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

```

6644 \ifx\@pdfproducer\relax
6645 \def\@pdfproducer{VTeX}
6646 \ifnum\Hy@VTeXversion>\z@
6647 \count@\VTeXversion
6648 \divide\count@ 100
6649 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}
6650 \multiply\count@ -100
6651 \advance\count@\VTeXversion
6652 \edef\@pdfproducer{%
6653 \@pdfproducer
6654 .\ifnum\count@<10 0\fi\the\count@
6655 \ifx\VTeXOS\@undefined\else
6656 \ifnum\VTeXOS>0 %
6657 \ifnum\VTeXOS<6 %
6658 \space%

```

```

6659         \ifcase\VTexOS
6660         \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
6661         \fi
6662         )%
6663     \fi
6664 \fi
6665 \fi
6666 ,\space
6667 \ifnum\OpMode=\@ne PDF\else PS\fi
6668 \space backend%
6669 \ifx\gexmode\@undefined\else
6670 \ifnum\gexmode>\z@\space with GeX\fi
6671 \fi
6672 }
6673 \fi
6674 \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).

```

6675 \def\PDF@SetupDoc{%
6676   \ifx\@pdfpagescrop\@empty
6677   \else
6678     \special{!pdfinfo b=<\@pdfpagescrop>}%
6679   \fi
6680   \special{!onopen Page\@pdfstartpage}%
6681   \special{!pdfinfo p=</\@pdfpagemode>}%
6682   \ifx\@baseurl\@empty
6683   \else
6684     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
6685   \fi
6686   \special{!pdfinfo v=<<<%
6687     \ifHy@toolbar\else /HideToolbar true\fi
6688     \ifHy@menubar\else /HideMenubar true\fi
6689     \ifHy>windowui\else /HideWindowUI true\fi
6690     \ifHy@fitwindow /FitWindow true\fi
6691     \ifHy@centerwindow /CenterWindow true\fi
6692     \ifHy@displaydoctitle /DisplayDocTitle true\fi
6693     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
6694     \Hy@UseNameKey{Direction}\@pdfdirection
6695     \Hy@UseNameKey{ViewArea}\@pdfviewarea
6696     \Hy@UseNameKey{ViewClip}\@pdfviewclip
6697     \Hy@UseNameKey{PrintArea}\@pdfprintarea
6698     \Hy@UseNameKey{PrintClip}\@pdfprintclip
6699     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6700     \Hy@UseNameKey{Duplex}\@pdfduplex

```

```

6701 \ifx\@pdfpicktraybypdfsize\@empty
6702 \else
6703 /PickTrayByPDFSize \@pdfpicktraybypdfsize
6704 \fi
6705 \ifx\@pdfprintpagerange\@empty
6706 \else
6707 /PrintPageRange[\@pdfprintpagerange]%
6708 \fi
6709 \ifx\@pdfnumcopies\@empty
6710 \else
6711 /NumCopies \@pdfnumcopies
6712 \fi
6713 >>>}%
6714 \ifx\@pdfpagelayout\@empty
6715 \else
6716 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
6717 \fi
6718 }%
6719 \def\PDF@FinishDoc{%
6720 \Hy@UseMaketitleInfos
6721 \special{!pdfinfo a=<\@pdfauthor>}%
6722 \special{!pdfinfo t=<\@pdftitle>}%
6723 \special{!pdfinfo s=<\@pdfsubject>}%
6724 \special{!pdfinfo c=<\@pdfcreator>}%
6725 \ifx\@pdfproducer\relax
6726 \else
6727 \special{!pdfinfo r=<\@pdfproducer>}%
6728 \fi
6729 \special{!pdfinfo k=<\@pdfkeywords>}%
6730 \Hy@DisableOption{pdfauthor}%
6731 \Hy@DisableOption{pdftitle}%
6732 \Hy@DisableOption{pdfsubject}%
6733 \Hy@DisableOption{pdfcreator}%
6734 \Hy@DisableOption{pdfcreationdate}%
6735 \Hy@DisableOption{pdfmoddate}%
6736 \Hy@DisableOption{pdfproducer}%
6737 \Hy@DisableOption{pdfkeywords}%
6738 }
6739 </vtx>

```

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.

```

6740 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
6741 <package>\providecommand*{\Hy@DistillerDestFix}{%
6742 *pdfmark | dviwindo}
6743 \def\Hy@DistillerDestFix{%
6744 \begingroup
6745 \let\x\literalps@out

```

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

```

6746 \ifnum \@ifundefined{OpMode}{0}{%
6747 \ifundefined{gexmode}{0}{%
6748 \ifnum\gexmode>0 \OpMode\else 0\fi
6749 }}>1 %
6750 \def\x##1{%
6751 \immediate\special{!=##1}%
6752 }%
6753 \fi
6754 \x{%
6755 /product where{%
6756 pop %
6757 product(Distiller)search{%
6758 pop pop pop %
6759 version(.)search{%
6760 exch pop exch pop%
6761 (3011)eq{%
6762 gsave %
6763 newpath 0 0 moveto closepath clip%
6764 /Courier findfont 10 scalefont setfont %
6765 72 72 moveto(.)show %
6766 grestore%
6767 }if%
6768 }{pop}ifelse%
6769 }{pop}ifelse%
6770 }if%
6771 }%
6772 \endgroup
6773 }
6774 </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

```

6775 <*pdfmark | dvipdf>
6776 \def\hyper@anchor#1{%
6777 \Hy@SaveLastskip
6778 \begingroup
6779 \pdfmark[\anchor@spot]{%
6780 pdfmark=/DEST,%
6781 linktype=anchor,%
6782 View=/\@pdfview \@pdfviewparams,%
6783 DestAnchor={#1}%

```

```

6784 }%
6785 \endgroup
6786 \Hy@RestoreLastskip
6787 }
6788 <*/dvipdf>
6789 \def\hyper@anchorstart#1{\Hy@activeanchortrue}
6790 \def\hyper@anchorend{\Hy@activeanchorfalse}
6791 \def\hyper@linkstart#1#2{%
6792   \expandafter\Hy@colorlink\csname @#1color\endcsname
6793   \xdef\hyper@currentanchor{#2}%
6794 }
6795 \def\hyper@linkend{%
6796   \Hy@endcolorlink
6797 }
6798 </dvipdf>
6799 <*pdfmark>
6800 \ifundefined{hyper@anchorstart}{\endinput}
6801 \def\hyper@anchorstart#1{%
6802   \Hy@SaveLastskip
6803   \literalps@out{H.S}%
6804   \xdef\hyper@currentanchor{#1}%
6805   \Hy@activeanchortrue
6806 }
6807 \def\hyper@anchorend{%
6808   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
6809   \pdfmark{%
6810     pdfmark=/DEST,%
6811     linktype=anchor,%
6812     View=/\@pdfview \@pdfviewparams,%
6813     DestAnchor=\hyper@currentanchor,%
6814     Raw=H.B%
6815   }%
6816   \Hy@activeanchorfalse
6817   \Hy@RestoreLastskip
6818 }
6819 \def\hyper@linkstart#1#2{%
6820   \ifHy@breaklinks
6821   \else
6822     \leavevmode\hbox\bgroup
6823     \fi
6824     \expandafter\Hy@colorlink\csname @#1color\endcsname
6825     \literalps@out{H.S}%
6826     \xdef\hyper@currentanchor{#2}%
6827     \gdef\hyper@currentlinktype{#1}%
6828 }
6829 \def\hyper@linkend{%
6830   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
6831   \edef\Hy@tempcolor{\csname @\hyper@currentlinktype bordercolor\endcsname}%
6832   \pdfmark{%
6833     pdfmark=/ANN,%
6834     linktype=link,%
6835     Subtype=/Link,%
6836     Dest=\hyper@currentanchor,%
6837     AcroHighlight=\@pdfhighlight,%
6838     Border=\@pdfborder,%
6839     BorderStyle=\@pdfborderstyle,%
6840     Color=\Hy@tempcolor,%

```



```

6841     Raw=H.B%
6842 }%
6843 \Hy@endcolorlink
6844 \ifHy@breaklinks
6845 \else
6846 \egroup
6847 \fi
6848 }
6849 <*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.

```

6850 \beginngroup
6851 \catcode'P=12
6852 \catcode'T=12
6853 \lowercase{\endgroup
6854 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
6855 }
6856 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
6857 </pdfmark>

```

\hyper@pagetransition

```

6858 \def\hyper@pagetransition{%
6859 \ifx\@pdfpagetransition\relax
6860 \else
6861 \ifx\@pdfpagetransition\@empty
6862 % 1. Does an old entry have to be deleted?
6863 % 2. If 1=yes, how to delete?
6864 \else
6865 \pdfmark{%
6866 pdfmark=/PUT,%
6867 Raw={%
6868 \string{ThisPage\string}%
6869 <</Trans << /S /\@pdfpagetransition\space >> >>%
6870 }%
6871 }%
6872 \fi
6873 \fi
6874 }

```

\hyper@pageduration

```

6875 \def\hyper@pageduration{%
6876 \ifx\@pdfpageduration\relax
6877 \else
6878 \ifx\@pdfpageduration\@empty
6879 % 1. Does an old entry have to be deleted?
6880 % 2. If 1=yes, how to delete?
6881 \else
6882 \pdfmark{%
6883 pdfmark=/PUT,%
6884 Raw={%
6885 \string{ThisPage\string}%
6886 <</Dur \@pdfpageduration>>%
6887 }%
6888 }%
6889 \fi

```

```

6890 \fi
6891 }

```

\hyper@pagehidden

```

6892 \def\hyper@pagehidden{%
6893   \ifHy@useHidKey
6894     \pdfmark{%
6895       pdfmark=/PUT,%
6896       Raw={%
6897         \string{ThisPage\string}%
6898         <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
6899       }%
6900     }%
6901   \fi
6902 }

6903 </pdfmark>
6904 \def\hyper@image#1#2{%
6905   \hyper@linkurl{#2}{#1}}
6906 \def\Hy@undefinedname{UNDEFINED}
6907 \def\hyper@link#1#2#3{%
6908   \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
6909   \begingroup
6910     \protected@edef\Hy@testname{#2}%
6911     \ifx\Hy@testname\@empty
6912       \let\Hy@testname\Hy@undefinedname
6913     \fi
6914 <*/dvipdf>
6915     \pdfmark[#{#3}]{%
6916       pdfmark=/LNK,%
6917       {},{%
6918         linktype={#1},%
6919         AcroHighlight=\@pdfhighlight,%
6920         Border=\@pdfborder,%
6921         BorderStyle=\@pdfborderstyle,%
6922         Color=\Hy@tempcolor,%
6923         Dest=\Hy@testname
6924       }%
6925 </dvipdf>
6926 <*/pdfmarkbase>
6927     \pdfmark[#{#3}]{%
6928       Color=\Hy@tempcolor,%
6929       linktype={#1},%
6930       AcroHighlight=\@pdfhighlight,%
6931       Border=\@pdfborder,%
6932       BorderStyle=\@pdfborderstyle,%
6933       pdfmark=/ANN,%
6934       Subtype=/Link,%
6935       Dest=\Hy@testname
6936     }%
6937 </pdfmarkbase>
6938   \endgroup
6939 }

6940 \newtoks\pdf@docset
6941 \def\PDF@FinishDoc{%
6942   \Hy@UseMaketitleInfos
6943   \let\Hy@temp\@empty
6944   \ifx\@pdfcreationdate\@empty

```

```

6945 \else
6946   \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
6947 \fi
6948 \ifx\@pdfmoddate\@empty
6949 \else
6950   \expandafter\def\expandafter\Hy@temp\expandafter{%
6951     \Hy@temp
6952     ModDate=\@pdfmoddate,%
6953   }%
6954 \fi
6955 \ifx\@pdfproducer\relax
6956 \else
6957   \expandafter\def\expandafter\Hy@temp\expandafter{%
6958     \Hy@temp
6959     Producer=\@pdfproducer,%
6960   }%
6961 \fi
6962 \expandafter
6963 \pdfmark\expandafter{%
6964   \Hy@temp
6965   pdfmark=/DOCINFO,%
6966   Title=\@pdftitle,%
6967   Subject=\@pdfsubject,%
6968   Creator=\@pdfcreator,%
6969   Author=\@pdfauthor,%
6970   Keywords=\@pdfkeywords
6971 }%
6972 \Hy@DisableOption{pdfauthor}%
6973 \Hy@DisableOption{pdftitle}%
6974 \Hy@DisableOption{pdfsubject}%
6975 \Hy@DisableOption{pdfcreator}%
6976 \Hy@DisableOption{pdfcreationdate}%
6977 \Hy@DisableOption{pdfmoddate}%
6978 \Hy@DisableOption{pdfproducer}%
6979 \Hy@DisableOption{pdfkeywords}%
6980 }
6981 \def\PDF@SetupDoc{%
6982   \pdfmark{%
6983     pdfmark=/DOCVIEW,%
6984     Page=\@pdfstartpage,%
6985     View=\@pdfstartview,%
6986     PageMode=/\@pdfpagemode
6987   }%
6988   \ifx\@pdfpagescrop\@empty
6989   \else
6990     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
6991   \fi
6992   \edef\Hy@temp{%
6993     \ifHy@toolbar\else /HideToolbar true\fi
6994     \ifHy@menubar\else /HideMenubar true\fi
6995     \ifHy>windowui\else /HideWindowUI true\fi
6996     \ifHy@fitwindow /FitWindow true\fi
6997     \ifHy@centerwindow /CenterWindow true\fi
6998     \ifHy@displaydoctitle /DisplayDocTitle true\fi
6999     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7000     \Hy@UseNameKey{Direction}\@pdfdirection
7001     \Hy@UseNameKey{ViewArea}\@pdfviewarea

```

```

7002 \Hy@UseNameKey{ViewClip}\@pdfviewclip
7003 \Hy@UseNameKey{PrintArea}\@pdfprintarea
7004 \Hy@UseNameKey{PrintClip}\@pdfprintclip
7005 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7006 \Hy@UseNameKey{Duplex}\@pdfduplex
7007 \ifx\@pdfpicktraybypdfsize\@empty
7008 \else
7009 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7010 \fi
7011 \ifx\@pdfprintpagerange\@empty
7012 \else
7013 /PrintPageRange[\@pdfprintpagerange]%
7014 \fi
7015 \ifx\@pdfnumcopies\@empty
7016 \else
7017 /NumCopies \@pdfnumcopies
7018 \fi
7019 }%
7020 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7021 \pdfmark{%
7022 pdfmark=/PUT,%
7023 Raw={%
7024 \string{Catalog\string} <<
7025 \ifx\Hy@temp\@empty
7026 \else
7027 /ViewerPreferences<<\Hy@temp>>%
7028 \fi
7029 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7030 \ifx\@pdflang\@empty
7031 \else
7032 /Lang(\@pdflang)%
7033 \fi
7034 \ifx\@baseurl\@empty
7035 \else
7036 /URI << /Base (\Hy@pstringB) >>%
7037 \fi
7038 >>%
7039 }%
7040 }%
7041 }
7042 </pdfmark | dvipdf>
7043 <*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.

```

7044 \newif\ifHy@pdfmarkerror
7045 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
7046 \def\pdfmark@[#1]#2{%
7047 \Hy@pdfmarkerrorfalse
7048 \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
7049 \@processme
7050 \let\pdf@type\relax
7051 \setkeys{PDF}{#2}%
7052 \ifHy@pdfmarkerror

```

```

7053 \else
7054   \ifx\pdf@type\relax
7055     \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
7056     \ifx\#1\relax\else\pdf@rect{#1}\fi
7057   \else
7058     \ifx\#1\relax
7059 \pdfmarkbase) \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark}%
7060 \dvipdf) \literalps@out{/ANN >>}%
7061   \else
7062     \ifundefined{@\pdf@linktype color}{%
7063       \Hy@colorlink\@linkcolor
7064     }{%
7065       \expandafter\Hy@colorlink
7066         \csname @\pdf@linktype color\endcsname
7067     }%
7068     \pdf@rect{#1}%
7069 \pdfmarkbase) \literalps@out{[\the\pdf@toks\space\pdf@type\space pdfmark}%
7070 \dvipdf) \literalps@out{/ANN >>}%
7071     \Hy@endcolorlink
7072   \fi
7073 \fi
7074 \fi
7075 }

```

The complicated bit is working out the right enclosing rectangle of some piece of \TeX text, needed by the `/Rect` key. This solution originates with Toby Thain (tobyth@netSPACE.net.au).

For the case `breaklinks` is enabled, I have added two hooks, the first one for package `setouterhbox`, it provides a hopefully better method without setting the text twice.

```
\usepackage[hyperref]{setouterhbox}
```

With the second hook, also you can set the text twice, e.g.:

```

\long\def\Hy@setouterhbox#1#2{\long\def\my@temp{#2}}
\def\Hy@breaklinksunhbox#1{\my@temp}

```

```

7076 \newsavebox{\pdf@box}
7077 \providecommand*{\Hy@setouterhbox}{\sbox}
7078 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
7079 \def\pdf@rect#1{%
7080 \dvipdf) \literalps@out{/ANN \pdf@type\space\the\pdf@toks\space <<#1%
7081 \leavevmode
7082 \ifHy@breaklinks
7083   \Hy@setouterhbox\pdf@box{#1}%
7084 \else
7085   \sbox\pdf@box{#1}%
7086 \fi
7087 \dimen@ht\pdf@box
7088 \ifdim\dp\pdf@box=\z@
7089   \literalps@out{H.S}%
7090 \else
7091   \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
7092 \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...).

```

7093 \ifHy@breaklinks
7094   \expandafter\Hy@breaklinksunhbox
7095 \else

```

```

7096 \expandafter\box
7097 \fi
7098 \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

7099 \ifdim\dimen@=\z@
7100 \literalps@out{H.R}%
7101 \else
7102 \raise\dimen@ \hbox{\literalps@out{H.R}}%
7103 \fi
7104 \pdf@addtoksx{H.B}%
7105 }

```

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.

```

7106 \newtoks\pdf@toks
7107 \newtoks\pdf@defaulttoks
7108 \pdf@defaulttoks={}
7109 \def\pdf@addtoks#1#2{%
7110 \edef\@processme{\pdf@toks{\the\pdf@toks\space /#2 #1}}%
7111 \@processme
7112 }
7113 \def\pdf@addtoksx#1{%
7114 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
7115 \@processme
7116 }
7117 \def\PDFdefaults#1{%
7118 \pdf@defaulttoks={#1}%
7119 }

```

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

```

7120 % what is the type of pdfmark?
7121 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
7122 % what is the link type?
7123 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
7124 \def\pdf@linktype{link}
7125 % parameter is a stream of PDF
7126 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
7127 % parameter is a name
7128 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
7129 % parameter is a array
7130 \define@key{PDF}{Border}{%
7131 \edef\Hy@temp{#1}%
7132 \ifx\Hy@temp\@empty
7133 \else
7134 \pdf@addtoks{[#1]}{Border}%
7135 \fi
7136 }
7137 % parameter is a dictionary
7138 \define@key{PDF}{BorderStyle}{%
7139 \edef\Hy@temp{#1}%
7140 \ifx\Hy@temp\@empty
7141 \else
7142 \pdf@addtoks{<<#1>>}{BS}%

```

```

7143 \fi
7144 }
7145 % parameter is a array
7146 \define@key{PDF}{Color}{\pdf@addtoks{[#1]}{Color}}
7147 % parameter is a string
7148 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
7149 % parameter is a integer
7150 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
7151 % parameter is a array
7152 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}
7153 % parameter is a string
7154 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
7155 % parameter is a string or file
7156 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
7157 % parameter is a destination
7158 \define@key{PDF}{Dest}{%
7159 \Hy@pstringdef\Hy@pstringDest{#1}%
7160 \ifx\Hy@pstringDest\@empty
7161 \Hy@pdfmarkerrortrue
7162 \Hy@Warning{Destination with empty name ignored}%
7163 \else
7164 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
7165 \fi
7166 }
7167 \define@key{PDF}{DestAnchor}{%
7168 \Hy@pstringdef\Hy@pstringDest{#1}%
7169 \ifx\Hy@pstringDest\@empty
7170 \Hy@pdfmarkerrortrue
7171 \Hy@Warning{Destination with empty name ignored}%
7172 \else
7173 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
7174 \fi
7175 }
7176 % parameter is a string
7177 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
7178 % parameter is a string
7179 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
7180 % parameter is a int
7181 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
7182 % parameter is a name
7183 \define@key{PDF}{AcroHighlight}{%
7184 \beginngroup
7185 \edef\x{#1}%
7186 \expandafter\endgroup\ifx\x\@empty
7187 \else
7188 \pdf@addtoks{#1}{H}%
7189 \fi
7190 }
7191 % parameter is a string
7192 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}
7193 % parameter is a string
7194 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
7195 % parameter is a string
7196 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
7197 % parameter is a string
7198 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
7199 % parameter is a Boolean

```

```

7200 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
7201 % parameter is a integer or name
7202 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
7203 % parameter is a name
7204 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
7205 % parameter is a string
7206 \define@key{PDF}{Params}{\pdf@addtoks{#1}{Params}}
7207 % parameter is a array
7208 \define@key{PDF}{Rect}{\pdf@addtoks{#1}{Rect}}
7209 % parameter is a integer
7210 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
7211 % parameter is a name
7212 \pdfmarkbase\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
7213 \dvi pdf\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{}}
7214 % parameter is a string
7215 \define@key{PDF}{Title}{\pdf@addtoks{#1}{Title}}
7216 % parameter is a string
7217 \define@key{PDF}{Unix}{\pdf@addtoks{#1}{Unix}}
7218 % parameter is a string
7219 \define@key{PDF}{UnixFile}{\pdf@addtoks{#1}{UnixFile}}
7220 % parameter is an array
7221 \define@key{PDF}{View}{\pdf@addtoks{#1}{View}}
7222 % parameter is a string
7223 \define@key{PDF}{WinFile}{\pdf@addtoks{#1}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

7224 \define@key{PDF}{Author}{\pdf@addtoks{#1}{Author}}
7225 \define@key{PDF}{Creator}{\pdf@addtoks{#1}{Creator}}
7226 \define@key{PDF}{CreationDate}{\pdf@addtoks{#1}{CreationDate}}
7227 \define@key{PDF}{ModDate}{\pdf@addtoks{#1}{ModDate}}
7228 \define@key{PDF}{Producer}{\pdf@addtoks{#1}{Producer}}
7229 \define@key{PDF}{Subject}{\pdf@addtoks{#1}{Subject}}
7230 \define@key{PDF}{Keywords}{\pdf@addtoks{#1}{Keywords}}
7231 \define@key{PDF}{ModDate}{\pdf@addtoks{#1}{ModDate}}
7232 \define@key{PDF}{Base}{\pdf@addtoks{#1}{Base}}
7233 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
7234 \pdfmarkbase | dvipdf
7235 \*pdfmark | dvipdf
7236 \def\Acrobatmenu#1#2{%
7237   \pdfmark[{#2}] {%
7238     linktype=menu,%
7239     pdfmark=/ANN,%
7240     AcroHighlight=\pdfhighlight,%
7241     Border=\pdfborder,%
7242     BorderStyle=\pdfborderstyle,%
7243     Action={<< /Subtype /Named /N /#1 >>},%
7244     Subtype=/Link%
7245   }%
7246 }

```

And now for some useful examples:

```

7247 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
7248 \def\PDFNextPage@[#1]#2{%
7249   \pdfmark[{#2}] {%
7250     #1,%
7251     Border=\pdfborder,%
7252     BorderStyle=\pdfborderstyle,%
7253     Color=.2 .1 .5,

```



```

7254 pdfmark=/ANN,%
7255 Subtype=/Link,%
7256 Page=/Next%
7257 }%
7258 }
7259 \def\PDFPreviousPage{%
7260 \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
7261 }
7262 \def\PDFPreviousPage@[#1]#2{%
7263 \pdfmark[#{#2}]{%
7264 #1,%
7265 Border=\pdfborder,%
7266 BorderStyle=\pdfborderstyle,%
7267 Color=.4 .4 .1,%
7268 pdfmark=/ANN,%
7269 Subtype=/Link,%
7270 Page=/Prev%
7271 }%
7272 }
7273 \def\PDFOpen#1{%
7274 \pdfmark{#1,pdfmark=/DOCVIEW}%
7275 }

```

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!

```

7276 \def\PDFPage{\@ifnextchar[{\PDFPage@}{\PDFPage@[]}}
7277 \def\PDFPage@[#1]#2#3{%
7278 \let\pageref\simple@pageref
7279 \pdfmark[#{#3}]{%
7280 #1,%
7281 Page={#2},%
7282 AcroHighlight=\pdfhighlight,%
7283 Border=\pdfborder,%
7284 BorderStyle=\pdfborderstyle,%
7285 Color=\pagebordercolor,%
7286 pdfmark=/ANN,%
7287 Subtype=/Link%
7288 }%
7289 }
7290 \def\simple@pageref#1{%
7291 \expandafter\ifx\csname r@#1\endcsname\relax
7292 0%
7293 \else
7294 \expandafter\expandafter\expandafter
7295 \@secondoffive\csname r@#1\endcsname
7296 \fi}

```

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

```

7297 \def\hyper@linkurl#1#2{%
7298 \begingroup
7299 \Hy@pstringdef\Hy@pstringURI{#2}%
7300 \hyper@chars
7301 \leavevmode
7302 \pdfmarkbase{
7303 \pdfmark[#{#1}]{%
7304 pdfmark=/ANN,%
7305 linktype=url,%

```

```

7306     AcroHighlight=\@pdfhighlight,%
7307     Border=\@pdfborder,%
7308     BorderStyle=\@pdfborderstyle,%
7309     Color=\@urlbordercolor,%
7310     Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
7311     Subtype=/Link%
7312 }%
7313 </pdfmarkbase>
7314 <*dvipdf>
7315     \pdfmark[{#1}]{%
7316         pdfmark=/LNK,%
7317         linktype=url,%
7318         AcroHighlight=\@pdfhighlight,%
7319         Border=\@pdfborder,%
7320         BorderStyle=\@pdfborderstyle,%
7321         Color=\@urlbordercolor,%
7322         Action={URI /URI <\Hy@hstringURI>}%
7323     }%
7324 </dvipdf>
7325 \endgroup
7326 }
7327 \def\hyper@linkfile#1#2#3{%
7328     \begingroup
7329     \Hy@pstringdef\Hy@pstringF{#2}%
7330     \Hy@pstringdef\Hy@pstringD{#3}%
7331     \leavevmode
7332 <*pdfmark>
7333     \pdfmark[{#1}]{%
7334         pdfmark=/ANN,%
7335         Subtype=/Link,%
7336         AcroHighlight=\@pdfhighlight,%
7337         Border=\@pdfborder,%
7338         BorderStyle=\@pdfborderstyle,%
7339         linktype=file,%
7340         Color=\@filebordercolor,%
7341         Action={<<
7342             /S /GoToR
7343             \ifHy@newwindow /NewWindow true \fi
7344             /F (\Hy@pstringF)
7345             /D \ifx\#3\[/0 \@pdfstartview\else(\Hy@pstringD) cvn\fi
7346         >>}%
7347     }%
7348 </pdfmark>
7349 <*dvipdf>
7350     \pdfmark[{#1}]{%
7351         pdfmark=/LNK,%
7352         linktype=file,%
7353         AcroHighlight=\@pdfhighlight,%
7354         Border=\@pdfborder,%
7355         BorderStyle=\@pdfborderstyle,%
7356         Color=\@filebordercolor,%
7357         Action={<<
7358             /S /GoToR
7359             \ifHy@newwindow /NewWindow true \fi
7360             /F (\Hy@pstringF)
7361             /D \ifx\#3\[/0 \@pdfstartview\else(\Hy@pstringD) cvn\fi
7362         >>}%

```

```

7363 }%
7364 </dvipdf>
7365 \endgroup
7366 }
7367 \def\@hyper@launch run:#1\#2#3{%
7368 \begingroup
7369 \Hy@pstringdef\Hy@pstringF{#1}%
7370 \Hy@pstringdef\Hy@pstringP{#3}%
7371 \leavevmode
7372 <*pdfmark>
7373 \pdfmark[{#2}]{%
7374 pdfmark=/ANN,%
7375 Subtype=/Link,%
7376 AcroHighlight=\@pdfhighlight,%
7377 Border=\@pdfborder,%
7378 BorderStyle=\@pdfborderstyle,%
7379 linktype=file,%
7380 Color=\@filebordercolor,%
7381 Action={<<
7382 /S /Launch
7383 \ifHy@newwindow /NewWindow true \fi
7384 /F (\Hy@pstringF)
7385 \ifx\#3\%
7386 \else
7387 /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
7388 \fi
7389 >>}%
7390 }%
7391 </pdfmark>
7392 <*dvipdf>
7393 \pdfmark[{#2}]{%
7394 pdfmark=/LNK,%
7395 linktype=file,%
7396 AcroHighlight=\@pdfhighlight,%
7397 Border=\@pdfborder,%
7398 BorderStyle=\@pdfborderstyle,%
7399 Color=\@filebordercolor,%
7400 Action={<<
7401 /S /GoToR
7402 \ifHy@newwindow /NewWindow true \fi
7403 /F (\Hy@pstringF)
7404 \ifx\#3\%
7405 \else
7406 /Win << /P (\Hy@pstringP) /F (\Hy@pstringF) >>
7407 \fi
7408 >>}%
7409 }%
7410 </dvipdf>
7411 \endgroup
7412 }
7413 </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.

```
7414 < *dvips>
7415 \input{pdfmark.def}%
7416 \ifx\@pdfproducer\relax
7417   \def\@pdfproducer{dvips + Distiller}
7418 \fi
7419 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
7420 \def\headerps@out#1{\special{! #1}}%
7421 \providecommand*\@pdfborder{0 0 12}
7422 \providecommand*\@pdfborderstyle{}
7423 \providecommand*\@pdfview{XYZ}
7424 \providecommand*\@pdfviewparams{ H.V}

7425 \AtBeginDvi{%
7426   \headerps@out{%
```

Unless I am going mad, this *appears* to be the relationship between the default coordinate system (PDF), and dvips;

```
/DvipsToPDF { .01383701 div Resolution div } def
/PDFToDvips { .01383701 mul Resolution mul } def
```

the latter's coordinates are resolution dependent, but what that .01383701 is, who knows? well, almost everyone except me, I expect... And yes, Maarten Gelderman <mgelderman@econ.vu.nl> points out that its 1/72.27 (the number of points to an inch, big points to inch is 1/72). This also suggests that the code would be more understandable (and exact) if 0.013 div would be replaced by 72.27 mul, so here we go. If this isn't right, I'll revert it.

```
7427   /DvipsToPDF { 72.27 mul Resolution div } def
7428   /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.

```
7429   /HyperBorder { 1 PDFToDvips } def
7430   /H.V {pdf@hoff pdf@voff null} def
7431   /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

```
7432   /H.S {
7433     currentpoint
7434     HyperBorder add /pdf@lly exch def
7435     dup DvipsToPDF /pdf@hoff exch def
7436     HyperBorder sub /pdf@llx exch def
7437   } def
```

The calculation of upper left y is done without raising the point in T_EX, 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

```

7438 /H.L {
7439   2 sub dup
7440   /HyperBasePt exch def
7441   PDFToDvips /HyperBaseDvips exch def
7442   currentpoint
7443   HyperBaseDvips sub /pdf@ury exch def
7444   /pdf@urx exch def
7445 } def
7446 /H.A {
7447   H.L
7448 % | /pdf@voff| = the distance from the top of the page to a point
7449 % | \baselineskip| above the current point in PDF coordinates
7450   currentpoint exch pop
7451   vsize 72 sub exch DvipsToPDF
7452   HyperBasePt sub % baseline skip
7453   sub /pdf@voff exch def
7454 } def
7455 /H.R {
7456   currentpoint
7457   HyperBorder sub /pdf@ury exch def
7458   HyperBorder add /pdf@urx exch def
7459 % | /pdf@voff| = the distance from the top of the page to the current point, in
7460 % PDF coordinates
7461   currentpoint exch pop vsize 72 sub
7462   exch DvipsToPDF sub /pdf@voff exch def
7463 } def
7464 systemdict /pdfmark known
7465 {
7466   userdict /?pdfmark systemdict /exec get put
7467 }{
7468   userdict /?pdfmark systemdict /pop get put
7469   userdict /pdfmark systemdict /cleartomark get put
7470 }
7471 ifelse
7472 }%
7473 }
7474 \AfterBeginDocument{%
7475   \ifx\special@paper\@empty\else
7476     \ifHy@setpagesize
7477       \special{papersize=\special@paper}%
7478     \fi
7479     \Hy@DisableOption{setpagesize}%
7480   \fi
7481 }
7482 </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.

```

7483 <*vtexpdfmark>
7484 \input{pdfmark.def}%
7485 \ifx\@pdfproducer\relax
7486   \ifnum\OpMode=\@ne

```

```

7487 \def\@pdfproducer{VTeX}
7488 \else
7489 \def\@pdfproducer{VTeX + Distiller}
7490 \fi
7491 \fi
7492 \def\literalps@out#1{\special{pS:#1}}%
7493 \def\headerps@out#1{\immediate\special{pS:#1}}%
7494 \providecommand*\@pdfborder{0 0 1}
7495 \providecommand*\@pdfborderstyle{}
7496 \providecommand*\@pdfview{XYZ}
7497 \providecommand*\@pdfviewparams{ H.V}

7498 \AtBeginDvi{%
7499 \headerps@out{%
7500 /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.

```

7501 /HyperBorder {1} def
7502 /H.V {pdf@hoff pdf@voff null} def
7503 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def

```

H.S (start of anchor, link, or rect) stores the x and y coordinates of the current point, in PDF coordinates: $\text{pdf@lly} = Y_c - \text{HyperBorder}$, $\text{pdf@hoff} = X_c + 72$, $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

7504 /H.S {
7505   currentpoint
7506   HyperBorder sub
7507   /pdf@lly exch def
7508   dup 72 add /pdf@hoff exch def
7509   HyperBorder sub
7510   /pdf@llx exch def
7511 } def

```

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

```

7512 /H.L {
7513   2 sub
7514   /HyperBasePt exch def
7515   currentpoint
7516   HyperBasePt add HyperBorder add
7517   /pdf@ury exch def
7518   HyperBorder add
7519   /pdf@urx exch def
7520 } def
7521 /H.A {
7522   H.L
7523   currentpoint exch pop
7524   vsize 72 sub exch
7525   HyperBasePt add add
7526   /pdf@voff exch def
7527 } def

```

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

```

7528 /H.R {
7529   currentpoint
7530   HyperBorder add
7531   /pdf@ury exch def
7532   HyperBorder add

```

```

7533      /pdf@urx exch def
7534      currentpoint exch pop vsize 72 sub add
7535      /pdf@voff exch def
7536    } def
7537    systemdict /pdfmark known
7538    {
7539      userdict /?pdfmark systemdict /exec get put
7540    }{
7541      userdict /?pdfmark systemdict /pop get put
7542      userdict /pdfmark systemdict /cleartomark get put
7543    }
7544    ifelse
7545  }%
7546 }
7547 </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.

```

7548 <*textures>
7549 \begingroup
7550   \obeylines %
7551   \gdef\Hy@ps@CR{\noexpand
7552   }%
7553 \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`.

```

7554 \def\literalps@out#1{%
7555   \special{postscript 0 0 transform}%
7556   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
7557 }%
7558 %

```

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.

```

7559 \def\headerps@out#1{%
7560   \special{%
7561     prepostscript TeXdict begin\Hy@ps@CR
7562     #1\Hy@ps@CR

```

```

7563     end%
7564   }%
7565 }%
7566 %

```

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.

```

7567 \AtBeginDvi{%
7568   \headerps@out{%
7569     /betterpdfmark {%
7570       systemdict begin
7571         dup /BP eq
7572         {cleartomark gsave nulldevice []
7573          {dup /EP eq
7574           {cleartomark cleartomark grestore}
7575           {cleartomark}
7576           ifelse
7577         }ifelse
7578       end
7579     }def\Hy@ps@CR
7580     __pdfmark__ not{/pdfmark /betterpdfmark load def}if
7581     systemdict /pdfmark known
7582     {
7583       userdict /?pdfmark systemdict /load get put
7584     }{
7585       userdict /?pdfmark systemdict /pop get put
7586     }
7587     ifelse
7588   }% end of \headerps@out
7589 }% end of \AtBeginDvi
7590 %
7591 \input{pdfmark.def}%
7592 %
7593 \ifx\@pdfproducer\relax
7594   \def\@pdfproducer{Textures + Distiller}%
7595 \fi
7596 \providecommand*\@pdfborder{0 0 1}
7597 \providecommand*\@pdfborderstyle{}
7598 \providecommand*\@pdfview{XYZ}
7599 \providecommand*\@pdfviewparams{ H.V}
7600 %

```

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 T_EX.

```

7601 \headerps@out{%

```

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

```

7602 /vsize {\Hy@pageheight} def
7603 /DvipsToPDF {} def
7604 /PDFToDvips {} def
7605 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
7606 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
7607 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
7608 /H.S {

```



```

7609     currentpoint
7610     HyperBorder add /pdf@lly exch def
7611     dup DvipsToPDF /pdf@hoff exch def
7612     HyperBorder sub /pdf@llx exch def
7613 } def\Hy@ps@CR
7614 /H.L {
7615     2 sub
7616     PDFToDvips /HyperBase exch def
7617     currentpoint
7618     HyperBase sub /pdf@ury exch def
7619     /pdf@urx exch def
7620 } def\Hy@ps@CR
7621 /H.A {
7622     H.L
7623     currentpoint exch pop
7624     vsize 72 sub exch DvipsToPDF
7625     HyperBase sub % baseline skip
7626     sub /pdf@voff exch def
7627 } def\Hy@ps@CR
7628 /H.R {
7629     currentpoint
7630     HyperBorder sub /pdf@ury exch def
7631     HyperBorder add /pdf@urx exch def
7632     currentpoint exch pop vsize 72 sub
7633     exch DvipsToPDF sub /pdf@voff exch def
7634 } def\Hy@ps@CR
7635 }

7636 \AfterBeginDocument{%
7637     \ifHy@colorlinks
7638         \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
7639     \fi
7640 }

```

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.

```

7641 \expandafter\let\expandafter\keepPDF@SetupDoc
7642 \csname PDF@SetupDoc\endcsname
7643 \def\PDF@SetupDoc{%
7644     \ifx\@baseurl\@empty
7645         \else
7646             \special{html:<base href="\@baseurl">}%
7647         \fi
7648     \keepPDF@SetupDoc
7649 }
7650 \def\hyper@anchor#1{%
7651     \Hy@SaveLastskip
7652     \begingroup
7653         \let\protect=\string
7654         \special{html:<a name=\hyper@quote #1\hyper@quote>}%
7655     \endgroup
7656     \Hy@activeanchortrue
7657     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7658     \special{html:</a>}%
7659     \Hy@activeanchorfalse
7660     \Hy@RestoreLastskip
7661 }
7662 \def\hyper@anchorstart#1{%

```

```

7663 \Hy@SaveLastskip
7664 \begingroup
7665 \hyper@chars
7666 \special{html:<a name=\hyper@quote#1\hyper@quote>}%
7667 \endgroup
7668 \Hy@activeanchortrue
7669 }
7670 \def\hyper@anchorend{%
7671 \special{html:</a>}%
7672 \Hy@activeanchorfalse
7673 \Hy@RestoreLastskip
7674 }
7675 \def\@urlltype{url}
7676 \def\hyper@linkstart#1#2{%
7677 \expandafter\Hy@colorlink\csname @#1color\endcsname
7678 \def\Hy@tempa{#1}%
7679 \ifx\Hy@tempa\@urlltype
7680 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7681 \else
7682 \begingroup
7683 \hyper@chars
7684 \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
7685 \endgroup
7686 \fi
7687 }
7688 \def\hyper@linkend{%
7689 \special{html:</a>}%
7690 \Hy@endcolorlink
7691 }
7692 \def\hyper@linkfile#1#2#3{%
7693 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
7694 }
7695 \def\hyper@linkurl#1#2{%
7696 \leavevmode
7697 \ifHy@raiselinks
7698 \setbox\@tempboxa=\color@hbox #1\color@endbox
7699 \@linkdim\dp\@tempboxa
7700 \lower\@linkdim\hbox{%
7701 \hyper@chars
7702 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
7703 }%
7704 \Hy@colorlink\@urlcolor#1%
7705 \@linkdim\ht\@tempboxa
7706 \advance\@linkdim by -6.5\p@
7707 \raise\@linkdim\hbox{\special{html:</a>}}%
7708 \Hy@endcolorlink
7709 \else
7710 \begingroup
7711 \hyper@chars
7712 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
7713 \Hy@colorlink\@urlcolor#1%
7714 \special{html:</a>}}%
7715 \Hy@endcolorlink
7716 \endgroup
7717 \fi
7718 }
7719 \def\hyper@link#1#2#3{%

```

```

7720 \hyper@linkurl{#3}{\##2}%
7721 }
7722 \def\hyper@image#1#2{%
7723 \begin{group}
7724 \hyper@chars
7725 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
7726 \end{group}
7727 }
7728 </textures>

```

45.12 dvipsone

```

7729 % \subsection{dvipsone driver}
7730 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
7731 % |\special| commands.
7732 < *dvipsone>
7733 \providecommand*\@pdfborder{0 0 65781}
7734 \providecommand*\@pdfborderstyle{}
7735 \input{pdfmark.def}%
7736 \ifx\@pdfproducer\relax
7737 \def\@pdfproducer{dvipsone + Distiller}
7738 \fi
7739 \def\literalps@out#1{\special{ps:#1}}%
7740 \def\headerps@out#1{\special{! #1}}%
7741 \def\PDF@FinishDoc{%
7742 \Hy@UseMaketitleInfos
7743 \special{PDF: Keywords \@pdfkeywords}%
7744 \special{PDF: Title \@pdftitle}%
7745 \special{PDF: Creator \@pdfcreator}%
7746 \ifx\@pdfcreationdate\@empty
7747 \else
7748 \special{PDF: CreationDate \@pdfcreationdate}%
7749 \fi
7750 \ifx\@pdfmoddate\@empty
7751 \else
7752 \special{PDF: ModDate \@pdfmoddate}%
7753 \fi
7754 \special{PDF: Author \@pdfauthor}%
7755 \ifx\@pdfproducer\relax
7756 \else
7757 \special{PDF: Producer \@pdfproducer}%
7758 \fi
7759 \special{PDF: Subject \@pdfsubject}%
7760 \Hy@DisableOption{pdfauthor}%
7761 \Hy@DisableOption{pdftitle}%
7762 \Hy@DisableOption{pdfsubject}%
7763 \Hy@DisableOption{pdfcreator}%
7764 \Hy@DisableOption{pdfcreationdate}%
7765 \Hy@DisableOption{pdfmoddate}%
7766 \Hy@DisableOption{pdfproducer}%
7767 \Hy@DisableOption{pdfkeywords}%
7768 }
7769 \def\PDF@SetupDoc{%
7770 \pdfmark{%
7771 pdfmark=/DOCVIEW,
7772 Page=\@pdfstartpage,
7773 View=\@pdfstartview,

```

```

7774     PageMode=/\@pdfpagemode
7775 }%
7776 \ifx\@pdfpagescrop\@empty
7777 \else
7778     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7779 \fi
7780 \edef\Hy@temp{%
7781     \ifHy@toolbar\else /HideToolbar true\fi
7782     \ifHy@menubar\else /HideMenubar true\fi
7783     \ifHy>windowui\else /HideWindowUI true\fi
7784     \ifHy@fitwindow /FitWindow true\fi
7785     \ifHy@centerwindow /CenterWindow true\fi
7786     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7787     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7788     \Hy@UseNameKey{Direction}\@pdfdirection
7789     \Hy@UseNameKey{ViewArea}\@pdfviewarea
7790     \Hy@UseNameKey{ViewClip}\@pdfviewclip
7791     \Hy@UseNameKey{PrintArea}\@pdfprintarea
7792     \Hy@UseNameKey{PrintClip}\@pdfprintclip
7793     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7794     \Hy@UseNameKey{Duplex}\@pdfduplex
7795     \ifx\@pdfpicktraybypdfsize\@empty
7796     \else
7797         /PickTrayByPDFSize \@pdfpicktraybypdfsize
7798     \fi
7799     \ifx\@pdfprintpagerange\@empty
7800     \else
7801         /PrintPageRange[\@pdfprintpagerange]%
7802     \fi
7803     \ifx\@pdfnumcopies\@empty
7804     \else
7805         /NumCopies \@pdfnumcopies
7806     \fi
7807 }%
7808 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7809 \pdfmark{%
7810     pdfmark=/PUT,%
7811     Raw={%
7812         \string{Catalog\string} <<
7813         \ifx\Hy@temp\@empty
7814         \else
7815             /ViewerPreferences<<\Hy@temp>>%
7816         \fi
7817         \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7818         \ifx\@pdflang\@empty
7819         \else
7820             /Lang(\@pdflang)%
7821         \fi
7822         \ifx\@baseurl\@empty
7823         \else
7824             /URI << /Base (\Hy@pstringB) >>%
7825         \fi
7826     >>%
7827 }%
7828 }%
7829 }
7830 \providecommand*\@pdfview{XYZ}

```

```

7831 \providecommand*\@pdfviewparams{ %
7832   gsave revscl currentpoint grestore
7833   72 add exch pop null exch null
7834 }

```

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

```

7835 \special{headertext=

```

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

```

7836 /DvipsToPDF { 65781 div } def
7837 /PDFToDvips { 65781 mul } def
7838 /HyperBorder { 1 PDFToDvips } def
7839 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def
7840 /H.S {
7841   currentpoint
7842   HyperBorder add /pdf@lly exch def
7843   dup DvipsToPDF /pdf@hoff exch def
7844   HyperBorder sub /pdf@llx exch def
7845 } def
7846 /H.L {
7847   2 sub
7848   PDFToDvips /HyperBase exch def
7849   currentpoint
7850   HyperBase sub /pdf@ury exch def
7851   /pdf@urx exch def
7852 } def
7853 /H.A {
7854   H.L
7855   currentpoint exch pop
7856   HyperBase sub % baseline skip
7857   DvipsToPDF /pdf@voff exch def
7858 } def
7859 /H.R {
7860   currentpoint
7861   HyperBorder sub /pdf@ury exch def
7862   HyperBorder add /pdf@urx exch def
7863   currentpoint exch pop DvipsToPDF /pdf@voff exch def
7864 } def
7865 systemdict
7866 /pdfmark known
7867 {
7868   userdict /?pdfmark /exec load put
7869 }{
7870   userdict /?pdfmark /pop load put
7871   userdict /pdfmark systemdict /cleartomark get put
7872 }
7873 ifelse
7874 }
7875 </dvipsone>
7876 <*dvipdf>
7877 \def\literalps@out#1{\special{pdf: #1}}%
7878 \providecommand*\@pdfborder{0 0 1}
7879 \providecommand*\@pdfborderstyle{}
7880 </dvipdf>

```

45.13 TeX4ht

```
7881 <*tex4ht>
7882 \@ifpackageloaded{tex4ht}
7883   {\typeout{hyperref tex4ht: tex4ht already loaded}}%
7884   {\RequirePackage[hTeX4ht]{tex4ht}}
7885 \def\PDF@FinishDoc{}
7886 \def\PDF@SetupDoc{%
7887   \ifx\@baseurl\@empty
7888     \else
7889       \special{t4ht=<base href="\@baseurl">}%
7890     \fi
7891 }
7892 \def\hyper@anchor#1{%
7893   \Hy@SaveLastskip
7894   \begingroup
7895     \let\protect=\string
7896     \special{t4ht=<a name=\hyper@quote #1\hyper@quote>}%
7897   \endgroup
7898   \Hy@activeanchortrue
7899   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7900   \special{t4ht=</a>}%
7901   \Hy@activeanchorfalse
7902   \Hy@RestoreLastskip
7903 }
7904 \def\hyper@anchorstart#1{%
7905   \Hy@SaveLastskip
7906   \begingroup
7907     \hyper@chars\special{t4ht=<a name=\hyper@quote#1\hyper@quote>}%
7908   \endgroup
7909   \Hy@activeanchortrue
7910 }
7911 \def\hyper@anchorend{%
7912   \special{t4ht=</a>}%
7913   \Hy@activeanchorfalse
7914   \Hy@RestoreLastskip
7915 }
7916 \def\@urltype{url}
7917 \def\hyper@linkstart#1#2{%
7918   \expandafter\Hy@colorlink\csname @#1color\endcsname
7919   \def\Hy@tempa{#1}%
7920   \ifx\Hy@tempa\@urltype
7921     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7922   \else
7923     {\hyper@chars\special{t4ht=<a href=\hyper@quote\##2\hyper@quote>}}%
7924   \fi
7925 }
7926 \def\hyper@linkend{%
7927   \special{t4ht=</a>}%
7928   \Hy@endcolorlink
7929 }
7930 \def\hyper@linkfile#1#2#3{%
7931   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
7932 }
7933 \def\hyper@linkurl#1#2{%
7934   \leavevmode
7935   \ifHy@raiselinks
7936     \setbox\@tempboxa=\color@hbox #1\color@endbox
```

```

7937 \@linkdim\dp\@tempboxa
7938 \lower\@linkdim\hbox{%
7939 \begingroup
7940 \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7941 \endgroup
7942 }%
7943 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7944 \@linkdim\ht\@tempboxa
7945 \advance\@linkdim by -6.5\p@
7946 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
7947 \else
7948 \begingroup
7949 \hyper@chars
7950 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
7951 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7952 \special{t4ht=</a>}%
7953 \endgroup
7954 \fi
7955 }
7956 \def\hyper@link#1#2#3{%
7957 \hyper@linkurl{#3}{\##2}%
7958 }
7959 \def\hyper@image#1#2{%
7960 \begingroup
7961 \hyper@chars
7962 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
7963 \endgroup
7964 }
7965 \let\autoref\ref
7966 \ifx \rEfLiNK \UnDef
7967 \def\rEfLiNK #1#2{#2}%
7968 \fi
7969 \def\backref#1{}
7970 </tex4ht>
7971 <*tex4htcfg>
7972 \IfFileExists{\jobname.cfg}{\endinput}{}
7973 \Preamble{html}
7974 \begin{document}
7975 \EndPreamble
7976 \def\TeX{TeX}
7977 \def\OMEGA{\Omega}
7978 \def\LaTeX{LaTeX}
7979 \def\LaTeXe{\LaTeX2e}
7980 \def\eTeX{e-TeX}
7981 \def\MF{Metafont}
7982 \def\MP{Metapost}
7983 </tex4htcfg>

```

46 Driver-specific form support

46.1 pdfmarks

```

7984 <*pdfmark>
7985 \long\def\@Form[#1]{%
7986 \AtBeginDvi{%
7987 \headerpsout{%
7988 [ /_objdef {pdfDocEncoding}
7989 /type /dict

```

```

7990 /OBJ pdfmark
7991 [ {pdfDocEncoding}
7992 << /Type /Encoding
7993     /Differences [ 24 /breve /caron /circumflex /dotaccent
7994 /hungarumlaut /ogonek /ring /tilde 39 /quotesingle 96 /grave 128
7995 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin /fraction
7996 /guilsinglleft /guilsinglright /minus /perthousand /quotedblbase
7997 /quotedblleft /quotedblright /quoteleft /quoteright /quotesinglbase
7998 /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis /Zcaron /dotlessi
7999 /lslash /oe /scaron /zcaron 164 /currency 166 /brokenbar 168 /dieresis
8000 /copyright /ordfeminine 172 /logicalnot /.notdef /registered /macron
8001 /degree /plusminus /twosuperior /threesuperior /acute /mu 183
8002 /periodcentered /cedilla /onesuperior /ordmasculine 188 /onequarter
8003 /onehalf /threequarters 192 /Agrave /Aacute /Acircumflex /Atilde
8004 /Adieresis /Aring /AE /Ccedilla /Egrave /Eacute /Ecircumflex
8005 /Edieresis /Igrave /Iacute /Icircumflex /Idieresis /Eth /Ntilde
8006 /Ograve /Oacute /Ocircumflex /Otilde /Odieresis /multiply /Oslash
8007 /Ugrave /Uacute /Ucircumflex /Udieresis /Yacute /Thorn /germandbls
8008 /agrave /aacute /acircumflex /atilde /adieresis /aring /ae /ccedilla
8009 /egrave /eacute /ecircumflex /edieresis /igrave /iacute /icircumflex
8010 /idieresis /eth /ntilde /ograve /oacute /ocircumflex /otilde
8011 /odieresis /divide /oslash /ugrave /uacute /ucircumflex /udieresis
8012 /yacute /thorn /ydieresis ]
8013 >>
8014 /PUT pdfmark
8015 [ /_objdef {ZaDb}
8016 /type /dict
8017 /OBJ pdfmark
8018 [ {ZaDb}
8019 <<
8020 /Type /Font
8021 /Subtype /Type1
8022 /Name /ZaDb
8023 /BaseFont /ZapfDingbats
8024 >>
8025 /PUT pdfmark
8026 [ /_objdef {Helv}
8027 /type /dict
8028 /OBJ pdfmark
8029 [ {Helv}
8030 <<
8031 /Type /Font
8032 /Subtype /Type1
8033 /Name /Helv
8034 /BaseFont /Helvetica
8035 /Encoding {pdfDocEncoding}
8036 >>
8037 /PUT pdfmark
8038 [ /_objdef {aform}
8039 /type /dict
8040 /OBJ pdfmark
8041 [ /_objdef {afields}
8042 /type /array
8043 /OBJ pdfmark
8044 {
8045 [/BBox [0 0 100 100] /_objdef {Check} /BP pdfmark
8046 1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (4) show

```



```

8047 [/EP pdfmark
8048 [/BBox [0 0 100 100] /_objdef {Cross} /BP pdfmark
8049 1 0 0 setrgbcolor /ZapfDingbats 80 selectfont 20 20 moveto (8) show
8050 [/EP pdfmark
8051 [/BBox [0 0 250 100] /_objdef {Submit} /BP pdfmark 0.6 setgray 0 0 250
8052 100 rectfill 1 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246 96
8053 lineto 4 96 lineto 4 4 lineto fill 0.34 setgray 248 98 moveto 248 2
8054 lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
8055 /Helvetica 76 selectfont 0 setgray 8 22.5 moveto (Submit) show
8056 [/EP pdfmark
8057 [/BBox [0 0 250 100] /_objdef {SubmitP} /BP pdfmark 0.6 setgray 0 0
8058 250 100 rectfill 0.34 setgray 2 2 moveto 2 98 lineto 248 98 lineto 246
8059 96 lineto 4 96 lineto 4 4 lineto fill 1 setgray 248 98 moveto 248 2
8060 lineto 2 2 lineto 4 4 lineto 246 4 lineto 246 96 lineto fill
8061 /Helvetica 76 selectfont 0 setgray 10 20.5 moveto (Submit) show
8062 [/EP pdfmark
8063 } ?pdfmark
8064 [ {aform}
8065 <<
8066   /Fields {afields}
8067   /DR << /Font << /ZaDb {ZaDb} /Helv {Helv} >> >>
8068   /DA (/Helv 10 Tf 0 g )
8069   /CO {corder}
8070   /NeedAppearances true
8071   >>
8072 /PUT pdfmark
8073 [ \string{Catalog\string}
8074 <<
8075   /AcroForm {aform}
8076   >>
8077 /PUT pdfmark
8078 [ /_objdef {corder} /type /array /OBJ pdfmark   % dps
8079 }}%
8080 \setkeys{Form}{#1}%
8081 }
8082 \def\@endForm{}
8083 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8084   \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
8085 }
8086 \def\@TextField[#1]#2{% parameters, label
8087   \def\Fld@name{#2}%
8088   \def\Fld@default{}%
8089   \let\Fld@value\@empty
8090   \def\Fld@width{\DefaultWidthofText}%
8091   \def\Fld@height{\DefaultHeightofText}%
8092   \ifFld@multiline
8093     \begingroup
8094       \dimen@=\DefaultHeightofText
8095       \dimen@=4\dimen@
8096       \edef\x{\endgroup
8097         \def\noexpand\Fld@height{\the\dimen@}%
8098       }%
8099     \x
8100   \fi
8101   \bgroup
8102     \Field@toks={ }%
8103     \setkeys{Field}{#1}%

```

```

8104 \ifFld@hidden\def\Fld@width{1sp}\fi
8105 \ifx\Fld@value\empty\def\Fld@value{\Fld@default}\fi
8106 \LayoutTextField{#2}{%
8107   \Hy@escapeform\PDFForm@Text
8108   \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
8109     pdfmark=/ANN,Raw={\PDFForm@Text}%
8110   }%
8111 }%
8112 \egroup
8113 }
8114 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8115 \def\Fld@name{#2}%
8116 \let\Fld@default\relax
8117 \let\Fld@value\relax
8118 \def\Fld@width{\DefaultWidthofChoiceMenu}%
8119 \def\Fld@height{\DefaultHeightofChoiceMenu}%
8120 \bgroup
8121 \Fld@menulength=0
8122 \@tempdima\z@
8123 \@for\@curropt:=#3\do{%
8124   \expandafter\Fld@checkequals\@curropt==\%
8125   \Hy@StepCount\Fld@menulength
8126   \settowidth{\@tempdimb}{\@currDisplay}%
8127   \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8128 }%
8129 \advance\@tempdima by 15\p@
8130 \Field@toks={ }%
8131 \setkeys{Field}{#1}%
8132 \ifFld@hidden\def\Fld@width{1sp}\fi
8133 \LayoutChoiceField{#2}{%
8134   \ifFld@radio
8135     \@@Radio{#3}%
8136   \else
8137     {%
8138       \ifdim\Fld@width<\@tempdima
8139         \ifdim\@tempdima<1cm\@tempdima1cm\fi
8140         \edef\Fld@width{\the\@tempdima}%
8141       \fi
8142       \def\Fld@flags{%
8143         \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8144         \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8145         \ifx\Fld@flags\empty
8146           \@tempdima=\the\Fld@menulength\Fld@charsize
8147           \advance\@tempdima by \Fld@borderwidth bp
8148           \advance\@tempdima by \Fld@borderwidth bp
8149           \edef\Fld@height{\the\@tempdima}%
8150         \fi
8151         \@@ListBox{#3}%
8152       }%
8153     \fi
8154   }%
8155 \egroup
8156 }
8157 \def\@@Radio#1{%
8158 \Fld@listcount=0
8159 \@for\@curropt:=#1\do{%
8160   \expandafter\Fld@checkequals\@curropt==\%

```

```

8161 \Hy@StepCount\Fld@listcount
8162 \@currDisplay\space
8163 \Hy@escapeform\PDFForm@Radio
8164 \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
8165 pdfmark=/ANN,%
8166 Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
8167 } % deliberate space between radio buttons
8168 }%
8169 }
8170 \newcount\Fld@listcount
8171 \def\@@ListBox#1{%
8172 \Choice@toks={ }%
8173 \Fld@listcount=0
8174 \@for\@curropt:=#1\do{%
8175 \expandafter\Fld@checkequals\@curropt==\%
8176 \Hy@StepCount\Fld@listcount
8177 \edef\@processme{%
8178 \Choice@toks{the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8179 }\@processme
8180 }%
8181 \Hy@escapeform\PDFForm@List
8182 \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
8183 pdfmark=/ANN,Raw={\PDFForm@List}%
8184 }%
8185 }
8186 \def\@PushButton[#1]#2{% parameters, label
8187 \def\Fld@name{#2}%
8188 \bgroup
8189 \Field@toks={ }%
8190 \setkeys{Field}{#1}%
8191 \ifFld@hidden\def\Fld@width{1sp}\fi
8192 \LayoutPushButtonField{%
8193 \Hy@escapeform\PDFForm@Push
8194 \pdfmark[\MakeButtonField{#2}]{%
8195 pdfmark=/ANN,Raw={\PDFForm@Push}%
8196 }%
8197 }%
8198 \egroup
8199 }
8200 \def\@Submit[#1]#2{%
8201 \Field@toks={ }%
8202 \def\Fld@width{\DefaultWidthofSubmit}%
8203 \def\Fld@height{\DefaultHeightofSubmit}%
8204 \bgroup
8205 \def\Fld@name{Submit}%
8206 \setkeys{Field}{#1}%
8207 \ifFld@hidden\def\Fld@width{1sp}\fi
8208 \Hy@escapeform\PDFForm@Submit
8209 \pdfmark[\MakeButtonField{#2}]{%
8210 pdfmark=/ANN,%
8211 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
8212 }%
8213 \egroup
8214 }
8215 \def\@Reset[#1]#2{%
8216 \Field@toks={ }%
8217 \def\Fld@width{\DefaultWidthofReset}%

```

```

8218 \def\Fld@height{\DefaultHeightofReset}%
8219 \bgroup
8220   \def\Fld@name{Reset}%
8221   \setkeys{Field}{#1}%
8222   \ifFld@hidden\def\Fld@width{1sp}\fi
8223   \Hy@escapeform\PDFForm@Reset
8224   \pdfmark[\MakeButtonField{#2}]{%
8225     pdfmark=/ANN,Raw={\PDFForm@Reset}%
8226   }%
8227 \egroup
8228 }
8229 \def\@CheckBox[#1]#2{% parameters, label
8230   \def\Fld@name{#2}%
8231   \def\Fld@default{0}%
8232   \bgroup
8233     \def\Fld@width{\DefaultWidthofCheckBox}%
8234     \def\Fld@height{\DefaultHeightofCheckBox}%
8235     \Field@toks={ }%
8236     \setkeys{Field}{#1}%
8237     \ifFld@hidden\def\Fld@width{1sp}\fi
8238     \LayoutCheckField{#2}{%
8239       \Hy@escapeform\PDFForm@Check
8240       \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
8241         pdfmark=/ANN,Raw={\PDFForm@Check}%
8242       }%
8243     }%
8244   \egroup
8245 }
8246 \pdfmark

```

46.2 dvipdf

```

8247 \def\*dvipdf
8248 \def\@Form[#1]{\typeout{Sorry, I do not support FORMs}}
8249 \def\@endForm{}
8250 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8251   \typeout{Sorry, dvipdf does not support FORM gauges}%
8252 }
8253 \def\@TextField[#1]#2{% parameters, label
8254   \typeout{Sorry, dvipdf does not support FORM text fields}%
8255 }
8256 \def\@CheckBox[#1]#2{% parameters, label
8257   \typeout{Sorry, dvipdf does not support FORM checkboxes}%
8258 }
8259 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8260   \typeout{Sorry, dvipdf does not support FORM choice menus}%
8261 }
8262 \def\@PushButton[#1]#2{% parameters, label
8263   \typeout{Sorry, dvipdf does not support FORM pushbuttons}%
8264 }
8265 \def\@Reset[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
8266 \def\@Submit[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
8267 \def\*dvipdf

```

46.3 HyperTeX

```

8268 \def\*hypertext
8269 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
8270 \def\@endForm{}

```

```

8271 \def \@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8272   \typeout{Sorry, HyperTeX does not support FORM gauges}%
8273 }
8274 \def \@TextField[#1]#2{% parameters, label
8275   \typeout{Sorry, HyperTeX does not support FORM text fields}%
8276 }
8277 \def \@CheckBox[#1]#2{% parameters, label
8278   \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
8279 }
8280 \def \@ChoiceMenu[#1]#2#3{% parameters, label, choices
8281   \typeout{Sorry, HyperTeX does not support FORM choice menus}%
8282 }
8283 \def \@PushButton[#1]#2{% parameters, label
8284   \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
8285 }
8286 \def \@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
8287 \def \@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
8288 \</hypertex>

```

46.4 TeX4ht

```

8289 \< *tex4ht>
8290 \def \@Form[#1]{%
8291   \setkeys{Form}{#1}%
8292   \HCode{<form action="\Form@action" method="\Form@method">}%
8293 }
8294 \def \@endForm{\HCode{</form>}}
8295 \def \@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8296   \typeout{Sorry, TeX4ht does not support gauges}%
8297 }
8298 \def \@TextField[#1]#2{% parameters, label
8299   \let\Hy@reserved@a\@empty
8300   \def\Fld@name{#2}%
8301   \def\Fld@default{}%
8302   \bgroup
8303     \Field@toks={ }%
8304     \setkeys{Field}{#1}%
8305     \HCode{<label for="\Fld@name">#2</label>}%
8306     \ifFld@password
8307       \@@PasswordField
8308     \else
8309       \@@TextField
8310     \fi
8311   \egroup
8312 }
8313 \def \@@PasswordField{%
8314   \HCode{%
8315     <input type="password"
8316       id="\Fld@name"
8317       name="\Fld@name"
8318       \ifFld@hidden type="hidden"\fi
8319       value="\Fld@default"
8320       \the\Field@toks
8321     >%
8322   }%
8323 }
8324 \def \@@TextField{%
8325   \ifFld@multiline

```

```

8326     \HCode{<textarea
8327         \ifFld@readonly readonly \fi
8328         id="\Fld@name"
8329         name="\Fld@name"
8330         \ifFld@hidden type="hidden"\fi
8331         \the\Field@toks>%
8332     }%
8333     \Fld@default
8334     \HCode{</textarea>}%
8335 \else
8336     \HCode{<input type="textbox"
8337         \ifFld@readonly readonly \fi
8338         id="\Fld@name"
8339         name="\Fld@name"
8340         \ifFld@hidden type="hidden"\fi
8341         value="\Fld@default" \the\Field@toks>
8342     }%
8343 \fi
8344 }
8345 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8346     \def\Fld@name{#2}%
8347     \def\Fld@default{}%
8348     \let\Hy@reserved@a\relax
8349     \bgroup
8350     \expandafter\Fld@findlength#3\\%
8351     \Field@toks={ }%
8352     \setkeys{Field}{#1}%
8353     #2%
8354     \ifFld@radio
8355         \expandafter\@@Radio#3\\%
8356     \else
8357         \expandafter\@@Menu#3\\%
8358     \fi
8359 \egroup
8360 }
8361 \def\Fld@findlength#1\\{%
8362     \Fld@menulength=0
8363     \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
8364 }
8365 \def\@@Menu#1\\{%
8366     \HCode{<select size="\the\Fld@menulength"
8367         name="\Fld@name" \the\Field@toks>}%
8368     \@for\@curropt:=#1\do{%
8369         \expandafter\Fld@checkequals\@curropt==\\%
8370         \HCode{<option
8371             \ifx\@curropt\Fld@default selected \fi
8372             value="\@currValue">\@currDisplay</option>%
8373         }%
8374     }%
8375     \HCode{</select>}%
8376 }
8377 \def\@@Radio#1\\{%
8378     \@for\@curropt:=#1\do{%
8379         \expandafter\Fld@checkequals\@curropt==\\%
8380         \HCode{<input type="radio"
8381             \ifx\@curropt\Fld@default checked \fi
8382             name="\Fld@name"

```

```

8383     value="\@currValue"
8384     \the\Field@toks>%
8385   }%
8386   \@currDisplay
8387 }%
8388 }
8389 \def\@PushButton[#1]#2{% parameters, label
8390   \def\Fld@name{#2}%
8391   \bgroup
8392     \Field@toks={ }%
8393     \setkeys{Field}{#1}%
8394     \HCode{<input type="button"
8395       name="\Fld@name"
8396       value="#2"
8397       \the\Field@toks>%
8398     }%
8399     \HCode{</button>}%
8400   \egroup
8401 }
8402 \def\@Submit[#1]#2{%
8403   \HCode{<button type="submit">#2</button>}%
8404 }
8405 \def\@Reset[#1]#2{%
8406   \HCode{<button type="reset">#2</button>}%
8407 }
8408 \def\@CheckBox[#1]#2{% parameters, label
8409   \let\Hy@reserved@a\@empty
8410   \def\Fld@name{#2}%
8411   \def\Fld@default{0}%
8412   \bgroup
8413     \Field@toks={ }%
8414     \setkeys{Field}{#1}%
8415     \HCode{<input type="checkbox"
8416       \ifFld@checked checked \fi
8417       \ifFld@disabled disabled \fi
8418       \ifFld@readonly readonly \fi
8419       name="\Fld@name"
8420       \ifFld@hidden type="hidden"\fi
8421       value="\Fld@default"
8422       \the\Field@toks>%
8423     #2%
8424   }%
8425   \egroup
8426 }
8427 </tex4ht>

```

46.5 pdfTeX

```

8428 <*pdfTeX>
8429 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8430   \typeout{Sorry, pdfTeX does not support FORM gauges}%
8431 }
8432 \def\MakeFieldObject#1#2{\sbox0{#1}%
8433   \immediate\pdfxform0 %
8434   \expandafter\edef\csname #2Object\endcsname{%
8435     \the\pdflastxform\space 0 R%
8436   }%
8437 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%

```

```

8438 }%
8439 \def\@Form[#1]{%
8440   \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
8441   \setkeys{Form}{#1}%
8442   \ifnum\pdftexversion>13
8443     \pdfrefobj\OBJ@pdfdocencoding
8444     \pdfrefobj\OBJ@ZaDb
8445     \pdfrefobj\OBJ@Helv
8446     \pdfrefobj\OBJ@acroform
8447   \fi
8448   \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
8449   \MakeFieldObject{%

Same as \ding{123} of package pifont.
8450   \begingroup
8451     \fontfamily{pzd}%
8452     \fontencoding{U}%
8453     \fontseries{m}%
8454     \fontshape{n}%
8455     \selectfont
8456     \char123 %
8457   \endgroup
8458   }{Ding}%
8459   \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{Submit}}}}{Submit}%
8460   \MakeFieldObject{\fbox{\textcolor{yellow}{\textsf{SubmitP}}}}{SubmitP}%
8461 }
8462 \def\@endForm{}
8463 \def\@TextField[#1]#2{% parameters, label
8464   \def\Fld@name{#2}%
8465   \def\Fld@default{}%
8466   \let\Fld@value\@empty
8467   \def\Fld@width{\DefaultWidthofText}%
8468   \def\Fld@height{\DefaultHeightofText}%
8469   \ifFld@multiline
8470     \begingroup
8471       \dimen@=\DefaultHeightofText
8472       \dimen@=4\dimen@
8473       \edef\x{\endgroup
8474         \def\noexpand\Fld@height{\the\dimen@}%
8475       }%
8476       \x
8477     \fi
8478   \bgroup
8479     \Field@toks={ }%
8480     \setkeys{Field}{#1}%
8481     \ifFld@hidden\def\Fld@width{1sp}\fi
8482     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
8483     \LayoutTextField{#2}{%
8484       \Hy@escapeform\PDFForm@Text
8485       \pdfstartlink user {\PDFForm@Text}\relax
8486       \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
8487     }%
8488   \egroup
8489 }
8490 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8491   \def\Fld@name{#2}%
8492   \let\Fld@default\relax
8493   \let\Fld@value\relax

```



```

8494 \def\Fld@width{\DefaultWidthofChoiceMenu}%
8495 \def\Fld@height{\DefaultHeightofChoiceMenu}%
8496 \bgroup
8497   \Fld@menulength=0
8498   \@tempdima\z@
8499   \@for\@curropt:=#3\do{%
8500     \expandafter\Fld@checkequals\@curropt==\%
8501     \Hy@StepCount\Fld@menulength
8502     \settowidth{\@tempdimb}{\@currDisplay}%
8503     \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8504   }%
8505   \advance\@tempdima by 15\p@
8506   \Field@toks={ }%
8507   \setkeys{Field}{#1}%
8508   \ifFld@hidden\def\Fld@width{1sp}\fi
8509   \ifx\Fld@value\relax
8510     \let\Fld@value\Fld@default
8511   \fi
8512   \LayoutChoiceField{#2}{%
8513     \ifFld@radio
8514       \@@Radio{#3}%
8515     \else
8516       {%
8517         \ifdim\Fld@width<\@tempdima
8518           \ifdim\@tempdima<1cm\@tempdima1cm\fi
8519           \edef\Fld@width{\the\@tempdima}%
8520         \fi
8521         \def\Fld@flags{%
8522           \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8523           \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8524           \ifx\Fld@flags\@empty
8525             \@tempdima=\the\Fld@menulength\Fld@charsize
8526             \advance\@tempdima by \Fld@borderwidth bp
8527             \advance\@tempdima by \Fld@borderwidth bp
8528             \edef\Fld@height{\the\@tempdima}%
8529           \fi
8530           \@@ListBox{#3}%
8531         }%
8532       \fi
8533     }%
8534   \egroup
8535 }
8536 \def\@@Radio#1{%
8537   \Fld@listcount=0
8538   \@for\@curropt:=#1\do{%
8539     \expandafter\Fld@checkequals\@curropt==\%
8540     \Hy@StepCount\Fld@listcount
8541     \@currDisplay\space
8542     \leavevmode
8543     \Hy@escapeform\PDFForm@Radio
8544     \pdfstartlink user {%
8545       \PDFForm@Radio
8546       /AP <<
8547       /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.

```

8548         /\@currValue\space \DingObject
8549     >>
8550 >>
8551 }%
8552 \relax
8553 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
8554 \space% deliberate space between radio buttons
8555 }%
8556 }
8557 \newcount\Fld@listcount
8558 \def\@@ListBox#1{%
8559 \Choice@toks={ }%
8560 \Fld@listcount=0
8561 \@for\@curropt:=#1\do{%
8562 \expandafter\Fld@checkequals\@curropt==\\%
8563 \Hy@StepCount\Fld@listcount
8564 \edef\@processme{%
8565 \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8566 }\@processme
8567 }%
8568 \leavevmode
8569 \Hy@escapeform\PDFForm@List
8570 \pdfstartlink user {\PDFForm@List}\relax
8571 \MakeChoiceField{\Fld@width}{\Fld@height}%
8572 \pdfendlink
8573 }
8574 \def\@PushButton[#1]#2{% parameters, label
8575 \def\Fld@name{#2}%
8576 \bgroup
8577 \Field@toks={ }%
8578 \setkeys{Field}{#1}%
8579 \ifFld@hidden\def\Fld@width{1sp}\fi
8580 \LayoutPushButtonField{%
8581 \leavevmode
8582 \Hy@escapeform\PDFForm@Push
8583 \pdfstartlink user {\PDFForm@Push}\relax
8584 \MakeButtonField{#2}%
8585 \pdfendlink
8586 }%
8587 \egroup
8588 }
8589 \def\@Submit[#1]#2{%
8590 \Field@toks={ }%
8591 \def\Fld@width{\DefaultWidthofSubmit}%
8592 \def\Fld@height{\DefaultHeightofSubmit}%
8593 \bgroup
8594 \def\Fld@name{Submit}%
8595 \setkeys{Field}{#1}%
8596 \ifFld@hidden\def\Fld@width{1sp}\fi
8597 \leavevmode
8598 \Hy@escapeform\PDFForm@Submit
8599 \pdfstartlink user {%
8600 \PDFForm@Submit
8601 /AP << /N \SubmitObject\space /D \SubmitPObject >>
8602 }%
8603 \relax
8604 \MakeButtonField{#2}%

```

```

8605 \pdfendlink
8606 \egroup
8607 }
8608 \def\@Reset[#1]#2{%
8609 \Field@toks={ }%
8610 \def\Fld@width{\DefaultWidthofReset}%
8611 \def\Fld@height{\DefaultHeightofReset}%
8612 \bgroup
8613 \def\Fld@name{Reset}%
8614 \setkeys{Field}{#1}%
8615 \ifFld@hidden\def\Fld@width{1sp}\fi
8616 \leavevmode
8617 \Hy@escapeform\PDFForm@Reset
8618 \pdfstartlink user {\PDFForm@Reset}\relax
8619 \MakeButtonField{#2}%
8620 \pdfendlink
8621 \egroup
8622 }
8623 \def\@CheckBox[#1]#2{% parameters, label
8624 \def\Fld@name{#2}%
8625 \def\Fld@default{0}%
8626 \bgroup
8627 \def\Fld@width{\DefaultWidthofCheckBox}%
8628 \def\Fld@height{\DefaultHeightofCheckBox}%
8629 \Field@toks={ }%
8630 \setkeys{Field}{#1}%
8631 \ifFld@hidden\def\Fld@width{1sp}\fi
8632 \LayoutCheckField{#2}{%
8633 \Hy@escapeform\PDFForm@Check
8634 \pdfstartlink user {\PDFForm@Check}\relax
8635 \MakeCheckField{\Fld@width}{\Fld@height}%
8636 \pdfendlink
8637 }%
8638 \egroup
8639 }
8640 \pdfobj { << /Type /Encoding /Differences [ 24 /breve /caron
8641 /circumflex /dotaccent /hungarumlaut /ogonek /ring /tilde 39
8642 /quotesingle 96 /grave 128 /bullet /dagger /daggerdbl /ellipsis
8643 /emdash /endash /florin /fraction /guilsinglleft /guilsinglright
8644 /minus /perthousand /quotedblbase /quotedblleft /quotedblright
8645 /quoteleft /quoteright /quotesinglbase /trademark /fi /fl /Lslash /OE
8646 /Scaron /Ydieresis /Zcaron /dotlessi /lslash /oe /scaron /zcaron 164
8647 /currency 166 /brokenbar 168 /dieresis /copyright /ordfeminine 172
8648 /logicalnot /.notdef /registered /macron /degree /plusminus
8649 /twosuperior /threesuperior /acute /mu 183 /periodcentered /cedilla
8650 /onesuperior /ordmasculine 188 /onequarter /onehalf /threequarters 192
8651 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE /Ccedilla
8652 /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute /Icircumflex
8653 /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex /Otilde
8654 /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex /Udieresis
8655 /Yacute /Thorn /germandbls /agrave /aacute /acircumflex /atilde
8656 /adieresis /aring /ae /ccedilla /egrave /eacute /ecircumflex
8657 /edieresis /igrave /iacute /icircumflex /idieresis /eth /ntilde
8658 /ograve /oacute /ocircumflex /otilde /odieresis /divide /oslash
8659 /ugrave /uacute /ucircumflex /udieresis /yacute /thorn /ydieresis ] >>
8660 }
8661 \edef\OBJ@pdfdocencoding{\the\pdflastobj}

```

```

8662 \pdfobj {
8663   <<
8664     /Type /Font
8665     /Subtype /Type1
8666     /Name /ZaDb
8667     /BaseFont /ZapfDingbats
8668   >>
8669 }
8670 \edef\OBJ@ZaDb{\the\pdflastobj}
8671 \pdfobj { <<
8672   /Type /Font
8673   /Subtype /Type1
8674   /Name /Helv
8675   /BaseFont /Helvetica
8676   /Encoding \OBJ@pdfdocencoding\space 0 R
8677   >>
8678 }
8679 \edef\OBJ@Helv{\the\pdflastobj}
8680 \pdfobj {
8681   <<
8682     /Fields []
8683     /DR <<
8684       /Font << /ZaDb \OBJ@ZaDb\space 0 R /Helv \OBJ@Helv\space 0 R >>
8685     >>
8686     /DA (/Helv 10 Tf 0 g )
8687     /NeedAppearances true
8688   >>
8689 }
8690 \edef\OBJ@acroform{\the\pdflastobj}
8691 \pdfTeX

```

46.6 dvipdfm

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

```
8692 \dvipdfm
```

\@Gauge

```

8693 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8694   \typeout{Sorry, dvipdfm does not support FORM gauges}%
8695 }

```

\@Form

```

8696 \def\@Form[#1]{%
8697   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
8698   \setkeys{Form}{#1}%
8699   \@pdfm@mark{obj @afields [ ]}%
8700   \@pdfm@mark{obj @corder [ ]}%
8701   \@pdfm@mark{%
8702     obj @aform <<
8703       /Fields @afields
8704       /DR << /Font << /ZaDb \OBJ@ZaDb /Helv \OBJ@Helv >> >>
8705       /DA (/Helv 10 Tf 0 g )
8706       /CO @corder
8707       /NeedAppearances true
8708     >>%
8709   }%

```

```

8710 \pdfmark{put @catalog << /AcroForm @aform >>}%
8711 }

\@endForm

8712 \def\@endForm{}

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

8713 \def\dvipdfm@setdim{%
8714   height \the\ht\pdfm@box\space
8715   width \the\wd\pdfm@box\space
8716   depth \the\dp\pdfm@box\space
8717 }

\@TextField

8718 \def\@TextField[#1]#2{% parameters, label
8719   \def\Fld@name{#2}%
8720   \def\Fld@default{}%
8721   \let\Fld@value\@empty
8722   \def\Fld@width{\DefaultWidthofText}%
8723   \def\Fld@height{\DefaultHeightofText}%
8724   \ifFld@multiline
8725     \begingroup
8726       \dimen@=\DefaultHeightofText
8727       \dimen@=4\dimen@
8728       \edef\x{\endgroup
8729         \def\noexpand\Fld@height{\the\dimen@}%
8730       }%
8731       \x
8732     \fi
8733     \bgroup
8734       \Field@toks={ }%
8735       \setkeys{Field}{#1}%
8736       \ifFld@hidden\def\Fld@width{1sp}\fi
8737       \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
8738       \setbox\pdfm@box=\hbox{%
8739         \MakeTextField{\Fld@width}{\Fld@height}%
8740       }%
8741       \LayoutTextField{#2}{%
8742         \Hy@escapeform\PDFForm@Text
8743         \@pdfm@mark{%
8744           ann @\Fld@name\space \dvipdfm@setdim << \PDFForm@Text >>%
8745         }%
8746       }%
8747       \unhbox\pdfm@box
8748       \@pdfm@mark{put @afields @\Fld@name}% record in @afields array
8749     \egroup
8750 }

\@ChoiceMenu

8751 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8752   \def\Fld@name{#2}%
8753   \let\Fld@default\relax
8754   \let\Fld@value\relax
8755   \def\Fld@width{\DefaultWidthofChoiceMenu}%
8756   \def\Fld@height{\DefaultHeightofChoiceMenu}%
8757   \bgroup
8758     \Fld@menulength=0

```

```

8759 \@tempdima\z@
8760 \@for\@curropt:=#3\do{%
8761 \expandafter\Fld@checkequals\@curropt==\\%
8762 \Hy@StepCount\Fld@menulength
8763 \settowidth{\@tempdimb}{\@currDisplay}%
8764 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
8765 }%
8766 \advance\@tempdima by 15\p@
8767 \Field@toks={ }%
8768 \setkeys{Field}{#1}%
8769 \ifFld@hidden\def\Fld@width{1sp}\fi
8770 \LayoutChoiceField{#2}{%
8771 \ifFld@radio
8772 \@@Radio{#3}%
8773 \else
8774 {%
8775 \ifdim\Fld@width<\@tempdima
8776 \ifdim\@tempdima<1cm\@tempdima1cm\fi
8777 \edef\Fld@width{\the\@tempdima}%
8778 \fi
8779 \def\Fld@flags{}%
8780 \ifFld@combo\def\Fld@flags{/Ff 917504}\fi
8781 \ifFld@popdown\def\Fld@flags{/Ff 131072}\fi
8782 \ifx\Fld@flags\@empty
8783 \@tempdima=\the\Fld@menulength\Fld@charsize
8784 \advance\@tempdima by \Fld@borderwidth bp
8785 \advance\@tempdima by \Fld@borderwidth bp
8786 \edef\Fld@height{\the\@tempdima}%
8787 \fi
8788 \@@Listbox{#3}%
8789 }%
8790 \fi
8791 }%
8792 \egroup
8793 }

```

\@@Radio

```

8794 \def\@@Radio#1{%
8795 \Fld@listcount=0
8796 \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
8797 \@for\@curropt:=#1\do{%
8798 \expandafter\Fld@checkequals\@curropt==\\%
8799 \Hy@StepCount\Fld@listcount
8800 \@currDisplay\space
8801 \leavevmode
8802 \Hy@escapeform\PDFForm@Radio
8803 \@pdfm@mark{%
8804 ann \ifnum\Fld@listcount=1 @\Fld@name\space\fi
8805 \dvi pdfm@setdim
8806 <<
8807 \PDFForm@Radio\space
8808 /AP << /N << /\@currValue /null >> >>
8809 >>%
8810 }%
8811 \unhcopy\pdfm@box\space% deliberate space between radio buttons
8812 \ifnum\Fld@listcount=1\@pdfm@mark{put @afields @\Fld@name}\fi
8813 }%

```

```

8814 }

\Fld@listcount

8815 \newcount\Fld@listcount

@@Listbox

8816 \def\@@Listbox#1{%
8817   \Choice@toks={ }%
8818   \Fld@listcount=0
8819   \@for\@curropt:=#1\do{%
8820     \expandafter\Fld@checkequals\@curropt==\%
8821     \Hy@StepCount\Fld@listcount
8822     \edef\@processme{%
8823       \Choice@toks{\the\Choice@toks [(\@currValue) (\@currDisplay)]}%
8824     }\@processme
8825   }%
8826   \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
8827   \leavevmode
8828   \Hy@escapeform\PDFForm@List
8829   \@pdfm@mark{%
8830     ann @\Fld@name\space\dvipdfm@setdim
8831     << \PDFForm@List >>%
8832   }%
8833   \unhbox\pdfm@box
8834   \@pdfm@mark{put @afields @\Fld@name}%
8835 }

\@PushButton

8836 \def\@PushButton[#1]#2{% parameters, label
8837   \def\Fld@name{#2}%
8838   \bgroup
8839     \Field@toks={ }%
8840     \setkeys{Field}{#1}%
8841     \ifFld@hidden\def\Fld@width{1sp}\fi
8842     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8843     \LayoutPushButtonField{%
8844       \leavevmode
8845       \Hy@escapeform\PDFForm@Push
8846       \@pdfm@mark{%
8847         ann @\Fld@name\space\dvipdfm@setdim
8848         << \PDFForm@Push >>%
8849       }%
8850     }%
8851     \unhbox\pdfm@box
8852     \@pdfm@mark{put @afields @\Fld@name}%
8853   \egroup
8854 }

\@Submit

8855 \def\@Submit[#1]#2{%
8856   \Field@toks={ }%
8857   \def\Fld@width{\DefaultWidthofSubmit}%
8858   \def\Fld@height{\DefaultHeightofSubmit}%
8859   \bgroup
8860     \def\Fld@name{Submit}%
8861     \setkeys{Field}{#1}%
8862     \ifFld@hidden\def\Fld@width{1sp}\fi

```

```

8863 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8864 \leavevmode
8865 \Hy@escapeform\PDFForm@Submit
8866 \@pdfm@mark{%
8867   ann @\Fld@name\space\dvipdfm@setdim
8868   << \PDFForm@Submit >>%
8869 }%
8870 \unhbox\pdfm@box%
8871 \@pdfm@mark{put @afields @\Fld@name}%
8872 \egroup
8873 }

```

\@Reset

```

8874 \def\@Reset[#1]#2{%
8875   \Field@toks={ }%
8876   \def\Fld@width{\DefaultWidthofReset}%
8877   \def\Fld@height{\DefaultHeightofReset}%
8878   \bgroup
8879     \def\Fld@name{Reset}%
8880     \setkeys{Field}{#1}%
8881     \ifFld@hidden\def\Fld@width{1sp}\fi
8882     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
8883     \leavevmode
8884     \Hy@escapeform\PDFForm@Reset
8885     \@pdfm@mark{%
8886       ann @\Fld@name\space\dvipdfm@setdim
8887       << \PDFForm@Reset >>%
8888     }%
8889     \unhbox\pdfm@box
8890     \@pdfm@mark{put @afields @\Fld@name}%
8891   \egroup
8892 }

```

\@CheckBox

```

8893 \def\@CheckBox[#1]#2{% parameters, label
8894   \def\Fld@name{#2}%
8895   \def\Fld@default{0}%
8896   \bgroup
8897     \def\Fld@width{\DefaultWidthofCheckBox}%
8898     \def\Fld@height{\DefaultHeightofCheckBox}%
8899     \Field@toks={ }%
8900     \setkeys{Field}{#1}%
8901     \ifFld@hidden\def\Fld@width{1sp}\fi
8902     \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
8903     \LayoutCheckField{#2}%
8904     \Hy@escapeform\PDFForm@Check
8905     \@pdfm@mark{%
8906       ann @\Fld@name\space\dvipdfm@setdim
8907       << \PDFForm@Check >>%
8908     }%
8909     \unhbox\pdfm@box
8910     \@pdfm@mark{put @afields @\Fld@name}%
8911   }%
8912 \egroup
8913 }

8914 \@pdfm@mark{obj @OBJpdfdocencoding << /Type /Encoding /Differences [%

```



```

8915 24 /breve /caron /circumflex /dotaccent /hungarumlaut /ogonek /ring
8916 /tilde
8917 39 /quotesingle
8918 96 /grave
8919 128 /bullet /dagger /daggerdbl /ellipsis /emdash /endash /florin
8920 /fraction /guilsinglleft /guilsinglright /minus /perthousand
8921 /quotedblbase /quotedblleft /quotedblright /quoteleft /quoteright
8922 /quotesinglbase /trademark /fi /fl /Lslash /OE /Scaron /Ydieresis
8923 /Zcaron /dotlessi /lslash /oe /scaron /zcaron
8924 164 /currency
8925 166 /brokenbar
8926 168 /dieresis /copyright /ordfeminine
8927 172 /logicalnot /.notdef /registered /macron /degree /plusminus
8928 /twosuperior /threesuperior /acute /mu
8929 183 /periodcentered /cedilla /onesuperior /ordmasculine
8930 188 /onequarter /onehalf /threequarters
8931 192 /Agrave /Aacute /Acircumflex /Atilde /Adieresis /Aring /AE
8932 /Ccedilla /Egrave /Eacute /Ecircumflex /Edieresis /Igrave /Iacute
8933 /Icircumflex /Idieresis /Eth /Ntilde /Ograve /Oacute /Ocircumflex
8934 /Otilde /Odieresis /multiply /Oslash /Ugrave /Uacute /Ucircumflex
8935 /Udieresis /Yacute /Thorn /germandbls /agrave /aacute /acircumflex
8936 /atilde /adieresis /aring /ae /ccedilla /egrave /eacute
8937 /ecircumflex /edieresis /igrave /iacute /icircumflex /idieresis
8938 /eth /ntilde /ograde /oacute /ocircumflex /otilde /odieresis
8939 /divide /oslash /ugrave /uacute /ucircumflex /udieresis /yacute
8940 /thorn /ydieresis%
8941 ] >>
8942 }
8943 \pdfmark{obj @OBJZaDb
8944 <<
8945 /Type /Font
8946 /Subtype /Type1
8947 /Name /ZaDb
8948 /BaseFont /ZapfDingbats
8949 >>
8950 }
8951 \pdfmark{obj @OBJHelv
8952 <<
8953 /Type /Font
8954 /Subtype /Type1
8955 /Name /Helv
8956 /BaseFont /Helvetica
8957 /Encoding @OBJpdfdocencoding
8958 >>
8959 }
8960 </dvipdfm>

```

46.7 Common forms part

```
8961 <*pdfform>
```

\Hy@escapestring

```

8962 \begingroup\expandafter\expandafter\expandafter\endgroup
8963 \expandafter\ifx\csname pdfescapestring\endcsname\relax
8964 \let\Hy@escapestring\@firstofone
8965 \def\Hy@escapeform#1{%
8966 \ifHy@escapeform

```

```

8967 \def\Hy@escapestring##1{%
8968 \noexpand\Hy@escapestring{\noexpand##1}%
8969 }%
8970 \edef\Hy@temp{#1}%
8971 \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
8972 \def\Hy@escapestring##1{%
8973 \@ifundefined{Hy@esc@\string##1}{%
8974 ##1%
8975 \ThisShouldNotHappen
8976 }{%
8977 \csname Hy@esc@\string##1\endcsname
8978 }%
8979 }%
8980 \else
8981 \let\Hy@escapestring\@firstofone
8982 \fi
8983 }%
8984 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
8985 \ifx\#3\%
8986 \else
8987 \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
8988 \Hy@ReturnAfterFi{%
8989 \Hy@@escapeform#3\@nil
8990 }%
8991 \fi
8992 }%
8993 \else
8994 \def\Hy@escapeform#1{%
8995 \ifHy@escapeform
8996 \let\Hy@escapestring\pdfescapestring
8997 \else
8998 \let\Hy@escapestring\@firstofone
8999 \fi
9000 }%
9001 \Hy@escapeform{}}%
9002 \fi

```

\PDFForm@Check

```

9003 \def\PDFForm@Check{%
9004 /Subtype /Widget
9005 \ifFld@hidden /F 6 \else /F 4 \fi
9006 /T (\Hy@escapestring{Fld@name})
9007 /Q \Fld@align\space
9008 /BS << /W \Fld@borderwidth\space /S /\Fld@borderstyle\space >>
9009 /MK <<
9010 /BC [\Fld@bordercolor]
9011 \ifx\Fld@bcolor\@empty
9012 \else
9013 /BG [\Fld@bcolor]
9014 \fi
9015 /CA (\Hy@escapestring{Fld@cbsymbol})
9016 >>
9017 /DA (/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)
9018 /FT /Btn
9019 /H /P
9020 \ifFld@checked /V /Yes \else /V /Off \fi
9021 }

```

\PDFForm@Push

```
9022 \def\PDFForm@Push{%
9023   /Subtype/Widget
9024   \ifFld@hidden /F 6\else /F 4\fi
9025   /T(\Hy@escapestring{\Fld@name})%
9026   /FT/Btn%
9027   /Ff 65540
9028   /H/P%
9029   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
9030   /MK<<%
9031     /BC[\Fld@bordercolor]%
9032   >>%
9033   /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick})>>%
9034 }
```

\Fld@additionalactions

```
9035 \def\Fld@additionalactions{%
9036   /AA <<
K input (keystroke) format
9037   \ifx\Fld@keystroke@code\@empty
9038   \else
9039     /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
9040   \fi
```

F display format

```
9041   \ifx\Fld@format@code\@empty
9042   \else
9043     /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
9044   \fi
```

V validation

```
9045   \ifx\Fld@validate@code\@empty
9046   \else
9047     /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
9048   \fi
```

C calculation

```
9049   \ifx\Fld@calculate@code\@empty
9050   \else
9051     /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
9052   \fi
```

Fo receiving the input focus

```
9053   \ifx\Fld@onfocus@code\@empty
9054   \else
9055     /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
9056   \fi
```

Bl loosing the input focus (blurred)

```
9057   \ifx\Fld@onblur@code\@empty
9058   \else
9059     /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
9060   \fi
```

D pressing the mouse button (down)

```
9061   \ifx\Fld@onmousedown@code\@empty
9062   \else
9063     /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
9064   \fi
```

U releasing the mouse button (up)

```
9065 \ifx\Fld@onmouseup@code\@empty
9066 \else
9067 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
9068 \fi
```

E cursor enters the annotation's active area.

```
9069 \ifx\Fld@onenter@code\@empty
9070 \else
9071 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
9072 \fi
```

X cursor exits the annotation's active area.

```
9073 \ifx\Fld@onexit@code\@empty
9074 \else
9075 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
9076 \fi
9077 >>%
9078 }
```

\PDFForm@List

```
9079 \def\PDFForm@List{%
9080 /Subtype/Widget%
9081 \ifFld@hidden /F 6\else /F 4\fi
9082 /T(\Hy@escapestring{\Fld@name})%
9083 /FT/Ch%
9084 /Q \Fld@align
9085 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
9086 /MK<<%
9087 /BC[\Fld@bordercolor]%
9088 \ifx\Fld@bcolor\@empty
9089 \else
9090 /BG[\Fld@bcolor]%
9091 \fi
9092 >>%
9093 /DA(/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)%
9094 /Opt[\the\Choice@toks]%
9095 \ifx\Fld@default\relax
9096 \else
9097 /DV(\Hy@escapestring{\Fld@default})%
9098 \fi
9099 \ifx\Fld@value\relax
9100 \else
9101 /V(\Hy@escapestring{\Fld@value})%
9102 \fi
9103 \Fld@additionalactions
9104 \Fld@flags
9105 }
```

\PDFForm@Radio

```
9106 \def\PDFForm@Radio{%
9107 /Subtype/Widget%
9108 \ifFld@hidden /F 6\else /F 4\fi
9109 /T(\Hy@escapestring{\Fld@name})%
9110 /FT/Btn%
9111 /Ff 49152%
9112 /H/P
9113 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
```

```

9114 /MK<<%
9115 /BC[\Fld@bordercolor]%
9116 \ifx\Fld@bcolor\@empty
9117 \else
9118 /BG[\Fld@bcolor]%
9119 \fi
9120 /CA(H)%
9121 >>%
9122 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)%
9123 \ifx\@currValue\Fld@default
9124 /V/\Fld@default
9125 \else
9126 /V/Off%
9127 \fi
9128 \Fld@additionalactions
9129 }

```

\PDFForm@Text

```

9130 \def\PDFForm@Text{%
9131 /Subtype/Widget%
9132 \ifFld@hidden /F 6\else /F 4\fi
9133 /T(\Hy@escapestring{\Fld@name})
9134 /Q \Fld@align
9135 /FT/Tx%
9136 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
9137 /MK<<%
9138 /BC[\Fld@bordercolor]%
9139 \ifx\Fld@bcolor\@empty
9140 \else
9141 /BG[\Fld@bcolor]%
9142 \fi
9143 >>%
9144 /DA(/Helv \strip@pt\Fld@charsize\space Tf \Fld@color\space rg)%
9145 /DV(\Hy@escapestring{\Fld@default})%
9146 /V(\Hy@escapestring{\Fld@value})%
9147 \Fld@additionalactions
9148 \ifFld@multiline
9149 \ifFld@readonly /Ff 4097\else /Ff 4096\fi
9150 \else
9151 \ifFld@password
9152 \ifFld@readonly /Ff 8193\else /Ff 8192\fi
9153 \else
9154 \ifFld@readonly /Ff 1\fi
9155 \fi
9156 \fi
9157 \ifnum\Fld@maxlen>0/MaxLen \Fld@maxlen \fi
9158 }

```

\PDFForm@Submit

```

9159 \def\PDFForm@Submit{%
9160 /Subtype/Widget%
9161 \ifFld@hidden /F 6\else /F 4\fi
9162 /T(\Hy@escapestring{\Fld@name})%
9163 /FT/Btn%
9164 /Ff 65540%
9165 /H/P%
9166 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%

```

```

9167 /MK<<%
9168 /BC[\Fld@bordercolor]%
9169 >>%
9170 /A<<%
9171 /S/SubmitForm%
9172 /F<<%
9173 /FS/URL%
9174 /F(\Hy@escapestring{\Form@action})%
9175 >>%
9176 \ifForm@html /Flags 4\fi
9177 >>%
9178 }

```

\PDFForm@Reset

```

9179 \def\PDFForm@Reset{%
9180 /Subtype/Widget%
9181 \ifFld@hidden /F 6\else /F 4\fi
9182 /T(\Hy@escapestring{\Fld@name})%
9183 /FT/Btn%
9184 /H/P%
9185 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
9186 /Ff 65540%
9187 /MK<<%
9188 /BC[\Fld@bordercolor]%
9189 % /CA (Clear)
9190 % /AC (Done)
9191 >>%
9192 /BS<</W \Fld@borderwidth/S\Fld@borderstyle>>%
9193 /A<</S/ResetForm>>%
9194 }

9195 </pdfform>
9196 <*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 \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`

```

9197 \def\phantomsection{%
9198 \Hy@GlobalStepCount\Hy@linkcounter
9199 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
9200 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9201 }
9202 </package>

```

47.1 Bookmarks

```

9203 <*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.

```

9204 \def\Hy@writebookmark#1#2#3#4#5{% section number, text, label, level, file
9205 \ifx\WriteBookmarks\relax%
9206 \else
9207 \ifnum#4>\Hy@bookmarksdepth\relax
9208 \else
9209 \@@writetorep{#1}{#2}{#3}{#4}{#5}%
9210 \fi
9211 \fi}
9212 \def\Hy@currentbookmarklevel{0}
9213 \def\Hy@numberline#1{#1 }
9214 \def\@@writetorep#1#2#3#4#5{%
9215 \begingroup
9216 \edef\Hy@tempa{#5}%
9217 \ifx\Hy@tempa\Hy@bookmarkstype
9218 \edef\Hy@level{#4}%
9219 \ifx\Hy@levelcheck Y%
9220 \@tempcnta\Hy@level\relax
9221 \advance\@tempcnta by -1
9222 \ifnum\Hy@currentbookmarklevel<\@tempcnta
9223 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
9224 \advance\@tempcnta by 1
9225 \Hy@Warning{%
9226 Difference (\the\@tempcnta) between bookmark levels is %
9227 greater \MessageBreak than one, level fixed%
9228 }%
9229 \@tempcnta\Hy@currentbookmarklevel
9230 \advance\@tempcnta by 1
9231 \edef\Hy@level{\the\@tempcnta}%
9232 \fi
9233 \else
9234 \global\let\Hy@levelcheck Y%
9235 \fi
9236 \global\let\Hy@currentbookmarklevel\Hy@level
9237 \@tempcnta\Hy@level\relax
9238 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
9239 \advance\@tempcnta by -1
9240 \edef\Hy@tempa{#3}%
9241 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
9242 \ifx\Hy@tempa\Hy@tempb
9243 \Hy@Warning{%
9244 The anchor of a bookmark and its parent's must not%
9245 \MessageBreak be the same. Added a new anchor%
9246 }%
9247 \phantomsection
9248 \fi
9249 \ifHy@bookmarksnumbered
9250 \let\numberline\Hy@numberline
9251 \let\partnumberline\Hy@numberline
9252 \let\chapternumberline\Hy@numberline
9253 \else
9254 \let\numberline\@gobble
9255 \let\partnumberline\@gobble

```

```

9256      \let\chapternumberline@gobble
9257      \fi
9258      \pdfstringdef\Hy@tempa{#2}%
9259      \if@filesw
9260          \protected@write\@outlinefile{%
9261              \protect\BOOKMARK
9262              [\Hy@level] [\@bookmarkopenstatus{\Hy@level}] {#3}%
9263              {\Hy@tempa}{\Hy@tempb}%
9264          }%
9265      \fi
9266      \fi
9267      \endgroup
9268 }

```

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

```

9269 \newcommand{\currentpdfbookmark}{%
9270   \pdfbookmark[\Hy@currentbookmarklevel]%
9271 }
9272 \newcommand{\subpdfbookmark}{%
9273   \@tempcnta\Hy@currentbookmarklevel
9274   \Hy@StepCount\@tempcnta
9275   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
9276 }
9277 \newcommand{\belowpdfbookmark}[2]{%
9278   \@tempcnta\Hy@currentbookmarklevel
9279   \Hy@StepCount\@tempcnta
9280   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
9281   \advance\@tempcnta by -1
9282   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
9283 }

```

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.

```

9284 \renewcommand\pdfbookmark[3][0]{%
9285   \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
9286   \hyper@anchorstart{#3.#1}\hyper@anchorend
9287 }
9288 \def\BOOKMARK{\@ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}}
9289 \def\@BOOKMARK[#1]{\@ifnextchar[{\@@BOOKMARK[#1]}{\@@BOOKMARK[#1][-]}}

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfo` macros.

The `VTEX` section was written originally by `VTEX`, but then amended by Denis Girou (`denis.girou@idris.fr`), then by Taco Hoekwater (`taco.hoekwater@wkap.nl`). The problem is that `VTEX`, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping `\` and the like.

```

9290 (*vtx)
9291 \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.

```

9292 \begingroup
9293   \catcode'\'=12
9294   \ifnum\Hy@VTeXversion<650 %
9295       \catcode'\ "=12

```



```

9296 \gdef\hv@pdf@char#1#2#3{%
9297 \char
9298 \ifcase'#1#2#3
9299 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
9300 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
9301 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
9302 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
9303 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
9304 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
9305 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
9306 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
9307 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
9308 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
9309 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
9310 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
9311 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
9312 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
9313 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
9314 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
9315 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
9316 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
9317 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
9318 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
9319 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
9320 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
9321 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
9322 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
9323 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
9324 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
9325 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
9326 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
9327 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
9328 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
9329 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
9330 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
9331 \fi
9332 }
9333 \else
9334 \gdef\hv@pdf@char{\char'}
9335 \fi
9336 \endgroup

```

\@@BOOKMARK

```

9337 \def\@@BOOKMARK[#1][#2]#3#4#5{%
9338 \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
9339 \edef\@mycount{\the\@serial@counter}%
9340 \Hy@StepCount\@serial@counter
9341 \edef\@parcount{%
9342 \expandafter\ifx\csname @count@#5\endcsname\relax
9343 0%
9344 \else
9345 \csname @count@#5\endcsname
9346 \fi
9347 }%
9348 \immediate\special{!outline #3;p=\@parcount,i=\@mycount,s=\ifx#2-c\else
9349 o\fi,t=#4}%
9350 }%

```

\ReadBookmarks

```

9351 \def\ReadBookmarks{%
9352   \begingroup
9353     \def\0{\hv@pdf@char 0}%
9354     \def\1{\hv@pdf@char 1}%
9355     \def\2{\hv@pdf@char 2}%
9356     \def\3{\hv@pdf@char 3}%
9357     \def\{()%
9358     \def\)}%
9359     \def\do##1{%
9360       \ifnum\the\catcode'##1=\active
9361         \@makeother##1%
9362       \fi
9363     }%
9364     \dospecials
9365     \InputIfFileExists{\jobname.out}{\}{}%
9366   \endgroup
9367   \ifx\WriteBookmarks\relax
9368   \else
9369     \if@filesw
9370       \newwrite\@outlinefile
9371       \immediate\openout\@outlinefile=\jobname.out
9372       \ifHy@typexml
9373         \immediate\write\@outlinefile{<relaxxml>\relax}%
9374       \fi
9375     \fi
9376   \fi
9377 }

9378 </vtex>

9379 <!\vtex>
9380 \def\ReadBookmarks{%
9381   \begingroup
9382     \escapechar='\'%
9383     \let\escapechar\@gobble %
9384     \def\@@BOOKMARK [##1][##2]##3##4##5{\calc@bm@number{##5}}%
9385     \InputIfFileExists{\jobname.out}{\}{}%
9386     \ifx\WriteBookmarks\relax
9387       \global\let\WriteBookmarks\relax
9388     \fi
9389     \def\@@BOOKMARK [##1][##2]##3##4##5{%
9390       \def\Hy@temp{##4}%
9391   <*pdf tex>
9392     \Hy@pstringdef\Hy@pstringName{##3}%
9393     \Hy@OutlineName{\Hy@pstringName{%
9394       ##2\check@bm@number{##3}%
9395     }}%
9396     \expandafter\strip@prefix\meaning\Hy@temp
9397   }%
9398 </pdf tex>
9399 <*pdf mark>
9400     \Hy@pstringdef\Hy@pstringName{##3}%
9401     \pdfmark{%
9402       pdfmark=/OUT,%
9403       Count={##2\check@bm@number{##3}},%
9404       Dest={\Hy@pstringName},%
9405       Title=\expandafter\strip@prefix\meaning\Hy@temp

```

```

9406     }%
9407 </pdfmark>
9408 <*dvipdfm>
9409     \Hy@pstringdef\Hy@pstringName{##3}%
9410     \@pdfm@mark{%
9411         outline ##1 <<
9412             /Title (\expandafter\strip@prefix\meaning\Hy@temp)
9413             /A <<
9414                 /S /GoTo
9415                 /D (\Hy@pstringName)
9416             >>
9417         >>
9418     }%
9419 </dvipdfm>
9420 }%
9421 {%
9422     \def\WriteBookmarks{0}%
9423     \InputIfFileExists{\jobname.out}{-}{-}%
9424 }%
9425 {%\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
9426 \ifx\WriteBookmarks\relax
9427 \else
9428     \if@files
9429         \newwrite\@outlinefile
9430         \immediate\openout\@outlinefile=\jobname.out
9431         \ifHy@typexml
9432             \immediate\write\@outlinefile{<relaxxml>\relax}%
9433         \fi
9434     \fi
9435 \fi
9436 \endgroup
9437 }
9438 <*pdfTeX>
9439 \def\Hy@OutlineName#1#2#3#4{%
9440     \pdfoutline goto name{#2}count#3{#4}%
9441 }
9442 </pdfTeX>
9443 \def\check@bm@number#1{%
9444     \expandafter\ifx\csname B_#1\endcsname\relax
9445     0%
9446 \else
9447     \csname B_#1\endcsname
9448 \fi
9449 }
9450 \def\calc@bm@number#1{%
9451     \@tempcnta=\check@bm@number{#1}\relax
9452     \advance\@tempcnta by1
9453     \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
9454 }
9455 </!vTeX>

```

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

```

9456 \ifHy@implicit
9457 \else
9458     \def\@beginindvi{%
9459         \unvbox\@begindivibox
9460         \HyPL@EveryPage

```

```

9461 \global\let\@begindvi\HyPL@EveryPage
9462 }%
9463 \expandafter\endinput
9464 \fi

9465 </outlines>
9466 <*outlines | hypertex>

9467 \let\H@old@ssect\@ssect
9468 \def\@ssect#1#2#3#4#5{%
9469 \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
9470 \phantomsection
9471 }

9472 \let\H@old@schapter\@schapter
9473 \def\@schapter#1{%
9474 \H@old@schapter{#1}%
9475 \begingroup
9476 \let\@mkboth\@gobbletwo
9477 \Hy@GlobalStepCount\Hy@linkcounter
9478 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9479 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9480 \endgroup
9481 }

```

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:

```

9482 \@ifundefined{@chapter}{}{%
9483 \let\Hy@org@chapter\@chapter
9484 \def\@chapter{%
9485 \def\Hy@next{%
9486 \Hy@GlobalStepCount\Hy@linkcounter
9487 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9488 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9489 }%
9490 \ifnum\c@secnumdepth>\m@ne
9491 \@ifundefined{if@mainmatter}%
9492 \iftrue{\csname if@mainmatter\endcsname}%
9493 \let\Hy@next\relax
9494 \fi
9495 \fi
9496 \Hy@next
9497 \Hy@org@chapter
9498 }%
9499 }

9500 \let\H@old@part\@part
9501 \begingroup\expandafter\expandafter\expandafter\endgroup
9502 \expandafter\ifx\csname chapter\endcsname\relax
9503 \let\Hy@secnum@part\z@
9504 \else
9505 \let\Hy@secnum@part\m@ne
9506 \fi
9507 \def\@part{%
9508 \ifnum\Hy@secnum@part>\c@secnumdepth
9509 \phantomsection
9510 \fi
9511 \H@old@part
9512 }

```

```

9513 \let\H@old@spart\@spart
9514 \def\@spart#1{%
9515   \H@old@spart{#1}%
9516   \Hy@GlobalStepCount\Hy@linkcounter
9517   \xdef\@currentHref{part*.\the\Hy@linkcounter}%
9518   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9519 }
9520 \let\H@old@sect\@sect
9521 \def\@sect#1#2#3#4#5#6[#7]#8{%
9522   \ifnum #2>\c@secnumdepth
9523     \Hy@GlobalStepCount\Hy@linkcounter
9524     \xdef\@currentHref{section*.\the\Hy@linkcounter}%
9525   \fi
9526   \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}%
9527   \ifnum #2>\c@secnumdepth
9528     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9529   \fi
9530 }
9531 </outlines | hypertex>
9532 <*outlines>

9533 \expandafter\def\csname Parent-4\endcsname{}
9534 \expandafter\def\csname Parent-3\endcsname{}
9535 \expandafter\def\csname Parent-2\endcsname{}
9536 \expandafter\def\csname Parent-1\endcsname{}
9537 \expandafter\def\csname Parent0\endcsname{}
9538 \expandafter\def\csname Parent1\endcsname{}
9539 \expandafter\def\csname Parent2\endcsname{}
9540 \expandafter\def\csname Parent3\endcsname{}
9541 \expandafter\def\csname Parent4\endcsname{}
9542 </outlines>

```

48 Compatibility with koma-script classes

```

9543 <*outlines | hypertex>

```

Hard-wire in an unpleasant over-ride of komascript ‘scrbook’ class for Tobias.Isenberg@gmx.de. With version 6.71b the hack is also applied to ‘scrreprt’ class and is removed for koma-script versions since 2001/01/01, because Markus Kohm supports hyperref in komascript.

```

9544 \def\Hy@tempa{%
9545   \def\@addchap[##1]##2{%
9546     \typeout{##2}%
9547     \if@twoside
9548       \@mkboth{##1}{}%
9549     \else
9550       \@mkboth{}{##1}%
9551     \fi
9552     \addtocontents{lof}{\protect\addvspace{10\p@}}%
9553     \addtocontents{lot}{\protect\addvspace{10\p@}}%
9554     \Hy@GlobalStepCount\Hy@linkcounter
9555     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
9556     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
9557     \if@twocolumn
9558       \@topnewpage[\@makeschapterhead{##2}]%
9559     \else
9560       \@makeschapterhead{##2}%
9561       \@afterheading

```

```

9562 \fi
9563 \addcontentsline{toc}{chapter}{##1}%
9564 }%
9565 }
9566 \@ifclassloaded{scrbook}{%
9567 \@ifclasslater{scrbook}{2001/01/01}{%
9568 \let\Hy@tempa\@empty
9569 }{}%
9570 }{%
9571 \@ifclassloaded{scrreprt}{%
9572 \@ifclasslater{scrreprt}{2001/01/01}{%
9573 \let\Hy@tempa\@empty
9574 }{}%
9575 }{%
9576 \let\Hy@tempa\@empty
9577 }%
9578 }%
9579 \Hy@tempa
9580 </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

```

9581 <*pd1enc>
9582 \DeclareFontEncoding{PD1}{}{}

```

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

```

9583 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
9584 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
9585 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
9586 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
9587 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed

```

Accents

```

9588 \DeclareTextAccent{'}{PD1}{\textgrave}
9589 \DeclareTextAccent{'~}{PD1}{\textacute}
9590 \DeclareTextAccent{^}{PD1}{\textcircumflex}
9591 \DeclareTextAccent{~}{PD1}{\texttilde}
9592 \DeclareTextAccent{"}{PD1}{\textdieresis}
9593 \DeclareTextAccent{r}{PD1}{\textring}
9594 \DeclareTextAccent{v}{PD1}{\textcaron}
9595 \DeclareTextAccent{.}{PD1}{\textdotaccent}
9596 \DeclareTextAccent{c}{PD1}{\textcedilla}
9597 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textgrave}
9598 \DeclareTextCompositeCommand{'~}{PD1}{\@empty}{\textacute}
9599 \DeclareTextCompositeCommand{^}{PD1}{\@empty}{\textcircumflex}
9600 \DeclareTextCompositeCommand{~}{PD1}{\@empty}{\texttilde}
9601 \DeclareTextCompositeCommand{"}{PD1}{\@empty}{\textdieresis}
9602 \DeclareTextCompositeCommand{r}{PD1}{\@empty}{\textring}
9603 \DeclareTextCompositeCommand{v}{PD1}{\@empty}{\textcaron}
9604 \DeclareTextCompositeCommand{.}{PD1}{\@empty}{\textdotaccent}
9605 \DeclareTextCompositeCommand{c}{PD1}{\@empty}{\textcedilla}
9606 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}

```

Accent glyph names

```

9607 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve

```

```

9608 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
9609 \DeclareTextCommand{\textcirc{}}{PD1}{\032} % circumflex
9610 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
9611 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
9612 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
9613 \DeclareTextCommand{\textring}{PD1}{\036} % ring
9614 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde

\040: space
\041: exclam
9615 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042
9616 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign
9617 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar
9618 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent
9619 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand

\047: quotesingle
9620 \DeclareTextCommand{\textparenleft}{PD1}{\string\({} % parenleft \050
9621 \DeclareTextCommand{\textparenright}{PD1}{\string\)} % parenright \051

\052: asterisk
\053: plus
\054: comma
\055: hyphen
\056: period
\057: slash
\060... \071: 0...9
\072: colon
\073: semicolon
9622 \DeclareTextCommand{\textless}{PD1}{<} % less \074

\075: equal
9623 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076

\077: question
\100: at
\101... \132: A...Z
\133: bracketleft
9624 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash

\135: bracketright
9625 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum
9626 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
9627 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave

\141... \172: a...z
9628 \DeclareTextCompositeCommand{\.}{PD1}{i}{i} % i
9629 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
9630 \DeclareTextCommand{\textbar}{PD1}{|} % bar
9631 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
9632 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde

No glyph \177 in PDFDocEncoding.
9633 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
9634 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
9635 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl
9636 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis
9637 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
9638 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
9639 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
9640 \DeclareTextCommand{\textfractionmark}{PD1}{/} % fraction, \207
9641 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft

```

```

9642 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
9643 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
9644 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
9645 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
9646 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
9647 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright
9648 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
9649 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
9650 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
9651 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark
9652 \DeclareTextCommand{\textfi}{PD1}{fi} % fi ?? \223
9653 \DeclareTextCommand{\textfl}{PD1}{fl} % fl ?? \224
9654 \DeclareTextCommand{\L}{PD1}{L} % Lslash, \225
9655 \DeclareTextCommand{\OE}{PD1}{\226} % OE
9656 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron
9657 \DeclareTextCompositeCommand{\"}{PD1}{Y}{\230} % Ydieresis
9658 \DeclareTextCommand{\IJ}{PD1}{\230}
9659 \DeclareTextCompositeCommand{\v}{PD1}{Z}{Z} % Zcaron, \231
9660 \DeclareTextCommand{\i}{PD1}{i} % dotlessi, \232
9661 \DeclareTextCommand{\l}{PD1}{l} % lslash, \233
9662 \DeclareTextCommand{\oe}{PD1}{\234} % oe
9663 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
9664 \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.

```

9665 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
9666 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown
9667 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
9668 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
9669 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
9670 \DeclareTextCommand{\textyen}{PD1}{\245} % yen
9671 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
9672 \DeclareTextCommand{\textsection}{PD1}{\247} % section
9673 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
9674 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
9675 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
9676 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
9677 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

```

No glyph \255 in PDFDocEncoding.

```

9678 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
9679 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
9680 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
9681 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
9682 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
9683 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
9684 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
9685 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
9686 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
9687 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
9688 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
9689 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior
9690 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine
9691 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright
9692 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter
9693 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf
9694 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters
9695 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown

```


9696 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300} % Agrave
 9697 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301} % Acute
 9698 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302} % Acircumflex
 9699 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303} % Atilde
 9700 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304} % Adieresis
 9701 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring
 9702 \DeclareTextCommand{\AE}{PD1}{\306} % AE
 9703 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla
 9704 \DeclareTextCompositeCommand{\'}{PD1}{E}{\310} % Egrave
 9705 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311} % Eacute
 9706 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312} % Ecircumflex
 9707 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313} % Edieresis
 9708 \DeclareTextCompositeCommand{\'}{PD1}{I}{\314} % Igrave
 9709 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315} % Iacute
 9710 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316} % Icircumflex
 9711 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317} % Idieresis
 9712 \DeclareTextCommand{\DH}{PD1}{\320} % Eth
 9713 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth
 9714 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321} % Ntilde
 9715 \DeclareTextCompositeCommand{\'}{PD1}{O}{\322} % Ograve
 9716 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323} % Oacute
 9717 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324} % Ocircumflex
 9718 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325} % Otilde
 9719 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326} % Odieresis
 9720 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply
 9721 \DeclareTextCommand{\O}{PD1}{\330} % Oslash
 9722 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331} % Ugrave
 9723 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute
 9724 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333} % Ucircumflex
 9725 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis
 9726 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335} % Yacute
 9727 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn
 9728 \DeclareTextCommand{\ss}{PD1}{\337} % germandbls
 9729 \DeclareTextCompositeCommand{\'}{PD1}{a}{\340} % agrave
 9730 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute
 9731 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342} % acircumflex
 9732 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343} % atilde
 9733 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344} % adieresis
 9734 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring
 9735 \DeclareTextCommand{\ae}{PD1}{\346} % ae
 9736 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla
 9737 \DeclareTextCompositeCommand{\'}{PD1}{e}{\350} % egrave
 9738 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute
 9739 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352} % ecircumflex
 9740 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353} % edieresis
 9741 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
 9742 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
 9743 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
 9744 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
 9745 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356} % icircumflex
 9746 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356} % icircumflex
 9747 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
 9748 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357} % idieresis
 9749 \DeclareTextCommand{\dh}{PD1}{\360} % eth
 9750 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361} % ntilde
 9751 \DeclareTextCompositeCommand{\'}{PD1}{o}{\362} % ograve
 9752 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363} % oacute

```

9753 \DeclareTextCompositeCommand{\~}{PD1}{o}{\364} % ocircumflex
9754 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365} % otilde
9755 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366} % odieresis
9756 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
9757 \DeclareTextCommand{\o}{PD1}{\370} % oslash
9758 \DeclareTextCompositeCommand{\'}{PD1}{u}{\371} % ugrave
9759 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372} % uacute
9760 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373} % ucircumflex
9761 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374} % udieresis
9762 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375} % yacute
9763 \DeclareTextCommand{\th}{PD1}{\376} % thorn
9764 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377} % ydieresis
9765 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

9766 \DeclareTextCommand{\SS}{PD1}{SS}
9767 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

9768 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
9769 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
9770 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
9771 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
9772 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
9773 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
9774 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
9775 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

9776 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
9777 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
9778 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
9779 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
9780 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
9781 \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;

```

9782 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
9783 \DeclareTextCompositeCommand{\'}{PD1}{c}{c} % cacute
9784 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
9785 \DeclareTextCompositeCommand{\'}{PD1}{n}{n} % nacute
9786 \DeclareTextCompositeCommand{\'}{PD1}{s}{s} % sacute
9787 \DeclareTextCompositeCommand{\'}{PD1}{z}{z} % zacute
9788 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot

9789 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
9790 \DeclareTextCompositeCommand{\'}{PD1}{C}{C} % Cacute
9791 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
9792 \DeclareTextCompositeCommand{\'}{PD1}{N}{N} % Nacute
9793 \DeclareTextCompositeCommand{\'}{PD1}{S}{S} % Sacute
9794 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z} % Zacute
9795 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot

```

```

9796 \end{fontenc}

```

49.2 PU encoding

```

9797 \langle *puenc \rangle
9798 \DeclareFontEncoding{PU}{}{}

```

49.2.1 Basic Latin

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

```
9799 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
9800 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
9801 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
9802 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
9803 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed
```

Accents

```
9804 \DeclareTextAccent{\`}{PU}{\textgrave}
9805 \DeclareTextAccent{\'}{PU}{\textacute}
9806 \DeclareTextAccent{\~}{PU}{\textcircumflex}
9807 \DeclareTextAccent{\~}{PU}{\texttilde}
9808 \DeclareTextAccent{\"}{PU}{\textdieresis}
9809 \DeclareTextAccent{\r}{PU}{\textring}
9810 \DeclareTextAccent{\v}{PU}{\textcaron}
9811 \DeclareTextAccent{\.}{PU}{\textdotaccent}
9812 \DeclareTextAccent{\c}{PU}{\textcedilla}
9813 \DeclareTextAccent{\U}{PU}{\textbreve}
9814 \DeclareTextAccent{\C}{PU}{\textdoublegrave}
9815 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textgrave}
9816 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
9817 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textcircumflex}
9818 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
9819 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textdieresis}
9820 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
9821 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
9822 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
9823 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
9824 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
9825 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}
9826 \DeclareTextCommand{\=}{PU}[1]{\TextSymbolUnavailable{={#1}}#1}
9827 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
9828 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
9829 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}
```

Accent glyph names

```
9830 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
9831 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
9832 \DeclareTextCommand{\textcircumflex}{PU}{\80\032} % circumflex
9833 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
9834 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
9835 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
9836 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
9837 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
9838 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave
```

\040: space

\041: exclam

```
9839 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
9840 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
9841 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
9842 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
9843 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand
```

\047: quotesingle

```
9844 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft
9845 \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
 9846 \DeclareTextCommand{\textless}{PU}{<} % less \80\074
 \075: equal
 9847 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076
 \077: question
 \100: at
 \101... \132: A...Z
 \133: bracketleft
 9848 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash
 \135: bracketright
 9849 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum
 9850 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore
 9851 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave
 \141... \172: a...z
 9852 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % i
 9853 \DeclareTextCommand{\j}{PU}{j} % jdotless
 9854 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft
 9855 \DeclareTextCommand{\textbar}{PU}{|} % bar
 9856 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright
 9857 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde
 No glyph \177 in PDFDocEncoding.

49.2.2 Latin-1 Supplement

9858 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212
 9859 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223
 9860 \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.

9861 \DeclareTextCommand{\OE}{PU}{OE} % OE
 9862 \DeclareTextCommand{\oe}{PU}{oe} % oe

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

9863 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown
 9864 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent
 9865 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling
 9866 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency
 9867 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen
 9868 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar
 9869 \DeclareTextCommand{\textsection}{PU}{\80\247} % section
 9870 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis
 9871 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright
 9872 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine
 9873 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft

9874 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot

No glyph \255 in PDFDocEncoding.

9875 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered

9876 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron

9877 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree

9878 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus

9879 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior

9880 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior

9881 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute

9882 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu

9883 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph

9884 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered

9885 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla

9886 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior

9887 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine

9888 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright

9889 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter

9890 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf

9891 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters

9892 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown

9893 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300} % Agrave

9894 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute

9895 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302} % Acircumflex

9896 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303} % Atilde

9897 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis

9898 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring

9899 \DeclareTextCommand{\AE}{PU}{\80\306} % AE

9900 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla

9901 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310} % Egrave

9902 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311} % Eacute

9903 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312} % Ecircumflex

9904 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis

9905 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314} % Igrave

9906 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315} % Iacute

9907 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316} % Icircumflex

9908 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317} % Idieresis

9909 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth

9910 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321} % Ntilde

9911 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322} % Ograve

9912 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323} % Oacute

9913 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324} % Ocircumflex

9914 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325} % Otilde

9915 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326} % Odieresis

9916 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply

9917 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash

9918 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331} % Ugrave

9919 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332} % Uacute

9920 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333} % Ucircumflex

9921 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334} % Udieresis

9922 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335} % Yacute

9923 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn

9924 \DeclareTextCommand{\ss}{PU}{\80\337} % germandbls

9925 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340} % agrave

9926 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341} % aacute

9927 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342} % acircumflex

9928 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343} % atilde

9929 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344} % adieresis

```

9930 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
9931 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
9932 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
9933 \DeclareTextCompositeCommand{\' }{PU}{e}{\80\350} % egrave
9934 \DeclareTextCompositeCommand{\' }{PU}{e}{\80\351} % eacute
9935 \DeclareTextCompositeCommand{\` }{PU}{e}{\80\352} % ecircumflex
9936 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353} % edieresis
9937 \DeclareTextCompositeCommand{\' }{PU}{i}{\80\354} % igrave
9938 \DeclareTextCompositeCommand{\' }{PU}{i}{\80\354} % igrave
9939 \DeclareTextCompositeCommand{\' }{PU}{i}{\80\355} % iacute
9940 \DeclareTextCompositeCommand{\' }{PU}{i}{\80\355} % iacute
9941 \DeclareTextCompositeCommand{\` }{PU}{i}{\80\356} % icircumflex
9942 \DeclareTextCompositeCommand{\` }{PU}{i}{\80\356} % icircumflex
9943 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
9944 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357} % idieresis
9945 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
9946 \DeclareTextCompositeCommand{\~ }{PU}{n}{\80\361} % ntilde
9947 \DeclareTextCompositeCommand{\' }{PU}{o}{\80\362} % ograve
9948 \DeclareTextCompositeCommand{\' }{PU}{o}{\80\363} % oacute
9949 \DeclareTextCompositeCommand{\` }{PU}{o}{\80\364} % ocircumflex
9950 \DeclareTextCompositeCommand{\` }{PU}{o}{\80\365} % otilde
9951 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366} % odieresis
9952 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
9953 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
9954 \DeclareTextCompositeCommand{\' }{PU}{u}{\80\371} % ugrave
9955 \DeclareTextCompositeCommand{\' }{PU}{u}{\80\372} % uacute
9956 \DeclareTextCompositeCommand{\` }{PU}{u}{\80\373} % ucircumflex
9957 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374} % udieresis
9958 \DeclareTextCompositeCommand{\' }{PU}{y}{\80\375} % yacute
9959 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
9960 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377} % ydieresis
9961 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```

9962 \DeclareTextCommand{\SS}{PU}{SS}

```

Aliases (german.sty)

```

9963 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
9964 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
9965 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
9966 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
9967 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
9968 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
9969 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
9970 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

9971 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
9972 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
9973 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
9974 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
9975 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

49.2.3 Latin Extended-A

```

9976 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% Amacron
9977 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% amacron
9978 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% Abreve
9979 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% abreve
9980 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004} % Aogonek

```

```

9981 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005} % aogonek
9982 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006} % Cacute
9983 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007} % cacute
9984 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010} % Ccircumflex
9985 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011} % ccircumflex
9986 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012} % Cdot
9987 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013} % cdot
9988 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014} % Ccaron
9989 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015} % ccaron
9990 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016} % Dcaron
9991 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017} % dcaron
9992 \DeclareTextCommand{\DJ}{PU}{\81\020} % Dslash
9993 \DeclareTextCommand{\dj}{PU}{\81\021} % dslash
9994 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022} % Emacron
9995 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023} % emacron
9996 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024} % Ebreve
9997 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025} % ebreve
9998 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026} % Edot
9999 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027} % edot
10000 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030} % Eogonek
10001 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031} % eogonek
10002 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032} % Ecaron
10003 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033} % ecaron
10004 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034} % Gcircumflex
10005 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035} % gcircumflex
10006 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036} % Gbreve
10007 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037} % gbreve
10008 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040} % Gdot
10009 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041} % gdot
10010 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042} % Gcedilla
10011 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043} % gcedilla
10012 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044} % Hcircumflex
10013 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045} % hcircumflex
10014 \DeclareTextCommand{\textHslash}{PU}{\81\046} % Hslash
10015 \DeclareTextCommand{\textthslash}{PU}{\81\047} % hslash
10016 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050} % Itilde
10017 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde
10018 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde
10019 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052} % Imacron
10020 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053} % imacron
10021 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053} % imacron
10022 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054} % Ibreve
10023 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
10024 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
10025 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056} % Iogonek
10026 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
10027 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
10028 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060} % Idot
10029 \DeclareTextCommand{\i}{PU}{\81\061} % idotless
10030 % IJlig
10031 % ijlig
10032 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064} % Jcircumflex
10033 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
10034 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
10035 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
10036 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
10037 % kgreen

```

```

10038 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
10039 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
10040 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
10041 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
10042 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
10043 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
10044 % L middle dot
10045 % l middle dot
10046 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
10047 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
10048 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute
10049 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
10050 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
10051 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
10052 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
10053 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
10054 % n apostrophe
10055 \DeclareTextCommand{\NG}{PU}{\81\112} % NG
10056 \DeclareTextCommand{\ng}{PU}{\81\113} % ng
10057 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114} % Omacron
10058 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115} % omacron
10059 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve
10060 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
10061 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
10062 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
10063 \DeclareTextCommand{\OE}{PU}{\81\122} % OE
10064 \DeclareTextCommand{\oe}{PU}{\81\123} % oe
10065 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
10066 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
10067 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
10068 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
10069 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
10070 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
10071 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
10072 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
10073 \DeclareTextCompositeCommand{\`}{PU}{S}{\81\134} % Scircumflex
10074 \DeclareTextCompositeCommand{\`}{PU}{s}{\81\135} % scircumflex
10075 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
10076 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
10077 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
10078 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
10079 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
10080 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
10081 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
10082 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
10083 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
10084 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
10085 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150} % Utilde
10086 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151} % utilde
10087 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152} % Umacron
10088 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153} % umacron
10089 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
10090 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
10091 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring
10092 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
10093 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
10094 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute

```



```

10095 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Uogonek
10096 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % uogonek
10097 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164} % Wcircumflex
10098 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165} % wcircumflex
10099 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166} % Ycircumflex
10100 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167} % ycircumflex
10101 \DeclareTextCompositeCommand{"}{PU}{Y}{\81\170} % Ydieresis
10102 \DeclareTextCommand{\IJ}{PU}{\81\170}
10103 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
10104 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
10105 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
10106 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
10107 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
10108 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

```

49.2.4 Latin Extended-B

```

10109 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
10110 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
10111 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
10112 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
10113 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
10114 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
10115 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
10116 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
10117 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
10118 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
10119 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
10120 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
10121 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
10122 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
10123 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
10124 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
10125 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Oogonek
10126 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

```

49.2.5 Greek

```

10127 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
10128 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
10129 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}
10130 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
10131 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
10132 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
10133 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
10134 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
10135 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}
10136 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
10137 \DeclareTextCommand{\textBeta}{PU}{\83\222}
10138 \DeclareTextCommand{\textGamma}{PU}{\83\223}
10139 \DeclareTextCommand{\textDelta}{PU}{\83\224}
10140 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
10141 \DeclareTextCommand{\textZeta}{PU}{\83\226}
10142 \DeclareTextCommand{\textEta}{PU}{\83\227}
10143 \DeclareTextCommand{\textTheta}{PU}{\83\230}
10144 \DeclareTextCommand{\textIota}{PU}{\83\231}
10145 \DeclareTextCommand{\textKappa}{PU}{\83\232}
10146 \DeclareTextCommand{\textLambda}{PU}{\83\233}
10147 \DeclareTextCommand{\textMu}{PU}{\83\234}

```

```

10148 \DeclareTextCommand{\textNu}{PU}{\83\235}
10149 \DeclareTextCommand{\textXi}{PU}{\83\236}
10150 \DeclareTextCommand{\textOmicron}{PU}{\83\237}
10151 \DeclareTextCommand{\textPi}{PU}{\83\240}
10152 \DeclareTextCommand{\textRho}{PU}{\83\241}
10153 \DeclareTextCommand{\textSigma}{PU}{\83\243}
10154 \DeclareTextCommand{\textTau}{PU}{\83\244}
10155 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}
10156 \DeclareTextCommand{\textPhi}{PU}{\83\246}
10157 \DeclareTextCommand{\textChi}{PU}{\83\247}
10158 \DeclareTextCommand{\textPsi}{PU}{\83\250}
10159 \DeclareTextCommand{\textOmega}{PU}{\83\251}
10160 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}
10161 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}
10162 \DeclareTextCompositeCommand{\'}{PU}{\textalpha}{\83\254}
10163 \DeclareTextCompositeCommand{\'}{PU}{\textepsilon}{\83\255}
10164 \DeclareTextCompositeCommand{\'}{PU}{\texteta}{\83\256}
10165 \DeclareTextCompositeCommand{\'}{PU}{\textiota}{\83\257}
10166 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}
10167 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}
10168 \DeclareTextCommand{\textalpha}{PU}{\83\261}
10169 \DeclareTextCommand{\textbeta}{PU}{\83\262}
10170 \DeclareTextCommand{\textgamma}{PU}{\83\263}
10171 \DeclareTextCommand{\textdelta}{PU}{\83\264}
10172 \DeclareTextCommand{\textepsilon}{PU}{\83\265}
10173 \DeclareTextCommand{\textzeta}{PU}{\83\266}
10174 \DeclareTextCommand{\texteta}{PU}{\83\267}
10175 \DeclareTextCommand{\texttheta}{PU}{\83\270}
10176 \DeclareTextCommand{\textiota}{PU}{\83\271}
10177 \DeclareTextCommand{\textkappa}{PU}{\83\272}
10178 \DeclareTextCommand{\textlambda}{PU}{\83\273}
10179 \DeclareTextCommand{\textmu}{PU}{\83\274}
10180 \DeclareTextCommand{\textnu}{PU}{\83\275}
10181 \DeclareTextCommand{\textxi}{PU}{\83\276}
10182 \DeclareTextCommand{\textomicron}{PU}{\83\277}
10183 \DeclareTextCommand{\textpi}{PU}{\83\300}
10184 \DeclareTextCommand{\textrho}{PU}{\83\301}
10185 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
10186 \DeclareTextCommand{\textsigma}{PU}{\83\303}
10187 \DeclareTextCommand{\texttau}{PU}{\83\304}
10188 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
10189 \DeclareTextCommand{\textphi}{PU}{\83\306}
10190 \DeclareTextCommand{\textchi}{PU}{\83\307}
10191 \DeclareTextCommand{\textpsi}{PU}{\83\310}
10192 \DeclareTextCommand{\textomega}{PU}{\83\311}
10193 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}
10194 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}
10195 \DeclareTextCompositeCommand{\'}{PU}{\textomicron}{\83\314}
10196 \DeclareTextCompositeCommand{\'}{PU}{\textupsilon}{\83\315}
10197 \DeclareTextCompositeCommand{\'}{PU}{\textomega}{\83\316}
10198 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}
10199 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}
10200 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}
10201 %\DeclareTextCommand{\textdigamma}{PU}{\83\334}
10202 %\DeclareTextCommand{\textvarkappa}{PU}{\83\360}
10203 %\DeclareTextCommand{\textvarrho}{PU}{\83\361}

```

49.2.6 Cyrillic

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names.

```
10204 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
10205 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}%
10206 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
10207 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% GJE
10208 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
10209 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
10210 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
10211 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI
10212 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
10213 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
10214 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE
10215 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
10216 \DeclareTextCompositeCommand{'}{PU}{\CYRK}{\84\014}% KJE
10217 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
10218 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
10219 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A
10220 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
10221 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
10222 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
10223 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
10224 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
10225 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
10226 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
10227 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I
10228 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
10229 \DeclareTextCompositeCommand{U}{PU}{\CYRI}{\84\031}%
10230 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
10231 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
10232 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM
10233 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN
10234 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O
10235 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE
10236 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER
10237 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES
10238 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE
10239 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U
10240 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF
10241 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA
10242 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE
10243 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE
10244 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA
10245 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA
10246 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN
10247 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU
10248 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN
10249 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E
10250 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU
10251 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA
10252 \DeclareTextCommand{\cyra}{PU}{\84\060}% a
10253 \DeclareTextCommand{\cyrb}{PU}{\84\061}% be
10254 \DeclareTextCommand{\cyrv}{PU}{\84\062}% ve
10255 \DeclareTextCommand{\cyrg}{PU}{\84\063}% ghe
10256 \DeclareTextCommand{\cyrd}{PU}{\84\064}% de
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10257 \DeclareTextCommand{\cyre}{PU}{\84\065}% ie
10258 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% zhe
10259 \DeclareTextCommand{\cyrz}{PU}{\84\067}% ze
10260 \DeclareTextCommand{\cyri}{PU}{\84\070}% i
10261 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i
10262 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}%
10263 \DeclareTextCommand{\cyrk}{PU}{\84\072}% ka
10264 \DeclareTextCommand{\cyr1}{PU}{\84\073}% el
10265 \DeclareTextCommand{\cyrm}{PU}{\84\074}% em
10266 \DeclareTextCommand{\cyrn}{PU}{\84\075}% en
10267 \DeclareTextCommand{\cyro}{PU}{\84\076}% o
10268 \DeclareTextCommand{\cyrp}{PU}{\84\077}% pe
10269 \DeclareTextCommand{\cyrr}{PU}{\84\100}% er
10270 \DeclareTextCommand{\cyr{s}}{PU}{\84\101}% es
10271 \DeclareTextCommand{\cyr{t}}{PU}{\84\102}% te
10272 \DeclareTextCommand{\cyr{u}}{PU}{\84\103}% u
10273 \DeclareTextCommand{\cyr{f}}{PU}{\84\104}% ef
10274 \DeclareTextCommand{\cyr{h}}{PU}{\84\105}% ha
10275 \DeclareTextCommand{\cyr{c}}{PU}{\84\106}% tse
10276 \DeclareTextCommand{\cyr{ch}}{PU}{\84\107}% che
10277 \DeclareTextCommand{\cyr{sh}}{PU}{\84\110}% sha
10278 \DeclareTextCommand{\cyr{shch}}{PU}{\84\111}% shcha
10279 \DeclareTextCommand{\cyr{hrdsn}}{PU}{\84\112}% hard sign
10280 \DeclareTextCommand{\cyr{ery}}{PU}{\84\113}% yeru
10281 \DeclareTextCommand{\cyr{sftsn}}{PU}{\84\114}% soft sign
10282 \DeclareTextCommand{\cyr{erev}}{PU}{\84\115}% e
10283 \DeclareTextCommand{\cyr{yu}}{PU}{\84\116}% yu
10284 \DeclareTextCommand{\cyr{ya}}{PU}{\84\117}% ya
10285 \DeclareTextCommand{\cyr{yo}}{PU}{\84\121}% io
10286 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}%
10287 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% dje
10288 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% gje
10289 \DeclareTextCommand{\cyrie}{PU}{\84\124}% ukrainian ie
10290 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% dze
10291 \DeclareTextCommand{\cyrii}{PU}{\84\126}% byelorussian-ukrainian i
10292 \DeclareTextCommand{\cyryi}{PU}{\84\127}% yi
10293 \DeclareTextCommand{\cyrje}{PU}{\84\130}% je
10294 \DeclareTextCommand{\cyr1je}{PU}{\84\131}% lje
10295 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% nje
10296 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% tshe
10297 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% kje
10298 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% short u
10299 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% dzhe
10300 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA
10301 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega
10302 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT
10303 \DeclareTextCommand{\cyryat}{PU}{\84\143}% yat
10304 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E
10305 \DeclareTextCommand{\cyriote}{PU}{\84\145}% iotified e
10306 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS
10307 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% little yus
10308 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS
10309 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% iotified little yus
10310 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS
10311 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% big yus
10312 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS
10313 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% iotified big yus

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10314 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI
10315 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% ksi
10316 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI
10317 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi
10318 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA
10319 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita
10320 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA
10321 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa
10322 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave
10323 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave
10324 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK
10325 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk
10326 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA
10327 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega
10328 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo
10329 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo
10330 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT
10331 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot
10332 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA
10333 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa
10334 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign
10335 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO
10336 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION
10337 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA
10338 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA
10339 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn
10340 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn
10341 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke
10342 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke
10343 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook
10344 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook
10345 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender
10346 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender
10347 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender
10348 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender
10349 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender
10350 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% ka descender
10351 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke
10352 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke
10353 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke
10354 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% ka stroke
10355 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA
10356 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka
10357 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender
10358 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender
10359 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE
10360 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe
10361 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook
10362 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook
10363 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA
10364 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha
10365 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender
10366 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% es descender
10367 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender
10368 \DeclareTextCommand{\cyrtddsc}{PU}{\84\255}% te descender
10369 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U
10370 \DeclareTextCommand{\cyry}{PU}{\84\257}% straight u

10371 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke
10372 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% straight u stroke
10373 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender
10374 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% ha descender
10375 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE
10376 \DeclareTextCommand{\cyrтетse}{PU}{\84\265}% ligature te tse
10377 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender
10378 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender
10379 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke
10380 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% che vertical stroke
10381 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA
10382 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha
10383 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhasian CHE
10384 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhasian che
10385 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% abkhasian CHE descender
10386 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhasian che descender
10387 \DeclareTextCommand{\CYRpaločka}{PU}{\84\300}% paločka
10388 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve
10389 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% zhe breve
10390 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook
10391 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% ka hook
10392 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook
10393 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% en hook
10394 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE
10395 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che
10396 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve
10397 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve
10398 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% A diaeresis
10399 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% a diaeresis
10400 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE
10401 \DeclareTextCommand{\cyrae}{PU}{\84\325}% ligature a ie
10402 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve
10403 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve
10404 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA
10405 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% schwa
10406 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis
10407 \DeclareTextCompositeCommand{"}{PU}{\cyrswa}{\84\333}% schwa diaeresis
10408 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% ZHE diaeresis
10409 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% zhe diaeresis
10410 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% ZE diaeresis
10411 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% ze diaeresis
10412 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhasian DZE
10413 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhasian dze
10414 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% I macron
10415 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% i macron
10416 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% I diaeresis
10417 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% i diaeresis
10418 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% O diaeresis
10419 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% o diaeresis
10420 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O
10421 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% barred o
10422 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% barred O diaeresis
10423 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% barred o diaeresis
10424 \DeclareTextCompositeCommand{\=}{PU}{\CYRU}{\84\356}% U macron
10425 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% u macron
10426 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U diaeresis
10427 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% u diaeresis

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10428 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U double acute
10429 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% u double acute
10430 \DeclareTextCompositeCommand{\"}{PU}{\CYRCH}{\84\364}% CHE diaeresis
10431 \DeclareTextCompositeCommand{\"}{PU}{\cyrch}{\84\365}% che diaeresis
10432 \DeclareTextCompositeCommand{\"}{PU}{\CYRERY}{\84\370}% YERU diaeresis
10433 \DeclareTextCompositeCommand{\"}{PU}{\cyrery}{\84\371}% yeru diaeresis

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49.2.7 Symbols

```

10434 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash
10435 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash
10436 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030} % quoteleft
10437 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright
10438 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase
10439 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
10440 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
10441 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
10442 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
10443 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
10444 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet
10445 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
10446 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
10447 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
10448 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
10449 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
10450 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
10451 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
10452 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}
10453 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
10454 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
10455 %\DeclareTextCommand{\cyrlangle}{PU}{\9043\051}
10456 %\DeclareTextCommand{\cyrangle}{PU}{\9043\052}

10457 </puenc>

```

49.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

10458 <*puvnenc>

10459 \DeclareTextCommand{\abreve}{PU}{\81\003}
10460 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
10461 \DeclareTextCommand{\dj}{PU}{\81\021}
10462 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
10463 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
10464 \DeclareTextCommand{\ohorn}{PU}{\81\241}
10465 \DeclareTextCommand{\uhorn}{PU}{\81\260}
10466 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
10467 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
10468 \DeclareTextCommand{\DJ}{PU}{\81\020}
10469 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
10470 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
10471 \DeclareTextCommand{\OHORN}{PU}{\81\240}
10472 \DeclareTextCommand{\UHORN}{PU}{\81\257}

10473 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
10474 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
10475 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
10476 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}

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10477 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
10478 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
10479 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
10480 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
10481 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
10482 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
10483 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
10484 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
10485 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
10486 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}
10487 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}
10488 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}
10489 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}
10490 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}
10491 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}
10492 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}
10493 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}
10494 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}
10495 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}
10496 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}
10497 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}
10498 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}
10499 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}
10500 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}
10501 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}
10502 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}
10503 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}
10504 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}
10505 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}
10506 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}
10507 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}
10508 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}
10509 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}
10510 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}
10511 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}
10512 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}
10513 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}
10514 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}
10515 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}
10516 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}
10517 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}
10518 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}
10519 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}
10520 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}
10521 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}
10522 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}
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10524 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}
10525 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}
10526 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}
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10530 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}
10531 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}
10532 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}
10533 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}

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10534 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}
10535 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}
10536 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}
10537 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}
10538 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}
10539 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}
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10541 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}
10542 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}
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10555 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}
10556 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}
10557 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}
10558 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}
10559 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}
10560 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}
10561 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}
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10563 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}
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10565 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}
10566 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}
10567 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}
10568 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}
10569 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}
10570 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}
10571 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}
10572 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}
10573 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}
10574 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}
10575 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}
10576 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}
10577 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
10578 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
10579 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
10580 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}
10581 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
10582 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
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10590 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}

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10591 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
10592 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}

10593 </puvnenc>

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49.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

10594 <*puarenc>

10595 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LETTER HAMZA
10596 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADD A
10597 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA A
10598 \DeclareTextCommand{\wawhamza}{PU}{\86\044} % 0624;afii57412;ARABIC LETTER WAW WITH HAMZA AE
10599 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HA
10600 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
10601 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF
10602 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH
10603 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA
10604 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH
10605 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH
10606 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM
10607 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH
10608 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH
10609 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL
10610 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL
10611 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH
10612 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN
10613 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN
10614 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN
10615 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD
10616 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD
10617 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH
10618 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH
10619 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN
10620 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN
10621 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEL
10622 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afii57441;ARABIC LETTER FEH
10623 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF
10624 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF
10625 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM
10626 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LETTER MEEM
10627 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON
10628 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH
10629 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afii57448;ARABIC LETTER WAW
10630 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afii57449;ARABIC LETTER ALEF MAKSURA
10631 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afii57450;ARABIC LETTER YEH

10632 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afii57451;ARABIC FATHATAN
10633 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afii57452;ARABIC DAMMATAN
10634 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN
10635 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afii57454;ARABIC FATHA
10636 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afii57455;ARABIC DAMMA
10637 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA
10638 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA
10639 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afii57458;ARABIC SUKUN

Farsi

10640 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afii57506;ARABIC LETTER PEH

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10641 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afii57507;ARABIC LETTER TCHEH
10642 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afii57508;ARABIC LETTER JEH
10643 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9????;afii?????;FARSI LETTER KAF
10644 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF
10645 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afii?????;FARSI LETTER YEH

10646 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
10647 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ

10648 \</puarenc>

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50 End of file hycheck.tex

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10649 \< *check>
10650 \typeout{}
10651 \begin{document}
10652 \end{document}
10653 \</check>

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