

Hypertext marks in L^AT_EX

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1 Documentation overview for hyperref

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

Manual The user documentation is also available as HTML.

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

ChangeLog This file records the version history.

Options This file provides a short option summary.

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

Bookmark talk, paper The paper version of the talk.

Source code documentation:

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

backref.dtx “Back referencing from bibliographical citations”

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

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3 File hycheck.tex

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

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

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

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

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

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

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

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

`\HyC@checkPackage`

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

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

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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

```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

`\HyC@meaning`

```

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

```

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

```

154 \def\HyC@checkOk#1{%
155 \typeout{\space\space'\HyC@string#1' ok.}%
156 }

```

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

```

157 \def\HyC@checkFailed#1#2{%
158 \typeout{\space\space'\HyC@string#1' failed.}%
159 \typeout{\space\space* original: \meaning#2}%
160 \typeout{\space\space* expected: \HyC@meaning#1}%
161 }

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

```

4 Package options and setup

4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

181 \def\Hy@SetCatcodes{%
182   \makeother\‘%
183   \makeother\=%
184   \catcode'\$=3 %
185   \catcode'\&=4 %
186   \catcode'\^=7 %
187   \catcode'\_ =8 %
188   \makeother\|%
189   \makeother\:%
190   \makeother\(%
191   \makeother\)%
192   \makeother\[%
193   \makeother\]%
194   \makeother\/%
195   \makeother\!%
196   \makeother\<%
197   \makeother\>%
198   \makeother\.%
199   \makeother\;%
200   \makeother\+%
201   \makeother\-%
202   \makeother\"%
203   \makeother\'%
204 }

```

\Hy@RestoreCatcodes

```

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

```

```

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

```

```
231 \Hy@SetCatcodes
```

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

```

232 \RequirePackage{keyval}[1997/11/10]
233 \RequirePackage{hycolor}
234 \def\Hy@Warning#1{\PackageWarning{hyperref}{#1}}
235 \def\Hy@WarningNoLine#1{\PackageWarningNoLine{hyperref}{#1}}
236 \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`.

```

237 \@ifundefined{AfterBeginDocument}{%
238 \def\AfterBeginDocument{\AtBeginDocument}%
239 }{}%

```

4.3 Switches

```

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

```

```

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

```

Defaults for the switches are now set.

```

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

```

```

312 \Hy@typexmlfalse
313 \Hy@unicodedefalse
314 \Hy@usetitlefalse
315 \Hy@verbosefalse
316 \Hy@windowuitrue
317 \Hy@displaydoctitlefalse

```

5 Common help macros

`\Hy@StepCount`

```

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

```

`\Hy@GlobalStepCount`

```

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

320 \newdimen\@linkdim
321 \let\Hy@driver\@empty
322 \let\MaybeStopEarly\relax
323 \newcount\Hy@linkcounter
324 \newcount\Hy@pagecounter
325 \Hy@linkcounter0
326 \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.

```

327 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
328 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

329 \let\Hy@ReturnEnd\@empty
330 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
331 \long\def\Hy@ReturnAfterElseFiFiEnd#1\else#2\Hy@ReturnEnd{\fi\fi#1}

```

5.2 Babel's protection of shorthand characters

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

```

332 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
333 \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

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

```

6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

6.1 Description of PDF strings

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

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

<code>\\</code>	the backslash itself
<code>\), \((</code>	unbalanced parentheses
<code>\n, \r, \t, \b, \f</code>	special white space escape sequences
<code>\ddd</code>	octal character code <i>ddd</i>
- Strings are stored either in PDFDocEncoding, which is a superset of ISO Latin1 and is compatible with Unicode with character codes below 256, or in Unicode.

6.2 Definition of `\pdfstringdef`

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

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

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

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

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

- The result should obey the rules of the PDF specification for strings.
- The string can safely be processed by \TeX , because the tokens have only catcodes 10 until 12.

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

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

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

```
376 \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.

```
377 \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.

```
378 \edef\0{\string\0}%
379 \edef\1{\string\1}%
380 \edef\2{\string\2}%
381 \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.

```
382 \ifHy@unicode
383 \edef\8{\string\8}%
384 \edef\9{\string\9}%
385 \fontencoding{PU}%
386 \HyPsd@UTFviii
387 \else
388 \fontencoding{PD1}%
389 \fi
390 \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).

```
391 \@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).

```
392 \let\@inmathwarn\HyPsd@inmathwarn
```


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

```
393 \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.

```
394 \let\{\textbraceleft
395 \let\}\textbraceright
396 \let\\\textbackslash
397 \let\#\textnumbersign
398 \let\$\textdollar
399 \let\%\textpercent
400 \let\&\textampersand
401 % \let\~\textasciitilde
402 \let\_ \textunderscore
403 \let\P\textparagraph
404 \let\ldots\textellipsis
405 \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.

```
406 \def\{\pdfstringdefWarn\\}%
407 \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.

```
408 \def\TeX{\TeX}%
409 \def\LaTeX{La\TeX}%
410 \def\LaTeXe{LaTeX2e}%
411 \def\eTeX{e-\TeX}%
412 \def\MF{Metafont}%
413 \def\MP{Metapost}%
```

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

```
414 \let\emph\@firstofone
415 \let\textnormal\@firstofone
416 \let\textrm\@firstofone
417 \let\textsf\@firstofone
418 \let\texttt\@firstofone
419 \let\textbf\@firstofone
420 \let\textmd\@firstofone
421 \let\textit\@firstofone
422 \let\textsc\@firstofone
```

```

423 \let\textsl\@firstofone
424 \let\textup\@firstofone
425 \let\normalfont\@empty
426 \let\rmfamily\@empty
427 \let\sffamily\@empty
428 \let\ttfamily\@empty
429 \let\bfseries\@empty
430 \let\mdseries\@empty
431 \let\itshape\@empty
432 \let\scshape\@empty
433 \let\slshape\@empty
434 \let\upshape\@empty
435 \let\em\@empty
436 \let\rm\@empty
437 \let\Huge\@empty
438 \let\LARGE\@empty
439 \let\Large\@empty
440 \let\footnotesize\@empty
441 \let\huge\@empty
442 \let\large\@empty
443 \let\normalsize\@empty
444 \let\scriptsize\@empty
445 \let\small\@empty
446 \let\tiny\@empty
447 \let\mathversion\@gobble

```

Package color.

```

448 \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).

```

449 \let\textlatin\@firstofone
450 \@ifundefined{language@group}{\}%
451 \csname HyPsd@babel@language@group\endcsname
452 }%
453 \HyPsd@GreekPatch

454 \let\@safe@activetrue\relax
455 \let\@safe@activesfalse\relax

```

Disable \cyr, used in russianb.ldf.

```

456 \let\cyr\relax

```

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

```

457 \let\es@roman\@Roman

```

Package german.

```

458 \let\glqq\textglqq
459 \let\grqq\textgrqq
460 \let\glq\textglq
461 \let\grq\textgrq
462 \let\flqq\textflqq
463 \let\frqq\textfrqq
464 \let\flq\textflq
465 \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}
466 \let\if@mid@expandable\@firstoftwo

```

AMS classes.

```

467 \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.

```

468 \let\hspace\HyPsd@hspace

```

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

```

469 \let\label\@gobble
470 \let\index\@gobble
471 \let\glossary\@gobble
472 \let\href\@secondoftwo
473 \let\@mkboth\@gobbletwo

```

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

```

474 \let\ref\HyPsd@ref
475 \let\pageref\HyPsd@pageref
476 \let\autoref\HyPsd@autoref

```

Miscellaneous commands.

```

477 \let\leavevmode\@empty
478 \let\mbox\@empty

```

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

```

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

```

Patch for cjk bookmarks.

```

480 \ifHy@CJKbookmarks
481 \HyPsd@CJKhook
482 \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`).

```

483 \Hy@pdfstringtrue
484 \pdfstringdefPreHook

```

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

```

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

```

Package xspace.

```

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

```

Redefinitions of miscellaneous commands. Hyphenation does not make sense.

```

497 \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:

```

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

```

6.2.2 Expansion

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

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

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

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

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

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

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

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

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

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

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

6.2.3 Postprocessing

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

```
518 \ifx#1\@empty
519 \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 a marker for the xspace support.
- \TeX silently removes the outmost pair of braces of an argument. To prevent this on unwanted places, in the following the character | is appended to the string to make an outer brace to an inner one.

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

```

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

```

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

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

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

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

```

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

```

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

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

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

```

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

```
536 \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.

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

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

```

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

```

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

```

570 %     \HyPsd@Subst{---}\textemdash#1%
571 %     \HyPsd@Subst{--}\textendash#1%
572 %     \HyPsd@Subst{fi}\textfi#1%
573 %     \HyPsd@Subst{fl}\textfl#1%
574     \HyPsd@Subst{!'}\textexclamdown#1%
575     \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

576     \let\HyPsd@empty\@empty

```

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

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

```

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

```

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

```
592 \endgroup
593 \begingroup
594 \ifHy@unicode
595 \HyPsd@ConvertToUnicode#1%
```

Try conversion back to PDFDocEncoding.

```
596 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
597 \@ifundefined{StringEncodingConvertTest}{%
598 }{%
599 \EdefUnescapeString\HyPsd@temp#1%
600 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
601 {utf16be}{pdfdoc}{%
602 \EdefEscapeString\HyPsd@temp\HyPsd@temp
603 \global\let#1\HyPsd@temp
604 \Hy@unicodedefalse
605 }{}%
606 }%
607 \fi
608 \fi
```

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

```
609 \pdfstringdefPostHook#1%
610 \endgroup
611 }
```

\Hy@pdfstringdef

```
612 \def\Hy@pdfstringdef#1#2{%
613 \pdfstringdef\Hy@gtemp{#2}%
614 \let#1\Hy@gtemp
615 }
```

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.

```
616 \@ifundefined{T@PD1}{\input{pd1enc.def}}{}
617 \DeclareFontFamily{PD1}{pdf}{}
618 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
619 \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`.

```

620 \def\HyPsd@InitUnicode{%
621   \@ifundefined{T@PU}{\input{puenc.def}}{}%
622   \DeclareFontFamily{PU}{pdf}{}%
623   \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
624   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
625   \let\HyPsd@InitUnicode\relax
626 }

```

6.4 Additional user commands

6.4.1 `\texorpdfstring`

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

```

627 \newcommand*{\texorpdfstring}{%
628   \ifHy@pdfstring
629     \expandafter\@secondoftwo
630   \else
631     \expandafter\@firstoftwo
632   \fi
633 }

```

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`.

```

634 \@ifundefined{pdfstringdefPreHook}{%
635   \let\pdfstringdefPreHook\@empty
636 }{}
637 \@ifundefined{pdfstringdefPostHook}{%
638   \let\pdfstringdefPostHook\@gobble
639 }{}

```

`\pdfstringdefDisableCommands` In `\pdfstringdefPreHook` the user can add code that is executed before the string, that have to be converted by `\pdfstringdef`, is expanded. So replacements for problematic macros can be given. The code in `\pdfstringdefPreHook` should not be replaced perhaps by an `\renewcommand`, because a previous meaning gets lost.

Macro `\pdfstringdefDisableCommands` avoids this, because it reuses the old meaning of the hook and appends the new code to `\pdfstringdefPreHook`, e.g.:

```

\pdfstringdefDisableCommands{%
  \let~\textasciitilde
  \def\url{\pdfstringdefWarn\url}%
  \let\textcolor\@gobble
}%

```

In the argument of `\pdfstringdefDisableCommands` the character `@` can be used in command names. So it is easy to use useful L^AT_EX commands like `\@gobble` or `\@firstofone`.

```

640 \def\pdfstringdefDisableCommands{%
641   \begingroup
642     \makeatletter

```

```

643 \HyPsd@DisableCommands
644 }

```

\HyPsd@DisableCommands

```

645 \long\def\HyPsd@DisableCommands#1{%
646   \toks0=\expandafter{\pdfstringdefPreHook}%
647   \toks1={#1}%
648   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
649 \endgroup
650 }

```

\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.

```

651 \def\pdfstringdefWarn#1{%
652   \expandafter\noexpand\csname<-\string#1\endcsname
653 }

```

6.5 Help macros for expansion

6.5.1 Babel languages

```

654 \newif\ifHy@next

```

Nothing to do for english.

```

655 \@ifundefined{danish@sh@"@sel}{-}{-}%
656 \def\HyPsd@babel@danish{%
657   \declare@shorthand{danish}{-}{-}%
658   \declare@shorthand{danish}{-}{-}%
659 }%
660 }
661 \@ifundefined{dutch@sh@"@sel}{-}{-}%
662 \def\HyPsd@babel@dutch{%
663   \declare@shorthand{dutch}{-}{-}%
664   \declare@shorthand{dutch}{-}{-}%
665 }%
666 }
667 \@ifundefined{finnish@sh@"@sel}{-}{-}%
668 \def\HyPsd@babel@finnish{%
669   \declare@shorthand{finnish}{-}{-}%
670 }%
671 }
672 \@ifundefined{french@sh@:@sel}{-}{-}%
673 \def\HyPsd@babel@frenchb{%
674   \def\guill@spacing{ }%
675 }%
676 }
677 \@ifundefined{german@sh@"@sel}{-}{-}%
678 \def\HyPsd@babel@german{%
679   \declare@shorthand{german}{f}{f}%
680   \declare@shorthand{german}{-}{-}%
681   \declare@shorthand{german}{-}{-}%

```

```

682 }%
683 }
684 \@ifundefined{macedonian@sh@"@sel}{-}{%
685   \def\HyPsd@babel@macedonian{%
686     \declare@shorthand{macedonian}{"}{-}%
687     \declare@shorthand{macedonian}{"}{-}%
688   }%
689 }
690 \@ifundefined{ngerman@sh@"@sel}{-}{%
691   \def\HyPsd@babel@ngerman{%
692     \declare@shorthand{ngerman}{"}{-}%
693     \declare@shorthand{ngerman}{"}{-}%
694   }%
695 }
696 \@ifundefined{portuges@sh@"@sel}{-}{%
697   \def\HyPsd@babel@portuges{%
698     \declare@shorthand{portuges}{"}{-}%
699   }%
700 }
701 \@ifundefined{russian@sh@"@sel}{-}{%
702   \def\HyPsd@babel@russian{%
703     \declare@shorthand{russian}{"}{-}%
704     \declare@shorthand{russian}{"}{-}%
705   }%
706 }
707 \@ifundefined{slovene@sh@"@sel}{-}{%
708   \def\HyPsd@babel@slovene{%
709     \declare@shorthand{slovene}{"}{-}%
710   }%
711 }

```

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

```

712 \@ifundefined{spanish@sh@>@sel}{-}{%
713   \def\HyPsd@babel@spanish{%
714     \declare@shorthand{spanish}{<<}{\guillemotleft}%
715     \declare@shorthand{spanish}{>>}{\guillemotright}%
716     \declare@shorthand{spanish}{=}{-}%
717     \declare@shorthand{spanish}{~}{-}%
718     \declare@shorthand{spanish}{!}{\textexclamdown}%
719     \declare@shorthand{spanish}{?}{\textquestiondown}%
720   }%
721 }
722 \@ifundefined{swedish@sh@"@sel}{-}{%
723   \def\HyPsd@babel@swedish{%
724     \declare@shorthand{swedish}{"}{-}%
725     \declare@shorthand{swedish}{"}{-}%
726   }%
727 }
728 \@ifundefined{ukrainian@sh@"@sel}{-}{%
729   \def\HyPsd@babel@ukrainian{%
730     \declare@shorthand{ukrainian}{"}{-}%
731     \declare@shorthand{ukrainian}{"}{-}%
732   }%
733 }
734 \@ifundefined{usorbian@sh@"@sel}{-}{%
735   \def\HyPsd@babel@usorbian{%
736     \declare@shorthand{usorbian}{f}{f}%
737     \declare@shorthand{usorbian}{"}{-}%

```

```

738 }%
739 }
740 \@ifundefined{greek@sh@\string~@sel}{%
741   \let\HyPsd@GreekPatch\@empty
742 }{%
743   \def\HyPsd@GreekPatch{%
744     \let\greeknumeral\HyPsd@greeknumeral
745     \let\Greeknumeral\HyPsd@Greeknumeral
746   }%
747 }
748 \def\HyPsd@greeknumeral#1{%
749   \HyPsd@GreekNum\@firstoftwo{#1}%
750 }
751 \def\HyPsd@Greeknumeral#1{%
752   \HyPsd@GreekNum\@secondoftwo{#1}%
753 }
754 \def\HyPsd@GreekNum#1#2{%
755   \ifHy@unicode
756     \ifnum#2<\@ne
757       \@arabic{#2}%
758     \else
759       \ifnum#2<1000000 %
760         \HyPsd@@GreekNum#1{#2}%
761       \else
762         \@arabic{#2}%
763       \fi
764     \fi
765   \else
766     \@arabic{#2}%
767   \fi
768 }
769 \def\HyPsd@@GreekNum#1#2{%
770   \ifnum#2<\@m
771     \ifnum#2<10 %
772       \expandafter\HyPsd@GreekNumI
773       \expandafter\@gobble\expandafter#1\number#2%
774     \else
775       \ifnum#2<100 %
776         \expandafter\HyPsd@GreekNumII
777         \expandafter\@gobble\expandafter#1\number#2%
778       \else
779         \expandafter\HyPsd@GreekNumIII
780         \expandafter\@gobble\expandafter#1\number#2%
781       \fi
782     \fi
783     \ifnum#2>\z@
784       \textnumeralsigngreek
785     \fi
786   \else
787     \ifnum#2<\@M
788       \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
789     \else
790       \ifnum#2<100000 %
791         \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
792       \else
793         \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
794       \fi

```

```

795     \fi
796 \fi
797 }
798 \def\HyPsd@GreeNumI#1#2#3{%
799   #1{%
800     \ifnum#3>\z@
801       \textnumeralsignlowergreek
802     \fi
803   }%
804   \expandafter#2%
805   \ifcase#3 %
806     {}{}%
807   \or\textalpha\textAlpha
808   \or\textbeta\textBeta
809   \or\textgamma\textGamma
810   \or\textdelta\textDelta
811   \or\textepsilon\textEpsilon
812   \or\textstigmagreek\textStigmagreek
813   \or\textzeta\textZeta
814   \or\texteta\textEta
815   \or\texttheta\textTheta
816   \else
817     {}{}%
818   \fi
819 }
820 \def\HyPsd@GreeNumII#1#2#3#4{%
821   #1{%
822     \ifnum#3>\z@
823       \textnumeralsignlowergreek
824     \fi
825   }%
826   \expandafter#2%
827   \ifcase#3 %
828     {}{}%
829   \or\textiota\textIota
830   \or\textkappa\textKappa
831   \or\textlambda\textLambda
832   \or\textmu\textMu
833   \or\textnu\textNu
834   \or\textxi\textXi
835   \or\textomicron\textOmicron
836   \or\textpi\textPi
837   \or\textkoppagreek\textKoppagreek
838   \else
839     {}{}%
840   \fi
841   \HyPsd@GreeNumI#1#2#4%
842 }
843 \def\HyPsd@GreeNumIII#1#2#3#4#5{%
844   #1{%
845     \ifnum#3>\z@
846       \textnumeralsignlowergreek
847     \fi
848   }%
849   \expandafter#2%
850   \ifcase#3 %
851     {}{}%

```

```

852 \or\textrho\textRho
853 \or\textsigma\textSigma
854 \or\texttau\textTau
855 \or\textupsilon\textUpsilon
856 \or\textphi\textPhi
857 \or\textchi\textChi
858 \or\textpsi\textPsi
859 \or\textomega\textOmega
860 \or\textsampgreek\textSampgreek
861 \else
862   {}{}%
863 \fi
864 \HyPsd@GreekNumII#1#2#4#5%
865 }
866 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
867   \HyPsd@GreekNumI\@firstofone#1#2%
868   \HyPsd@@GreekNum#1{#3#4#5}%
869 }
870 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
871   \HyPsd@GreekNumII\@firstofone#1#2#3%
872   \HyPsd@@GreekNum#1{#4#5#6}%
873 }
874 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
875   \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
876   \HyPsd@@GreekNum#1{#5#6#7}%
877 }

```

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 ($\geq 0x40$).

```

878 \begingroup
879 \catcode"7F=\active
880 \toks@{%
881   \let\CJK@ignorespaces\empty
882   \def\CJK@char#1{\@gobbletwo}%
883   \let\CJK@charx\@gobblefour
884   \let\CJK@punctchar\@gobblefour
885   \def\CJK@punctcharx#1{\@gobblefour}%
886   \catcode"7F=\active
887   \def^^7f#1^^7f#2^^7f{%
888     \string #1\HyPsd@DecimalToOctal{#2}%
889   }%
890   % ... ?
891   \ifHy@unicode
892     \def\Hy@cjkpu{\80}%
893   \else
894     \let\Hy@cjkpu\@empty
895   \fi
896   \HyPsd@CJKActiveChars

```

```

897 }%
898 \count@=127 %
899 \@whilenum\count@<255 \do{%
900   \advance\count@ by 1 %
901   \lccode'\~=\count@
902   \lowercase{%
903     \toks@\expandafter{\the\toks@ ~}%
904   }%
905 }%
906 \toks@\expandafter{\the\toks@ !}%
907 \xdef\HyPsd@CJKhook{\the\toks@}%
908 \endgroup

```

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

```

909 \def\HyPsd@CJKActiveChars#1{%
910   \ifx#1!%
911     \let\HyPsd@CJKActiveChars\relax
912   \else
913     \edef#1{\noexpand\Hy@cjkpu\string#1}%
914   \fi
915   \HyPsd@CJKActiveChars
916 }

```

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

```

917 \def\HyPsd@DecimalToOctal#1{%
918   \ifcase #1 %
919     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
920     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
921     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
922     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
923     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
924     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
925     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
926     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
927     \or @\or A\or B\or C\or D\or E\or F\or G%
928     \or H\or I\or J\or K\or L\or M\or N\or O%
929     \or P\or Q\or R\or S\or T\or U\or V\or W%
930     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
931     \or \140\or a\or b\or c\or d\or e\or f\or g%
932     \or h\or i\or j\or k\or l\or m\or n\or o%
933     \or p\or q\or r\or s\or t\or u\or v\or w%
934     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
935     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
936     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
937     \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
938     \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
939     \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
940     \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
941     \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
942     \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
943     \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
944     \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
945     \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
946     \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
947     \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
948     \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%

```



```

949 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
950 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
951 \fi
952 }

```

6.5.3 \@inmathwarn-Patch

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

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

```

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

953 \def\HyPsd@inmathwarn#1#2{%
954   \ifx#2\expandafter
955     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
956       \HyPsd@GLYPHERR
957       \expandafter\@gobble\string#1%
958     >%
959     \expandafter\expandafter\expandafter\HyPsd@EndWithElse
960   \else
961     \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
962   \fi

```

```

963 \else
964   \expandafter#2%
965 \fi
966 }
967 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
968 \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

```

969 \def\HyPsd@add@accent#1#2{%
970   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
971   #2%
972 }%

```

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.

```

973 \def\HyPsd@LetUnexpandableSpace#1{%
974   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
975 }

```

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

```

976 \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.

```

977 \edef\HyPsd@XSPACE{\string#\string X}
978 \edef\HyPsd@ITALCORR{\string#\string I}
979 \edef\HyPsd@GLYPHERR{\string#\string G}

```

6.5.7 \hspace fix

\HyPsd@hspace

```

980 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}

```

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

```

981 \def\HyPsd@@hspace#1*#2\END{%
982   \ifx\#2\%
983     \HyPsd@hspacetest{#1}%

```

```

984 \else
985   \expandafter\HyPsd@hspacetest
986 \fi
987 }

```

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

```

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

```

6.5.8 Fix for AMS classes

```

989 \@ifundefined{tocsection}{%
990   \let\HyPSD@AMSclassfix\relax
991 }{%
992   \def\HyPSD@AMSclassfix{%
993     \let\tocpart\HyPSD@tocsection
994     \let\tocchapter\HyPSD@tocsection
995     \let\tocappendix\HyPSD@tocsection
996     \let\tocsection\HyPSD@tocsection
997     \let\tocsubsection\HyPSD@tocsection
998     \let\tocsubsubsection\HyPSD@tocsection
999     \let\tocparagraph\HyPSD@tocsection
1000   }%
1001   \def\HyPSD@tocsection#1#2#3{%
1002     \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1003     #3%
1004   }%
1005 }

```

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.

```

1006 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%

```

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

```

1007 \def\HyPsd@@ref#1*#2\END{%
1008   \ifx\\#2\\%
1009     \HyPsd@@@ref{#1}%
1010   \else
1011     \expandafter\HyPsd@@@ref
1012   \fi
1013 }%

```

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

```

1014 \def\HyPsd@@@ref#1{%
1015   \expandafter\ifx\csname r@#1\endcsname\relax
1016     ??%
1017   \else
1018     \expandafter\expandafter\expandafter
1019     \@car\csname r@#1\endcsname\@nil
1020   \fi
1021 }

```

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

```

1022 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

```



```

1064 \def\HyPsd@autorefname#1.#2\@nil{%
1065   \@ifundefined{#1autorefname}{%
1066     \@ifundefined{#1name}{%
1067       }{%
1068         \csname#1name\endcsname\space
1069       }%
1070     }{%
1071       \csname#1autorefname\endcsname\space
1072     }%
1073 }

```

6.5.10 Redefining the defining commands

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

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

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

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

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

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

```

\HyPsd@DefCommand
\HyPsd@LetCommand
1074 \begingroup
1075   \def\x#1#2{%
1076     \endgroup
1077     \let#1\def
1078     \def\HyPsd@DefCommand##1##2##{%
1079       #1%
1080       \expandafter\noexpand
1081         \csname\expandafter@gobble\string##1\@empty\endcsname
1082       \@gobble
1083     }%
1084     \let#2\let
1085     \def\HyPsd@LetCommand##1{%
1086       \expandafter\ifx\csname##1\expandafter\endcsname
1087         \csname iftrue\endcsname

```

```

1088     \pdfstringdefWarn\let
1089     \expandafter\@gobble
1090   \else
1091     \expandafter\ifx\csname##1\expandafter\endcsname
1092       \csname iffalse\endcsname
1093     \pdfstringdefWarn\let
1094     \expandafter\expandafter\expandafter\@gobble
1095   \else
1096     #2%
1097     \expandafter\noexpand
1098     \csname##1\expandafter\expandafter\expandafter\endcsname
1099   \fi
1100 \fi
1101 }%
1102 }%
1103 \expandafter\x\csname <def>-command\expandafter\endcsname
1104     \csname <let>-command\endcsname
1105 \def\HyPsd@LetCommand#1{%
1106   \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1107   \expandafter\expandafter\expandafter{%
1108     \expandafter\@gobble\string#1\@empty
1109   }%
1110 }

```

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.

```

1111 \def\HyPsd@ifnextchar{%
1112   \pdfstringdefWarn\@ifnextchar
1113   \expandafter\@gobbletwo\@gobble
1114 }

```

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

```

1115 \def\HyPsd@new@ifnextchar{%
1116   \pdfstringdefWarn\new@ifnextchar
1117   \expandafter\@gobbletwo\@gobble
1118 }

```

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`.

```

1119 \def\HyPsd@protected@testopt#1{%
1120   \pdfstringdefWarn#1%
1121   \@gobbletwo
1122 }

```

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:

```
1123 \def\HyPsd@Warning#1{%
1124   \begingroup
1125     \def\space{ }%
1126     \Hy@Warning{#1}%
1127   \endgroup
1128 }
```

6.6.2 Protecting spaces

```
1129 \RequirePackage{etexcmds}[2007/09/09]
1130 \ifetex@unexpanded
1131   \expandafter\@secondoftwo
1132 \else
1133   \expandafter\@firstoftwo
1134 \fi
1135 {%
```

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

```
1136   \def\HyPsd@ProtectSpaces#1{%
1137     \iftrue
1138       \expandafter\HyPsd@@ProtectSpacesFi
1139       \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1140     \fi
1141   }%
```

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

```
1142   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1143     \fi
1144     \ifx\scrollmode#2\scrollmode
1145       \HyPsd@RemoveMask#1\HyPsd@End#3%
1146     \else
1147       \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1148       \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1149     \fi
1150   }%
```

Remove mask.

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

```
1151   \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1152     \toks@\expandafter{#1}%
1153     \xdef#2{\the\toks@}%
1154   }%
1155 }{%
1156   \let\HyPsd@fi\fi
1157   \def\HyPsd@ProtectSpaces#1{%
```

```

1158 \xdef#1{%
1159 \iftrue
1160 \expandafter\HyPsd@@ProtectSpacesFi
1161 \expandafter\expandafter\@empty#1| %
1162 \HyPsd@fi
1163 }%
1164 \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1165 }%
1166 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1167 \fi
1168 \etex@unexpanded{#1}%
1169 \ifx\scrollmode#2\scrollmode
1170 \else
1171 \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1172 \HyPsd@fi
1173 }%
1174 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1175 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1176 }%
1177 }

```

6.6.3 Remove grouping braces

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

```

1178 \def\HyPsd@RemoveBraces#1{%
1179 \ifx\scrollmode#1\scrollmode
1180 \else
1181 \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1182 \fi
1183 }

```

`\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`.

```

1184 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1185 \fi
1186 \def\Hy@temp@A{#1#2}%
1187 \def\Hy@temp@B{#3}%
1188 \ifx\Hy@temp@A\Hy@temp@B
1189 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1190 \HyPsd@String#1%
1191 }%
1192 \ifx\scrollmode#2\scrollmode
1193 \else
1194 \Hy@ReturnAfterFiFiEnd{%
1195 \HyPsd@RemoveBraces{#2}%
1196 }%
1197 \fi
1198 \else
1199 \def\Hy@temp@A{#1}%

```



```

1200 \HyPsd@AppendItalcorr\HyPsd@String
1201 \ifx\Hy@temp@A\@empty
1202 \Hy@ReturnAfterElseFiFiEnd{%
1203 \HyPsd@RemoveBraces{#2}%
1204 }%
1205 \else
1206 \HyPsd@ProtectSpaces\Hy@temp@A
1207 \HyPsd@AppendItalcorr\Hy@temp@A
1208 \Hy@ReturnAfterFiFiEnd{%
1209 \expandafter\HyPsd@RemoveBraces\expandafter
1210 {\Hy@temp@A#2}%
1211 }%
1212 \fi
1213 \fi
1214 \Hy@ReturnEnd
1215 }

```

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

```

1216 \def\HyPsd@AppendItalcorr#1{%
1217 \expandafter\HyPsd@@AppendItalcorr\expandafter{/}\#1%
1218 }
1219 \def\HyPsd@@AppendItalcorr#1#2{%
1220 \expandafter\def\expandafter#2\expandafter{#2#1}%
1221 }

```

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).

```

1222 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1223 \global\let\HyPsd@Rest\relax
1224 \ifcat\relax\noexpand#1\relax
1225 \ifx#1\protect
1226 \else
1227 \ifx#1\penalty
1228 \setbox\z@=\hbox{%
1229 \afterassignment\HyPsd@AfterCountRemove
1230 \count@=#2\HyPsd@End
1231 }%
1232 \else
1233 \ifx#1\kern
1234 \setbox\z@=\hbox{%
1235 \afterassignment\HyPsd@AfterDimenRemove
1236 \dimen@=#2\HyPsd@End
1237 }%
1238 \else

```

```

1239         \ifx#1\hskip
1240         \setbox\z@=\hbox{%
1241         \afterassignment\HyPsd@AfterSkipRemove
1242         \skip@=#2\HyPsd@End
1243         }%
1244         \else
1245         \HyPsd@CatcodeWarning{#1}%
1246         \fi
1247     \fi
1248 \fi
1249 \fi
1250 \else
1251     \ifcat#1A% letter
1252     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1253     \HyPsd@String#1%
1254     }%
1255 \else
1256     \ifcat#1 % SPACE
1257     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1258     \HyPsd@String\HyPsd@SPACEOPTI
1259     }%
1260 \else
1261     \ifcat$#1%
1262     \HyPsd@CatcodeWarning{math shift}%
1263 \else
1264     \ifcat&#1%
1265     \HyPsd@CatcodeWarning{alignment tab}%
1266 \else
1267     \ifcat^#1%
1268     \HyPsd@CatcodeWarning{superscript}%
1269 \else
1270     \ifcat_#1%
1271     \HyPsd@CatcodeWarning{subscript}%
1272 \else
1273     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1274     \HyPsd@String#1%
1275     }%
1276     \fi
1277 \fi
1278 \fi
1279 \fi
1280 \fi
1281 \fi
1282 \fi
1283 \ifx\HyPsd@Rest\relax
1284     \ifx\scrollmode#2\scrollmode
1285     \else
1286     \Hy@ReturnAfterFiFiEnd{%
1287     \HyPsd@CheckCatcodes#2\HyPsd@End
1288     }%
1289     \fi
1290 \else
1291     \ifx\HyPsd@Rest\@empty
1292     \else
1293     \Hy@ReturnAfterFiFiEnd{%
1294     \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1295     }%

```

```

1296     \fi
1297   \fi
1298   \Hy@ReturnEnd
1299 }

```

Remove counts, dimens, skips.

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

```

1300 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1301   \gdef\HyPsd@Rest{#1}%
1302 }

```

`\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.

```

1303 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1304   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1305     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1306     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1307   \else
1308     \ifdim\dimen@=\z@
1309     \else
1310       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1311     \fi
1312     \gdef\HyPsd@Rest{#1}%
1313   \fi
1314 }

```

`\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).

```

1315 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1316   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1317     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1318     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1319   \else
1320     \ifdim\skip@=\z@
1321     \else
1322       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1323     \fi
1324     \gdef\HyPsd@Rest{#1}%
1325   \fi
1326 }

```

Catcode warnings.

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

```

1327 \def\HyPsd@CatcodeWarning#1{%
1328   \HyPsd@Warning{%
1329     Token not allowed in a PDF string (%)
1330     \ifHy@unicode
1331       Unicode%
1332     \else
1333       PDFDocEncoding%
1334     \fi
1335   },%

```

```

1336 \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1337 }%
1338 }
1339 \begingroup
1340 \catcode'\|=0 %
1341 \catcode'\|=12 %
1342 |gdef|HyPsd@RemoveCmdPrefix#1{%
1343 |expandafter|HyPsd@@RemoveCmdPrefix
1344 |string#1|@empty\<>-|@empty|@empty
1345 }%
1346 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1347 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

1348 \def\HyPsd@RemoveSpaceWarning#1{%
1349 \HyPsd@Warning{%
1350 Token not allowed in a PDFDocEncoded string:%
1351 \MessageBreak #1\MessageBreak
1352 removed%
1353 }%
1354 }

```

\HyPsd@ReplaceSpaceWarning

```

1355 \def\HyPsd@ReplaceSpaceWarning#1{%
1356 \HyPsd@Warning{%
1357 Token not allowed in a PDFDocEncoded string:%
1358 \MessageBreak #1\MessageBreak
1359 replaced by space%
1360 }%
1361 }

```

6.6.5 Check for wrong glyphs

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

```

1362 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1363 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1364 \HyPsd@String#1%
1365 }%
1366 \ifx\|#2\%
1367 \else
1368 \Hy@ReturnAfterFi{%
1369 \HyPsd@GlyphProcessWarning#2\@empty
1370 }%
1371 \fi
1372 }
1373 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1374 \HyPsd@Warning{%
1375 Glyph not defined in %
1376 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1377 removing '\@backslashchar#1'%
1378 }%
1379 \HyPsd@GlyphProcess#2\@empty
1380 }

```

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`.

```
1381 \def\HyPsd@spaceopti#1{ % first space
1382   \ifx\HyPsd@spaceopti#1%
1383     \040%
1384   \else
1385     #1%
1386   \fi
1387 }%
```

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.

```
1388 \def\HyPsd@Subst#1#2#3{%
1389   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1390     \fi
1391     ##1%
1392     \ifx\scrollmode##2\scrollmode
1393     \else
1394       #2%
1395       \HyPsd@@ReplaceFi##2\END
1396     \fi
1397   }%
1398   \xdef#3{%
1399     \iftrue
1400       \expandafter\HyPsd@@ReplaceFi#3#1\END
1401     \fi
1402   }%
1403 }
```

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

```
1404 \def\HyPsd@StringSubst#1{%
1405   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1406 }
```

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.

```
1407 \def\HyPsd@doxspace#1{%
1408   \ifx#1\relax\else
1409   \ifx#1.\else
1410   \ifx#1:\else
1411   \ifx#1,\else
1412   \ifx#1;\else
1413   \ifx#1!\else
1414     \ifx#1?\else
```

```

1415         \ifx#1/\else
1416         \ifx#1-\else
1417         \ifx#1'\else
1418         \HyPsd@SPACEOPTI
1419         \fi
1420         \fi
1421         \fi
1422         \fi
1423         \fi
1424         \fi
1425         \fi
1426         \fi
1427         \fi
1428         \fi
1429         #1%
1430 }%

```

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.

```

1431 \begingroup
1432 \catcode'\|=0 %
1433 \catcode'\|=12 %

```

\HyPsd@ConvertToUnicode

```

1434 |gdef|HyPsd@ConvertToUnicode#1{%
1435 |xdef#1{%
1436 |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1437 }%
1438 |ifx#1|@empty
1439 |else
1440 |xdef#1{%
1441 \376\377%
1442 #1%
1443 }%
1444 |fi
1445 }%

```

\HyPsd@DoConvert

```

1446 |gdef|HyPsd@DoConvert#1{%
1447 |ifx#1|@empty
1448 |else
1449 |Hy@ReturnAfterFi{%
1450 |ifx#1\|%
1451 \|%
1452 |expandafter|HyPsd@DoEscape
1453 |else
1454 \000#1%
1455 |expandafter|HyPsd@DoConvert
1456 |fi
1457 }%
1458 |fi
1459 }%

```

\HyPsd@DoEscape

```

1460 |gdef|HyPsd@DoEscape#1{%
1461   |ifx#19%
1462   |expandafter|HyPsd@GetTwoBytes
1463   |else
1464   |Hy@ReturnAfterFi{%
1465     |ifx#18%
1466     00%
1467     |expandafter|HyPsd@GetTwoBytes
1468     |else
1469     #1%
1470     |expandafter|HyPsd@GetOneByte
1471   |fi
1472   }%
1473 |fi
1474 }%

```

\HyPsd@GetTwoBytes

```

1475 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1476   #1\#2#3#4%
1477   |HyPsd@DoConvert
1478   }%

```

\HyPsd@GetOneByte

```

1479 |gdef|HyPsd@GetOneByte#1#2{%
1480   #1#2%
1481   |HyPsd@DoConvert
1482   }%
1483 |endgroup

```

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

```

1484 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1485   \xdef#4{#4#1#2}%
1486   \HyPsd@@ConvertToUnicode#3\END#4%
1487 }

```

6.6.9 Support for UTF-8 input encoding

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

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

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

```

1488 \begingroup\expandafter\expandafter\expandafter\endgroup
1489 \expandafter\ifx\csname numexpr\endcsname\relax
1490   \let\HyPsd@UTFviii\relax
1491 \else
1492   \def\HyPsd@UTFviii{%
1493     \let\UTFviii@two@octets\HyPsd@UTFviii@two
1494     \let\UTFviii@three@octets\HyPsd@UTFviii@three

```

```

1495 \let\unichar\HyPsd@unichar
1496 }%

```

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.

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

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

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

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

$$(5)$$

```

1497 \def\HyPsd@UTFviii@two#1#2{%
1498 \expandafter\HyPsd@UTFviii@two
1499 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1500 \number'#1\expandafter|%
1501 \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|%
1502 \number'#2 \@nil
1503 }%
1504 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
1505 \expandafter\8%
1506 \number\numexpr #1-48\expandafter\relax
1507 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1508 \number\numexpr #3-8*%
1509 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1510 \number\numexpr #4-8*#3\relax
1511 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

1512 \def\HyPsd@UTFviii@three#1#2#3{%
1513 \expandafter\HyPsd@UTFviii@three
1514 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1515 \number'#1\expandafter|%
1516 \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter|%
1517 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|%
1518 \number'#2\expandafter|%
1519 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|%
1520 \number'#3 \@nil
1521 }%
1522 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1523 \expandafter\9%
1524 \number\numexpr #1-56\expandafter\relax
1525 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1526 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax

```



```

1527 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1528 \number\numexpr #6-16\expandafter\relax
1529 \number\numexpr #7-8*#6\relax
1530 }%

```

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

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

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

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

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

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

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

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

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

$$(21)$$

```

1531 \def\HyPsd@UTFviii@four#1{%
1532 \expandafter\HyPsd@UTFviii@@four\number'#1|}%
1533 }%
1534 \def\HyPsd@UTFviii@@four#1|#2|#3|#4{%
1535 \expandafter\HyPsd@UTFviii@@@four\number#1\expandafter|}%
1536 \number'#2\expandafter|}%
1537 \number\dimexpr.03125\dimexpr'#2sp\expandafter|}%
1538 \number'#3\expandafter|}%
1539 \number\dimexpr.03125\dimexpr'#3sp\expandafter|}%
1540 \number'#4\expandafter|}%
1541 \number\dimexpr.125\dimexpr'#4|}%
1542 }%
1543 \def\HyPsd@UTFviii@@@four#1|#2|#3|#4|#5|#6|#7|{%
1544 \931%
1545 \number\numexpr\dimexpr.5\dimexpr#1sp\relax\relax -120\relax
1546 \csname\number\numexpr\ifodd#1 2\else 0\fi +#3-4\relax\endcsname
1547 \number\dimexpr.25\dimexpr #2sp - 32\dimexpr#3sp\relax\relax\relax
1548 % ...
1549 }%

```

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

```

1550 \def\HyPsd@unichar#1{%
1551 \ifHy@unicode
1552 \ifnum#1>"10FFFF %
1553 \HyPsd@UnicodeReplacementCharacter % illegal
1554 \else
1555 \ifnum#1>"FFFF %

```

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

```

1556 \expandafter\HyPsd@unichar\expandafter{%
1557 \number\numexpr 55296+%
1558 \dimexpr.0009765625\dimexpr\number#1sp-\p@
1559 \relax\relax\relax
1560 }%

```

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

```

1561         \expandafter\HyPsd@unichar\expandafter{%
1562             \number\numexpr#1-9216%
1563             -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1564             \relax\relax\relax
1565     }%
1566     \else
1567         \ifnum#1>"7FF %
1568             \9%
1569             \expandafter\HyPsd@unichar@first@byte\expandafter{%
1570                 \number
1571                 \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1572             }%
1573         \else
1574             \8%
1575             \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
1576         \fi
1577         \expandafter\HyPsd@unichar@second@byte\expandafter{%
1578             \number
1579             \numexpr#1-256*\number
1580             \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
1581         }%
1582     \fi
1583 \fi
1584 \else
1585     .% unsupported (Unicode -> PDF Doc Encoding)
1586 \fi
1587 }%
1588 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
1589 \def\HyPsd@unichar@first@byte#1{%
1590     \number\dimexpr.015625\dimexpr#1sp\relax\relax
1591     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1592         \number
1593         \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1594         \relax\relax\relax
1595     }%
1596 }%
1597 \def\HyPsd@unichar@second@byte#1{%
1598     \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
1599     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1600         \number
1601         \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1602         \relax\relax\relax
1603     }%
1604 }%
1605 \def\HyPsd@unichar@octtwo#1{%
1606     \number\dimexpr.125\dimexpr#1sp\relax\relax
1607     \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
1608     \relax\relax\relax
1609 }%
1610 \fi

```

7 Support of other packages

7.1 Class memoir

```

1611 \@ifclassloaded{memoir}{%

```

```

1612 \AtEndOfPackage{\RequirePackage{memhfixc}}%
1613 }{}

```

7.2 Package subfigure

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

```

1614 \ifpackageloaded{subfigure}{%
1615 \ifundefined{sub@label}{%
1616 \Hy@hypertexnamesfalse
1617 }{%
1618 \renewcommand*{\sub@label}[1]{%
1619 \@bsphack
1620 \subfig@oldlabel{#1}%
1621 \if@files@
1622 \begin@group
1623 \edef\@currentlabstr{%
1624 \expandafter\strip@prefix\meaning\@currentlabelname
1625 }%
1626 \protected@write\@auxout{}{%
1627 \string\newlabel{sub@#1}{%
1628 {\@nameuse{@@thesub\@capttype}}%
1629 {\thepage}%
1630 {%
1631 \expandafter\strip@period\@currentlabstr
1632 \relax.\relax\@@@%
1633 }%
1634 {\@currentHref}%
1635 }%
1636 }%
1637 }%
1638 \endgroup
1639 \fi
1640 \@esphack
1641 }%
1642 \ifpackage@later{subfigure}{2002/03/26}{%
1643 \providecommand*\toclevel@subfigure{1}%
1644 \providecommand*\toclevel@subtable{1}%
1645 }%
1646 }%
1647 }{}

```

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:

```

1648 \ifundefined{XR@addURL}{%
1649 }{}

```

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.

```

1650 \def\XR@addURL#1{\XR@dURL#1{}{}{}{}\\}%
1651 \def\XR@dURL#1#2#3#4#5\\{%
1652 {#1}{#2}%
1653 \if!#4!%
1654 \else
1655 {#3}{#4}{\XR@URL}%
1656 \fi

```

```

1657 }%
1658 }

1659 \def\Hy@true{true}
1660 \def\Hy@false{false}

    Providing dummy definitions.

1661 \let\literalps@out\@gobble
1662 \newcommand\pdfbookmark[3] [] {}
1663 \let\Acrobatmenu\@gobble
1664 \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

```

1665 \let\HyperRaiseLinkHook\@empty
1666 \def\HyperRaiseLinkDefault{\baselineskip}

```

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

```

1667 \def\Hy@raisedlink#1{%
1668   \ifvmode
1669     #1%
1670   \else
1671     \penalty\@M
1672     \smash{%
1673       \begingroup
1674         \let\HyperRaiseLinkLength\@tempdima
1675         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1676         \HyperRaiseLinkHook
1677       \expandafter\endgroup
1678       \expandafter\raise\the\HyperRaiseLinkLength\hbox{#1}%
1679     }%
1680   \fi
1681 }

```

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

```

1682 \def\Hy@SaveLastskip{%
1683   \let\Hy@RestoreLastskip\relax
1684   \ifvmode
1685     \ifdim\lastskip=\z@
1686       \let\Hy@RestoreLastskip\nobreak
1687     \else
1688       \begingroup
1689         \skip@=-\lastskip
1690       \edef\x{%
1691         \endgroup

```

```

1692         \def\noexpand\Hy@RestoreLastskip{%
1693             \noexpand\ifvmode
1694             \noexpand\nobreak
1695             \vskip\the\skip@
1696             \vskip\the\lastskip\relax
1697         \noexpand\fi
1698     }%
1699 }%
1700 \x
1701 \fi
1702 \else
1703     \ifhmode
1704         \ifdim\lastskip=\z@
1705             \let\Hy@RestoreLastskip\nobreak
1706         \else
1707             \begingroup
1708             \skip@=-\lastskip
1709             \edef\x{%
1710                 \endgroup
1711                 \def\noexpand\Hy@RestoreLastskip{%
1712                     \noexpand\ifhmode
1713                     \noexpand\nobreak
1714                     \hskip\the\skip@
1715                     \hskip\the\lastskip\relax
1716                 \noexpand\fi
1717             }%
1718         }%
1719     \x
1720 \fi
1721 \fi
1722 \fi
1723 }%

```

9 Options

9.1 Help macros

\Hy@boolkey

```

1724 \def\Hy@boolkey{\@dblarg\Hy@@boolkey}
1725 \def\Hy@@boolkey[#1]#2#3{%
1726     \lowercase{\def\Hy@tempa{#3}}%
1727     \ifx\Hy@tempa\@empty
1728         \let\Hy@tempa\Hy@true
1729     \fi
1730     \ifx\Hy@tempa\Hy@true
1731     \else
1732         \ifx\Hy@tempa\Hy@false
1733         \else
1734             \let\Hy@tempa\relax
1735         \fi
1736     \fi
1737     \ifx\Hy@tempa\relax
1738         \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1739     \else
1740         \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1741         \csname Hy@#2\Hy@tempa\endcsname

```

```

1742 \fi
1743 }

```

\Hy@WarnOptionValue

```

1744 \def\Hy@WarnOptionValue#1#2#3{%
1745   \Hy@Warning{%
1746     Unexpected value ‘#1’\MessageBreak
1747     of option ‘#2’ instead of\MessageBreak
1748     #3%
1749   }%
1750 }

```

\Hy@DisableOption

```

1751 \def\Hy@DisableOption#1{%
1752   \@ifundefined{KV@Hyp@#1@default}{%
1753     \define@key{Hyp}{#1}%
1754   }{%
1755     \define@key{Hyp}{#1}[]%
1756   }%
1757   {\Hy@WarnOptionDisabled{#1}}%
1758 }

```

\Hy@WarnOptionDisabled

```

1759 \def\Hy@WarnOptionDisabled#1{%
1760   \Hy@Warning{%
1761     Option ‘#1’ has already been used,\MessageBreak
1762     setting the option has no effect%
1763   }%
1764 }

```

\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.

```

1765 \def\Hy@CheckOptionValue#1#2#3{%
1766   \begingroup
1767   \edef\x{#1}%
1768   \@onelevel@sanitize\x
1769   \let\y=y%
1770   \def\do##1##2{%
1771     \def\z{##1}%
1772     \@onelevel@sanitize\z
1773     \ifx\x\z
1774       \let\y=n%
1775       \let\do\@gobbletwo
1776     \fi
1777   }%
1778   #3%
1779   \ifx\y y%
1780     \def\do##1##2{%
1781       * ‘##1’%
1782       \ifx\##2\\\else\space(##2)\fi
1783     \MessageBreak
1784   }%
1785   \Hy@Warning{%
1786     Values of option ‘#2’:\MessageBreak
1787     #3%
1788     * An empty value disables the option.\MessageBreak
1789     Unknown value ‘\x’%

```

```

1790     }%
1791     \fi
1792   \endgroup
1793 }

```

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

```

1794 \def\Hy@DefNameKey#1{%
1795   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
1796 }

```

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

```

1797 \def\Hy@@DefNameKey#1#2#3{%
1798   \define@key{Hyp}{#2}{%
1799     \edef#1{##1}%
1800     \ifx#1\@empty
1801       \else
1802         \Hy@CheckOptionValue{##1}{#2}{#3}%
1803       \fi
1804   }%
1805   \let#1\@empty
1806 }

```

`\Hy@UseNameKey`

```

1807 \def\Hy@UseNameKey#1#2{%
1808   \ifx#2\@empty
1809     \else
1810       /#1/#2%
1811     \fi
1812 }

```

9.2 Defining the options

```

1813 \define@key{Hyp}{implicit}[true]{%
1814   \Hy@boolkey{implicit}{#1}%
1815 }
1816 \define@key{Hyp}{draft}[true]{%
1817   \Hy@boolkey{draft}{#1}%
1818 }
1819 \define@key{Hyp}{final}[true]{%
1820   \Hy@boolkey{final}{#1}%
1821 }
1822 \let\KV@Hyp@nolinks\KV@Hyp@draft
1823 \define@key{Hyp}{a4paper}[true]{%
1824   \def\special@paper{210mm,297mm}%
1825   \def\Hy@pageheight{842}%
1826 }
1827 \define@key{Hyp}{a5paper}[true]{%
1828   \def\special@paper{148mm,210mm}%
1829   \def\Hy@pageheight{595}%
1830 }
1831 \define@key{Hyp}{b5paper}[true]{%
1832   \def\special@paper{176mm,250mm}%

```

```

1833 \def\Hy@pageheight{709}%
1834 }
1835 \define@key{Hyp}{letterpaper}[true]{%
1836 \def\special@paper{8.5in,11in}%
1837 \def\Hy@pageheight{792}%
1838 }
1839 \define@key{Hyp}{legalpaper}[true]{%
1840 \def\special@paper{8.5in,14in}%
1841 \def\Hy@pageheight{1008}%
1842 }
1843 \define@key{Hyp}{executivepaper}[true]{%
1844 \def\special@paper{7.25in,10.5in}%
1845 \def\Hy@pageheight{720}%
1846 }
1847 \define@key{Hyp}{setpagesize}[true]{%
1848 \Hy@boolkey{setpagesize}{#1}%
1849 }
1850 \define@key{Hyp}{debug}[true]{%
1851 \Hy@boolkey[debug]{verbose}{#1}%
1852 }
1853 \define@key{Hyp}{linktopage}[true]{%
1854 \Hy@boolkey{linktopage}{#1}%
1855 }
1856 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1857 \def\XR@ext{dvi}
1858 \define@key{Hyp}{verbose}[true]{%
1859 \Hy@boolkey{verbose}{#1}%
1860 }
1861 \define@key{Hyp}{typexml}[true]{%
1862 \Hy@boolkey{typexml}{#1}%
1863 }

```

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.

```

1864 \define@key{Hyp}{raiselinks}[true]{%
1865 \Hy@boolkey{raiselinks}{#1}%
1866 }

```

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

```

1867 \define@key{Hyp}{breaklinks}[true]{%
1868 \Hy@boolkey{breaklinks}{#1}%
1869 }

```

Determines whether an automatic anchor is put on each page

```

1870 \define@key{Hyp}{pageanchor}[true]{%
1871 \Hy@boolkey{pageanchor}{#1}%
1872 }

```

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.

```

1873 \define@key{Hyp}{plainpages}[true]{%
1874 \Hy@boolkey{plainpages}{#1}%
1875 }

```

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

```

1876 \define@key{Hyp}{naturalnames}[true]{%
1877 \Hy@boolkey{naturalnames}{#1}%

```


1878 }

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

```
1879 \define@key{Hyp}{hypertexnames}[true]{%
1880   \Hy@boolkey{hypertexnames}{#1}%
1881 }
```

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

```
1882 \define@key{Hyp}{nesting}[true]{%
1883   \Hy@boolkey{nesting}{#1}%
1884 }

1885 \define@key{Hyp}{unicode}[true]{%
1886   \Hy@boolkey{unicode}{#1}%
1887   \ifHy@unicode
1888     \def\HyPsd@pdfencoding{unicode}%
1889   \else
1890     \def\HyPsd@pdfencoding{pdfdoc}%
1891   \fi
1892   \HyPsd@LoadUnicode
1893 }

1894 \def\HyPsd@LoadUnicode{%
1895   \@ifundefined{T@PU}{\input{puenc.def}}{}%
1896   \DeclareFontFamily{PU}{pdf}{}%
1897   \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
1898   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
1899   \global\let\HyPsd@LoadUnicode\relax
1900 }

1901 \AtBeginDocument{%
1902   \ifx\HyPsd@LoadUnicode\relax
1903   \else
1904     \def\HyPsd@LoadUnicode{%
1905       \PackageError{hyperref}{%
1906         Unicode support for bookmarks is not available.\MessageBreak
1907         Activate unicode support by using one of the options\MessageBreak
1908         'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
1909         in the preamble%
1910       }@ehc
1911       \global\let\HyPsd@LoadUnicode\relax
1912       \global\Hy@unicodetrue
1913       \global\let\Hy@unicodetrue\Hy@unicodetrue
1914     }%
1915   \fi
1916 }

1917 \define@key{Hyp}{pdfencoding}{%
1918   \edef\HyPsd@temp{#1}%
1919   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
1920     \let\HyPsd@pdfencoding\HyPsd@temp
1921     \Hy@unicodetrue
1922   \else
1923     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
1924       \z@
1925     \else
1926       \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
1927         \z@
1928       \else
1929         \@ne
1930       \fi
```

```

1931         \fi
1932     \let\HyPsd@pdfencoding\HyPsd@temp
1933     \hypersetup{unicode}%
1934     \ifHy@unicode
1935         \def\HyPsd@pdfencoding{#1}%
1936         \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
1937             \HyPsd@LoadStringEnc
1938         \fi
1939     \else
1940         \Hy@Warning{Cannot switch to unicode bookmarks}%
1941         \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
1942     \fi
1943 \else
1944     \@onelevel@sanitize\HyPsd@temp
1945     \Hy@Warning{%
1946         Values of option 'pdfencoding':\MessageBreak
1947         'pdfdoc', 'unicode', 'auto'.\MessageBreak
1948         Ignoring unknown value '\HyPsd@temp'%
1949     }%
1950 \fi
1951 \fi
1952 }
1953 \def\HyPsd@pdfencoding@auto{auto}
1954 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
1955 \def\HyPsd@pdfencoding@unicode{unicode}
1956 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
1957 \def\HyPsd@LoadStringEnc{%
1958     \RequirePackage{stringenc}[2007/06/14]%
1959     \let\HyPsd@LoadStringEnc\relax
1960 }
1961 \AtBeginDocument{%
1962     \@ifpackageloaded{stringenc}{%
1963         \let\HyPsd@LoadStringEnc\relax
1964     }{%
1965         \def\HyPsd@LoadStringEnc{%
1966             \Hy@WarningNoLine{%
1967                 Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak
1968                 in the preamble or load the package there%
1969             }%
1970         }%
1971     }%
1972 }
1973 \newif\ifHy@setpdfversion
1974 \define@key{Hyp}{pdfversion}{%
1975     \@ifundefined{Hy@pdfversion@#1}{%
1976         \PackageWarning{hyperref}{%
1977             Unsupported PDF version '#1'.\MessageBreak
1978             Valid values: 1.2 until 1.7%
1979         }%
1980     }{%
1981         \Hy@setpdfversiontrue
1982         \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
1983     }%
1984 }
1985 \@namedef{Hy@pdfversion@1.2}{2}%
1986 \@namedef{Hy@pdfversion@1.3}{3}%
1987 \@namedef{Hy@pdfversion@1.4}{4}%

```

```

1988 \@namedef{Hy@pdfversion@1.5}{5}%
1989 \@namedef{Hy@pdfversion@1.6}{6}%
1990 \@namedef{Hy@pdfversion@1.7}{7}%
1991 \def\Hy@pdfversion{2}

```

10 Options for different drivers

```

1992 \define@key{Hyp}{hyperref}[true]{%
1993 \define@key{Hyp}{tex4ht}[true]{%
1994 \def\XR@ext{html}%
1995 \Hy@texhttrue
1996 \def\Hy@raisedlink{}%
1997 \setkeys{Hyp}{colorlinks=true}%
1998 \def\BeforeTeXIVht{\usepackage{color}}%
1999 \def\Hy@driver{htex4ht}%
2000 \def\MaybeStopEarly{%
2001 \typeout{Hyperref stopped early}%
2002 \AfterBeginDocument{%
2003 \PDF@FinishDoc
2004 \gdef\PDF@FinishDoc{}%
2005 }%
2006 \endinput
2007 }%
2008 }
2009 \define@key{Hyp}{pdftex}[true]{%
2010 \def\Hy@driver{hpdftex}%
2011 \def\XR@ext{pdf}%
2012 \PassOptionsToPackage{pdftex}{color}%
2013 \Hy@breaklinkstrue
2014 }
2015 \define@key{Hyp}{dvi pdf}[true]{%
2016 \Hy@WarningNoLine{%
2017 Option 'dvi pdf' is deprecated.\MessageBreak
2018 See the user manual for available driver options%
2019 }%
2020 }
2021 \define@key{Hyp}{native pdf}[true]{%
2022 \def\Hy@driver{hdvips}%
2023 \def\Hy@raisedlink{}%
2024 \def\XR@ext{pdf}%
2025 }
2026 \define@key{Hyp}{dvi pdf m}[true]{%
2027 \def\Hy@driver{hdvipdfm}%
2028 \def\XR@ext{pdf}%
2029 \Hy@breaklinkstrue
2030 }
2031 \define@key{Hyp}{dvi pdf m x}[true]{%
2032 \def\Hy@driver{hdvipdfm}%
2033 \def\XR@ext{pdf}%
2034 \Hy@breaklinkstrue
2035 }
2036 \define@key{Hyp}{dvi pdf m x-outline-open}[true]{%
2037 \expandafter\ifx\csname if#1\expandafter\endcsname
2038 \csname iftrue\endcsname
2039 \chardef\SpecialDvipdfmxOutlineOpen@ne
2040 \else
2041 \chardef\SpecialDvipdfmxOutlineOpen@z@

```

```

2042 \fi
2043 }
2044 \define@key{Hyp}{xetex}[true]{%
2045   \def\Hy@driver{hdvipdfm}%
2046   \def\XR@ext{pdf}%
2047   \Hy@breaklinkstrue
2048 }
2049 \define@key{Hyp}{pdfmark}[true]{%
2050   \def\Hy@driver{hdvips}%
2051   \def\Hy@raisedlink{}%
2052   \def\XR@ext{pdf}%
2053 }
2054 \define@key{Hyp}{dvips}[true]{%
2055   \def\Hy@driver{hdvips}%
2056   \def\Hy@raisedlink{}%
2057   \def\XR@ext{pdf}%
2058 }
2059 \define@key{Hyp}{hypertex}[true]{%
2060   \def\Hy@driver{hypertex}%
2061 }
2062 \let\Hy@MaybeStopNow\relax
2063 \define@key{Hyp}{vtex}[true]{%
2064   \begingroup\expandafter\expandafter\expandafter\endgroup
2065   \expandafter\ifx\csname OpMode\endcsname\relax
2066     \latex@error{Non-VTeX processor}{}%
2067     \global\let\Hy@MaybeStopNow\endinput
2068     \endinput
2069   \else
2070     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2071       \def\XR@ext{pdf}%
2072       \def\Hy@driver{hvtex}%
2073     \else
2074       \ifnum\OpMode=10\relax
2075         \def\XR@ext{htm}%
2076         \def\Hy@driver{hvtexhtm}%
2077         \def\MaybeStopEarly{%
2078           \typeout{Hyperref stopped early}%
2079           \AfterBeginDocument{%
2080             \PDF@FinishDoc
2081             \gdef\PDF@FinishDoc{}%
2082           }%
2083         \endinput
2084       }%
2085     \else
2086       \latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2087       \global\let\Hy@MaybeStopNow\endinput
2088       \endinput
2089     \fi
2090   \fi
2091 \fi
2092 }
2093 \define@key{Hyp}{vtexpdfmark}[true]{%
2094   \begingroup\expandafter\expandafter\expandafter\endgroup
2095   \expandafter\ifx\csname OpMode\endcsname\relax
2096     \latex@error{Non-VTeX processor}{}%
2097     \let\Hy@MaybeStopNow\endinput
2098   \endinput

```

```

2099 \else
2100   \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2101   \def\XR@ext{pdf}%
2102   \def\Hy@driver{hvtexmrk}%
2103   \def\Hy@raisedlink{}%
2104   \else
2105     \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2106     \let\Hy@MaybeStopNow\endinput
2107     \endinput
2108   \fi
2109 \fi
2110 }
2111 \define@key{Hyp}{dviwindo}[true]{%
2112   \def\Hy@driver{hdvwind}%
2113   \setkeys{Hyp}{colorlinks}%
2114   \PassOptionsToPackage{dviwindo}{color}%
2115 }
2116 \define@key{Hyp}{dvipsone}[true]{%
2117   \def\XR@ext{pdf}%
2118   \def\Hy@driver{hdvipson}%
2119   \def\Hy@raisedlink{}%
2120 }
2121 \define@key{Hyp}{textures}[true]{%
2122   \def\XR@ext{pdf}%
2123   \def\Hy@driver{htexture}%
2124 }
2125 \define@key{Hyp}{latex2html}[true]{%
2126   \AtBeginDocument{\@@latextohtmlX}%
2127 }

```

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

```

2128 \define@key{Hyp}{ps2pdf}[true]{%
2129   \def\Hy@driver{hdvips}%
2130   \def\Hy@raisedlink{}%
2131   \providecommand*\@pdfborder{0 0 1}%
2132 }

```

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.

```

2133 \define@key{Hyp}{hyperfigures}[true]{%
2134   \Hy@boolkey{hyperfigures}{figures}{#1}%
2135 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

2136 \define@key{Hyp}{hyperfootnotes}[true]{%
2137   \Hy@boolkey{hyperfootnotes}{#1}%
2138 }

```

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

```

2139 \def\back@none{none}
2140 \def\back@section{section}
2141 \def\back@page{page}
2142 \def\back@slide{slide}
2143 \define@key{Hyp}{backref}[section]{%
2144   \lowercase{\def\Hy@tempa{#1}}%
2145   \ifx\Hy@tempa\@empty

```

```

2146 \let\Hy@tempa\back@section
2147 \fi
2148 \ifx\Hy@tempa\Hy@false
2149 \let\Hy@tempa\back@none
2150 \fi
2151 \ifx\Hy@tempa\back@slide
2152 \let\Hy@tempa\back@section
2153 \fi
2154 \ifx\Hy@tempa\back@page
2155 \PassOptionsToPackage{hyperpageref}{backref}%
2156 \Hy@backreftrue
2157 \else
2158 \ifx\Hy@tempa\back@section
2159 \PassOptionsToPackage{hyperref}{backref}%
2160 \Hy@backreftrue
2161 \else
2162 \ifx\Hy@tempa\back@none
2163 \Hy@backreffalse
2164 \else
2165 \Hy@WarnOptionValue{#1}{backref}{%
2166 'section', 'slide', 'page', 'none', \MessageBreak
2167 or 'false'}%
2168 \fi
2169 \fi
2170 \fi
2171 }
2172 \define@key{Hyp}{pagebackref}[true]{%
2173 \lowercase{\def\Hy@tempa{#1}}%
2174 \ifx\Hy@tempa\@empty
2175 \let\Hy@tempa\Hy@true
2176 \fi
2177 \ifx\Hy@tempa\Hy@true
2178 \PassOptionsToPackage{hyperpageref}{backref}%
2179 \Hy@backreftrue
2180 \else
2181 \ifx\Hy@tempa\Hy@false
2182 \Hy@backreffalse
2183 \else
2184 \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
2185 \fi
2186 \fi
2187 }

```

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

```

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

```

Configuration of encap char.

```

2191 \define@key{Hyp}{encap}[\l]{%
2192 \def\HyInd@EncapChar{#1}%
2193 }

```

12 Language options

The \autoref feature depends on the language.

```

2194 \def\HyLang@afrikaans{%
2195   \def\equationautorefname{Vergelyking}%
2196   \def\footnoteautorefname{Voetnota}%
2197   \def\itemautorefname{Item}%
2198   \def\figureautorefname{Figuur}%
2199   \def\tableautorefname{Tabel}%
2200   \def\partautorefname{Deel}%
2201   \def\appendixautorefname{Bylae}%
2202   \def\chapterautorefname{Hoofstuk}%
2203   \def\sectionautorefname{Afdeling}%
2204   \def\subsectionautorefname{Subafdeling}%
2205   \def\subsubsectionautorefname{Subsubafdeling}%
2206   \def\paragraphautorefname{Paragraaf}%
2207   \def\subparagraphautorefname{Subparagraaf}%
2208   \def\FancyVerbLineautorefname{Lyn}%
2209   \def\theoremautorefname{Teorema}%
2210   \def\pageautorefname{Bladsy}%
2211 }
2212 \def\HyLang@english{%
2213   \def\equationautorefname{Equation}%
2214   \def\footnoteautorefname{footnote}%
2215   \def\itemautorefname{item}%
2216   \def\figureautorefname{Figure}%
2217   \def\tableautorefname{Table}%
2218   \def\partautorefname{Part}%
2219   \def\appendixautorefname{Appendix}%
2220   \def\chapterautorefname{chapter}%
2221   \def\sectionautorefname{section}%
2222   \def\subsectionautorefname{subsection}%
2223   \def\subsubsectionautorefname{subsubsection}%
2224   \def\paragraphautorefname{paragraph}%
2225   \def\subparagraphautorefname{subparagraph}%
2226   \def\FancyVerbLineautorefname{line}%
2227   \def\theoremautorefname{Theorem}%
2228   \def\pageautorefname{page}%
2229 }
2230 \def\HyLang@french{%
2231   \def\equationautorefname{\`Equation}%
2232   \def\footnoteautorefname{note}%
2233   \def\itemautorefname{item}%
2234   \def\figureautorefname{Figure}%
2235   \def\tableautorefname{Tableau}%
2236   \def\partautorefname{Partie}%
2237   \def\appendixautorefname{Appendice}%
2238   \def\chapterautorefname{chapitre}%
2239   \def\sectionautorefname{section}%
2240   \def\subsectionautorefname{sous-section}%
2241   \def\subsubsectionautorefname{sous-sous-section}%
2242   \def\paragraphautorefname{paragraphe}%
2243   \def\subparagraphautorefname{sous-paragraphe}%
2244   \def\FancyVerbLineautorefname{ligne}%
2245   \def\theoremautorefname{Th\'eor\`eme}%
2246   \def\pageautorefname{page}%
2247 }
2248 \def\HyLang@german{%
2249   \def\equationautorefname{Gleichung}%
2250   \def\footnoteautorefname{Fu\ss note}%

```

```

2251 \def\itemautorefname{Punkt}%
2252 \def\figureautorefname{Abbildung}%
2253 \def\tableautorefname{Tabelle}%
2254 \def\partautorefname{Teil}%
2255 \def\appendixautorefname{Anhang}%
2256 \def\chapterautorefname{Kapitel}%
2257 \def\sectionautorefname{Abschnitt}%
2258 \def\subsectionautorefname{Unterabschnitt}%
2259 \def\subsubsectionautorefname{Unterunterabschnitt}%
2260 \def\paragraphautorefname{Absatz}%
2261 \def\subparagraphautorefname{Unterabsatz}%
2262 \def\FancyVerbLineautorefname{Zeile}%
2263 \def\theoremautorefname{Theorem}%
2264 \def\pageautorefname{Seite}%
2265 }
2266 \def\HyLang@italian{%
2267 \def\equationautorefname{Equazione}%
2268 \def\footnoteautorefname{nota}%
2269 \def\itemautorefname{punto}%
2270 \def\figureautorefname{Figura}%
2271 \def\tableautorefname{Tabella}%
2272 \def\partautorefname{Parte}%
2273 \def\appendixautorefname{Appendice}%
2274 \def\chapterautorefname{Capitolo}%
2275 \def\sectionautorefname{sezione}%
2276 \def\subsectionautorefname{sottosezione}%
2277 \def\subsubsectionautorefname{sottosottosezione}%
2278 \def\paragraphautorefname{paragrafo}%
2279 \def\subparagraphautorefname{sottoparagrafo}%
2280 \def\FancyVerbLineautorefname{linea}%
2281 \def\theoremautorefname{Teorema}%
2282 \def\pageautorefname{Pag.\@}%
2283 }
2284 \def\HyLang@magyar{%
2285 \def\equationautorefname{Egyenlet}%
2286 \def\footnoteautorefname{1\ 'abjegyzet}%
2287 \def\itemautorefname{Elem}%
2288 \def\figureautorefname{\ 'Abra}%
2289 \def\tableautorefname{T\ 'abl\ 'azat}%
2290 \def\partautorefname{R\ 'esz}%
2291 \def\appendixautorefname{F\ "uggel\ 'ek}%
2292 \def\chapterautorefname{fejezet}%
2293 \def\sectionautorefname{szakasz}%
2294 \def\subsectionautorefname{alszakasz}%
2295 \def\subsubsectionautorefname{alalszakasz}%
2296 \def\paragraphautorefname{bekezd\ 'es}%
2297 \def\subparagraphautorefname{albekezd\ 'es}%
2298 \def\FancyVerbLineautorefname{sor}%
2299 \def\theoremautorefname{T\ 'etel}%
2300 \def\pageautorefname{oldal}%
2301 }
2302 \def\HyLang@portuges{%
2303 \def\equationautorefname{Equa\c c\~ao}%
2304 \def\footnoteautorefname{Nota de rodap\ 'e}%
2305 \def\itemautorefname{Item}%
2306 \def\figureautorefname{Figura}%
2307 \def\tableautorefname{Tabela}%

```



```

2308 \def\partautorefname{Parte}%
2309 \def\appendixautorefname{Ap\`endice}%
2310 \def\chapterautorefname{Cap\`itulo}%
2311 \def\sectionautorefname{Se\c c\`ao}%
2312 \def\subsectionautorefname{Subse\c c\`ao}%
2313 \def\subsubsectionautorefname{Subsubse\c c\`ao}%
2314 \def\paragraphautorefname{par\`agrafo}%
2315 \def\subparagraphautorefname{subpar\`agrafo}%
2316 \def\FancyVerbLineautorefname{linha}%
2317 \def\theoremautorefname{Teorema}%
2318 \def\pageautorefname{P\`agina}%
2319 }
2320 \def\HyLang@spanish{%
2321 \def\equationautorefname{Ecuaci\`on}%
2322 \def\footnoteautorefname{Nota a pie de p\`agina}%
2323 \def\itemautorefname{Elemento}%
2324 \def\figureautorefname{Figura}%
2325 \def\tableautorefname{Tabla}%
2326 \def\partautorefname{Parte}%
2327 \def\appendixautorefname{Ap\`endice}%
2328 \def\chapterautorefname{Cap\`itulo}%
2329 \def\sectionautorefname{Secci\`on}%
2330 \def\subsectionautorefname{Subsecci\`on}%
2331 \def\subsubsectionautorefname{Subsubsecci\`on}%
2332 \def\paragraphautorefname{P\`arrafo}%
2333 \def\subparagraphautorefname{Subp\`arrafo}%
2334 \def\FancyVerbLineautorefname{L\`inea}%
2335 \def\theoremautorefname{Teorema}%
2336 \def\pageautorefname{P\`agina}%
2337 }
2338 \def\HyLang@vietnamese{%
2339 \def\equationautorefname{Ph\`uhorn{}\`ohorn{}ng tr\`inh}%
2340 \def\footnoteautorefname{Ch\`u th\`ich}%
2341 \def\itemautorefname{m\`d{u}c}%
2342 \def\figureautorefname{H\`inh}%
2343 \def\tableautorefname{B\`h{a}ng}%
2344 \def\partautorefname{Ph\`'\`acircumflex{}n}%
2345 \def\appendixautorefname{Ph\`d{u} l\`d{u}c}%
2346 \def\chapterautorefname{ch\`uhorn{}\`ohorn{}ng}%
2347 \def\sectionautorefname{m\`d{u}c}%
2348 \def\subsectionautorefname{m\`d{u}c}%
2349 \def\subsubsectionautorefname{m\`d{u}c}%
2350 \def\paragraphautorefname{\dj{}o\`d{a}n}%
2351 \def\subparagraphautorefname{\dj{}o\`d{a}n}%
2352 \def\FancyVerbLineautorefname{d\`ong}%
2353 \def\theoremautorefname{DJ{}\`d{i}nh l\`y}%
2354 \def\pageautorefname{Trang}%
2355 }

```

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

```

2356 \def\HyLang@addto#1#2{%
2357 #2%
2358 \@temptokena{#2}%
2359 \ifx#1\relax
2360 \let#1\@empty
2361 \fi
2362 \ifx#1\undefined

```

```

2363 \edef#1{\the\@temptokena}%
2364 \else
2365 \toks@\expandafter{#1}%
2366 \edef#1{\the\toks@\the\@temptokena}%
2367 \fi
2368 \@temptokena{}\toks@\@temptokena
2369 }

2370 \def\HyLang@DeclareLang#1#2{%
2371 \begingroup
2372 \edef\x##1##2{%
2373 \noexpand\ifx##2\relax
2374 \errmessage{No definitions for language #2' found!}%
2375 \noexpand\fi
2376 \endgroup
2377 \noexpand\define@key{Hyp}{#1}[]{%
2378 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
2379 }%
2380 }%
2381 \expandafter\x\csname extras#1\expandafter\endcsname
2382 \csname HyLang@#2\endcsname
2383 }

2384 \HyLang@DeclareLang{english}{english}
2385 \HyLang@DeclareLang{UKenglish}{english}
2386 \HyLang@DeclareLang{british}{english}
2387 \HyLang@DeclareLang{USenglish}{english}
2388 \HyLang@DeclareLang{american}{english}
2389 \HyLang@DeclareLang{german}{german}
2390 \HyLang@DeclareLang{austrian}{german}
2391 \HyLang@DeclareLang{ngerman}{german}
2392 \HyLang@DeclareLang{naustrian}{german}
2393 \HyLang@DeclareLang{brazil}{portuges}
2394 \HyLang@DeclareLang{brazilian}{portuges}
2395 \HyLang@DeclareLang{portuguese}{portuges}
2396 \HyLang@DeclareLang{spanish}{spanish}
2397 \HyLang@DeclareLang{afrikaans}{afrikaans}
2398 \HyLang@DeclareLang{french}{french}
2399 \HyLang@DeclareLang{frenchb}{french}
2400 \HyLang@DeclareLang{français}{french}
2401 \HyLang@DeclareLang{acadian}{french}
2402 \HyLang@DeclareLang{canadien}{french}
2403 \HyLang@DeclareLang{italian}{italian}
2404 \HyLang@DeclareLang{magyar}{magyar}
2405 \HyLang@DeclareLang{hungarian}{magyar}

```

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

```

2406 \define@key{Hyp}{vietnamese}[]{%
2407 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
2408 \AtEndOfPackage{%
2409 \ifundefined{T@PU}{-}{%
2410 \input{puvnenc.def}%
2411 }%
2412 }%
2413 }

2414 \define@key{Hyp}{vietnam}[]{%
2415 \HyLang@addto\extrasvietnam\HyLang@vietnamese
2416 \AtEndOfPackage{%
2417 \ifundefined{T@PU}{-}{%

```

```

2418     \input{puvnenc.def}%
2419   }%
2420 }%
2421 }

```

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

```

2422 \define@key{Hyp}{arabic}[] {%
2423   \AtEndOfPackage{%
2424     \ifundefined{T@PU}{-}{%
2425       \input{puarenc.def}%
2426     }%
2427   }%
2428 }

```

13 Options to change appearance of links

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

```

2429 \define@key{Hyp}{colorlinks}[true] {%
2430   \Hy@boolkey{colorlinks}{#1}%
2431   \ifHy@colorlinks
2432     \def\pdfborder{0 0 0}%
2433     \let\pdfborderstyle\@empty
2434   \fi
2435 }
2436 \define@key{Hyp}{frenchlinks}[true] {%
2437   \Hy@boolkey{frenchlinks}{#1}%
2438 }

```

14 Bookmarking

```

2439 \define@key{Hyp}{bookmarks}[true] {%
2440   \Hy@boolkey{bookmarks}{#1}%
2441 }
2442 \define@key{Hyp}{bookmarksopen}[true] {%
2443   \Hy@boolkey{bookmarksopen}{#1}%
2444 }

```

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.

```

2445 \let\Hy@bookmarksdepth\c@tocdepth
2446 \define@key{Hyp}{bookmarksdepth}[] {%
2447   \begingroup
2448     \edef\x{#1}%
2449     \ifx\x\empty
2450       \global\let\Hy@bookmarksdepth\c@tocdepth
2451     \else
2452       \ifundefined{toclevel@x}{%

```

```

2453 \onelevel@sanitize\x
2454 \edef\y{\expandafter\@car\x\@nil}%
2455 \ifcase 0\expandafter\ifx\y-1\fi
2456 \expandafter\ifnum\expandafter'\y>47 %
2457 \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
2458 \Hy@Warning{Unknown document division name (\x)}%
2459 \else
2460 \setbox\z@=\hbox{%
2461 \count@=\x
2462 \xdef\Hy@bookmarksdepth{\the\count@}%
2463 }%
2464 \fi
2465 }{%
2466 \setbox\z@=\hbox{%
2467 \count@=\csname toplevel@\x\endcsname
2468 \xdef\Hy@bookmarksdepth{\the\count@}%
2469 }%
2470 }%
2471 \fi
2472 \endgroup
2473 }

```

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

```

2474 \define@key{Hyp}{bookmarksopenlevel}{%
2475 \def\@bookmarksopenlevel{#1}%
2476 }
2477 \def\@bookmarksopenlevel{\maxdimen}
2478 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
2479 \define@key{Hyp}{bookmarkstype}{%
2480 \def\Hy@bookmarkstype{#1}%
2481 }
2482 \def\Hy@bookmarkstype{toc}

```

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

```

2483 \define@key{Hyp}{bookmarksnumbered}[true]{%
2484 \Hy@boolkey{bookmarksnumbered}{#1}%
2485 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2486 \define@key{Hyp}{CJKbookmarks}[true]{%
2487 \Hy@boolkey{CJKbookmarks}{#1}%
2488 }
2489 \def\Hy@temp#1{%
2490 \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
2491 }
2492 \def\Hy@@temp#1#2#3{%
2493 \define@key{Hyp}{#2color}{%
2494 \HyColor@HyperrefColor{##1}#1%
2495 }%
2496 \def#1{#3}%
2497 }
2498 \Hy@temp{link}{red}
2499 \Hy@temp{anchor}{black}
2500 \Hy@temp{cite}{green}
2501 \Hy@temp{file}{cyan}
2502 \Hy@temp{url}{magenta}
2503 \Hy@temp{menu}{red}

```

```

2504 \Hy@temp{run}{\@filecolor}
2505 \define@key{Hyp}{pagecolor}{%
2506   \Hy@WarningPageColor
2507 }
2508 \def\Hy@WarningPageColor{%
2509   \Hy@WarningNoLine{Option 'pagecolor' is not available anymore}%
2510   \global\let\Hy@WarningPageColor\relax
2511 }

2512 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2513 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2514 \let\@baseurl\@empty
2515 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2516 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2517 \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.

```

2518 \let\@pdfpagetransition\relax
2519 \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.

```

2520 \let\@pdfpageduration\relax
2521 \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.

```

2522 \newif\ifHy@useHidKey
2523 \Hy@useHidKeyfalse
2524 \define@key{Hyp}{pdfpagehidden}[true]{%
2525   \Hy@boolkey{pdfpagehidden}{#1}%
2526   \ifHy@pdfpagehidden
2527     \global\Hy@useHidKeytrue
2528   \fi
2529 }

```

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).

```

2530 \def\Hy@ColorList{cite,file,link,menu,run,url}
2531 \for\Hy@temp:=\Hy@ColorList\do{%
2532   \edef\Hy@temp{%
2533     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2534       \noexpand\Hy@Color@HyperrefBorderColor
2535       {##1}%
2536       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname

```

```

2537         {hyperref}%
2538         {\Hy@temp bordercolor}%
2539     }%
2540 }%
2541 \Hy@temp
2542 }
2543 \define@key{Hyp}{pagebordercolor}{%
2544 \Hy@WarningPageBorderColor
2545 }
2546 \def\Hy@WarningPageBorderColor{%
2547 \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
2548 \global\let\Hy@WarningPageBorderColor\relax
2549 }

2550 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2551 \Hy@DefNameKey{pdfhighlight}{%
2552 \do{/I}{Invert}%
2553 \do{/N}{None}%
2554 \do{/O}{Outline}%
2555 \do{/P}{Push}%
2556 }
2557 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2558 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2559 \def\Hy@setpdfborder{%
2560 \ifx\@pdfborder\@empty
2561 \else
2562 /Border[\@pdfborder]%
2563 \fi
2564 \ifx\@pdfborderstyle\@empty
2565 \else
2566 /BS<<\@pdfborderstyle>>%
2567 \fi
2568 }
2569 \Hy@DefNameKey{pdfpagemode}{%
2570 \do{UseNone}{}%
2571 \do{UseOutlines}{}%
2572 \do{UseThumbs}{}%
2573 \do{FullScreen}{}%
2574 \do{UseOC}{PDF 1.5}%
2575 \do{UseAttachments}{PDF 1.6}%
2576 }
2577 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2578 \do{UseNone}{}%
2579 \do{UseOutlines}{}%
2580 \do{UseThumbs}{}%
2581 \do{FullScreen}{}%
2582 \do{UseOC}{PDF 1.5}%
2583 \do{UseAttachments}{PDF 1.6}%
2584 }
2585 \Hy@DefNameKey{pdfdirection}{%
2586 \do{L2R}{Left to right}%
2587 \do{R2L}{Right to left}%
2588 }
2589 \Hy@DefNameKey{pdfviewarea}{%
2590 \do{MediaBox}{}%
2591 \do{CropBox}{}%
2592 \do{BleedBox}{}%
2593 \do{TrimBox}{}%

```

```

2594 \do{ArtBox}{}%
2595 }
2596 \Hy@DefNameKey{pdfviewclip}{%
2597 \do{MediaBox}{}%
2598 \do{CropBox}{}%
2599 \do{BleedBox}{}%
2600 \do{TrimBox}{}%
2601 \do{ArtBox}{}%
2602 }
2603 \Hy@DefNameKey{pdfprintarea}{%
2604 \do{MediaBox}{}%
2605 \do{CropBox}{}%
2606 \do{BleedBox}{}%
2607 \do{TrimBox}{}%
2608 \do{ArtBox}{}%
2609 }
2610 \Hy@DefNameKey{pdfprintclip}{%
2611 \do{MediaBox}{}%
2612 \do{CropBox}{}%
2613 \do{BleedBox}{}%
2614 \do{TrimBox}{}%
2615 \do{ArtBox}{}%
2616 }
2617 \Hy@DefNameKey{pdfprintscaling}{%
2618 \do{AppDefault}{}%
2619 \do{None}{}%
2620 }
2621 \Hy@DefNameKey{pdfduplex}{%
2622 \do{Simplex}{}%
2623 \do{DuplexFlipShortEdge}{}%
2624 \do{DuplexFlipLongEdge}{}%
2625 }
2626 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
2627 \do{true}{}%
2628 \do{false}{}%
2629 }
2630 \define@key{Hyp}{pdfprintpagerange}{%
2631 \def\@pdfprintpagerange{#1}%
2632 }
2633 \Hy@DefNameKey{pdfnumcopies}{%
2634 \do{2}{two copies}%
2635 \do{3}{three copies}%
2636 \do{4}{four copies}%
2637 \do{5}{five copies}%
2638 }
2639 \define@key{Hyp}{pdfusetitle}[true]{%
2640 \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2641 }
2642 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2643 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2644 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2645 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2646 \define@key{Hyp}{pdfcreationdate}{\pdfstringdef\@pdfcreationdate{#1}}
2647 \define@key{Hyp}{pdfmoddate}{\pdfstringdef\@pdfmoddate{#1}}
2648 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2649 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2650 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}

```

```

2651 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2652 \let\setpdflinkmargin@gobble
2653 \def\calculate@pdfview#1 #2\{%
2654   \def\@pdfview{#1}%
2655   \ifx\#2\%
2656     \def\@pdfviewparams{ -32768}%
2657   \else
2658     \def\@pdfviewparams{ #2}%
2659   \fi
2660 }
2661 \begingroup\expandafter\expandafter\expandafter\endgroup
2662 \expandafter\ifx\csname numexpr\endcsname\relax
2663   \def\Hy@number#1{%
2664     \expandafter\@firstofone\expandafter{\number#1}%
2665   }%
2666 \else
2667   \def\Hy@number#1{%
2668     \the\numexpr#1\relax
2669   }%
2670 \fi
2671 \define@key{Hyp}{pdfstartpage}{%
2672   \ifx\#1\%
2673     \def\@pdfstartpage{}%
2674   \else
2675     \edef\@pdfstartpage{\Hy@number{#1}}%
2676   \fi
2677 }%
2678 \define@key{Hyp}{pdfstartview}{%
2679   \ifx\#1\%
2680     \def\@pdfstartview{}%
2681   \else
2682     \hypercalcbpdef\@pdfstartview{ /#1 }%
2683   \fi
2684 }
2685 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
2686 \define@key{Hyp}{pdftoolbar}[true]{%
2687   \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2688 }
2689 \define@key{Hyp}{pdfmenubar}[true]{%
2690   \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2691 }
2692 \define@key{Hyp}{pdfwindowui}[true]{%
2693   \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2694 }
2695 \define@key{Hyp}{pdfffitwindow}[true]{%
2696   \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2697 }
2698 \define@key{Hyp}{pdfcenterwindow}[true]{%
2699   \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2700 }
2701 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2702   \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2703 }
2704 \define@key{Hyp}{pdfnewwindow}[true]{%
2705   \def\Hy@temp{#1}%
2706   \ifx\Hy@temp\empty
2707     \Hy@newwindowsetfalse

```



```

2708 \else
2709   \Hy@newwindowsettrue
2710   \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2711 \fi
2712 }
2713 \def\Hy@SetNewWindow{%
2714   \ifHy@newwindowset
2715     /NewWindow %
2716     \ifHy@newwindow true\else false\fi
2717   \fi
2718 }
2719 \Hy@DefNameKey{pdfpagelayout}{%
2720   \do{SinglePage}{}%
2721   \do{OneColumn}{}%
2722   \do{TwoColumnLeft}{}%
2723   \do{TwoColumnRight}{}%
2724   \do{TwoPageLeft}{PDF 1.5}%
2725   \do{TwoPageRight}{PDF 1.5}%
2726 }
2727 \define@key{Hyp}{pdflang}{%
2728   \def\@pdflang{#1}%
2729 }
2730 \define@key{Hyp}{pdfpagelabels}[true]{%
2731   \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2732 }
2733 \define@key{Hyp}{pdfescapeform}[true]{%
2734   \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2735 }

```

Default values:

```

2736 \def\@linkbordercolor{1 0 0}
2737 \def\@urlbordercolor{0 1 1}
2738 \def\@menubordercolor{1 0 0}
2739 \def\@filebordercolor{0 .5 .5}
2740 \def\@runbordercolor{0 .7 .7}
2741 \def\@citebordercolor{0 1 0}
2742 \def\@pdfhighlight{/I}
2743 \def\@pdftitle{}
2744 \def\@pdfauthor{}
2745 \let\@pdfproducer\relax
2746 \def\@pdfcreator{LaTeX with hyperref package}
2747 \def\@pdfcreationdate{}
2748 \def\@pdfmoddate{}
2749 \def\@pdfsubject{}
2750 \def\@pdfkeywords{}
2751 \def\@pdfpagescrop{}
2752 \def\@pdfstartview{/Fit }
2753 \def\@pdfstartpage{1}
2754 \def\@pdfprintpagerange{}
2755 \def\@pdflang{}
2756 \let\PDF@SetupDoc\@empty
2757 \let\PDF@FinishDoc\@empty
2758 \let\phantomsection\@empty
2759 \let\special@paper\@empty
2760 \ifundefined{stockwidth}{%
2761   \ifdim\paperwidth>\z@
2762     \ifdim\paperheight>\z@
2763       \edef\special@paper{\the\paperwidth,\the\paperheight}%

```

```

2764 \fi
2765 \fi
2766 }{%
2767 \ifdim\stockwidth>\z@
2768 \ifdim\stockheight>\z@
2769 \edef\special@paper{\the\stockwidth,\the\stockheight}%
2770 \fi
2771 \fi
2772 }
2773 \begingroup
2774 \edef\x{\ifundefined{stockheight}\paperheight\stockheight}%
2775 \dimen@=\x\relax
2776 \ifdim\dimen@>\z@
2777 \else
2778 \dimen@=11in\relax
2779 \Hy@WarningNoLine{%
2780 Height of page (\expandafter\string\x) %
2781 is invalid (\the\x),\MessageBreak
2782 using 11in%
2783 }%
2784 \fi
2785 \dimen@=0.99626401\dimen@
2786 \xdef\Hy@pageheight{\strip@pt\dimen@}%
2787 \endgroup
2788 \def\HyInd@EncapChar{\\}
2789 \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.

```

2790 \let\hyper@normalise\ExecuteOptions
2791 \let\ExecuteOptions\hypersetup
2792 \Hy@RestoreCatcodes
2793 \InputIfFileExists{hyperref.cfg}{-}{-}
2794 \Hy@SetCatcodes
2795 \let\ExecuteOptions\hyper@normalise
2796 \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`.

```

2797 \RequirePackage{kvoptions}[2006/08/17]

```

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

```

2798 \@ifpackageloaded{tex4ht}{%
2799 \ifpackagewith{hyperref}{tex4ht}{-}{-}%
2800 \PassOptionsToPackage{tex4ht}{hyperref}%
2801 }%
2802 }{-}

2803 \let\ReadBookmarks\relax
2804 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2805 \AtBeginDocument{%
2806 \ifHy@draft
2807 \let\hyper@@anchor@gobble

```

```

2808 \gdef\hyper@link#1#2#3{#3}%
2809 \let\hyper@anchorstart\@gobble
2810 \let\hyper@anchorend\@empty
2811 \let\hyper@linkstart\@gobbletwo
2812 \let\hyper@linkend\@empty
2813 \def\hyper@linkurl#1#2{#1}%
2814 \def\hyper@linkfile#1#2#3{#1}%
2815 \def\hyper@link@{#1}#2#3{}%
2816 \def\Acrobatmenu#1#2{#2}%
2817 \let\PDF@SetupDoc\@empty
2818 \let\PDF@FinishDoc\@empty
2819 \let\@fifthoffive\@secondoftwo
2820 \let\@secondoffive\@secondoftwo
2821 \let\ReadBookmarks\relax
2822 \let\WriteBookmarks\relax
2823 \Hy@WarningNoLine{ draft mode on}%
2824 \fi
2825 \Hy@DisableOption{draft}%
2826 \Hy@DisableOption{nolinks}%
2827 \Hy@DisableOption{final}%
2828 }
2829 \Hy@DisableOption{pdfversion}%

```

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.

```

2830 \Hy@nextfalse
2831 \@ifundefined{spanish@sh@"@sel}{-}{\Hy@nexttrue}
2832 \@ifundefined{galician@sh@"@sel}{-}{\Hy@nexttrue}
2833 \@ifundefined{estonian@sh@"@sel}{-}{\Hy@nexttrue}
2834 \ifHy@next
2835 \let\texttilde\~%
2836 \fi

2837 \ifHy@figures
2838 \Hy@Info{Hyper figures ON}%
2839 \else
2840 \Hy@Info{Hyper figures OFF}%
2841 \fi

2842 \ifHy@nesting
2843 \Hy@Info{Link nesting ON}%
2844 \else
2845 \Hy@Info{Link nesting OFF}%
2846 \fi

2847 \ifHy@hyperindex
2848 \Hy@Info{Hyper index ON}%
2849 \else
2850 \Hy@Info{Hyper index OFF}%
2851 \fi

2852 \ifHy@plainpages
2853 \Hy@Info{Plain pages ON}%
2854 \else
2855 \Hy@Info{Plain pages OFF}%
2856 \fi

2857 \ifHy@backref
2858 \Hy@Info{Backreferencing ON}%

```

```

2859 \else
2860   \Hy@Info{Backreferencing OFF}%
2861 \fi
2862 \ifHy@typexml
2863   \AtEndOfPackage{%
2864     \RequirePackage{color}%
2865     \RequirePackage{nameref}%
2866   }%
2867 \fi
2868 \Hy@DisableOption{typexml}
2869 \ifHy@implicit
2870   \typeout{Implicit mode ON; LaTeX internals redefined}%
2871 \else
2872   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
2873   \def\MaybeStopEarly{%
2874     \typeout{Hyperref stopped early}%
2875     \AfterBeginDocument{%
2876       \PDF@FinishDoc
2877       \gdef\PDF@FinishDoc{}%
2878     }%
2879   \endinput
2880   }%
2881   \AtBeginDocument{%
2882     \let\autoref\ref
2883     \let\autopageref\pageref
2884     \ifx\@pdfpagemode\@empty
2885       \gdef\@pdfpagemode{UseNone}%
2886     \fi
2887     \global\Hy@backreffalse
2888   }%
2889   \AtEndOfPackage{%
2890     \global\let\ReadBookmarks\relax
2891     \global\let\WriteBookmarks\relax
2892   }%
2893 \fi
2894 \Hy@DisableOption{implicit}

```

15.1.1 Driver loading

```

2895 \AtEndOfPackage{%
2896   \@ifpackageloaded{tex4ht}{%
2897     \def\Hy@driver{htex4ht}%
2898     \Hy@texhttrue
2899   }{}%
2900   \ifx\Hy@driver\@empty
2901     \providecommand*{\Hy@defaultdriver}{hypertex}%
2902     \begingroup\expandafter\expandafter\expandafter\endgroup
2903     \expandafter\ifx\csname pdfoutput\endcsname\relax
2904       \begingroup\expandafter\expandafter\expandafter\endgroup
2905       \expandafter\ifx\csname OpMode\endcsname\relax
2906         \begingroup\expandafter\expandafter\expandafter\endgroup
2907         \expandafter\ifx\csname XeTeXversion\endcsname\relax
2908           \let\Hy@driver\Hy@defaultdriver
2909         \else
2910           \def\Hy@driver{hdvipdfm}%
2911         \fi
2912       \else

```

```

2913     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2914     \def\Hy@driver{hvtex}%
2915     \def\XR@ext{pdf}%
2916     \else
2917     \ifnum\OpMode=10\relax
2918     \def\XR@ext{htm}%
2919     \def\Hy@driver{hvtexhtm}%
2920     \def\MaybeStopEarly{%
2921     \typeout{Hyperref stopped early}%
2922     \AfterBeginDocument{%
2923     \PDF@FinishDoc
2924     \gdef\PDF@FinishDoc{}}%
2925     }%
2926     \endinput
2927     }%
2928     \else
2929     \let\Hy@driver\Hy@defaultdriver
2930     \fi
2931     \fi
2932     \fi
2933     \else
2934     \ifnum\pdfoutput<1 %
2935     \let\Hy@driver\Hy@defaultdriver
2936     \else
2937     \def\Hy@driver{hpdftex}%
2938     \def\XR@ext{pdf}%
2939     \PassOptionsToPackage{pdftex}{color}%
2940     \Hy@breaklinkstrue
2941     \fi
2942     \fi
2943     \ifx\Hy@driver\Hy@defaultdriver
2944     \def\Hy@temp{hdvips}%
2945     \ifx\Hy@temp\Hy@driver
2946     \def\Hy@raisedlink{}%
2947     \def\XR@ext{pdf}%
2948     \fi
2949     \def\Hy@temp{hdvipdfm}%
2950     \ifx\Hy@temp\Hy@driver
2951     \def\XR@ext{pdf}%
2952     \Hy@breaklinkstrue
2953     \fi
2954     \def\Hy@temp{hdviwind}%
2955     \ifx\Hy@temp\Hy@driver
2956     \setkeys{Hyp}{colorlinks}%
2957     \PassOptionsToPackage{dviwindo}{color}%
2958     \fi
2959     \def\Hy@temp{hdvipson}%
2960     \ifx\Hy@temp\Hy@driver
2961     \def\XR@ext{pdf}%
2962     \def\Hy@raisedlink{}%
2963     \fi
2964     \def\Hy@temp{textures}%
2965     \ifx\Hy@temp\Hy@driver
2966     \def\XR@ext{pdf}%
2967     \fi
2968     \fi
2969     \typeout{*hyperref using default driver \Hy@driver*}%

```

```

2970 \else
2971 \typeout{*hyperref using driver \Hy@driver*}%
2972 \fi
2973 \input{\Hy@driver.def}%
2974 \let\@unprocessedoptions\relax
2975 \Hy@RestoreCatcodes
2976 }
2977 \newif\ifHy@DvipdfmxOutlineOpen
2978 \begingroup\expandafter\expandafter\expandafter\endgroup
2979 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
2980 \else
2981 \ifnum\SpecialDvipdfmxOutlineOpen>\z@
2982 \Hy@DvipdfmxOutlineOpentruer
2983 \fi
2984 \fi
2985 \Hy@DisableOption{tex4ht}
2986 \Hy@DisableOption{pdftex}
2987 \Hy@DisableOption{dvipdf}
2988 \Hy@DisableOption{nativepdf}
2989 \Hy@DisableOption{dvipdfm}
2990 \Hy@DisableOption{dvipdfmx}
2991 \Hy@DisableOption{dvipdfmx-outline-open}
2992 \Hy@DisableOption{pdfmark}
2993 \Hy@DisableOption{dvips}
2994 \Hy@DisableOption{hypertex}
2995 \Hy@DisableOption{vtex}
2996 \Hy@DisableOption{vtexpdfmark}
2997 \Hy@DisableOption{dviwindo}
2998 \Hy@DisableOption{dvipsone}
2999 \Hy@DisableOption{textures}
3000 \Hy@DisableOption{latex2html}
3001 \Hy@DisableOption{ps2pdf}
3002 \Hy@DisableOption{xetex}

```

15.1.2 Bookmarks

```

3003 \def\WriteBookmarks{0}
3004 \def\@bookmarkopenstatus#1{%
3005 \ifHy@bookmarksopen

```

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

```

3006 \ifnum#1<\expandafter\@firstofone\expandafter
3007 {\number\@bookmarkopenlevel} % explicit space
3008 \else
3009 -%
3010 \fi
3011 \else
3012 -%
3013 \fi
3014 }
3015 \ifHy@bookmarks
3016 \Hy@Info{Bookmarks ON}%
3017 \ifx\@pdfpagemode\@empty
3018 \def\@pdfpagemode{UseOutlines}%
3019 \fi
3020 \else
3021 \def\@bookmarkopenstatus#1{%
3022 \Hy@Info{Bookmarks OFF}%

```

```

3023 \AtEndOfPackage{%
3024   \global\let\ReadBookmarks\relax
3025   \global\let\WriteBookmarks\relax
3026 }%
3027 \ifx\@pdfpagemode\@empty
3028   \def\@pdfpagemode{UseNone}%
3029 \fi
3030 \fi
3031 \Hy@DisableOption{bookmarks}

```

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

```

3032 \AtBeginDocument{%
3033   \ifHy@colorlinks
3034     \ifHy@typexml
3035     \else
3036       \RequirePackage{color}%
3037     \fi
3038     \def\Hy@colorlink#1{%
3039       \begingroup
3040         \HyColor@UseColor#1%
3041       }%
3042     \def\Hy@endcolorlink{\endgroup}%
3043     \Hy@Info{Link coloring ON}%
3044   \else
3045     \ifHy@frenchlinks
3046       \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
3047       \def\Hy@endcolorlink{\endgroup}%
3048       \Hy@Info{French linking ON}%
3049     \else

```

for grouping consistency:

```

3050       \def\Hy@colorlink#1{\begingroup}%
3051       \def\Hy@endcolorlink{\endgroup}%
3052       \Hy@Info{Link coloring OFF}%
3053     \fi
3054   \fi
3055   \Hy@DisableOption{colorlinks}%
3056   \Hy@DisableOption{frenchlinks}%
3057   \ifHy@texht
3058     \long\def\@firstoffive#1#2#3#4#5{#1}%
3059     \long\def\@secondoffive#1#2#3#4#5{#2}%
3060     \long\def\@thirdoffive#1#2#3#4#5{#3}%
3061     \long\def\@fourthoffive#1#2#3#4#5{#4}%
3062     \long\def\@fifthoffive#1#2#3#4#5{#5}%
3063     \providecommand*\@safe@activestruer{}%
3064     \providecommand*\@safe@activesfalse{}%
3065     \def\T@ref#1{%
3066       \Hy@safe@activestruer
3067       \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
3068       \Hy@safe@activesfalse
3069     }%
3070     \def\T@pageref#1{%
3071       \Hy@safe@activestruer
3072       \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
3073       \Hy@safe@activesfalse
3074     }%
3075   \else
3076     \ifHy@typexml\else\RequirePackage{nameref}\fi

```

```

3077 \fi
3078 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
3079 \DeclareRobustCommand\pageref{%
3080   \@ifstar\@pagerefstar\T@pageref
3081 }%
3082 }
3083 \AfterBeginDocument{%
3084   \ifHy@texht
3085   \else
3086     \ReadBookmarks
3087   \fi
3088 }
3089 \ifHy@backref
3090   \RequirePackage{backref}%
3091 \else
3092   \let\Hy@backout\@gobble
3093 \fi
3094 \Hy@DisableOption{backref}
3095 \Hy@DisableOption{pagebackref}
3096 \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.

```

3097 \begingroup
3098   \endlinechar=-1 %
3099   \catcode'\^A=14 %
3100   \catcode'\^M\active
3101   \catcode'\%\active
3102   \catcode'\#\active
3103   \catcode'\_\active
3104   \catcode'\$\active
3105   \gdef\hyper@normalise{^A
3106     \begingroup
3107     \catcode'\^M\active
3108     \def^^M{ }^A
3109     \catcode'\%\active
3110     \let%\@percentchar
3111     \let\%\@percentchar
3112     \catcode'\#\active
3113     \def#{\hyper@hash}^A
3114     \def\#{\hyper@hash}^A
3115     \@makeother\&^A
3116     \edef\textunderscore{\string_}^A
3117     \let_\textunderscore
3118     \catcode'\_\active
3119     \let_\textunderscore
3120     \let~\hyper@tilde
3121     \let~\hyper@tilde
3122     \let\textasciitilde\hyper@tilde
3123     \let\\\@backslashchar

```



```

3124 \edef$\string$}^^A
3125 \Hy@safe@activetrue
3126 \hyper@n@rmalise
3127 }^^A
3128 \catcode'\# =6 ^^A
3129 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
3130 \gdef\hyper@n@rmalise#1#2{^^A
3131 \def\Hy@tempa{#2}^^A
3132 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
3133 \Hy@ReturnAfterElseFi{^^A
3134 \hyper@@normalise{#1}^^A
3135 }^^A
3136 \else
3137 \Hy@ReturnAfterFi{^^A
3138 \hyper@@normalise{#1}{#2}^^A
3139 }^^A
3140 \fi
3141 }^^A
3142 \gdef\hyper@@normalise#1#2{^^A
3143 \edef\Hy@tempa{^^A
3144 \endgroup
3145 \noexpand#1{\Hy@RemovePercentCr#2%\^^M\@nil}^^A
3146 }^^A
3147 \Hy@tempa
3148 }^^A
3149 \gdef\Hy@RemovePercentCr#1%\^^M#2\@nil{^^A
3150 #1^^A
3151 \ifx\limits#2\limits
3152 \else
3153 \Hy@ReturnAfterFi{^^A
3154 \Hy@RemovePercentCr #2\@nil
3155 }^^A
3156 \fi
3157 }^^A
3158 \endgroup
3159 \providecommand*\hyper@chars{%
3160 \let\#\hyper@hash
3161 \let%\@percentchar
3162 \Hy@safe@activetrue
3163 }

3164 \def\hyperlink#1#2{%
3165 \hyper@link{#1}{#2}%
3166 }

3167 \DeclareRobustCommand*\href{%
3168 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
3169 }
3170 \def\Hy@href#1{%
3171 \hyper@normalise\href@
3172 }
3173 \begingroup
3174 \catcode'\$ =6 %
3175 \catcode'\# =12 %
3176 \gdef\href@#1{\expandafter\href@split$1##\}%
3177 \gdef\href@split$1#$2#$3\{%
3178 \hyper@link{$1}{$2}%
3179 }%
3180 \endgroup

```

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

```

3181 \RequirePackage{url}
3182 \let\HyOrg@url\url
3183 \def\Hurl{\begingroup \Url}
3184 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
3185 \def\nolinkurl@#1{\Hurl{#1}}
3186 \DeclareRobustCommand*\url{\hyper@normalise\url@}
3187 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

3188 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
3189 \providecommand\hyper@image[2]{#2}

3190 \def\hypertarget#1#2{%
3191   \ifHy@nesting
3192     \hyper@@anchor{#1}{#2}%
3193   \else
3194     \hyper@@anchor{#1}{\relax}#2%
3195   \fi
3196 }
```

`\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 L^AT_EX label which can be used in a short form of `\hyperref` later, to avoid remembering the name and category.

```

3197 \DeclareRobustCommand*\hyperref{%
3198   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
3199 }
3200 \def\Hy@babelnormalise#1[#2]{%
3201   \begingroup
3202     \Hy@safe@activestrue
3203     \edef\Hy@tempa{%
3204       \endgroup
3205       \noexpand#1[#2]}%
3206   }%
3207   \Hy@tempa
3208 }
3209 \def\@hyperref{\hyper@normalise\@hyperref}
3210 \def\@hyperref#1#2#3{%
3211   \edef\ref@one{\ifx\\#2\\\else#2.\fi#3}%
3212   \expandafter\tryhyper@link\ref@one\\{#1}%
3213 }
3214 \def\tryhyper@link#1\\#2{%
3215   \hyper@@link{#2}{#1}%
3216 }

3217 \def\hyperdef{\@ifnextchar[{\label@hyperdef}\@hyperdef}}
3218 \def\@hyperdef#1#2#3{%, category, name, text
3219   \ifHy@nesting
3220     \hyper@@anchor{#1.#2}{#3}%
3221   \else
3222     \hyper@@anchor{#1.#2}{\relax}#3%
3223   \fi
3224 }
```

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.

```

3225 \def\label@hyperref[#1]{%
```

```

3226 \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
3227 }%
3228 \def\label@@hyperref#1#2#3{%
3229   \ifx#1\relax
3230     \protect\G@refundefinedtrue
3231     \latex@warning{%
3232       Hyper reference ‘#2’ on page \thepage \space undefined%
3233     }%
3234     \hyper@@link{}{??}{#3}%
3235   \else
3236     \hyper@@link{\expandafter\@fifthoffive#1}%
3237       {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
3238   \fi
3239 }
3240 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
3241                               % anchor text
3242   \@bsphack
3243   \if@filesw
3244     \protected@write\@auxout{%
3245       {\string\newlabel{#1}{#2}{#3}{#4}{#2.#3}}%
3246     \fi
3247   \@esphack
3248   \ifHy@nesting
3249     \hyper@@anchor{#2.#3}{#4}%
3250   \else
3251     \hyper@@anchor{#2.#3}{\relax}#4%
3252   \fi
3253 }

```

17 Underlying basic hypertext macros

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

```

3254 \def\hyper@@link{\let\Hy@reserved@a\relax
3255   \ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
3256 }
3257 \def\hyper@link@[#1]#2#3#4{%
3258   \begingroup
3259     \protected@edef\Hy@tempa{#2}%
3260     \Hy@safe@activestrue
3261     \edef\x{#3}%
3262     \ifx\Hy@tempa\@empty
3263       \toks0{\hyper@link{#1}}%
3264     \else
3265       \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
3266     \fi
3267     \toks2{#4}%
3268     \edef\Hy@tempa{\the\toks2}%
3269     \edef\x{\endgroup
3270       \ifx\Hy@tempa\@empty
3271         \noexpand\Hy@Warning{Suppressing empty link}%
3272       \else
3273         \the\toks0 {\x}{\the\toks2}}%
3274     \fi

```

```

3275     }%
3276   \x
3277 }

```

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.

```

3278 \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.

```

3279   \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1:.\{#1}%
3280 }

```

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

```

3281 \def\@pdftempwordfile{file}%
3282 \def\@pdftempwordrun{run}%
3283 \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 :

```

3284   \ifx\|#6\|
3285     \expandafter\@hyper@linkfile file:#7\{#3}{#2}%
3286   \else
3287     \ifx\|#4\|
3288       \expandafter\@hyper@linkfile file:#7\{#3}{#2}%
3289     \else

```

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

```

3290       \def\@pdftempa{#4}%
3291       \ifx\@pdftempa\@pdftempwordfile
3292         \expandafter\@hyper@linkfile#7\{#3}{#2}%
3293       \else

```

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

```

3294         \ifx\@pdftempa\@pdftempwordrun
3295           \expandafter\@hyper@launch#7\{#3}{#2}%
3296         \else

```

otherwise its a URL

```

3297           \hyper@linkurl{#3}{#7\ifx\|#2\|\else\hyper@hash#2\fi}%
3298         \fi
3299       \fi
3300     \fi
3301   \fi
3302 }

```

By default, turn run: into file:

```

3303 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
3304   \hyper@linkurl{#2}{%
3305     \Hy@linkfileprefix
3306     #1%
3307     \ifx\#3\%
3308     \else
3309       \hyper@hash
3310       #3%
3311     \fi
3312   }%
3313 }
```

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

```

3314 \def\@hyper@linkfile file:#1\#2#3{%
3315   %file url,link string, name
3316   \filename@parse{#1}%
3317   \ifx\filename@ext\relax
3318     \edef\filename@ext{\XR@ext}%
3319   \fi
3320   \def\use@file{\filename@area\filename@base.\filename@ext}%
3321   \ifx\filename@ext\XR@ext
3322     \hyper@linkfile{#2}{\use@file}{#3}%
3323   \else
3324     \ifx\@baseurl\@empty
3325       \hyper@linkurl{#2}{%
3326         \Hy@linkfileprefix\use@file\ifx\#3\%
3327       }%
3328     \else
3329       \hyper@linkurl{#2}{\use@file\ifx\#3\%
3330     \fi
3331   \fi
3332 }
```

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.

```

3333 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
3334 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
3335   \ifx\#1\%
3336     #2\Hy@WarningNoLine{empty link? #1: #2#3}%
3337   \else
3338     \def\anchor@spot{#2#3}%
3339     \let\put@me@back\@empty
3340     \ifx\relax#2\relax
3341     \else
3342       \ifHy@nesting
3343       \else
3344         \ifcat a\noexpand#2\relax
3345         \else
3346           \ifcat O\noexpand#2 \relax
3347         \else
```

```

3348 %           \typeout{Anchor start is not alphanumeric %
3349 %           on input line\the\inputlineno%
3350 %           }%
3351           \let\anchor@spot\@empty
3352           \def\put@me@back{#2#3}%
3353       \fi
3354   \fi
3355 \fi
3356 \fi
3357 \ifHy@activeanchor
3358   \anchor@spot
3359 \else
3360   \hyper@anchor{#1}%
3361 \fi
3362   \expandafter\put@me@back
3363 \fi
3364 \let\anchor@spot\@empty
3365 }

```

18 Compatibility with the *L^AT_EX2html* package

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

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

```

3366 \let\htmladding\hyperimage
3367 \def\htmladdnormallink#1#2{\href{#2}{#1}}
3368 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
3369 \def\htmlref#1#2{% anchor text, label
3370   \label@hyperref[{#2}]{#1}%
3371 }

```

This is really too much. The *L^AT_EX2html* package defines its own `\hyperref` command, with a different syntax. Was this always here? Its weird, anyway. We interpret it in the 'printed' way, since we are about fidelity to the page.

```

3372 \def\@@latextohtmlX{%
3373   \let\hhyperref\hyperref
3374   \def\hyperref##1##2##3##4{% anchor text for HTML
3375     % text to print before label in print
3376     % label
3377     % post-label text in print
3378     ##2\ref{##4}##3%
3379   }%
3380 }

```

19 Forms creation

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

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

19.1 Field flags

The field flags are organized in a bit set.

```
3381 \RequirePackage{bitset}
```

Each flag has a option name, an \if switch, and a bit position. The default is always ‘false’, the flag is clear. This is also the default of the switch created by \newif.

The names of the flags in the PDF specification (1.7) are used as lowercase option names.

`\HyField@NewFlag` #1: type: F annot flags, Ff field flags
#2: PDF name
#3: PDF position

```
3382 \def\HyField@NewFlag#1#2{%
3383   \lowercase{\HyField@NewOption{#2}}%
3384   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3385 }
```

`\HyField@NewFlagOnly`

```
3386 \def\HyField@NewFlagOnly#1#2{%
3387   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3388 }
```

`\HyField@NewOption` #1: option name

```
3389 \def\HyField@NewOption#1{%
3390   \expandafter\newif\csname ifFld@#1\endcsname
3391   \define@key{Field}{#1}[true]{%
3392     \lowercase{\Field@boolkey{##1}}{#1}%
3393   }%
3394 }
```

`\HyField@NewBitsetFlag` Package ‘bitset’ uses zero based positions, the PDF specification starts with one.

#1: option
#2: PDF name
#3: type: F annot flags, Ff field flags
#4: PDF position

```
3395 \def\HyField@NewBitsetFlag#1#2#3#4{%
3396   \begingroup
3397     \count@=#4\relax
3398     \advance\count@\m@ne
3399     \def\x##1{%
3400       \endgroup
3401       \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
3402       \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
3403         \expandafter\edef\csname HyField@#3@##1\endcsname{%
3404           (\number#4) #2%
3405         }%
3406       \else
3407         \expandafter\edef\csname HyField@#3@##1\endcsname{%
3408           \csname HyField@#3@##1\endcsname
3409           /#2%
3410         }%
3411       \fi
3412     }%
3413   \expandafter\x\expandafter{\the\count@}%
3414 }
```

```

\HyField@UseFlag The bit set is HyField@#1
3415 \def\HyField@UseFlag#1#2{%
3416   \lowercase{\HyField@@UseFlag{#2}}{#1}%
3417 }

\HyField@@UseFlag
3418 \def\HyField@@UseFlag#1#2{%
3419   \bitsetSetValue{HyField@#2}{%
3420     \csname HyField@#2@#1\endcsname
3421   }{%
3422     \csname ifFld@#1\endcsname 1\else 0\fi
3423   }%
3424 }

\HyField@SetFlag The bit set is HyField@#1
3425 \def\HyField@SetFlag#1#2{%
3426   \lowercase{\HyField@@SetFlag{#2}}{#1}%
3427 }

\HyField@@SetFlag
3428 \def\HyField@@SetFlag#1#2{%
3429   \bitsetSetValue{HyField@#2}{%
3430     \csname HyField@#2@#1\endcsname
3431   }{1}%
3432 }

\HyField@PrintFlags
3433 \def\HyField@PrintFlags#1#2{%
3434   \ifHy@verbose
3435     \begingroup
3436     \let\Hy@temp\@empty
3437     \let\MessageBreak\relax
3438     \expandafter\@for\expandafter\x\expandafter:\expandafter=%
3439     \bitsetGetSetBitList{HyField@#1}\do{%
3440       \edef\Hy@temp{%
3441         \Hy@temp
3442         \csname HyField@#1@\x\endcsname\MessageBreak
3443       }%
3444     }%
3445   \edef\x{\endgroup
3446     \noexpand\Hy@Info{%
3447       Field flags: %
3448       \expandafter\ifx\@car#1\@nil S\else/\fi
3449       #1 %
3450       \bitsetGetDec{HyField@#1} %
3451       (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
3452       \Hy@temp
3453       for #2%
3454     }%
3455   }\x
3456 \fi
3457 }

```

19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”


```

3458 \HyField@NewFlag{Ff}{ReadOnly}{1}
3459 \HyField@NewFlag{Ff}{Required}{2}
3460 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

3461 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
3462 \HyField@NewFlag{Ff}{Radio}{16}
3463 \HyField@NewFlag{Ff}{Pushbutton}{17}
3464 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

3465 \HyField@NewFlag{Ff}{Multiline}{13}
3466 \HyField@NewFlag{Ff}{Password}{14}
3467 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
3468 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3469 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
3470 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
3471 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

3472 \HyField@NewFlag{Ff}{Combo}{18}
3473 \HyField@NewFlag{Ff}{Edit}{19}
3474 \HyField@NewFlag{Ff}{Sort}{20}
3475 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
3476 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3477 \HyField@NewFlag{Ff}{CommitOnSelChange}{27}% PDF 1.5

```

Signature fields are not supported.

Until 6.76i hyperref uses field option ‘combo’ to set three flags ‘Combo’, ‘Edit’, and ‘Sort’. Option ‘popdown’ sets flag ‘Combo’ only.

```

3478 \newif\iffld@popdown
3479 \define@key{Field}{popdown}[true]{%
3480 \lowercase{\Field@boolkey{#1}}{popdown}%
3481 }

```

Annotation flags. The form objects are widget annotations. There are two flags for readonly settings, the one in the annotation flags is ignored, instead the other in the field flags is used.

Flag Print is not much useful, because hyperref do not use the appearance entry of the annotations for most fields.

```

3482 \HyField@NewFlag{F}{Invisible}{1}
3483 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
3484 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
3485 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
3486 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
3487 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
3488 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
3489 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
3490 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

```

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

```

3491 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
3492 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
3493 \HyField@NewFlag{Submit}{GetMethod}{4}
3494 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
3495 \HyField@NewFlagOnly{Submit}{XFDF}{6}
3496 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
3497 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
3498 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}

```

```

3499 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
3500 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
3501 \HyField@NewFlag{Submit}{ExclFKey}{12}
3502 \HyField@NewFlag{Submit}{EmbedForm}{14}

3503 \define@key{Field}{export}{%
3504   \lowercase{\def\Hy@temp{#1}}%
3505   \@ifundefined{Fld@export@\Hy@temp}{%
3506     \@onelevel@sanitize\Hy@temp
3507     \PackageError{hyperref}{%
3508       Unknown export format '\Hy@temp'.\MessageBreak
3509       Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
3510     }\@ehc
3511   }{%
3512     \let\Fld@export\Hy@temp
3513   }%
3514 }
3515 \def\Fld@export{fdf}
3516 \@namedef{Fld@export@fdf}{0}%
3517 \@namedef{Fld@export@html}{1}%
3518 \@namedef{Fld@export@xfdf}{2}%
3519 \@namedef{Fld@export@pdf}{3}%

```

19.1.2 Set submit flags

\HyField@FlagsSubmit

```

3520 \def\HyField@FlagsSubmit{%
3521   \bitsetReset{HyField@Submit}%
3522   \ifcase\@nameuse{Fld@export@\Fld@export} %
3523     % FDF
3524     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3525     \HyField@UseFlag{Submit}{SubmitCoordinates}%
3526     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
3527     \HyField@UseFlag{Submit}{IncludeAnnotations}%
3528     \HyField@UseFlag{Submit}{CanonicalFormat}%
3529     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
3530     \HyField@UseFlag{Submit}{ExclFKey}%
3531     \HyField@UseFlag{Submit}{EmbedForm}%
3532   \or % HTML
3533     \HyField@SetFlag{Submit}{ExportFormat}%
3534     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3535     \HyField@UseFlag{Submit}{GetMethod}%
3536     \HyField@UseFlag{Submit}{SubmitCoordinates}%
3537     \HyField@UseFlag{Submit}{CanonicalFormat}%
3538   \or % XFDF
3539     \HyField@SetFlag{Submit}{XFDF}%
3540     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3541     \HyField@UseFlag{Submit}{SubmitCoordinates}%
3542     \HyField@UseFlag{Submit}{CanonicalFormat}%
3543   \or % PDF
3544     \HyField@SetFlag{Submit}{SubmitPDF}%
3545     \HyField@UseFlag{Submit}{GetMethod}%
3546   \fi
3547   \HyField@PrintFlags{Submit}{submit button field}%
3548   \bitsetIsEmpty{HyField@Submit}{%
3549     \def\Fld@submitflags{%
3550     }{%
3551     \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%

```

```

3552 }%
3553 }

```

19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

3554 \def\HyField@FlagsAnnot#1{%
3555   \bitsetReset{HyField@F}%
3556   \HyField@UseFlag{F}{Invisible}%
3557   \HyField@UseFlag{F}{Hidden}%
3558   \HyField@UseFlag{F}{Print}%
3559   \HyField@UseFlag{F}{NoZoom}%
3560   \HyField@UseFlag{F}{NoRotate}%
3561   \HyField@UseFlag{F}{NoView}%
3562   \HyField@UseFlag{F}{Locked}%
3563   \HyField@UseFlag{F}{ToggleNoView}%
3564   \HyField@UseFlag{F}{LockedContents}%
3565   \HyField@PrintFlags{F}{#1}%
3566   \bitsetIsEmpty{HyField@F}{%
3567     \def\Fld@annotflags{%
3568     }{%
3569     \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
3570   }%
3571 }

```

19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

3572 \def\HyField@FlagsPushButton{%
3573   \HyField@FlagsAnnot{push button field}%
3574   \bitsetReset{HyField@Ff}%
3575   \HyField@UseFlag{Ff}{ReadOnly}%
3576   \HyField@UseFlag{Ff}{Required}%
3577   \HyField@UseFlag{Ff}{NoExport}%
3578   \HyField@SetFlag{Ff}{Pushbutton}%
3579   \HyField@PrintFlags{Ff}{push button field}%
3580   \bitsetIsEmpty{HyField@Ff}{%
3581     \def\Fld@flags{%
3582     }{%
3583     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3584   }%
3585 }

```

19.1.5 Check box field

\HyField@FlagsCheckBox

```

3586 \def\HyField@FlagsCheckBox{%
3587   \HyField@FlagsAnnot{check box field}%
3588   \bitsetReset{HyField@Ff}%
3589   \HyField@UseFlag{Ff}{ReadOnly}%
3590   \HyField@UseFlag{Ff}{Required}%
3591   \HyField@UseFlag{Ff}{NoExport}%
3592   \HyField@PrintFlags{Ff}{check box field}%
3593   \bitsetIsEmpty{HyField@Ff}{%
3594     \def\Fld@flags{%
3595     }{%

```

```

3596 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3597 }%
3598 }

```

19.1.6 Radio button field

\HyField@FlagsRadioButton

```

3599 \def\HyField@FlagsRadioButton{%
3600 \HyField@FlagsAnnot{radio button field}%
3601 \bitsetReset{HyField@Ff}%
3602 \HyField@UseFlag{Ff}{ReadOnly}%
3603 \HyField@UseFlag{Ff}{Required}%
3604 \HyField@UseFlag{Ff}{NoExport}%
3605 \HyField@UseFlag{Ff}{NoToggleToOff}%
3606 \HyField@SetFlag{Ff}{Radio}%
3607 \HyField@UseFlag{Ff}{RadiosInUnison}%
3608 \HyField@PrintFlags{Ff}{radio button field}%
3609 \bitsetIsEmpty{HyField@Ff}{%
3610 \def\Fld@flags{%
3611 }{%
3612 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3613 }%
3614 }

```

19.1.7 Text fields

\HyField@FlagsText

```

3615 \def\HyField@FlagsText{%
3616 \HyField@FlagsAnnot{text field}%
3617 \bitsetReset{HyField@Ff}%
3618 \HyField@UseFlag{Ff}{ReadOnly}%
3619 \HyField@UseFlag{Ff}{Required}%
3620 \HyField@UseFlag{Ff}{NoExport}%
3621 \HyField@UseFlag{Ff}{Multiline}%
3622 \HyField@UseFlag{Ff}{Password}%
3623 \HyField@UseFlag{Ff}{FileSelect}%
3624 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
3625 \HyField@UseFlag{Ff}{DoNotScroll}%
3626 \ifFld@comb
3627 \ifcase0\ifFld@multiline
3628 \else\ifFld@password
3629 \else\ifFld@fileselect
3630 \else 1\fi\fi\fi\relax
3631 \PackageError{hyperref}{%
3632 Field option 'comb' cannot be used together with\MessageBreak
3633 'multiline', 'password', or 'fileselect'%
3634 }\@ehc
3635 \else
3636 \HyField@UseFlag{Ff}{Comb}%
3637 \fi
3638 \fi
3639 \HyField@UseFlag{Ff}{RichText}%
3640 \HyField@PrintFlags{Ff}{text field}%
3641 \bitsetIsEmpty{HyField@Ff}{%
3642 \def\Fld@flags{%
3643 }{%

```

```

3644 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
3645 }%
3646 }

```

19.1.8 Choice fields

\HyField@FlagsChoice

```

3647 \def\HyField@FlagsChoice{%
3648 \HyField@FlagsAnnot{choice field}%
3649 \bitsetReset{HyField@Ff}%
3650 \HyField@UseFlag{Ff}{ReadOnly}%
3651 \HyField@UseFlag{Ff}{Required}%
3652 \HyField@UseFlag{Ff}{NoExport}%
3653 \HyField@UseFlag{Ff}{Combo}%
3654 \ifFld@combo
3655 \HyField@UseFlag{Ff}{Edit}%
3656 \fi
3657 \HyField@UseFlag{Ff}{Sort}%
3658 \HyField@UseFlag{Ff}{MultiSelect}%
3659 \ifFld@combo
3660 \ifFld@edit
3661 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
3662 \fi
3663 \fi
3664 \HyField@UseFlag{Ff}{CommitOnSelChange}%
3665 \HyField@PrintFlags{Ff}{choice field}%
3666 \bitsetIsEmpty{HyField@Ff}{%
3667 \def\Fld@flags{%
3668 }{%
3669 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
3670 }%
3671 }

```

19.2 Choice field

3672 \RequirePackage{kvsetkeys}[2007/09/29]

\HyField@PDFChoices #1: list of choices in key value syntax, key = exported name, value = displayed text.

Input: \Fld@default, \Fld@value, \ifFld@multiselect

Result: \Fld@choices with entries: /Opt, /DV, /V, /I.

```

3673 \def\HyField@PDFChoices#1{%
3674 \begingroup
3675 \gdef\Fld@choices{%
3676 \def\HyTmp@optlist{%
3677 \let\HyTmp@optitem\relax
3678 \count@=0 %
3679 \kv@parse{#1}{%
3680 \Hy@pdfstringdef\kv@key\kv@key
3681 \ifx\kv@value\relax
3682 \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
3683 \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
3684 \else
3685 \xdef\Fld@choices{\Fld@choices(\kv@key)}%
3686 \fi
3687 \else
3688 \Hy@pdfstringdef\kv@value\kv@value
3689 \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@value)]}%

```

```

3690 \fi
3691 \edef\HyTmp@optlist{%
3692   \HyTmp@optlist
3693   \HyTmp@optitem{\the\count@}{\kv@key}0%
3694 }%
3695 \advance\count@ by 1 %
3696 \@gobbletwo
3697 }%
3698 \xdef\Fld@choices{/Opt[\Fld@choices]]%
3699 \ifFld@multiselect
3700   \HyField@@PDFChoices{DV}\Fld@default
3701   \HyField@@PDFChoices{V}\Fld@value
3702 \else
3703   \ifx\Fld@default\relax
3704   \else
3705     \pdfstringdef\Hy@gtemp\Fld@default
3706     \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
3707   \fi
3708   \ifx\Fld@value\relax
3709   \else
3710     \pdfstringdef\Hy@gtemp\Fld@value
3711     \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
3712   \fi
3713 \fi
3714 \endgroup
3715 }

```

\HyField@@PDFChoices

```

3716 \def\HyField@@PDFChoices#1#2{%
3717   \ifx#2\relax
3718   \else
3719     \count@=0 %
3720     \def\HyTmp@optitem##1##2##3{%
3721       \def\HyTmp@key{##2}%
3722       \ifx\HyTmp@key\Hy@gtemp
3723         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
3724           \HyTmp@optlist
3725           \HyTmp@optitem{##1}{##2}1%
3726         }%
3727         \let\HyTmp@found=Y%
3728       \else
3729         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
3730           \HyTmp@optlist
3731           \HyTmp@optitem{##1}{##2}##3%
3732         }%
3733       \fi
3734     }%
3735     \expandafter\comma@parse\expandafter{#2}{%
3736       \pdfstringdef\Hy@gtemp\comma@entry
3737       \let\HyTmp@found=N %
3738       \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
3739       \HyTmp@optlist
3740       \ifx\HyTmp@found Y%
3741         \advance\count@ by 1 %
3742       \else
3743         \@onelevel@sanitize\comma@entry
3744         \PackageWarning{hyperref}{%

```

```

3745         \string\ChoiceBox: Ignoring value ‘\comma@entry’,%
3746         \MessageBreak
3747         it cannot be found in the choices%
3748     }%
3749     \fi
3750     \@gobble
3751 }%
3752 \def\HyTmp@optitem##1##2##3{%
3753     \ifnum##3=1 %
3754         (##2)%
3755     \fi
3756 }%
3757 \ifcase\count@
3758 \or
3759     \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
3760 \else
3761     \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
3762     \ifx#1V%
3763         \def\HyTmp@optitem##1##2##3{%
3764             \ifnum##3=1 %
3765                 \@firstofone{ ##1}%
3766             \fi
3767         }%
3768     \edef\HyTmp@optlist{\HyTmp@optlist}%
3769     \xdef\Fld@choices{%
3770         \Fld@choices
3771         /I[\expandafter\@firstofone\HyTmp@optlist]%
3772     }%
3773     \fi
3774 \fi
3775 \fi
3776 }

```

19.3 Forms

\HyField@SetKeys

```

3777 \def\HyField@SetKeys{%
3778     \setkeys{Field}%
3779 }

3780 \newif\ifFld@checked
3781 \newif\ifFld@disabled
3782 \Fld@checkedfalse
3783 \Fld@disabledfalse
3784 \newcount\Fld@menulength
3785 \newdimen\Fld@Width
3786 \newdimen\Fld@charsize
3787 \Fld@charsize=10\p@
3788 \def\Fld@maxlen{0}
3789 \def\Fld@align{0}
3790 \def\Fld@color{0 0 0 rg}
3791 \def\Fld@bcolor{1 1 1}
3792 \def\Fld@bordercolor{1 0 0}
3793 \def\Fld@bordersep{1\p@}
3794 \def\Fld@borderwidth{1}
3795 \def\Fld@borderstyle{S}
3796 \def\Fld@cbsymbol{4}

```

```

3797 \def\Fld@rotation{0}
3798 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
3799 \def\endForm{\@endForm}
3800 \newif\ifForm@html
3801 \Form@htmlfalse
3802 \def\Form@boolkey#1#2{%
3803   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
3804 }
3805 \define@key{Form}{action}{%
3806   \hyper@normalise\Hy@DefFormAction{#1}%
3807 }
3808 \def\Hy@DefFormAction{\def\Form@action}
3809 \def\enc@html{html}
3810 \define@key{Form}{encoding}{%
3811   \def\Hy@tempa{#1}%
3812   \ifx\Hy@tempa\enc@html
3813     \Form@htmltrue
3814     \def\Fld@export{html}%
3815   \else
3816     \typeout{hyperref: form 'encoding' key set to #1 %
3817       -- unknown type%
3818     }%
3819     \Form@htmlfalse
3820   \fi
3821 }
3822 \define@key{Form}{method}{%
3823   \lowercase{\def\Hy@temp{#1}}%
3824   \@ifundefined{Form@method@\Hy@temp}{%
3825     \@onelevel@sanitize\Hy@temp
3826     \PackageError{hyperref}{%
3827       Unknown method '\Hy@temp'.\MessageBreak
3828       Known values are 'post' and 'get'%
3829     }\@ehc
3830   }{%
3831     \let\Form@method\Hy@temp
3832     \ifcase\@nameuse{Form@method@\Hy@temp} %
3833       \Fld@getmethodfalse
3834     \else
3835       \Fld@getmethodtrue
3836     \fi
3837   }%
3838 }
3839 \def\Form@method{}
3840 \@namedef{Form@method@post}{0}
3841 \@namedef{Form@method@get}{1}
3842 \def\Field@boolkey#1#2{%
3843   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
3844 }
3845 \newtoks\Field@toks
3846 \Field@toks={ }%
3847 \def\Field@addtoks#1#2{%
3848   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
3849   \@processme
3850 }
3851 \def\Fld@checkequals#1=#2=#3\\{%
3852   \def\@currDisplay{#1}%
3853   \ifx\#2\%

```



```

3854     \def\@currValue{#1}%
3855     \else
3856         \def\@currValue{#2}%
3857     \fi
3858 }
3859 \define@key{Field}{loc}{%
3860     \def\Fld@loc{#1}%
3861 }
3862 \define@key{Field}{checked}[true]{%
3863     \lowercase{\Field@boolkey{#1}}{checked}%
3864 }
3865 \define@key{Field}{disabled}[true]{%
3866     \lowercase{\Field@boolkey{#1}}{disabled}%
3867 }
3868 \define@key{Field}{accesskey}{%
3869     \Field@addtoks{accesskey}{#1}%
3870 }
3871 \define@key{Field}{tabkey}{%
3872     \Field@addtoks{tabkey}{#1}%
3873 }
3874 \define@key{Field}{name}{%
3875     \def\Fld@name{#1}%
3876 }
3877 \define@key{Field}{width}{%
3878     \def\Fld@width{#1}%
3879     \Field@Width#1\setbox0=\hbox{m}%
3880 }
3881 \define@key{Field}{maxlen}{%
3882     \def\Fld@maxlen{#1}%
3883 }
3884 \define@key{Field}{menulength}{%
3885     \Field@menulength=#1\relax
3886 }
3887 \define@key{Field}{height}{%
3888     \def\Fld@height{#1}%
3889 }
3890 \define@key{Field}{charsize}{%
3891     \Field@charsize#1%
3892 }
3893 \define@key{Field}{borderwidth}{%
3894     \def\Fld@borderwidth{#1}%
3895 }
3896 \define@key{Field}{borderstyle}{%
3897     \def\Fld@borderstyle{#1}%
3898 }
3899 \define@key{Field}{bordersep}{%
3900     \def\Fld@bordersep{#1}%
3901 }
3902 \define@key{Field}{default}{%
3903     \def\Fld@default{#1}%
3904 }
3905 \define@key{Field}{align}{%
3906     \def\Fld@align{#1}%
3907 }
3908 \define@key{Field}{value}{%
3909     \def\Fld@value{#1}%
3910 }

```

```

3911 \define@key{Field}{checkboxsymbol}{%
3912   \def\Fld@cbsymbol{#1}%
3913 }

3914 \define@key{Field}{rotation}{%
3915   \def\Fld@rotation{#1}%
3916 }

3917 \define@key{Field}{backgroundcolor}{%
3918   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
3919 }

3920 \define@key{Field}{bordercolor}{%
3921   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
3922 }

3923 \define@key{Field}{color}{%
3924   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
3925 }

3926 \def\Fld@format@code{}
3927 \def\Fld@validate@code{}
3928 \def\Fld@calculate@code{}
3929 \def\Fld@keystroke@code{}
3930 \def\Fld@onfocus@code{}
3931 \def\Fld@onblur@code{}
3932 \def\Fld@onmousedown@code{}
3933 \def\Fld@onmouseup@code{}
3934 \def\Fld@onenter@code{}
3935 \def\Fld@onexit@code{}
3936 \define@key{Field}{keystroke}{%
3937   \def\Fld@keystroke@code{#1}%
3938 }

3939 \define@key{Field}{format}{%
3940   \def\Fld@format@code{#1}%
3941 }

3942 \define@key{Field}{validate}{%
3943   \def\Fld@validate@code{#1}%
3944 }

3945 \define@key{Field}{calculate}{%
3946   \def\Fld@calculate@code{#1}%
3947 }

3948 \define@key{Field}{onfocus}{%
3949   \def\Fld@onfocus@code{#1}%
3950 }

3951 \define@key{Field}{onblur}{%
3952   \def\Fld@onblur@code{#1}%
3953 }

3954 \define@key{Field}{onenter}{%
3955   \def\Fld@onenter@code{#1}%
3956 }

3957 \define@key{Field}{onexit}{%
3958   \def\Fld@onexit@code{#1}%
3959 }

3960 \define@key{Field}{onselect}{%
3961   \Field@addtoks{onselect}{#1}%
3962 }

3963 \define@key{Field}{onchange}{%
3964   \Field@addtoks{onchange}{#1}%
3965 }

3966 \define@key{Field}{onclick}{%

```

```

3967 \def\Fld@onclick{#1}%
3968 \Field@addtoks{onclick}{#1}%
3969 }
3970 \define@key{Field}{ondblclick}{%
3971 \Field@addtoks{ondblclick}{#1}%
3972 }
3973 \define@key{Field}{onmousedown}{%
3974 \Field@addtoks{onmousedown}{#1}%
3975 }
3976 \define@key{Field}{onmouseup}{%
3977 \Field@addtoks{onmouseup}{#1}%
3978 }
3979 \define@key{Field}{onmouseover}{%
3980 \Field@addtoks{onmouseover}{#1}%
3981 }
3982 \define@key{Field}{onmousemove}{%
3983 \Field@addtoks{onmousemove}{#1}%
3984 }
3985 \define@key{Field}{onmouseout}{%
3986 \Field@addtoks{onmouseout}{#1}%
3987 }
3988 \define@key{Field}{onkeypress}{%
3989 \Field@addtoks{onkeypress}{#1}%
3990 }
3991 \define@key{Field}{onkeydown}{%
3992 \Field@addtoks{onkeydown}{#1}%
3993 }
3994 \define@key{Field}{onkeyup}{%
3995 \Field@addtoks{onkeyup}{#1}%
3996 }
3997 %
3998 \DeclareRobustCommand\TextField{%
3999 \@ifnextchar[{\@TextField}{\@TextField[]}%
4000 }
4001 \DeclareRobustCommand\ChoiceMenu{%
4002 \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
4003 }
4004 \DeclareRobustCommand\CheckBox{%
4005 \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
4006 }
4007 \DeclareRobustCommand\PushButton{%
4008 \@ifnextchar[{\@PushButton}{\@PushButton[]}%
4009 }
4010 \DeclareRobustCommand\Gauge{%
4011 \@ifnextchar[{\@Gauge}{\@Gauge[]}%
4012 }
4013 \DeclareRobustCommand\Submit{%
4014 \@ifnextchar[{\@Submit}{\@Submit[]}%
4015 }
4016 \DeclareRobustCommand\Reset{%
4017 \@ifnextchar[{\@Reset}{\@Reset[]}%
4018 }
4019 \def\LayoutTextField#1#2{% label, field
4020 #1 #2%
4021 }
4022 \def\LayoutChoiceField#1#2{% label, field
4023 #1 #2%

```

```

4024 }
4025 \def\LayoutCheckField#1#2{% label, field
4026   #1 #2%
4027 }
4028 \def\LayoutPushButtonField#1{% button
4029   #1%
4030 }
4031 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4032 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4033 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4034 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4035 \def\MakeButtonField#1{%
4036   \sbox0{%
4037     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
4038   }%
4039   \@tempdima\ht0 %
4040   \advance\@tempdima by \Fld@borderwidth bp %
4041   \advance\@tempdima by \Fld@borderwidth bp %
4042   \ht0\@tempdima
4043   \@tempdima\dp0 %
4044   \advance\@tempdima by \Fld@borderwidth bp %
4045   \advance\@tempdima by \Fld@borderwidth bp %
4046   \dp0\@tempdima
4047   \box0\relax
4048 }
4049 \def\DefaultHeightofSubmit{14pt}
4050 \def\DefaultWidthofSubmit{2cm}
4051 \def\DefaultHeightofReset{14pt}
4052 \def\DefaultWidthofReset{2cm}
4053 \def\DefaultHeightofCheckBox{\baselineskip}
4054 \def\DefaultWidthofCheckBox{\baselineskip}
4055 \def\DefaultHeightofChoiceMenu{\baselineskip}
4056 \def\DefaultWidthofChoiceMenu{\baselineskip}
4057 \def\DefaultHeightofText{\baselineskip}
4058 \def\DefaultHeightofTextMultiline{4\baselineskip}
4059 \def\DefaultWidthofText{3cm}
4060 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
4061 \def\DefaultOptionsofReset{print,name=Reset,noexport}
4062 \def\DefaultOptionsofPushButton{print}
4063 \def\DefaultOptionsofCheckBox{print}
4064 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

4065 \def\DefaultOptionsofListBox{print}
4066 \def\DefaultOptionsofComboBox{print,edit,sort}
4067 \def\DefaultOptionsofPopdownBox{print}
4068 \def\DefaultOptionsofRadio{print,notoggletooft}

```

20 Setup

```

4069 \ifHy@figures
4070   \Hy@Info{Hyper figures ON}%
4071 \else
4072   \Hy@Info{Hyper figures OFF}%
4073 \fi
4074 \ifHy@nesting
4075   \Hy@Info{Link nesting ON}%

```

```

4076 \else
4077   \Hy@Info{Link nesting OFF}%
4078 \fi
4079 \ifHy@hyperindex
4080   \Hy@Info{Hyper index ON}%
4081 \else
4082   \Hy@Info{Hyper index OFF}%
4083 \fi
4084 \ifHy@backref
4085   \Hy@Info{backreferencing ON}%
4086 \else
4087   \Hy@Info{backreferencing OFF}%
4088 \fi
4089 \ifHy@colorlinks
4090   \Hy@Info{Link coloring ON}%
4091 \else
4092   \Hy@Info{Link coloring OFF}%
4093 \fi

```

21 Low-level utility macros

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

```

4094 \edef\hyper@hash{\string#}
4095 \edef\hyper@tilde{\string~}
4096 \edef\hyper@quote{\string"}
4097 \let\@currentHref\@empty
4098 \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.

```

4099 \AfterBeginDocument{%
4100   \Hy@pdfstringtrue
4101   \PDF@SetupDoc
4102   \let\PDF@SetupDoc\@empty
4103   \Hy@DisableOption{pdfpagescrop}%
4104   \Hy@DisableOption{pdfpagemode}%
4105   \Hy@DisableOption{pdfnonfullscreenpagemode}%
4106   \Hy@DisableOption{pdfdirection}%
4107   \Hy@DisableOption{pdfviewarea}%
4108   \Hy@DisableOption{pdfviewclip}%
4109   \Hy@DisableOption{pdfprintarea}%
4110   \Hy@DisableOption{pdfprintclip}%
4111   \Hy@DisableOption{pdfprintscaling}%
4112   \Hy@DisableOption{pdfduplex}%
4113   \Hy@DisableOption{pdfpicktraybypdfsize}%
4114   \Hy@DisableOption{pdfprintpagerange}%
4115   \Hy@DisableOption{pdfnumcopies}%
4116   \Hy@DisableOption{pdfstartview}%
4117   \Hy@DisableOption{pdfstartpage}%
4118   \Hy@DisableOption{pdftoolbar}%
4119   \Hy@DisableOption{pdfmenubar}%
4120   \Hy@DisableOption{pdfwindowui}%
4121   \Hy@DisableOption{pdffitwindow}%
4122   \Hy@DisableOption{pdfcenterwindow}%
4123   \Hy@DisableOption{pdfdisplaydoctitle}%
4124   \Hy@DisableOption{pdfpagelayout}%
4125   \Hy@DisableOption{pdflang}%

```

```

4126 \Hy@DisableOption{baseurl}%
4127 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
4128 \Hy@pdfstringfalse
4129 }

```

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.

```

4130 \def\NoHyper{%
4131   \def\hyper@link@{##1}##2##3##4{##4}%
4132   \def\hyper@@anchor##1{%
4133     \global\let\hyper@livelink\hyper@link
4134     \gdef\hyper@link##1##2##3{##3}%
4135     \def\hyper@anchorstart##1{%
4136       \let\hyper@anchorend\@empty
4137       \def\hyper@linkstart##1##2{%
4138         \let\hyper@linkend\@empty
4139         \def\hyper@linkurl##1##2{##1}%
4140         \def\hyper@linkfile##1##2##3{##1}%
4141         \def\hyper@link@{##1}##2##3{%
4142           \let\Hy@backout\@gobble
4143         }
4144         \def\stop@hyper{%
4145           \def\hyper@link@{##1}##2##3##4{##4}%
4146           \let\Hy@backout\@gobble
4147           \def\hyper@@anchor##1{%
4148             \def\hyper@link##1##2##3{##3}%
4149             \def\hyper@anchorstart##1{%
4150               \let\hyper@anchorend\@empty
4151               \def\hyper@linkstart##1##2{%
4152                 \let\hyper@linkend\@empty
4153                 \def\hyper@linkurl##1##2{##1}%
4154                 \def\hyper@linkfile##1##2##3{##1}%
4155                 \def\hyper@link@{##1}##2##3{%
4156                   }
4157               \def\endNoHyper{%
4158                 \global\let\hyper@link\hyper@livelink
4159               }
4160             }

```

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:

```

4161 \*nohyperref
4162 \let\hyper@@anchor\@gobble
4163 \def\hyper@link##1##2##3{##3}%

```

```

4164 \let\hyper@anchorstart\@gobble
4165 \let\hyper@anchorend\@empty
4166 \let\hyper@linkstart\@gobbletwo
4167 \let\hyper@linkend\@empty
4168 \def\hyper@linkurl#1#2{#1}%
4169 \def\hyper@linkfile#1#2#3{#1}%
4170 \def\hyper@link@[#1]#2#3{#1}%
4171 \let\PDF@SetupDoc\@empty
4172 \let\PDF@FinishDoc\@empty

```

Some top-level commands:

```

4173 \let\Acrobatmenu\@gobble
4174 \let\pdfstringdefDisableCommands\@gobbletwo
4175 \let\texorpdfstring\@firstoftwo
4176 \let\pdfbookmark\@undefined
4177 \newcommand\pdfbookmark[3][]{\@empty}
4178 \let\phantomsection\@empty
4179 \let\hypersetup\@gobble
4180 \let\hyperbaseurl\@gobble
4181 \let\href\@gobble
4182 \let\hyperdef\@gobbletwo
4183 \let\hyperlink\@gobble
4184 \let\hypertarget\@gobble
4185 \def\hyperref{%
4186   \@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
4187 }
4188 \long\def\@gobbleopt[#1]{\@empty}
4189 \let\hyperpage\@empty
4190 \</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}

```

4191 \<*package>
4192 \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.

```

4193 \if@filesw
4194   \ifHy@typexml
4195     \immediate\closeout\@mainaux
4196     \immediate\openout\@mainaux\jobname.aux\relax
4197     \immediate\write\@auxout{<relaxxml>\relax}%
4198   \fi
4199   \immediate\write\@auxout{%
4200     \string\ifx\string\hyper@anchor\string\@undefined^^J%
4201     \global\let\string\oldcontentsline\string\contentsline^^J%
4202     \gdef\string\contentsline%
4203       \string#1\string#2\string#3\string#4{%
4204       \string\oldcontentsline%
4205       {\string#1}{\string#2}{\string#3}}^^J%
4206     \global\let\string\oldnewlabel\string\newlabel^^J%
4207     \gdef\string\newlabel\string#1\string#2{%

```

```

4208         \string\newlabelxx{\string#1}\string#2}^^J%
4209     \gdef\string\newlabelxx%
4210         \string#1\string#2\string#3\string#4\string#5\string#6{%
4211         \string\oldnewlabel{\string#1}{\string#2}{\string#3}}^^J%

```

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

```

4212     \string\AtEndDocument{%
4213         \let\string\contentsline\string\oldcontentsline^^J%
4214         \let\string\newlabel\string\oldnewlabel}^^J%

```

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

```

4215     \string\else^^J%
4216     \global\let\string\hyper@last\relax^^J%
4217     \string\fi^^J%
4218 }%
4219 \fi

```

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

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

```

4220 \ifx\hyper@last\@undefined
4221 \def\@starttoc#1{%
4222 \begingroup
4223 \makeatletter
4224 \IfFileExists{\jobname.#1}{%
4225 \Hy@WarningNoLine{%
4226 old #1 file detected, not used; run LaTeX again%
4227 }%
4228 }{}%
4229 \if@filesw
4230 \expandafter\newwrite\csname tf@#1\endcsname
4231 \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
4232 \fi
4233 \@nobreakfalse
4234 \endgroup
4235 }%
4236 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
4237 \fi
4238 }

```

25 Title strings

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

```

4239 \ifHy@usetitle
4240 \let\HyOrg@title\title
4241 \let\HyOrg@author\author
4242 \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
4243 \def\Hy@scanopttitle[#1]{%
4244 \gdef\Hy@title{#1}%
4245 \HyOrg@title[#1]}%
4246 }%

```



```

4247 \def\Hy@scantitle#1{%
4248   \gdef\Hy@title{#1}%
4249   \HyOrg@title{#1}%
4250 }%
4251 \def\author{\ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
4252 \def\Hy@scanoptauthor[#1]{%
4253   \gdef\Hy@author{#1}%
4254   \HyOrg@author[{#1}]%
4255 }%
4256 \def\Hy@scanauthor#1{%
4257   \gdef\Hy@author{#1}%
4258   \HyOrg@author{#1}%
4259 }%

```

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.

```

4260 \begingroup
4261   \def\process@me#1\@nil#2{%
4262     \expandafter\let\expandafter\x\csname @#2\endcsname
4263     \edef\y{\expandafter\strip@prefix\meaning\x}%
4264     \def\c##1##2\@nil{%
4265       \ifx\\##1\\%
4266         \else
4267           \expandafter\gdef\csname Hy@#2\expandafter\endcsname
4268             \expandafter{\x}%
4269         \fi
4270       }%
4271       \expandafter\c\y\relax#1\@nil
4272     }%
4273     \expandafter\process@me\string\@latex@\@nil{title}%
4274     \expandafter\process@me\string\@latex@\@nil{author}%
4275   \endgroup
4276 \fi
4277 \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.

```

4278 \def\Hy@UseMaketitleString#1{%
4279   \@ifundefined{Hy@#1}{}%
4280   \begingroup
4281     \let\Hy@sav@hook\pdfstringdefPreHook
4282     \pdfstringdefDisableCommands{%
4283       \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
4284       \let\newline\\%
4285     }%
4286     \expandafter\ifx\csname @pdf#1\endcsname\@empty
4287       \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
4288         \csname Hy@#1\endcsname\@empty
4289       }%
4290     \fi

```

```

4291     \global\let\pdfstringdefPreHook\Hy@saved@hook
4292     \endgroup
4293 }%
4294 }
4295 \def\Hy@newline@title#1{ #1}
4296 \def\Hy@newline@author#1{, #1}
4297 \def\Hy@UseMaketitleInfos{%
4298   \Hy@UseMaketitleString{title}%
4299   \Hy@UseMaketitleString{author}%
4300 }

```

26 Page numbers

This stuff is done by Heiko Oberdiek.

27 Every page

```

4301 \RequirePackage{atbegshi}[2007/09/09]
4302 \def\Hy@EveryPageHook{}
4303 \def\Hy@EveryPageBoxHook{}
4304 \def\Hy@FirstPageHook{}
4305 \AtBeginShipout{%
4306   \Hy@EveryPageHook
4307   \ifx\Hy@EveryPageBoxHook\@empty
4308   \else
4309     \setbox\AtBeginShipoutBox=\vbox{%
4310       \offinterlineskip
4311       \Hy@EveryPageBoxHook
4312       \box\AtBeginShipoutBox
4313     }%
4314   \fi
4315 }
4316 \AtBeginShipoutFirst{%
4317   \Hy@FirstPageHook
4318 }
4319 \g@addto@macro\Hy@FirstPageHook{%
4320   \PDF@FinishDoc
4321   \gdef\PDF@FinishDoc{}%
4322 }

```

27.1 PDF /PageLabels

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

```

4323 \ifHy@pagelabels
4324   \begingroup\expandafter\expandafter\expandafter\endgroup
4325   \expandafter\ifx\csname thepage\endcsname\relax
4326     \Hy@pagelabelsfalse
4327     \Hy@WarningNoLine{%
4328       Option ‘pdfpagelabels’ is turned off\MessageBreak
4329       because \string\thepage\space is undefined%
4330     }%
4331     \csname fi\endcsname
4332     \csname iffalse\expandafter\endcsname
4333   \fi

```

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

```
4334 \def\thispdfpagelabel#1{%
4335 \gdef\HyPL@thisLabel{#1}%
4336 }%
4337 \global\let\HyPL@thisLabel\relax
```

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

```
4338 \def\HyPL@Labels{%
```

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

```
4339 \newcount\Hy@abspage
4340 \Hy@abspage=0 %
```

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

```
4341 \def\HyPL@LastType{init}%
4342 \def\HyPL@LastNumber{0}%
4343 \def\HyPL@LastPrefix{%
```

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

```
4344 \def\HyPL@arabic{D}%
4345 \def\HyPL@Roman{R}%
4346 \def\HyPL@roman{r}%
4347 \def\HyPL@Alph{A}%
4348 \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.

```
4349 \def\HyPL@EveryPage{%
4350 \begingroup
4351 \ifx\HyPL@thisLabel\relax
4352 \let\HyPL@page\thepage
4353 \else
4354 \let\HyPL@page\HyPL@thisLabel
4355 \global\let\HyPL@thisLabel\relax
4356 \fi
4357 \let\HyPL@Type\relax
4358 \ifnum\the\c@page>0 %
4359 \expandafter\HyPL@CheckThePage\HyPL@page\@nil
4360 \fi
4361 \let\Hy@temp Y%
4362 \ifx\HyPL@Type\HyPL@LastType
4363 \else
4364 \let\Hy@temp N%
4365 \fi
4366 \ifx\HyPL@Type\relax
4367 \pdfstringdef\HyPL@Prefix{\HyPL@page}%
4368 \else
4369 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
4370 \fi
4371 \ifx\HyPL@Prefix\HyPL@LastPrefix
4372 \else
4373 \let\Hy@temp N%
4374 \fi
4375 \if Y\Hy@temp
4376 \advance\c@page by -1 %
4377 \ifnum\HyPL@LastNumber=\the\c@page\relax
```

```

4378     \else
4379       \let\Hy@temp N%
4380     \fi
4381     \Hy@StepCount\c@page
4382   \fi
4383   \if N\Hy@temp
4384     \ifx\HyPL@Type\relax
4385       \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
4386     \else
4387       \HyPL@StorePageLabel{%
4388         \ifx\HyPL@Prefix\@empty
4389         \else
4390           /P(\HyPL@Prefix)%
4391         \fi
4392         /S/\csname HyPL\HyPL@Type\endcsname
4393         \ifnum\the\c@page=1 %
4394         \else
4395           \space/St \the\c@page
4396         \fi
4397       }%
4398     \fi
4399   \fi
4400   \xdef\HyPL@LastNumber{\the\c@page}%
4401   \global\let\HyPL@LastType\HyPL@Type
4402   \global\let\HyPL@LastPrefix\HyPL@Prefix
4403 \endgroup
4404 \Hy@GlobalStepCount\Hy@abspage
4405 }%

```

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

```

4406 \def\HyPL@CheckThePage#1\@nil{%
4407   \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
4408 }%

```

`\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`.

```

4409 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
4410   \def\Hy@tempa{#4}%
4411   \def\Hy@tempb{\csname\endcsname\c@page}%
4412   \ifx\Hy@tempa\Hy@tempb
4413     \expandafter\ifx\csname HyPL#3\endcsname\relax
4414     \else
4415       \def\HyPL@Type{#3}%
4416       \def\HyPL@Prefix{#2}%
4417     \fi
4418   \else
4419     \begingroup
4420     \let\Hy@next\endgroup
4421     \let\HyPL@found\@undefined
4422     \def\arabic{\HyPL@Format{arabic}}%
4423     \def\Roman{\HyPL@Format{Roman}}%
4424     \def\roman{\HyPL@Format{roman}}%
4425     \def\Alph{\HyPL@Format{Alph}}%
4426     \def\alph{\HyPL@Format{alph}}%
4427     \protected@edef\Hy@temp{#1}%

```

```

4428     \ifx\HyPL@found\relax
4429       \toks@{\expandafter{\Hy@temp}}%
4430       \edef\Hy@next{\endgroup
4431         \noexpand\HyPL@@@CheckThePage\the\toks@
4432         \noexpand\HyPL@found\relax\noexpand\@nil
4433       }%
4434     \fi
4435   \Hy@next
4436 \fi
4437 }%

```

\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`.

```

4438 \def\HyPL@Format#1#2{%
4439   \ifx\HyPL@found\@undefined
4440     \expandafter\ifx\csname c@#2\endcsname\c@page
4441       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
4442     \else
4443       \expandafter\noexpand\csname#1\endcsname{#2}%
4444     \fi
4445   \else
4446     \expandafter\noexpand\csname#1\endcsname{#2}%
4447   \fi
4448 }%

```

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

```

4449 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
4450   \def\Hy@tempa{#3}%
4451   \def\Hy@tempb{\HyPL@found\relax}%
4452   \ifx\Hy@tempa\Hy@tempb
4453     \def\HyPL@Type{#2}%
4454     \def\HyPL@Prefix{#1}%
4455   \fi
4456 }%

```

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

```

4457 \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`.

```

4458 \def\HyPL@Useless{0<</S/D>>}%
4459 \@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.

```

4460 \def\HyPL@SetPageLabels{%
4461   \@onelevel@sanitize\HyPL@Labels
4462   \ifx\HyPL@Labels\@empty
4463   \else
4464     \ifx\HyPL@Labels\HyPL@Useless
4465     \else
4466       \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
4467     \fi
4468   \fi
4469 }%

```

```

4470 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
4471 \fi

```

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

```

4472 \Hy@DisableOption{pdfpagelabels}
4473 \</package>

```

27.1.1 pdfTeX and VTeX

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

\Hy@PutCatalog

```

4474 \<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.

```

4475 \<*vTeX>
4476 \edef\Hy@VTeXversion{%
4477   \ifx\VTeXversion\undefined
4478     \z@
4479   \else
4480     \ifx\VTeXversion\relax
4481       \z@
4482     \else
4483       \VTeXversion
4484     \fi
4485   \fi
4486 }
4487 \begingroup
4488   \ifnum\Hy@VTeXversion<660 %
4489     \gdef\Hy@PutCatalog#1{%
4490       \Hy@WarningNoLine{%
4491         VTeX 6.59g or above required for pdfpagelabels%
4492       }%
4493     }%
4494   \else
4495     \gdef\Hy@PutCatalog#1{%
4496       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
4497     }%
4498     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
4499       \ifx\#2\%
4500         \else
4501           \immediate\special{!pdfpagelabels #2}%
4502         \fi
4503       }%
4504     \fi
4505   \endgroup
4506 \</vTeX>

4507 \<*pdfTeX | vTeX>

```

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

```

4508 \ifHy@pagelabels
4509   \def\HyPL@StorePageLabel#1{%

```

```

4510 \toks@expandafter{\HyPL@Labels}%
4511 \xdef\HyPL@Labels{%
4512 \the\toks@
4513 \the\Hy@abspage<<#1>>%
4514 }%
4515 }%

```

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.

```

4516 \@ifclassloaded{revtex4}{%
4517 \g@addto@macro\clear@document{\HyPL@SetPageLabels}%
4518 }{%
4519 \AtEndDocument{\clearpage\HyPL@SetPageLabels}%
4520 }%
4521 \fi
4522 </pdfTeX | vTeX>

```

27.1.2 pdfmarkbase, dvipdfm

\Hy@PutCatalog

```

4523 <dvipdfm>\def\Hy@PutCatalog#1{\@pdfm@mark{docview << #1 >>}}
4524 <*pdfmarkbase>
4525 \def\Hy@PutCatalog#1{%
4526 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
4527 }
4528 </pdfmarkbase>
4529 <*pdfmarkbase | dvipdfm>
4530 \ifHy@pagelabels

```

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

```

4531 \def\HyPL@StorePageLabel#1{%
4532 \if@filesw
4533 \begingroup
4534 \edef\Hy@tempa{\the\Hy@abspage<<#1>>%
4535 \immediate\write\@mainaux{%
4536 \string\HyPL@Entry{\Hy@tempa}%
4537 }%
4538 \endgroup
4539 \fi
4540 }%

```

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.

```

4541 \AfterBeginDocument{%
4542 \if@filesw
4543 \immediate\write\@mainaux{%
4544 \string\providecommand\string*\string\HyPL@Entry[1]{}%
4545 }%
4546 \fi
4547 \ifx\HyPL@Labels\@empty
4548 \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
4549 \else
4550 \HyPL@SetPageLabels
4551 \fi
4552 \let\HyPL@Entry\@gobble
4553 }%

```

\HyPL@Entry

```

4554 \def\HyPL@Entry#1{%
4555   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
4556     \HyPL@Labels
4557     #1%
4558   }%
4559 }%

4560 \fi
4561 </pdfmarkbase | dvipdfm>
4562 <*package>
4563 \MaybeStopEarly

```

28 Automated L^AT_EX hypertext cross-references

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

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

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

Start with a fallback for equations

```

4564 \def\Hy@CounterExists#1{%
4565   \begingroup\expandafter\expandafter\expandafter\endgroup
4566   \expandafter\ifx\csname c@#1\endcsname\relax
4567     \expandafter\@gobble
4568   \else
4569     \begingroup\expandafter\expandafter\expandafter\endgroup
4570     \expandafter\ifx\csname the#1\endcsname\relax
4571       \expandafter\expandafter\expandafter\@gobble
4572     \else
4573       \expandafter\expandafter\expandafter\@firstofone
4574     \fi
4575   \fi
4576 }
4577 \Hy@CounterExists{section}{%
4578   \newcommand\theHequation{\theHsection.\arabic{equation}}%
4579 }
4580 \Hy@CounterExists{part}{%
4581   \newcommand\theHpart{\arabic{part}}%
4582 }
4583 \@ifundefined{thechapter}{%
4584   \newcommand\theHsection    {\arabic{section}}%
4585   \newcommand\theHfigure     {\arabic{figure}}%
4586   \newcommand\theHtable      {\arabic{table}}%

```



```

4587 }{%
4588   \newcommand\theHchapter    {\arabic{chapter}}%
4589   \newcommand\theHfigure     {\theHchapter.\arabic{figure}}%
4590   \newcommand\theHtable      {\theHchapter.\arabic{table}}%
4591   \newcommand\theHsection    {\theHchapter.\arabic{section}}%
4592 }
4593 \newcommand\theHsubsection   {\theHsection.\arabic{subsection}}
4594 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
4595 \newcommand\theHparagraph    {\theHsubsubsection.\arabic{paragraph}}
4596 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
4597 \newcommand\theHtheorem      {\theHsection.\arabic{theorem}}
4598 \newcommand\theHthm          {\theHsection.\arabic{thm}}

```

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

```

4599 \let\H@item\item
4600 \newcounter{Item}
4601 \def\theHItem{\arabic{Item}}
4602 \def\item{%
4603   \@hyper@itemfalse
4604   \if@nmbrrlist\@hyper@itemtrue\fi
4605   \H@item
4606 }
4607 \newcommand\theHenumi      {\theHItem}
4608 \newcommand\theHenumii    {\theHItem}
4609 \newcommand\theHenumiii   {\theHItem}
4610 \newcommand\theHenumiv    {\theHItem}
4611 \newcommand\theHHfootnote {\arabic{Hfootnote}}
4612 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
4613 \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.

```

4614 \let\H@refstepcounter\refstepcounter
4615 \edef\name@of@eq{equation}%
4616 \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.

```

4617 \newif\if@hyper@item
4618 \newif\if@skiphyperref
4619 \@hyper@itemfalse
4620 \@skiphyperreffalse
4621 \def\refstepcounter#1{%
4622   \ifHy@pdfstring
4623   \else
4624     \H@refstepcounter{#1}%
4625     \edef\This@name{#1}%
4626     \ifx\This@name\name@of@slide
4627     \else
4628       \if@skiphyperref
4629       \else
4630         \if@hyper@item
4631           \stepcounter{Item}%
4632           \hyper@refstepcounter{Item}%

```

```

4633         \else
4634             \hyper@refstepcounter{#1}%
4635         \fi
4636     \fi
4637 \fi
4638 \fi
4639 }

```

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.

```

4640 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

4641 \def\hyper@refstepcounter#1{%
4642     \edef\This@name{#1}%
4643     \ifx\This@name\name@of@eq
4644         \@ifundefined{theHequation}{%
4645             \make@stripped@name{\theequation}%
4646             \let\theHequation\newname
4647         }{}%
4648     \fi
4649     \@ifundefined{theH#1}{%
4650         \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
4651     }{}%
4652     \hyper@makecurrent{#1}%
4653     \ifmeasuring@
4654     \else
4655         \Hy@raisedlink{%
4656             \hyper@anchorstart{\@currentHref}\hyper@anchorend
4657         }%
4658     \fi
4659 }

```

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`.

```

4660 \begingroup\expandafter\expandafter\expandafter\endgroup
4661 \expandafter\ifx\csname chapter\endcsname\relax
4662     \def\Hy@chapterstring{section}%
4663 \else
4664     \def\Hy@chapterstring{chapter}%
4665 \fi
4666 \def\Hy@appendixstring{appendix}
4667 \def\Hy@chapapp{\Hy@chapterstring}
4668 \let\HyOrg@appendix\appendix
4669 \def\appendix{%
4670     \@ifundefined{chapter}%
4671     {\gdef\theHsection{\Alph{section}}}%
4672     {\gdef\theHchapter{\Alph{chapter}}}%
4673     \xdef\Hy@chapapp{\Hy@appendixstring}%
4674     \HyOrg@appendix
4675 }

```

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

```

4676 \def\hyper@makecurrent#1{%
4677   \begingroup
4678     \edef\Hy@param{#1}%
4679     \ifx\Hy@param\Hy@chapterstring
4680       \let\Hy@param\Hy@chapapp
4681     \fi
4682     \ifHy@hypertextnames
4683       \let\@number\@firstofone
4684       \@ifundefined{latin@Alph}{-}{%
4685         \ifx\@Alph\greek@Alph
4686           \def\@Alph{Alph\@arabic}%
4687         \fi
4688       }%
4689     \ifHy@naturalnames
4690       \let\textlatin\@firstofone
4691       \xdef\@currentHlabel{\csname the#1\endcsname}%
4692     \else
4693       \xdef\@currentHlabel{\csname theH#1\endcsname}%
4694     \fi
4695     \xdef\@currentHref{%
4696       \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
4697     }%
4698   \else
4699     \Hy@GlobalStepCount\Hy@linkcounter
4700     \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
4701   \fi
4702 \endgroup
4703 }

4704 \ifpackageloaded{fancyvrb}{%
4705   \def\FV@StepLineNo{%
4706     \FV@SetLineNo
4707     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
4708     \FV@StepLineNo
4709   }%
4710 }{}

```

29 Package lastpage support

Package `lastpage` directly writes the `\newlabel` command to the aux file. Because package `hyperref` requires additional arguments, the internal command `\lastpage@putlabel` is redefined. The patch is deferred by `\AtBeginDocument`, because it is possible that package `lastpage` is loaded after package `hyperref`. The same algorithm (options `hypertextnames` and `plainpages`) is used to get the page anchor name as in `\Hy@EveryPageAnchor` (see sec. 38). The link will not work if option `pageanchor` is set to false.

`\lastpage@putlabel`

```

4711 \AtBeginDocument{%
4712   \ifclassloaded{revtex4}{%
4713     \namedef{ver@lastpage.sty}{1994/06/25}%
4714   }{}%
4715   \ifpackageloaded{lastpage}{%
4716     \ifHy@pageanchor
4717     \else

```

```

4718     \Hy@WarningNoLine{%
4719         The \string\pageref{LastPage} link doesn't work\MessageBreak
4720         with disabled option 'pageanchor'%
4721     }%
4722 \fi
4723 \def\lastpage@putlabel{%
4724     \addtocounter{page}{-1}%
4725     \if@filesw
4726         \begingroup
4727         \let\@number\@firstofone
4728         \ifHy@pageanchor
4729             \ifHy@hypertextnames
4730                 \ifHy@plainpages
4731                     \def\Hy@temp{\arabic{page}}%
4732                 \else
4733                     \Hy@unicodedefalse
4734                     \pdfstringdef\Hy@temp{\thepage}%
4735                 \fi
4736             \else
4737                 \def\Hy@temp{\the\Hy@pagecounter}%
4738             \fi
4739         \fi
4740         \immediate\write\@auxout{%
4741             \string\newlabel
4742             {LastPage}{\the\Hy@temp}{\thepage}{\thepage}%
4743             \ifHy@pageanchor page.\Hy@temp\fi}{}}%
4744     }%
4745 \endgroup
4746 \fi
4747 \addtocounter{page}{1}%
4748 }%
4749 \@ifclassloaded{revtex4}{%
4750     \begingroup
4751     \toks@\expandafter{\lastpage@putlabel}%
4752     \edef\x{\endgroup
4753         \def\noexpand\lastpage@putlabel{%
4754             \noexpand\stepcounter{page}%
4755             \the\toks@
4756             \noexpand\addtocounter{page}\noexpand\m@ne
4757         }%
4758     }%
4759     \x
4760 }{}%
4761 }{}%
4762 }
4763 \end{package}
4764 \check
4765 \checkpackage{lastpage}[1994/06/25]
4766 \checkcommand\def\lastpage@putlabel{%
4767     \addtocounter{page}{-1}%
4768     \immediate\write\@auxout{%
4769         \string\newlabel{LastPage}{\the\Hy@temp}{\thepage}%
4770     }%
4771     \addtocounter{page}{1}%
4772 }
4773 \end{check}
4774 \end{package}

```

30 Package ifthen support

Since version 6.75a this is done in package nameref.

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

```
4775 \def\hypergetref#1{\getrefbykeydefault{#1}{}}{??}}
4776 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}}{0}}
```

31 Package titlesec and titletoc support

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

Package titlesec support:

```
4777 \@ifpackageloaded{titlesec}{%
4778   \def\ttl@Hy@steplink#1{%
4779     \Hy@GlobalStepCount\Hy@linkcounter
4780     \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
4781     \def\ttl@Hy@saveanchor{%
4782       \Hy@raisedlink{%
4783         \hyper@anchorstart{\@currentHref}\hyper@anchorend
4784       }%
4785     }%
4786   }%
4787   \def\ttl@Hy@refstepcounter#1{%
4788     \let\ttl@b\Hy@raisedlink
4789     \def\Hy@raisedlink##1{%
4790       \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
4791     }%
4792     \refstepcounter{#1}%
4793     \let\Hy@raisedlink\ttl@b
4794   }%
4795 }
```

Package titletoc support:

```
4796 \@ifpackageloaded{titletoc}{%
4797   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
4798 }
```

32 Package varioref support

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

```
4799 \def\Hy@varioref@undefined{{??}{??}}{}}{}}
4800 \@ifpackageloaded{varioref}{%
4801   \def\vref#1#2{%
4802     \@ifundefined{r@#2}{%
4803       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
4804     }{}%
4805     \edef#1{\getpagerefnumber{#2}}%
4806   }%
4807 }
```

33 Package longtable support

Sometimes the anchor of the longtable goes to the previous page. Thus the following patch separates the anchor setting and counter incrementation by hyperref's `\refstepcounter` and the anchor setting is moved after `\vskip\LTpre`.

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

```

4808 \ifpackageloaded{longtable}{%
4809   \begingroup
4810     \def\y{\LT@array}%
4811     \ifundefined{scr@LT@array}{\def\y{\scr@LT@array}}%
4812     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
4813       \expandafter\endgroup
4814       \expandafter\def\y[#1]##2{%
4815         \H@refstepcounter{#1}%
4816         \hyper@makecurrent{table}%
4817         \let\Hy@LT@currentHlabel\@currentHlabel
4818         \let\Hy@LT@currentHref\@currentHref
4819         #2\@sharp####4%
4820       }%
4821     }%
4822   \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil

```

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

```

4823   \begingroup
4824     \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
4825     \endgroup
4826     \def\LT@start{%
4827       #1%
4828       \let\@currentHlabel\Hy@LT@currentHlabel
4829       \let\@currentHref\Hy@LT@currentHref
4830       \Hy@raisedlink{%
4831         \hyper@anchorstart{\@currentHref}\hyper@anchorend
4832       }%
4833       \ifvoid\LT@firsthead\copy
4834       #2%
4835     }%
4836   }%
4837   \expandafter\x\LT@start\@nil
4838 }{}

```

34 Equations

We want to make the whole equation a target anchor. Overload equation, temporarily reverting to original `\refstepcounter`. If, however, it is in AMS math, we do not do anything, as the tag mechanism is used there (see section 41). The exception is that we move the equation incrementation inside the math environment to avoid specials outside and a wrong vertical spacing of equation environments.

```

4839 \let\new@refstepcounter\refstepcounter
4840 \let\H@equation\equation
4841 \let\H@endequation\endequation
4842 \ifpackageloaded{amsmath}{%
4843   \long\def\Hy@temp{%
4844     \incr@eqnum
4845     \mathdisplay@push

```

```

4846 \st@rredfalse \global\@eqnswtrue
4847 \mathdisplay{equation}%
4848 }%
4849 \ifx\Hy@temp\equation
4850 \expandafter\ifx\csname if@fleqn\expandafter\endcsname
4851 \csname iftrue\endcsname
4852 \else
4853 \long\def\equation{%
4854 \mathdisplay@push
4855 \st@rredfalse \global\@eqnswtrue
4856 \mathdisplay{equation}%
4857 \incr@eqnum
4858 }%
4859 \fi
4860 \fi
4861 }{%
4862 \def\equation{%
4863 \let\refstepcounter\H@refstepcounter
4864 \H@equation
4865 \@ifundefined{theHequation}{%
4866 \make@stripped@name{\theequation}%
4867 \let\theHequation\newname
4868 }{%
4869 \hyper@makecurrent{equation}%
4870 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}}%
4871 \let\refstepcounter\new@refstepcounter
4872 }%
4873 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
4874 }

```

My goodness, why can't \LaTeX 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.

```

4875 \newif\if@eqnstar
4876 \@eqnstarfalse
4877 \let\H@eqnarray\eqnarray
4878 \let\H@endeqnarray\endeqnarray
4879 \def\eqnarray{%
4880 \let\Hy@reserved@a\relax
4881 \def\@currentHref{}%
4882 \H@eqnarray
4883 \if@eqnstar
4884 \else
4885 \ifx\\\@currentHref\\%
4886 \else
4887 \@ifundefined{theHequation}{%
4888 \make@stripped@name{\theequation}%
4889 \let\theHequation\newname
4890 }{%
4891 \hyper@makecurrent{equation}%
4892 \hyper@anchorstart{\@currentHref}{\hyper@anchorend
4893 \fi
4894 \fi
4895 }
4896 \def\endeqnarray{%

```

```

4897 \H@endeqnarray
4898 }

```

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.

```

4899 \@namedef{eqnarray*}{%
4900   \def\@eqnocr{\nonumber\@seqnocr}\@eqnstartrue\eqnarray
4901 }
4902 \@namedef{endeqnarray*}{%
4903   \nonumber\endeqnarray\@eqnstarfalse
4904 }

```

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

```

4905 \@ifundefined{subeqnarray}{}{%
4906   \let\H@subeqnarray\subeqnarray
4907   \let\H@endsubeqnarray\endsubeqnarray
4908   \def\subeqnarray{%
4909     \let\Hy@reserved@a\relax
4910     \H@subeqnarray
4911     \@ifundefined{theHequation}{%
4912       \make@stripped@name{\theequation}%
4913       \let\theHequation\newname
4914     }{}%
4915     \hyper@makecurrent{equation}%
4916     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
4917   }%
4918   \def\endsubeqnarray{%
4919     \H@endsubeqnarray
4920   }%
4921   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
4922 }

```

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

```

4923 \def\make@stripped@name#1{%
4924   \begingroup
4925     \escapechar\m@ne
4926     \global\let\newname\@empty
4927     \protected@edef\Hy@tempa{#1}%
4928     \edef\@tempb{%
4929       \noexpand\@tfor\noexpand\Hy@tempa:=%
4930       \expandafter\strip@prefix\meaning\Hy@tempa
4931     }%
4932     \@tempb\do{%
4933       \if\Hy@tempa\else
4934         \if}\Hy@tempa\else
4935           \xdef\newname{\newname\Hy@tempa}%
4936         \fi
4937       \fi
4938     }%
4939   \endgroup
4940 }

```

Support for amsmath's subequations:

```

4941 \begingroup\expandafter\expandafter\expandafter\endgroup
4942 \expandafter\ifx\csname subequations\endcsname\relax
4943 \else
4944   \let\HyOrg@subequations\subequations
4945   \def\subequations{%

```



```

4946 \stepcounter{equation}%
4947 \protected@edef\theHparentequation{%
4948 \ifundefined{theHequation}\theequation\theHequation
4949 }%
4950 \addtocounter{equation}{-1}%
4951 \HyOrg@subequations
4952 \def\theHequation{\theHparentequation\alph{equation}}%
4953 \ignorespaces
4954 }%
4955 \fi

```

35 Footnotes

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

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

```

4956 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
4957 \ifHy@hyperfootnotes
4958 \newcounter{Hfootnote}%
4959 \let\H@@footnotetext\@footnotetext
4960 \let\H@@footnotemark\@footnotemark
4961 \def\@xfootnotenext[#1]{%
4962 \begingroup
4963 \csname c@\@mpfn\endcsname #1\relax
4964 \unrestored@protected@xdef\@thefnmark{\thempfn}%
4965 \endgroup
4966 \ifx\@footnotetext\@mpfootnotetext
4967 \expandafter\H@@mpfootnotetext
4968 \else
4969 \expandafter\H@@footnotetext
4970 \fi
4971 }%
4972 \def\@xfootnotemark[#1]{%
4973 \begingroup
4974 \c@footnote #1\relax
4975 \unrestored@protected@xdef\@thefnmark{\thefnmark}%
4976 \endgroup
4977 \H@@footnotemark
4978 }%
4979 \let\H@@mpfootnotetext\@mpfootnotetext
4980 \long\def\@mpfootnotetext#1{%
4981 \H@@mpfootnotetext{%
4982 \ifHy@nesting
4983 \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
4984 \else
4985 \Hy@raisedlink{%
4986 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
4987 }#1%
4988 \fi
4989 }%
4990 }%
4991 \long\def\@footnotetext#1{%
4992 \H@@footnotetext{%
4993 \ifHy@nesting

```

```

4994     \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
4995   \else
4996     \Hy@raisedlink{%
4997       \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
4998     }%
4999     \let\@currentHlabel\Hy@footnote@currentHlabel
5000     \let\@currentHref\Hy@footnote@currentHref
5001     \let\@currentlabelname\@empty
5002     #1%
5003   \fi
5004 }%
5005 }%

```

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.

```

5006 \def\@footnotemark{%
5007   \leavevmode
5008   \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
5009   \stepcounter{Hfootnote}%
5010   \global\let\Hy@saved@currentHlabel\@currentHlabel
5011   \global\let\Hy@saved@currentHref\@currentHref
5012   \hyper@makecurrent{Hfootnote}%
5013   \global\let\Hy@footnote@currentHlabel\@currentHlabel
5014   \global\let\Hy@footnote@currentHref\@currentHref
5015   \global\let\@currentHlabel\Hy@saved@currentHlabel
5016   \global\let\@currentHref\Hy@saved@currentHref
5017   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
5018   \@makefnmark
5019   \hyper@linkend
5020   \ifhmode\spacefactor\x@sf\fi
5021   \relax
5022 }%

```

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.

```

5023 \ifpackageloaded{longtable}{%
5024   \CheckCommand*{\LT@p@ftntext}[1]{%
5025     \edef\@tempa{%
5026       \the\LT@p@ftn
5027       \noexpand\footnotetext[\the\c@footnote]%
5028     }%
5029     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
5030   }%
5031   \long\def\LT@p@ftntext#1{%
5032     \edef\@tempa{%
5033       \the\LT@p@ftn
5034       \begingroup
5035         \noexpand\c@footnote=\the\c@footnote\relax
5036         \noexpand\protected@xdef
5037           \noexpand\@thefnmark{\noexpand\thempfn}%
5038         \noexpand\protected@xdef\noexpand\@thefnmark{%
5039           \noexpand\thempfn
5040         }%
5041         \expandafter\expandafter\expandafter\noexpand

```

```

5042         \expandafter\expandafter\expandafter\Hy@LT@footnotetext
5043         \expandafter\expandafter\expandafter{%
5044             \expandafter\Hy@footnote@currentHref\expandafter
5045             }\expandafter{\Hy@footnote@currentHlabel}%
5046     }%
5047     \global\LT@p@ftn\expandafter{%
5048         \@tempa{#1}%
5049     \endgroup
5050 }%
5051 }%
5052 \long\def\Hy@LT@footnotetext#1#2#3{%
5053     \H@@footnotetext{%
5054         \ifHy@nesting
5055             \hyper@@anchor{#1}{#3}%
5056         \else
5057             \Hy@raisedlink{%
5058                 \hyper@@anchor{#1}{\relax}%
5059             }%
5060             \def\@currentHlabel{#2}%
5061             \def\@currentHref{#1}%
5062             \let\@currentlabelname\@empty
5063             #3%
5064         \fi
5065     }%
5066 }%
5067 }{}%

```

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.

```

5068 \let\HyOrg@maketitle\maketitle
5069 \def\maketitle{%
5070     \let\Hy@saved@footnotemark\@footnotemark
5071     \let\Hy@saved@footnotetext\@footnotetext
5072     \let\@footnotemark\H@@footnotemark
5073     \let\@footnotetext\H@@footnotetext
5074     \@ifnextchar[\Hy@maketitle@optarg{% ]
5075         \HyOrg@maketitle
5076         \Hy@maketitle@end
5077     }%
5078 }%
5079 \def\Hy@maketitle@optarg[#1]{%
5080     \HyOrg@maketitle[#{#1}]%
5081     \Hy@maketitle@end
5082 }%
5083 \def\Hy@maketitle@end{%
5084     \ifx\@footnotemark\H@@footnotemark
5085         \let\@footnotemark\Hy@saved@footnotemark
5086     \fi
5087     \ifx\@footnotetext\H@@footnotetext
5088         \let\@footnotetext\Hy@saved@footnotetext
5089     \fi
5090 }%

```

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

```

5091 \def\realfootnote{%
5092     \ifnextchar[\@xfootnote{%
5093         \stepcounter{\@mpfn}%

```

```

5094     \protected@xdef\@thefnmark{\thempfn}%
5095     \H@@footnotemark\H@@footnotetext
5096   }%
5097 }%

5098 \fi
5099 \Hy@DisableOption{hyperfootnotes}

5100 \</package>
5101 \<*check>
5102 \checklatex
5103 \checkcommand\def\@xfootnotenext[#1]{%
5104   \begingroup
5105     \csname c@\@mpfn\endcsname #1\relax
5106     \unrestored@protected@xdef\@thefnmark{\thempfn}%
5107   \endgroup
5108   \@footnotetext
5109 }
5110 \checkcommand\def\@xfootnotemark[#1]{%
5111   \begingroup
5112     \c@footnote #1\relax
5113     \unrestored@protected@xdef\@thefnmark{\thefnmark{\thefootnote}}%
5114   \endgroup
5115   \@footnotemark
5116 }
5117 \checkcommand\def\@footnotemark{%
5118   \leavevmode
5119   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
5120   \@makefnmark
5121   \ifhmode\spacefactor\@x@sf\fi
5122   \relax
5123 }
5124 \</check>
5125 \<*package>

```

36 Float captions

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

```

5126 \def\caption{%
5127   \ifx\@captype\@undefined
5128     \@latexerror{\noexpand\caption outside float}\@ehd
5129     \expandafter\@gobble
5130   \else
5131     \H@refstepcounter\@captype
5132     \let\Hy@tempa\@caption
5133     \@ifundefined{float@caption}{%
5134       }{%
5135         \expandafter\ifx\csname @float@c@\@captype\endcsname
5136           \float@caption
5137         \let\Hy@tempa\Hy@float@caption
5138       \fi
5139     }%
5140     \expandafter\@firstofone
5141   \fi
5142   {\@dblarg{\Hy@tempa\@captype}}%
5143 }

```

```

5144 \long\def\@caption#1[#2]#3{%
5145   \expandafter\ifx\csname if@capstart\expandafter\endcsname
5146     \csname iftrue\endcsname
5147     \global\let\@currentHref\hc@currentHref
5148   \else
5149     \hyper@makecurrent{\@capttype}%
5150   \fi
5151   \def\@currentlabelname{#2}%
5152   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
5153     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
5154   }%
5155   \begingroup
5156     \@parboxrestore
5157     \if@minipage
5158       \setminipage
5159     \fi
5160     \normalsize
5161     \expandafter\ifx\csname if@capstart\expandafter\endcsname
5162       \csname iftrue\endcsname
5163       \global\@capstartfalse
5164       \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
5165     \else
5166       \@makecaption{\csname fnum@#1\endcsname}{%
5167         \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

5168     \ifHy@nesting
5169       \hyper@@anchor{\@currentHref}{#3}%
5170     \else
5171       \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
5172     \fi
5173   }%
5174 \fi
5175 \par
5176 \endgroup
5177 }

```

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.

```

5178 \let\Hy@float@caption\@caption
5179 \@ifpackageloaded{float}{%
5180   \def\Hy@float@caption{%
5181     \ifx\Hy@float@currentHref\@undefined
5182       \hyper@makecurrent{\@capttype}%
5183       \global\let\Hy@float@currentHref\@currentHref
5184     \else
5185       \let\@currentHref\Hy@float@currentHref
5186     \fi
5187     \float@caption
5188   }%
5189   \let\HyOrg@float@makebox\float@makebox
5190   \renewcommand{\float@makebox}[1]{%
5191     \HyOrg@float@makebox{%
5192       #1\relax
5193       \ifx\Hy@float@currentHref\@undefined
5194       \else
5195         \hyper@@anchor{\Hy@float@currentHref}{\relax}%
5196       \global\let\Hy@float@currentHref\@undefined

```

```

5197      \fi
5198    }%
5199  }%
5200 }{}

5201 </package>
5202 <*check>
5203 \checklatex[1999/06/01 - 2000/06/01]
5204 \checkcommand\def\caption{%
5205   \ifx\@capytype\@undefined
5206     \latexerror{\noexpand\caption outside float}\@ehd
5207     \expandafter\@gobble
5208   \else
5209     \refstepcounter\@capytype
5210     \expandafter\@firstofone
5211   \fi
5212   {\@dblarg{\@caption\@capytype}}}%
5213 }
5214 \checkcommand\long\def\@caption#1[#2]#3{%
5215   \par
5216   \addcontentsline{\csname ext@#1\endcsname}{#1}%
5217     {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
5218   \begingroup
5219     \@parboxrestore
5220     \if@minipage
5221       \setminipage
5222     \fi
5223     \normalsize
5224     \makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
5225   \endgroup
5226 }
5227 </check>
5228 <*package>

```

37 Bibliographic references

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

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

```

5229 \def\hyper@natlinkstart#1{%
5230   \Hy@backout{#1}%
5231   \hyper@linkstart{cite}{cite.#1}%
5232   \def\hyper@nat@current{#1}%
5233 }
5234 \def\hyper@natlinkend{%
5235   \hyper@linkend
5236 }
5237 \def\hyper@natlinkbreak#1#2{%
5238   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
5239 }
5240 \def\hyper@natanchorstart#1{%

```

```

5241 \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
5242 }
5243 \def\hyper@natanchorend{\hyper@anchorend}

```

Do not play games if we have natbib support. Macro extra@binfo added for chapterbib support. Chapterbib also wants \@extra@binfo in the hyper-link, but since the link tag is not expanded immediately, we use \@extra@b@citeb, so cites in a chapter will link to the bibliography in that chapter.

```

5244 \@ifundefined{NAT@parse}{%
5245   \providecommand*\@extra@binfo{}%
5246   \providecommand*\@extra@b@citeb{}%
5247   \def\bibcite#1#2{%
5248     \@newl@bel{b}{#1\@extra@binfo}{%
5249       \hyper@link[cite]{}{cite.#1\@extra@b@citeb}{#2}%
5250     }%
5251   }%
5252   \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.”.

```

5253 \let\Hy@bibcite\bibcite
5254 \begingroup
5255   \@ifundefined{bbl@cite@choice}{}{%
5256     \g@addto@macro\bbl@cite@choice{%
5257       \let\bibcite\Hy@bibcite
5258     }%
5259   }%
5260 \endgroup

```

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

```

5261 \providecommand*\@BIBLABEL{\@biblabel}%
5262 \def\@lbibitem[#1]#2{%
5263   \@skiphyperreftrue
5264   \H@item[%
5265     \ifx\Hy@raisedlink\@empty
5266       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
5267       \@BIBLABEL{#1}%
5268       \hyper@anchorend
5269     \else
5270       \Hy@raisedlink{%
5271         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
5272       }%
5273       \@BIBLABEL{#1}%
5274     \fi
5275     \hfill
5276   ]%
5277   \@skiphyperreffalse
5278   \if@filesw
5279     \begingroup
5280       \let\protect\noexpand
5281       \immediate\write\@auxout{%
5282         \string\bibcite{#2}{#1}%
5283       }%
5284     \endgroup
5285   \fi
5286   \ignorespaces
5287 }%

```

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

```

5288 \def\@bibitem#1{%
5289   \@skiphyperreftrue\H@item\@skiphyperreffalse
5290   \Hy@raisedlink{%
5291     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
5292   }%
5293   \if@filesw
5294     \begingroup
5295       \let\protect\noexpand
5296       \immediate\write\@auxout{%
5297         \string\bibcite{#1}{\the\value{\@listctr}}}%
5298       }%
5299     \endgroup
5300   \fi
5301   \ignorespaces
5302 }%
5303 }{}

5304 </package>
5305 <*check>
5306 \checklatex
5307 \checkcommand\def\@lbibitem[#1]#2{%
5308   \item[\@biblabel{#1}\hfill]%
5309   \if@filesw
5310     {%
5311       \let\protect\noexpand
5312       \immediate\write\@auxout{%
5313         \string\bibcite{#2}{#1}%
5314       }%
5315     }%
5316   \fi
5317   \ignorespaces
5318 }
5319 \checkcommand\def\@bibitem#1{%
5320   \item
5321   \if@filesw
5322     \immediate\write\@auxout{%
5323       \string\bibcite{#1}{\the\value{\@listctr}}}%
5324     }%
5325   \fi
5326   \ignorespaces
5327 }
5328 </check>
5329 <*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.

```

5330 \@ifclassloaded{revtex}{%
5331   \Hy@Info{*** compatibility with revtex **** }%
5332   \def\revtex@checking#1#2{%
5333     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
5334     \expandafter\def\csname b@#1\endcsname{#2}%
5335     \@SetMaxRnhefLabel{#1}%
5336     \expandafter\let\csname b@#1\endcsname\T@temp
5337   }%

```


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

```

5338 \ifundefined{CITE}{\def\CITE{\@cite}}{}%
5339 \providecommand*{\@extra@b@citeb}{}%
5340 \def\CITEX[#1]#2{%
5341   \let\@citea\@empty
5342   \leavevmode
5343   \unskip
5344   $~{%
5345     \scriptstyle
5346     \CITE{%
5347       \@for\@citeb:=#2\do{%
5348         \@citea
5349         \def\@citea{,\penalty\@m\ }%
5350         \edef\@citeb{\expandafter\@firstofone\@citeb}%
5351         \if@filesw
5352           \immediate\write\@auxout{\string\citation{\@citeb}}%
5353         \fi
5354         \ifundefined{b@\@citeb\extra@b@citeb}{%
5355           \mbox{\reset@font\bfseries ?}%
5356           \G@refundefinedtrue
5357           \latex@warning{%
5358             Citation '\@citeb' on page \thepage \space undefined%
5359           }%
5360         }{%
5361           {\csname b@\@citeb\extra@b@citeb\endcsname}%
5362         }%
5363       }%
5364     }{#1}%
5365   }$%
5366 }%

```

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.

```

5367 \def\citex[#1]#2{%
5368   \let\@citea\@empty
5369   \@cite{%
5370     \@for\@citeb:=#2\do{%
5371       \@citea
5372       \def\@citea{,\penalty\@m\ }%
5373       \edef\@citeb{\expandafter\@firstofone\@citeb}%
5374       \if@filesw
5375         \immediate\write\@auxout{\string\citation{\@citeb}}%
5376       \fi
5377       \ifundefined{b@\@citeb\extra@b@citeb}{%
5378         \mbox{\reset@font\bfseries ?}%
5379         \G@refundefinedtrue
5380         \latex@warning{%
5381           Citation '\@citeb' on page \thepage \space undefined%
5382         }%
5383       }{%
5384         \hbox{\csname b@\@citeb\extra@b@citeb\endcsname}%
5385       }%
5386     }%
5387   }{#1}%
5388 }%
5389 }{}

```

37.1 Package harvard

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

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

```
5390 \ifpackageloaded{harvard}{%
5391   \AtBeginDocument{%
5392     \Hy@Info{*** compatibility with harvard *** }%
5393     \Hy@raiselinksfalse
5394     \def\harvardcite#1#2#3#4{%
5395       \global\@namedef{HAR@fn@#1}{\hyper@@link[cite]{}{cite.#1}{#2}}%
5396       \global\@namedef{HAR@an@#1}{\hyper@@link[cite]{}{cite.#1}{#3}}%
5397       \global\@namedef{HAR@yr@#1}{\hyper@@link[cite]{}{cite.#1}{#4}}%
5398       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
5399     }%
5400     \def\HAR@citetoaux#1{%
5401       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
5402       \ifHy@backref
5403         \ifx\@empty\@currentlabel
5404         \else
5405           \@bsphack
5406           \if@filesw
5407             \protected@write\@auxout{}{%
5408               \string\writefile{brf}{%
5409                 \string\backcite{#1}{%
5410                   {\thepage}{\@currentlabel}{\@currentHref}%
5411                 }%
5412               }%
5413             }%
5414             \fi
5415             \@esphack
5416           \fi
5417         \fi
5418       }%
5419       \def\harvarditem{%
5420         \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
5421       }%
5422       \def\@harvarditem[#1]#2#3#4#5\par{%
5423         \item[]%
5424         \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
5425         \if@filesw
5426           \begingroup
5427             \def\protect##1{\string ##1\space}%
5428             \ifthenelse{\equal{#1}{\null}}{%
5429               {\def\next{{#4}{#2}{#3}}}%
5430             }{\def\next{{#4}{#2}{#1}{#3}}}%
5431             \immediate\write\@auxout{\string\harvardcite\codeof\next}%
5432           \endgroup
5433         \fi
5434         \protect\hspace*{-\labelwidth}%
5435         \protect\hspace*{-\labelsep}%
5436         \ignorespaces
5437         #5%
5438         \ifHy@backref
```

```

5439      \newblock
5440      \backref{\csname br@#4\endcsname}%
5441      \fi
5442      \par
5443      }%

```

`\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`:

```

5444      \long\def\HAR@checkcitations#1#2#3#4{%
5445      \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#2}}%
5446      \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
5447      \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#3}}%
5448      \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
5449      \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#4}}%
5450      \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
5451      \else
5452      \@tempswatrue
5453      \fi
5454      \else
5455      \@tempswatrue
5456      \fi
5457      \else
5458      \@tempswatrue
5459      \fi
5460      }%
5461      }%

5462 }{}

```

37.2 Package chicago

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

```

5463 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

5464 \def\citeN{%
5465   \def\@citesep{--1000}%
5466   \def\@cite##1##2{##1}%
5467   \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
5468   \@citedata@opt
5469 }%

```

`\shortciteN`

```

5470 \def\shortciteN{%
5471   \def\@citesep{--1000}%
5472   \def\@cite##1##2{##1}%
5473   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
5474   \@citedata@opt
5475 }%

```

`\@citedata@opt`

```

5476 \def\@citedata@opt{%
5477   \let\@cite@opt\@empty
5478   \@ifnextchar [{%
5479     \@tempswatrue

```

```

5480      \@citedatax@opt
5481    }{%
5482      \@tempwafalse
5483      \@citedatax[]%
5484    }%
5485  }%

\@citedatax@opt

5486  \def\@citedatax@opt[#1]{%
5487    \def\@cite@opt{, #1}%
5488    \@citedatax[#1]%
5489  }%

5490 }{}

```

38 Page numbers

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

This where we supply a destination for each page.

```

5491 \def\Hy@EveryPageAnchor{%
5492   \Hy@DistillerDestFix
5493   \ifHy@pageanchor
5494     \ifHy@hypertextnames
5495     \ifHy@plainpages
5496       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
5497     \else
5498       \begingroup
5499         \let\@number\@firstofone
5500         \Hy@unicodedefalse
5501         \pdfstringdef\@theH@page{\thepage}%
5502       \endgroup
5503       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@theH@page}}%
5504     \fi
5505   \else
5506     \Hy@GlobalStepCount\Hy@pagecounter
5507     \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}%
5508   \fi
5509   \vbox to 0pt{%
5510     \kern\voffset
5511     \kern\topmargin
5512     \kern-1bp\relax
5513     \hbox to 0pt{%
5514       \kern\hoffset
5515       \kern\ifodd\value{page}%
5516         \oddsidemargin
5517       \else
5518         \evensidemargin
5519       \fi
5520       \kern-1bp\relax
5521       \Hy@TempPageAnchor
5522       \hss
5523     }%

```

```

5524      \vss
5525    }%
5526  \fi
5527 }
5528 \g@addto@macro\Hy@EveryPageBoxHook{%
5529   \Hy@EveryPageAnchor
5530 }

```

39 Table of contents

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

```

5531 \begingroup\expandafter\expandafter\expandafter\endgroup
5532 \expandafter\ifx\csname chapter\endcsname\relax
5533   \def\toclevel@part{0}%
5534 \else
5535   \def\toclevel@part{-1}%
5536 \fi
5537 \def\toclevel@chapter{0}
5538 \def\toclevel@section{1}
5539 \def\toclevel@subsection{2}
5540 \def\toclevel@subsubsection{3}
5541 \def\toclevel@paragraph{4}
5542 \def\toclevel@subparagraph{5}
5543 \def\toclevel@figure{0}
5544 \def\toclevel@table{0}
5545 \@ifpackageloaded{listings}{%
5546   \providecommand*\theHlstlisting{\thelstlisting}%
5547   \providecommand*\toclevel@lstlisting{0}%
5548 }{}
5549 \@ifpackageloaded{listing}{%
5550   \providecommand*\theHlisting{\thelisting}%
5551   \providecommand*\toclevel@listing{0}%
5552 }{}
5553 \def\addcontentsline#1#2#3{% toc extension, type, tag
5554   \begingroup
5555     \let\label@gobble
5556     \let\textlatin@firstofone
5557     \ifx\@currentHref\@empty
5558       \Hy@Warning{%
5559         No destination for bookmark of \string\addcontentsline,%
5560         \MessageBreak destination is added%
5561       }%
5562     \phantomsection
5563   \fi
5564   \expandafter\ifx\csname toclevel@#2\endcsname\relax
5565     \begingroup
5566       \def\Hy@tempa{#1}%
5567       \ifx\Hy@tempa\Hy@bookmarkstype
5568         \Hy@WarningNoLine{%
5569           bookmark level for unknown #2 defaults to 0%
5570         }%
5571       \else
5572         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
5573       \fi

```

```

5574 \endgroup
5575 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
5576 \fi
5577 \edef\Hy@toplevel{\csname toplevel@#2\endcsname}%
5578 \Hy@writebookmark{\csname the#2\endcsname}%
5579   {#3}%
5580   {\@currentHref}%
5581   {\Hy@toplevel}%
5582   {#1}%
5583 \ifHy@verbose
5584   \def\Hy@tempa{#3}%
5585   \@onelevel@sanitize\Hy@tempa
5586   \typeout{pdfTeX: bookmark at \the\inputlineno: %
5587     {\csname the#2\endcsname}%
5588     {\Hy@tempa}%
5589     {\@currentHref}%
5590     {\Hy@toplevel}%
5591     {#1}%
5592   }%
5593 \fi
5594 \addtocontents{#1}{%
5595   \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
5596 }%
5597 \endgroup
5598 }
5599 \def\contentsline#1#2#3#4{%
5600   \ifx\\#4\\%
5601     \csname l@#1\endcsname{#2}{#3}%
5602   \else
5603     \ifHy@linktopage
5604       \csname l@#1\endcsname{#2}{%
5605         \hyper@linkstart{link}{#4}{#3}\hyper@linkend
5606       }%
5607     \else
5608       \csname l@#1\endcsname{%
5609         \hyper@linkstart{link}{#4}{#2}\hyper@linkend
5610       }{#3}%
5611     \fi
5612   \fi
5613 }
5614 \end{package}
5615 \check
5616 \checklatex
5617 \checkcommand\def\addcontentsline#1#2#3{%
5618   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
5619 }
5620 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
5621 \end{check}
5622 \end{package}

```

40 New counters

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

```

5623 \let\H@definecounter\@definecounter
5624 \def\@definecounter#1{%

```

```

5625 \H@definecounter{#1}%
5626 \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
5627 }

```

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.

```

5628 \let\H@newctr\@newctr
5629 \def\@newctr#1[#2]{%
5630   \H@newctr#1[#2]}%
5631 \expandafter\def\csname theH#1\endcsname{%
5632   \csname the\@ifundefined{theH#2}{H}#2\endcsname.\arabic{#1}%
5633 }%
5634 }

```

41 AMS \LaTeX compatibility

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

```

5635 \let\Hmake@df@tag@@\make@df@tag@@
5636 \def\make@df@tag@@#1{%
5637   \Hmake@df@tag@@{#1}%
5638   \Hy@GlobalStepCount\Hy@linkcounter
5639   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5640   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5641 }
5642 \let\Hmake@df@tag@@@\make@df@tag@@@
5643 \def\make@df@tag@@@#1{%
5644   \Hmake@df@tag@@@{#1}%
5645   \Hy@GlobalStepCount\Hy@linkcounter
5646   \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5647   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5648 }

```

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

```

5649 \ifpackagewith{hyperref}{pdf $\text{\TeX}$ }{%
5650   \let\H@seteqlabel\@seteqlabel
5651   \def\@seteqlabel#1{%
5652     \H@seteqlabel{#1}%
5653     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
5654     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
5655   }%
5656 }{}

```

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}}}%

```

41.1 \@addtoreset and \numberwithin patches

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

```

5657 \let\HyOrg@addtoreset\@addtoreset
5658 \def\@addtoreset#1#2{%
5659   \HyOrg@addtoreset{#1}{#2}%
5660   \expandafter\xdef\csname theH#1\endcsname{%
5661     \expandafter\noexpand
5662       \csname the\@ifundefined{theH#2}{H#2\endcsname
5663       .\noexpand\the\noexpand\value{#1}%
5664   }%
5665 }
```

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

```

5666 \</package>
5667 \<*check>
5668 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
5669 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
5670   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
5671     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
5672       \@addtoreset{#2}{#3}%
5673       \@xp\xdef\csname the#2\endcsname{%
5674         \@xp@nx\csname the#3\endcsname .\@nx#1{#2}%
5675       }%
5676     }%
5677   }%
5678 }%
5679 \</check>
5680 \<*package>
5681 \@ifpackageloaded{amsmath}{%
5682   \@ifpackagelater{amsmath}[1999/12/14]{%
5683     \renewcommand*{\numberwithin}[3][\arabic]{%
5684       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
5685         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
5686           \HyOrg@addtoreset{#2}{#3}%
5687           \@xp\xdef\csname the#2\endcsname{%
5688             \@xp@nx\csname the#3\endcsname .\@nx#1{#2}%
5689           }%
5690           \@xp\xdef\csname theH#2\endcsname{%
5691             \@xp@nx
5692             \csname the\@ifundefined{theH#3}{H#3\endcsname
5693             .\@nx#1{#2}%
5694           }%
5695         }%
5696       }%
5697     }%
5698   }{%
5699     \Hy@WarningNoLine{%
5700       \string\numberwithin\space of package 'amsmath' %
5701       only fixed\MessageBreak
5702       for version 2000/06/06 v2.12 or newer%
5703     }%
5704   }%
5705 }
```


42 Included figures

Simply intercept the low level graphics package macro.

```
5706 \ifHy@figures
5707   \let\Hy@Gin@setfile\Gin@setfile
5708   \def\Gin@setfile#1#2#3{%
5709     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
5710   }%
5711 \fi
5712 \Hy@DisableOption{hyperfigures}
```

43 hyperindex entries

Internal command names are prefixed with \HyInd@.

Hyper-indexing works crudely, by forcing code onto the end of the index entry with the | feature; this puts a hyperlink around the printed page numbers. It will not proceed if the author has already used the | specifier for something like 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.

```
5713 \ifHy@hyperindex
5714   \def\HyInd@ParenLeft{({}%
5715   \def\HyInd@ParenRight{)}}%
5716   \Hy@nextfalse
5717   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
5718   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
5719   \begingroup
5720     \lccode'\|=\expandafter'\HyInd@EncapChar\relax
5721   \lowercase{\endgroup
5722     \ifHy@next
5723       \let\HyInd@org@wrindex\@wrindex
5724       \def\@wrindex#1#2{\HyInd@@wrindex{#1}{#2}||\}%
5725       \def\HyInd@@wrindex#1#2|#3|#4\{\%
5726         \ifx\|#3\%
5727           \HyInd@org@wrindex{#1}{#2|hyperpage}%
5728         \else
5729           \def\Hy@temp@A{#3}%
5730           \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
5731             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
5732             \relax
5733           \HyInd@org@wrindex{#1}{#2|#3}%
5734         \else
5735           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
5736         \fi
5737       \fi
5738     }%
5739   \else
5740     \def\@wrindex#1{\@@wrindex#1||\}%
5741     \def\@@wrindex#1|#2|#3\{\%
5742       \if@filesw
5743         \ifx\|#2\%
5744           \protected@write\@indexfile{}\%
5745             \string\indexentry{#1|hyperpage}{\thepage}%

```

```

5746         }%
5747     \else
5748         \def\Hy@temp@A{#2}%
5749         \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
5750             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
5751             \relax
5752             \protected@write\@indexfile{}\{%
5753                 \string\indexentry{#1|#2}{\thepage}%
5754             }%
5755     \else
5756         \protected@write\@indexfile{}\{%
5757             \string\indexentry{#1|#2hyperpage}{\thepage}%
5758         }%
5759     \fi
5760 \fi
5761 \fi
5762 \endgroup
5763 \@esphack
5764 }%
5765 \fi
5766 }%
5767 \fi
5768 \Hy@DisableOption{hyperindex}
5769 \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.

```

5770 \def\hyperpage#1{\@hyperpage#1---\}
5771 \def\@hyperpage#1--#2--#3\{\%
5772     \ifx\#2\%
5773         \@commahyperpage{#1}%
5774     \else
5775         \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
5776     \fi
5777 }
5778 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
5779 \def\@commahyperpage#1, #2,#3\{\%
5780     \ifx\#2\%
5781         \HyInd@pagelink{#1}%
5782     \else
5783         \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
5784     \fi
5785 }

```

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

```

5786 \def\HyInd@pagelink#1{%
5787     \begingroup
5788     \toks@={}%
5789     \HyInd@removespaces#1 \@nil
5790 \endgroup
5791 }
5792 \def\HyInd@removespaces#1 #2\@nil{%
5793     \toks@=\expandafter{\the\toks@#1}%
5794     \ifx\#2\%
5795         \edef\x{\the\toks@}%
5796         \ifx\x@empty
5797             \else

```

```

5798     \hyperlink{page.\the\toks@}{\the\toks@}%
5799     \fi
5800 \else
5801     \Hy@ReturnAfterFi{%
5802     \HyInd@removespaces#2\@nil
5803     }%
5804 \fi
5805 }

```

44 Compatibility with foiltex

```

5806 \@ifclassloaded{foils}{%
5807   \providecommand*\ext@table{lot}%
5808   \providecommand*\ext@figure{lof}%
5809 }{}

```

45 Compatibility with seminar slide package

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

```

5810 \@ifclassloaded{seminar}{%
5811   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}}%
5812 }{%
5813   \Hy@seminarslidesfalse
5814 }
5815 \@ifpackageloaded{slidesec}{%
5816   \newcommand\theHslidesection {\arabic{slidesection}}%
5817   \newcommand\theHslidesubsection{%
5818     \theHslidesection.\arabic{slidesubsection}%
5819   }%
5820   \def\slide@heading[#1]#2{%
5821     \H@refstepcounter{slidesection}%
5822     \@addtoreset{slidesubsection}{slidesection}%
5823     \addtocontents{los}{%
5824       \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
5825       {\@SCTR}{\slideheading.\theslidesection}%
5826     }%
5827     \def\Hy@tempa{#2}%
5828     \ifx\Hy@tempa\@empty
5829       \else
5830         {%
5831           \edef\@currentlabel{%
5832             \csname p@slidesection\endcsname\theslidesection
5833           }%
5834           \makeslideheading{#2}%
5835         }%
5836       \fi
5837       \gdef\theslideheading{#1}%
5838       \gdef\theslidesubheading{}%
5839       \ifHy@bookmarksnumbered
5840         \def\Hy@slidetitle{\theslidesection\space #1}%
5841       \else
5842         \def\Hy@slidetitle{#1}%
5843       \fi
5844       \ifHy@hypertextnames
5845         \ifHy@naturalnames

```

```

5846         \hyper@@anchor{slideheading.\theslidesection}{\relax}%
5847         \Hy@writebookmark
5848             {\theslidesection}%
5849             {\Hy@slidetitle}%
5850             {slideheading.\theslidesection}%
5851             {1}%
5852             {toc}%
5853     \else
5854         \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
5855         \Hy@writebookmark
5856             {\theslidesection}%
5857             {\Hy@slidetitle}%
5858             {slideheading.\theHslidesection}%
5859             {1}%
5860             {toc}%
5861     \fi
5862 \else
5863     \Hy@GlobalStepCount\Hy@linkcounter
5864     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
5865     \Hy@writebookmark
5866         {\theslidesection}%
5867         {\Hy@slidetitle}%
5868         {slideheading.\the\Hy@linkcounter}%
5869         {1}%
5870         {toc}%
5871 \fi
5872 }%
5873 \def\slide@subheading[#1]#2{%
5874     \H@refstepcounter{slidesubsection}%
5875     \addtocontents{los}{%
5876         \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
5877         {\@SCTR}{slideheading.\theslidesubsection}%
5878     }%
5879     \def\Hy@tempa{#2}%
5880     \ifx\Hy@tempa\@empty
5881     \else
5882         {%
5883             \edef\@currentlabel{%
5884                 \csname p@slidesubsection\endcsname\theslidesubsection
5885             }%
5886             \makeslidesubheading{#2}%
5887         }%
5888     \fi
5889     \gdef\theslidesubheading{#1}%
5890     \ifHy@bookmarksnumbered
5891         \def\Hy@slidetitle{\theslidesubsection\space #1}%
5892     \else
5893         \def\Hy@slidetitle{#1}%
5894     \fi
5895     \ifHy@hypertextnames
5896         \ifHy@naturalnames
5897             \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
5898             \Hy@writebookmark
5899                 {\theslidesubsection}%
5900                 {\Hy@slidetitle}%
5901                 {slideheading.\theslidesubsection}%
5902                 {2}%

```

```

5903         {toc}%
5904     \else
5905         \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
5906         \Hy@writebookmark
5907             {\theslidesubsection}%
5908             {\Hy@slidetitle}%
5909             {slideheading.\theHslidesubsection}%
5910             {2}%
5911         {toc}%
5912     \fi
5913 \else
5914     \Hy@GlobalStepCount\Hy@linkcounter
5915     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
5916     \Hy@writebookmark
5917         {\theslidesubsection}%
5918         {\Hy@slidetitle}%
5919         {slideheading.\the\Hy@linkcounter}%
5920         {1}%
5921     {toc}%
5922 \fi
5923 }%
5924 \providecommand*\listslidenamelist{List of Slides}%
5925 \def\listofslides{%
5926     \section*{%
5927         \listslidenamelist
5928         \@mkboth{%
5929             \expandafter\MakeUppercase\listslidenamelist
5930         }{%
5931             \expandafter\MakeUppercase\listslidenamelist
5932         }%
5933     }%
5934     \def\l@slide##1##2##3##4{%
5935         \slide@undottedcline{%
5936             \slidenumberline{##3}{\hyperlink{##4}{##2}}%
5937         }%
5938     }%
5939     \let\l@subslide\l@slide
5940     \@startlos
5941 }%
5942 \def\slide@contents{%
5943     \def\l@slide##1##2##3##4{%
5944         \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
5945     }%
5946     \let\l@subslide\@gobblefour
5947     \@startlos
5948 }%
5949 \def\Slide@contents{%
5950     \def\l@slide##1##2##3##4{%
5951         \ifcase\lslide@flag
5952             \message{##1 ** \the\c@slidesection}%
5953             \ifnum##1>\c@slidesection
5954                 \def\lslide@flag{1}%
5955             {%
5956                 \large
5957                 \slide@ccline{%
5958                     \slidenumberline{\$ \Rightarrow \bullet \$}%
5959                     {\hyperlink{##4}{##2}}%

```

```

5960         }{##3}%
5961     }%
5962     \else
5963     {%
5964         \large
5965         \slide@cline{%
5966             \slidenumberline{$\surd\;\bullet$}%
5967             {\hyperlink{##4}{##2}}%
5968         }{##3}%
5969     }%
5970     \fi
5971 \or
5972 \def\lslide@flag{2}%
5973 {%
5974     \large
5975     \slide@cline{%
5976         \slidenumberline{$\bullet$}%
5977         {\hyperlink{##4}{##2}}%
5978     }{##3}%
5979 }%
5980 \or
5981 {%
5982     \large
5983     \slide@cline{%
5984         \slidenumberline{$\bullet$}%
5985         {\hyperlink{##4}{##2}}%
5986     }{##3}%
5987 }%
5988 \fi
5989 }%
5990 \def\l@subslide##1##2##3##4{%
5991     \ifnum\lslide@flag=1 %
5992         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
5993     \fi
5994 }%
5995 \def\lslide@flag{0}%
5996 \@startlos
5997 }%
5998 }{}

```

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.)

```

5999 \ifHy@texht
6000   \expandafter\endinput
6001 \fi
6002 \let\real@setref\@setref
6003 \def\@setref#1#2#3{% csname, extract group, refname
6004   \ifx#1\relax
6005     \protect\G@refundefinedtrue
6006     \nfss@text{\reset@font\bfseries ??}%
6007     \@latex@warning{%
6008       Reference ‘#3’ on page \thepage \space undefined%
6009     }%
6010   \else
6011     \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
6012   \fi
6013 }

```

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

```

6014 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
6015   \begingroup
6016     \toks0={\hyper@@link{#5}{#4}}%
6017     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
6018     \edef\x{\endgroup
6019       \the\toks0 \the\toks1 }%
6020   }%
6021   \x
6022 }
6023 \def\@pagesetref#1#2#3{% csname, extract macro, ref
6024   \ifx#1\relax
6025     \protect\G@refundefinedtrue
6026     \nfss@text{\reset@font\bfseries ??}%
6027     \@latex@warning{%
6028       Reference ‘#3’ on page \thepage \space undefined%
6029     }%
6030   \else
6031     \protect\hyper@@link
6032     {\expandafter\@fifthoffive#1}%
6033     {page.\expandafter\@secondoffive#1}%
6034     {\expandafter\@secondoffive#1}%
6035   \fi
6036 }
6037 </package>
6038 <*check>
6039 \checklatex
6040 \checkcommand\def\@setref#1#2#3{%
6041   \ifx#1\relax
6042     \protect\G@refundefinedtrue
6043     \nfss@text{\reset@font\bfseries ??}%
6044     \@latex@warning{%
6045       Reference ‘#3’ on page \thepage\space undefined%
6046     }%
6047   \else
6048     \expandafter#2#1\relax
6049   \fi
6050 }
6051 </check>
6052 <*package>

```

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

```

6053 \def\HyRef@StarSetRef#1{%
6054   \begingroup
6055     \Hy@safe@activetrue
6056     \edef\x{#1}%
6057     \@onelevel@sanitize\x
6058     \edef\x{\endgroup
6059       \noexpand\HyRef@@StarSetRef
6060       \expandafter\noexpand\csname r@\x\endcsname{\x}%
6061     }%
6062     \x
6063 }
6064 \def\HyRef@@StarSetRef#1#2#3{%
6065   \ifx#1\@undefined

```

```

6066 \let#1\relax
6067 \fi
6068 \real@setref#1#3{#2}%
6069 }
6070 \def\@refstar#1{%
6071 \HyRef@StarSetRef{#1}\@firstoffive
6072 }
6073 \def\@pagerefstar#1{%
6074 \HyRef@StarSetRef{#1}\@secondoffive
6075 }
6076 \AtBeginDocument{%
6077 \@ifpackageloaded{varioref}{%
6078 \def\@Refstar#1{%
6079 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
6080 }%
6081 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
6082 \MakeUppercase#1%
6083 }%
6084 \DeclareRobustCommand*\Ref}{%
6085 \@ifstar\@Refstar\HyRef@Ref
6086 }%
6087 \def\HyRef@Ref#1{%
6088 \hyperref[#{1}]{\Ref*{#1}}%
6089 }%
6090 \def\Vr@f#1{%
6091 \leavevmode\unskip\vref@space
6092 \hyperref[#{1}]{%
6093 \Ref*{#1}%
6094 \let\vref@space\nobreakspace
6095 \vpageref[\unskip]{#1}%
6096 }%
6097 }%
6098 \def\vr@f#1{%
6099 \leavevmode\unskip\vref@space
6100 \begingroup
6101 \let\T@pageref\@pagerefstar
6102 \hyperref[#{1}]{%
6103 \ref*{#1}%
6104 \vpageref[\unskip]{#1}%
6105 }%
6106 \endgroup
6107 }%
6108 }-%
6109 }
6110 \DeclareRobustCommand*\autopageref}{%
6111 \@ifstar{%
6112 \HyRef@autopagerefname\pageref*%
6113 }\HyRef@autopageref
6114 }
6115 \def\HyRef@autopageref#1{%
6116 \hyperref[#{1}]{\HyRef@autopagerefname\pageref*{#1}}%
6117 }
6118 \def\HyRef@autopagerefname{%
6119 \@ifundefined{pageautorefname}{%
6120 \@ifundefined{pagename}{%
6121 \Hy@Warning{No autoref name for 'page'}%
6122 }-%

```



```

6123     \pagename\nobreakspace
6124   }%
6125 }{%
6126   \pageautorefname\nobreakspace
6127 }%
6128 }
6129 \DeclareRobustCommand*{\autoref}{%
6130   \@ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}%
6131 }
6132 \def\HyRef@autoref#1#2{%
6133   \begingroup
6134     \Hy@safe@activetrue
6135     \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
6136   \endgroup
6137 }
6138 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
6139   \HyRef@ShowKeysRef{#2}%
6140   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
6141     \edef\HyRef@thisref{%
6142       \expandafter\@fourthoffive#1\@empty\@empty\@empty
6143     }%
6144     \expandafter\HyRef@testreftype\HyRef@thisref.\.%
6145     \Hy@safe@activesfalse
6146     #3{%
6147       \expandafter\@fifthoffive#1\@empty\@empty\@empty
6148     }{%
6149       \expandafter\@fourthoffive#1\@empty\@empty\@empty
6150     }{%
6151       \HyRef@currentHtag
6152       \expandafter\@firstoffive#1\@empty\@empty\@empty
6153       \null
6154     }%
6155   \else
6156     \protect\G@refundefinedtrue
6157     \nfss@text{\reset@font\bfseries ??}%
6158     \@latex@warning{%
6159       Reference ‘#2’ on page \thepage\space undefined%
6160     }%
6161   \fi
6162 }
6163 \def\HyRef@testreftype#1.#2\{%
6164   \@ifundefined{#1autorefname}{%
6165     \@ifundefined{#1name}{%
6166       \HyRef@StripStar#1\*\@nil{#1}%
6167       \@ifundefined{\HyRef@name autorefname}{%
6168         \@ifundefined{\HyRef@name name}{%
6169           \def\HyRef@currentHtag{%
6170             \Hy@Warning{No autoref name for ‘#1’}%
6171           }{%
6172             \edef\HyRef@currentHtag{%
6173               \expandafter\noexpand\csname\HyRef@name name\endcsname
6174               \noexpand~%
6175             }%
6176           }%
6177         }{%
6178           \edef\HyRef@currentHtag{%
6179             \expandafter\noexpand\csname\HyRef@name autorefname\endcsname

```

```

6180         \noexpand~%
6181     }%
6182 }%
6183 }{%
6184     \edef\HyRef@currentHtag{%
6185         \expandafter\noexpand\csname#1name\endcsname
6186         \noexpand~%
6187     }%
6188 }%
6189 }{%
6190     \edef\HyRef@currentHtag{%
6191         \expandafter\noexpand\csname#1autorefname\endcsname
6192         \noexpand~%
6193     }%
6194 }%
6195 }
6196 \def\HyRef@StripStar#1*\#2\@nil#3{%
6197     \def\HyRef@name{#2}%
6198     \ifx\HyRef@name\HyRef@CaseStar
6199         \def\HyRef@name{#1}%
6200     \else
6201         \def\HyRef@name{#3}%
6202     \fi
6203 }
6204 \def\HyRef@CaseStar{*\\}
6205 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

6206 \let\HyRef@ShowKeysRef\@gobble
6207 \def\HyRef@ShowKeysInit{%
6208     \begingroup\expandafter\expandafter\expandafter\endgroup
6209     \expandafter\ifx\csname SK@@label\endcsname\relax
6210     \else
6211         \ifx\SK@ref\@empty
6212         \else
6213             \def\HyRef@ShowKeysRef{%
6214                 \SK@\SK@@ref
6215             }%
6216         \fi
6217     \fi
6218 }
6219 \@ifpackageloaded{showkeys}{%
6220     \HyRef@ShowKeysInit
6221 }{%
6222     \AtBeginDocument{%
6223         \@ifpackageloaded{showkeys}{%
6224             \HyRef@ShowKeysInit
6225         }{%
6226         }%
6227 }

```

Defaults for the names that \autoref uses.

```

6228 \providecommand*{\AMSautorefname}{\equationautorefname}
6229 \providecommand*{\Hfootnoteautorefname}{\footnoteautorefname}
6230 \providecommand*{\Itemautorefname}{\itemautorefname}
6231 \providecommand*{\itemautorefname}{item}

```

```

6232 \providecommand*\equationautorefname{Equation}
6233 \providecommand*\footnoteautorefname{footnote}
6234 \providecommand*\itemautorefname{item}
6235 \providecommand*\figureautorefname{Figure}
6236 \providecommand*\tableautorefname{Table}
6237 \providecommand*\partautorefname{Part}
6238 \providecommand*\appendixautorefname{Appendix}
6239 \providecommand*\chapterautorefname{chapter}
6240 \providecommand*\sectionautorefname{section}
6241 \providecommand*\subsectionautorefname{subsection}
6242 \providecommand*\subsubsectionautorefname{subsubsection}
6243 \providecommand*\paragraphautorefname{paragraph}
6244 \providecommand*\subparagraphautorefname{subparagraph}
6245 \providecommand*\FancyVerbLineautorefname{line}
6246 \providecommand*\theoremautorefname{Theorem}
6247 \providecommand*\pageautorefname{page}
6248 \end{package}

```

46 Configuration files

46.1 PS/PDF strings

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

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

```

6249 <*pdfTeX | dvipdfm | vTeX | pdfmarkbase | dviwindo>
6250 \RequirePackage{pdfTeXcmds}[2007/11/11]
6251 \begingroup\expandafter\expandafter\expandafter\endgroup
6252 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
6253   \begingroup
6254     \catcode'\| = 0 %
6255     \makeother\| %
6256     |@firstofone{|endgroup
6257     |def|Hy@pstringdef#1#2{%
6258       |edef#1{#2}%
6259       |@onelevel@sanitize#1%
6260       |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
6261       |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
6262       |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
6263     }%
6264     |def|Hy@ExchangeBackslash#1#2|@nil{%
6265       #1%
6266       |ifx|#2\| %
6267       |else
6268         \| %
6269       |Hy@ReturnAfterFi{%
6270         |Hy@ExchangeBackslash#2|@nil
6271       }%
6272     |fi
6273   }%
6274 }%
6275 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%

```

```

6276      #1%
6277      \ifx\\#2\\%
6278      \else
6279          \@backslashchar(%
6280          \Hy@ReturnAfterFi{%
6281          \Hy@ExchangeLeftParenthesis#2\@nil
6282      }%
6283      \fi
6284  }%
6285  \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
6286      #1%
6287      \ifx\\#2\\%
6288      \else
6289          \@backslashchar)%
6290          \Hy@ReturnAfterFi{%
6291          \Hy@ExchangeRightParenthesis#2\@nil
6292      }%
6293      \fi
6294  }%
6295  \else
6296      \def\Hy@pstringdef#1#2{%
6297          \edef#1{\pdf@escapestring{#2}}%
6298      }%
6299      \fi
6300  </pdfTeX | dvipdfm | vtex | pdfmarkbase | dviwindo>

```

46.2 pdfTeX

```
6301 <*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.

Set PDF version if requested by option pdfversion.

- pdfT_EX 1.10a, 2003-01-16: \pdfoptionpdfminorversion
- pdfT_EX 1.30, 2005-08-081: \pdfminorversion

```

6302 \let\Hy@pdfminorversion\relax
6303 \begingroup\expandafter\expandafter\expandafter\endgroup
6304 \expandafter\ifx\csname pdfminorversion\endcsname\relax
6305     \begingroup\expandafter\expandafter\expandafter\endgroup
6306     \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
6307         \else
6308             \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
6309         \fi
6310     \else
6311         \def\Hy@pdfminorversion{\pdfminorversion}%
6312     \fi
6313 \ifundefined{Hy@pdfminorversion}{%
6314     \PackageInfo{hyperref}{%
6315         PDF version is not set, because pdfTeX is too old (<1.10a)%
6316     }%
6317 }{%
6318     \ifHy@setpdfversion
6319         \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
6320     \else
6321         \Hy@pdfminorversion=\Hy@pdfversion\relax

```

```

6322 \fi
6323 \PackageInfo{hyperref}{%
6324 \expandafter\string\Hy@pdfminorversion
6325 :=\number\Hy@pdfversion\space
6326 }%
6327 \fi
6328 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
6329 \Hy@DisableOption{pdfversion}%
6330 }

```

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

```

6331 \def\setpdflinkmargin#1{\pdflinkmargin#1}
6332 \ifx\pdfstartlink\@undefined% less than version 14
6333 \let\pdfstartlink\pdfannotlink
6334 \let\pdflinkmargin\@tempdima
6335 \let\pdfxform\pdfform
6336 \let\pdflastxform\pdflastform
6337 \let\pdfrefxform\pdfrefform
6338 \else
6339 \pdflinkmargin1pt %
6340 \fi

```

First set up the default linking

```

6341 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

6342 \def\new@pdflink#1{%
6343 \ifHy@verbose
6344 \typeout{pdftex: define anchor at line \the\inputlineno: #1}%
6345 \fi
6346 \Hy@SaveLastskip
6347 \Hy@pstringdef\Hy@pstringDest{#1}%
6348 \Hy@DestName\Hy@pstringDest\@pdfview
6349 \Hy@RestoreLastskip
6350 }
6351 \let\pdf@endanchor\@empty

```

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

```

6352 \def\Hy@DestName#1#2{%
6353 \pdfdest name{#1}#2\relax
6354 }

```

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.

```

6355 \providecommand*\@pdfborder{0 0 1}
6356 \providecommand*\@pdfborderstyle{}
6357 \def\Hy@undefinedname{UNDEFINED}
6358 \def\find@pdflink#1#2{%
6359 \leavevmode
6360 \protected@edef\Hy@testname{#2}%
6361 \ifx\Hy@testname\@empty
6362 \let\Hy@testname\Hy@undefinedname
6363 \else
6364 \Hy@pstringdef\Hy@testname\Hy@testname
6365 \fi

```

```

6366 \Hy@StartlinkName{%
6367 \Hy@setpdfborder
6368 \ifx\@pdfhighlight\@empty
6369 \else
6370 /H\@pdfhighlight
6371 \fi
6372 \ifx\CurrentBorderColor\relax
6373 \else
6374 /C[\CurrentBorderColor]%
6375 \fi
6376 }\Hy@testname
6377 \expandafter\Hy@colorlink\csname @#1color\endcsname
6378 }
6379 \def\Hy@StartlinkName#1#2{%
6380 \pdfstartlink attr{#1}goto name{#2}\relax
6381 }
6382 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
6383 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
6384 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
6385 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
6386 \def\hyper@linkstart#1#2{%
6387 \@ifundefined{@#1bordercolor}{%
6388 \let\CurrentBorderColor\relax
6389 }{%
6390 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6391 }%
6392 \find@pdflink{#1}{#2}%
6393 }
6394 \def\hyper@linkend{\close@pdflink}
6395 \def\hyper@link#1#2#3{%
6396 \@ifundefined{@#1bordercolor}{%
6397 \let\CurrentBorderColor\relax
6398 }{%
6399 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6400 }%
6401 \find@pdflink{#1}{#2}#3\close@pdflink
6402 }
6403 \let\CurrentBorderColor\@linkbordercolor
6404 \def\hyper@linkurl#1#2{%
6405 \begingroup
6406 \Hy@pstringdef\Hy@pstringURI{#2}%
6407 \hyper@chars
6408 \leavevmode
6409 \pdfstartlink
6410 attr{%
6411 \Hy@setpdfborder
6412 \ifx\@pdfhighlight\@empty
6413 \else
6414 /H\@pdfhighlight
6415 \fi
6416 \ifx\@urlbordercolor\relax
6417 \else
6418 /C[\@urlbordercolor]%
6419 \fi
6420 }%
6421 user{%
6422 /Subtype/Link%

```

```

6423      /A<<%
6424      /Type/Action%
6425      /S/URI%
6426      /URI(\Hy@pstringURI)%
6427      >>%
6428      }%
6429      \relax
6430      \Hy@colorlink\@urlcolor#1%
6431      \close@pdflink
6432      \endgroup
6433 }
6434 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
6435      \begingroup
6436      \Hy@pstringdef\Hy@pstringF{#2}%
6437      \Hy@pstringdef\Hy@pstringD{#3}%
6438      \leavevmode
6439      \pdfstartlink
6440      attr{%
6441      \Hy@setpdfborder
6442      \ifx\@pdfhighlight\@empty
6443      \else
6444      /H\@pdfhighlight
6445      \fi
6446      \ifx\@filebordercolor\relax
6447      \else
6448      /C[\@filebordercolor]%
6449      \fi
6450      }%
6451      user {%
6452      /Subtype/Link%
6453      /A<<%
6454      /F(\Hy@pstringF)%
6455      /S/GoToR%
6456      \Hy@SetNewWindow

```

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

```

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

```

```

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

```

```

6457      \ifx\#3\%
6458      /D[0 \@pdfstartview]%
6459      \else
6460      /D(\Hy@pstringD)%
6461      \fi
6462      >>%
6463      }%
6464      \relax
6465      \Hy@colorlink\@filecolor#1%
6466      \close@pdflink
6467      \endgroup
6468 }

```

```

6469 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
6470   \begingroup
6471     \Hy@pstringdef\Hy@pstringF{#1}%
6472     \Hy@pstringdef\Hy@pstringP{#3}%
6473     \leavevmode
6474     \pdfstartlink
6475     attr{%
6476       \Hy@setpdfborder
6477       \ifx\@pdfhighlight\@empty
6478       \else
6479         /H\@pdfhighlight
6480       \fi
6481       \ifx\@runbordercolor\relax
6482       \else
6483         /C[\@runbordercolor]%
6484       \fi
6485     }%
6486     user {%
6487       /Subtype/Link%
6488       /A<<%
6489         /F(\Hy@pstringF)%
6490         /S/Launch%
6491         \Hy@SetNewWindow
6492         \ifx\#3\%
6493         \else
6494           /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
6495         \fi
6496       >>%
6497     }%
6498     \relax
6499     \Hy@colorlink\@runcolor#2%
6500     \close@pdflink
6501   \endgroup
6502 }

```

\@pdfproducer

```

6503 \ifx\@pdfproducer\relax
6504   \begingroup\expandafter\expandafter\expandafter\endgroup
6505   \expandafter\ifx\cename luatexversion\endcename\relax
6506     \def\@pdfproducer{pdfTeX}%
6507     \ifx\@eTeXversion\@undefined
6508     \else
6509       \ifx\@eTeXversion\relax
6510       \else
6511         \ifnum\@eTeXversion>0 %
6512           \def\@pdfproducer{pdfTeX}%
6513         \fi
6514       \fi
6515     \fi
6516     \ifx\pdftexversion\@undefined
6517     \else
6518       \ifnum\pdftexversion<100 %
6519         \edef\@pdfproducer{%
6520           \@pdfproducer
6521           \the\pdftexversion.\pdftexrevision
6522         }%
6523       \else

```



```

6524     \ifnum\pdfTeXversion<130 %
6525     \edef\@pdfproducer{%
6526     \pdfproducer-%
6527     \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
6528     \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
6529     \pdfTeXrevision
6530     }%
6531     \else
6532     \ifnum\pdfTeXversion<140 %
6533     \else
6534     \def\@pdfproducer{pdfTeX}%
6535     \fi
6536     \edef\@pdfproducer{%
6537     \pdfproducer-%
6538     \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
6539     \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
6540     \pdfTeXrevision
6541     }%
6542     \fi
6543     \fi
6544     \fi
6545     \else
6546     \begingroup
6547     \count@=\luaTeXversion
6548     \divide\count@ by 100 %
6549     \edef\x{\the\count@}%
6550     \count@=-\x\relax
6551     \multiply\count@ by 100 %
6552     \advance\count@ by \luaTeXversion
6553     \edef\x{\endgroup
6554     \def\noexpand\@pdfproducer{%
6555     LuaTeX-\x.\the\count@.\luaTeXrevision
6556     }%
6557     }%
6558     \x
6559     \fi
6560 \fi

```

\PDF@SetupDox

```

6561 \def\PDF@SetupDoc{%
6562 \ifx\@pdfpagescrop\@empty
6563 \else
6564 \edef\process@me{%
6565 \pdfpagesattr={%
6566 /CropBox[\@pdfpagescrop]%
6567 \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
6568 \else
6569 ^^J\the\pdfpagesattr
6570 \fi
6571 }%
6572 }%
6573 \process@me
6574 \fi
6575 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
6576 \pdfcatalog{%
6577 /PageMode/\@pdfpagemode
6578 \ifx\@baseurl\@empty

```

```

6579     \else
6580         /URI<</Base(\Hy@pstringB)>>%
6581     \fi
6582 }%
6583 \ifx\@pdfstartpage\@empty
6584 \else
6585     \ifx\@pdfstartview\@empty
6586     \else
6587         openaction goto page\@pdfstartpage{\@pdfstartview}%
6588     \fi
6589 \fi
6590 \edef\Hy@temp{%
6591     \ifHy@toolbar\else /HideToolbar true\fi
6592     \ifHy@menubar\else /HideMenubar true\fi
6593     \ifHy>windowui\else /HideWindowUI true\fi
6594     \ifHy@fitwindow /FitWindow true\fi
6595     \ifHy@centerwindow /CenterWindow true\fi
6596     \ifHy@displaydoctitle /DisplayDocTitle true\fi
6597     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
6598     \Hy@UseNameKey{Direction}\@pdfdirection
6599     \Hy@UseNameKey{ViewArea}\@pdfviewarea
6600     \Hy@UseNameKey{ViewClip}\@pdfviewclip
6601     \Hy@UseNameKey{PrintArea}\@pdfprintarea
6602     \Hy@UseNameKey{PrintClip}\@pdfprintclip
6603     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
6604     \Hy@UseNameKey{Duplex}\@pdfduplex
6605     \ifx\@pdfpicktraybypdfsize\@empty
6606     \else
6607         /PickTrayByPDFSize \@pdfpicktraybypdfsize
6608     \fi
6609     \ifx\@pdfprintpagerange\@empty
6610     \else
6611         /PrintPageRange[\@pdfprintpagerange]%
6612     \fi
6613     \ifx\@pdfnumcopies\@empty
6614     \else
6615         /NumCopies \@pdfnumcopies
6616     \fi
6617 }%
6618 \pdfcatalog{%
6619     \ifx\Hy@temp\@empty
6620     \else
6621         /ViewerPreferences<<\Hy@temp>>%
6622     \fi
6623     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
6624     \ifx\@pdflang\@empty
6625     \else
6626         /Lang(\@pdflang)%
6627     \fi
6628 }%
6629 }

```

\PDF@FinishDoc

```

6630 \def\PDF@FinishDoc{%
6631     \Hy@UseMaketitleInfos
6632     \pdfinfo{%
6633         /Author(\@pdfauthor)%

```

```

6634 /Title(\@pdftitle)%
6635 /Subject(\@pdfsubject)%
6636 /Creator(\@pdfcreator)%
6637 \ifx\@pdfcreationdate\@empty
6638 \else
6639 /CreationDate(\@pdfcreationdate)%
6640 \fi
6641 \ifx\@pdfmoddate\@empty
6642 \else
6643 /ModDate(\@pdfmoddate)%
6644 \fi
6645 \ifx\@pdfproducer\relax
6646 \else
6647 /Producer(\@pdfproducer)%
6648 \fi
6649 /Keywords(\@pdfkeywords)%
6650 }%
6651 \Hy@DisableOption{pdfauthor}%
6652 \Hy@DisableOption{pdftitle}%
6653 \Hy@DisableOption{pdfsubject}%
6654 \Hy@DisableOption{pdfcreator}%
6655 \Hy@DisableOption{pdfcreationdate}%
6656 \Hy@DisableOption{pdfmoddate}%
6657 \Hy@DisableOption{pdfproducer}%
6658 \Hy@DisableOption{pdfkeywords}%
6659 }

```

`\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`.

```

6660 \def\hyper@pagetransition{%
6661 \ifx\@pdfpagetransition\relax
6662 \else
6663 \expandafter\Hy@RemoveTransPageAttr
6664 \the\pdfpageattr^^J/Trans{}}>>\END
6665 \ifx\@pdfpagetransition\@empty
6666 \else
6667 \edef\@processme{%
6668 \global\pdfpageattr{%
6669 \the\pdfpageattr
6670 ^^J/Trans << /S /\@pdfpagetransition\space >>%
6671 }%
6672 }%
6673 \@processme
6674 \fi
6675 \fi
6676 }

```

`\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.

```

6677 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
6678 \ifx\#2\%
6679 \global\pdfpageattr{#1}%
6680 \else
6681 \Hy@RemoveTransPageAttr#1#4\END

```

```

6682 \fi
6683 }

```

`\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`.

```

6684 \def\hyper@pageduration{%
6685   \ifx\@pdfpageduration\relax
6686   \else
6687     \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
6688     \ifx\@pdfpageduration\@empty
6689     \else
6690       \edef\@processme{%
6691         \global\pdfpageattr{%
6692           \the\pdfpageattr
6693           ^^J/Dur \@pdfpageduration\space
6694         }%
6695       }%
6696       \@processme
6697     \fi
6698   \fi
6699 }

```

`\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.

```

6700 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
6701   \ifx\#2\%
6702     \global\pdfpageattr{#1}%
6703   \else
6704     \Hy@RemoveDurPageAttr#1#4\END
6705   \fi
6706 }

```

`\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).

```

6707 \def\hyper@pagehidden{%
6708   \ifHy@useHidKey
6709     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
6710     \ifHy@pdfpagehidden
6711     \edef\@processme{%
6712       \global\pdfpageattr{%
6713         \the\pdfpageattr
6714         ^^J/Hid true % SPACE
6715       }%
6716     }%
6717     \@processme
6718   \fi
6719 \fi
6720 }

```

`\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.

```

6721 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
6722   \ifx\#2\%
6723     \global\pdfpageattr{#1}%
6724   \else
6725     \Hy@RemoveHidPageAttr#1#4\END
6726   \fi
6727 }

```

```

6728 \g@addto@macro\Hy@EveryPageHook{%
6729   \hyper@pagetransition
6730   \hyper@pageduration
6731   \hyper@pagehidden
6732 }

```

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.

```

6733 \pdfoutput=1
6734 \pdfcompresslevel=9
6735 \AtBeginDocument{%
6736   \ifHy@setpagesize
6737     \expandafter\@firstofone
6738   \else
6739     \expandafter\@gobble
6740   \fi
6741 }{%
6742   \@ifclassloaded{seminar}{%
6743     \setlength{\pdfhorigin}{1truein}%
6744     \setlength{\pdfvorigin}{1truein}%
6745     \ifportrait
6746       \ifdim\paperwidth=\z@
6747       \else
6748         \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
6749       \fi
6750       \ifdim\paperheight=\z@
6751       \else
6752         \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
6753       \fi
6754     \else
6755       \ifdim\paperheight=\z@
6756       \else
6757         \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
6758       \fi
6759       \ifdim\paperwidth=\z@
6760       \else
6761         \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
6762       \fi
6763     \fi
6764   }{%
6765     \@ifundefined{stockwidth}{%
6766       \ifdim\paperwidth=\z@
6767       \else
6768         \setlength{\pdfpagewidth}{\paperwidth}%
6769       \fi
6770       \ifdim\paperheight=\z@
6771       \else
6772         \setlength{\pdfpageheight}{\paperheight}%
6773       \fi
6774     }{%

```

```

6775         \ifdim\stockwidth=\z@
6776         \else
6777             \setlength{\pdfpagewidth}{\stockwidth}%
6778         \fi
6779         \ifdim\stockheight=\z@
6780         \else
6781             \setlength{\pdfpageheight}{\stockheight}%
6782         \fi
6783     }%
6784 }%
6785 }%
6786 \Hy@DisableOption{setpagesize}%
6787 }
6788 \def\Acrobatmenu#1#2{%
6789     \leavevmode
6790     \pdfstartlink
6791     attr{%
6792         \Hy@setpdfborder
6793         \ifx\@pdfhighlight\@empty
6794         \else
6795             /H\@pdfhighlight
6796         \fi
6797         \ifx\@menubordercolor\relax
6798         \else
6799             /C[\@menubordercolor]%
6800         \fi
6801     }%
6802     user{%
6803         /Subtype/Link%
6804         /A<<%
6805             /S/Named/N/#1%
6806         >>%
6807     }%
6808     \relax
6809     \Hy@colorlink\@menucolor#2\close@pdflink
6810 }
6811 </pdfTeX>
6812 <*hypertex>

```

46.3 hypertex

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

href: `html:`

name: `html:`

end: `html:`

image: `html:`

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

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

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

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

```

6813 \def\PDF@FinishDoc{}
6814 \def\PDF@SetupDoc{%
6815   \ifx\@baseurl\@empty
6816   \else
6817     \special{html:<base href="\@baseurl">}%
6818   \fi
6819 }
6820 \def\hyper@anchor#1{%
6821   \Hy@SaveLastskip
6822   \begingroup
6823     \let\protect=\string
6824     \hyper@chars
6825     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
6826   \endgroup
6827   \Hy@activeanchortrue
6828   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6829   \special{html:</a>}%
6830   \Hy@activeanchorfalse
6831   \Hy@RestoreLastskip
6832 }
6833 \def\hyper@anchorstart#1{%
6834   \Hy@SaveLastskip
6835   \begingroup
6836     \hyper@chars
6837     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
6838   \endgroup
6839   \Hy@activeanchortrue
6840 }
6841 \def\hyper@anchorend{%
6842   \special{html:</a>}%
6843   \Hy@activeanchorfalse
6844   \Hy@RestoreLastskip
6845 }
6846 \def\@urltype{url}
6847 \def\hyper@linkstart#1#2{%
6848   \expandafter\Hy@colorlink\csname @#1color\endcsname
6849   \def\Hy@tempa{#1}%
6850   \ifx\Hy@tempa\@urltype
6851     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
6852   \else
6853     \begingroup
6854     \hyper@chars

```

```

6855      \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
6856      \endgroup
6857      \fi
6858 }
6859 \def\hyper@linkend{%
6860   \special{html:</a>}%
6861   \Hy@endcolorlink
6862 }
6863 \def\hyper@linkfile#1#2#3{%
6864   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
6865 }
6866 \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.

```

6867   \leavevmode
6868   \ifHy@raiselinks
6869     \setbox\@tempboxa=\color@hbox #1\color@endbox
6870     \@linkdim\dp\@tempboxa
6871     \lower\@linkdim\hbox{%
6872       \hyper@chars
6873       \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
6874     }%
6875     \Hy@colorlink\@urlcolor#1%
6876     \@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).

```

6877     \advance\@linkdim by -6.5\p@
6878     \raise\@linkdim\hbox{\special{html:</a>}}%
6879     \Hy@endcolorlink
6880   \else
6881     \begingroup
6882     \hyper@chars
6883     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
6884     \Hy@colorlink\@urlcolor#1%
6885     \special{html:</a>}}%
6886     \Hy@endcolorlink
6887   \endgroup
6888   \fi
6889 }
6890 \def\hyper@link#1#2#3{%
6891   \hyper@linkurl{#3}{\##2}%
6892 }
6893 \def\hyper@image#1#2{%
6894   \begingroup
6895   \hyper@chars
6896   \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
6897   \endgroup
6898 }
6899 </hypertex>
6900 <*dviwindo>

```


46.4 dviwindo

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

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

```
6901 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
6902 \def\hyper@anchor#1{%
6903   \Hy@SaveLastskip
6904   \begingroup
6905     \let\protect=\string
6906     \special{mark: #1}%
6907   \endgroup
6908   \Hy@activeanchortrue
6909   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
6910   \Hy@activeanchorfalse
6911   \Hy@RestoreLastskip
6912 }
6913 \def\hyper@anchorstart#1{%
6914   \Hy@SaveLastskip
6915   \special{mark: #1}%
6916   \Hy@activeanchortrue
6917 }
6918 \def\hyper@anchorend{%
6919   \Hy@activeanchorfalse
6920   \Hy@RestoreLastskip
6921 }
6922 \def\hyper@linkstart#1#2{%
6923   \expandafter\Hy@colorlink\csname @#1color\endcsname
6924   \special{button: %
6925     10000000 %
6926     \number\baselineskip\space
6927     #2%
6928   }%
6929 }
6930 \def\hyper@linkend{%
6931   \Hy@endcolorlink
6932 }
6933 \def\hyper@link#1#2#3{%
6934   \setbox\@tempboxa=\color@hbox #3\color@endbox
6935   \leavevmode
6936   \ifHy@raiselinks
6937     \@linkdim\dp\@tempboxa
6938     \lower\@linkdim\hbox{%
6939       \special{button: %
6940         \number\wd\@tempboxa\space
6941         \number\ht\@tempboxa\space
6942         #2%
6943       }%
6944       \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
6945       \Hy@endcolorlink
```

```

6946 }%
6947 \@linkdim\ht\@tempboxa
6948 \advance\@linkdim by -6.5\p@
6949 \raise\@linkdim\hbox{}%
6950 \else
6951 \special{button: %
6952 \number\wd\@tempboxa\space
6953 \number\ht\@tempboxa\space
6954 #2%
6955 }%
6956 \exandafter\Hy@colorlink\csname @#1color\endcsname#3%
6957 \Hy@endcolorlink
6958 \fi
6959 }
6960 \def\hyper@linkurl#1#2{%
6961 \begingroup
6962 \hyper@chars
6963 \leavevmode
6964 \setbox\@tempboxa=\color@hbox #1\color@endbox
6965 \ifHy@raiselinks
6966 \@linkdim\dp\@tempboxa
6967 \lower\@linkdim\hbox{%
6968 \special{button: %
6969 \number\wd\@tempboxa\space
6970 \number\ht\@tempboxa\space
6971 launch: \wwwbrowser\space
6972 #2%
6973 }%
6974 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6975 }%
6976 \@linkdim\ht\@tempboxa
6977 \advance\@linkdim by -6.5\p@
6978 \raise\@linkdim\hbox{}%
6979 \else
6980 \special{button: %
6981 \number\wd\@tempboxa\space
6982 \number\ht\@tempboxa\space
6983 launch: \wwwbrowser\space
6984 #2%
6985 }%
6986 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
6987 \fi
6988 \endgroup
6989 }
6990 \def\hyper@linkfile#1#2#3{%
6991 \begingroup
6992 \hyper@chars
6993 \leavevmode
6994 \setbox\@tempboxa=\color@hbox #1\color@endbox
6995 \ifHy@raiselinks
6996 \@linkdim\dp\@tempboxa
6997 \lower\@linkdim\hbox{%
6998 \special{button: %
6999 \number\wd\@tempboxa\space
7000 \number\ht\@tempboxa\space
7001 #3,%
7002 file: #2%

```

```

7003     }%
7004     \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7005 }%
7006 \@linkdim\ht\@tempboxa
7007 \advance\@linkdim by -6.5\p@
7008 \raise\@linkdim\hbox{}%
7009 \else
7010 \special{button: %
7011 \number\wd\@tempboxa\space
7012 \number\ht\@tempboxa\space
7013 #3,%
7014 file: #2%
7015 }%
7016 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7017 \fi
7018 \endgroup
7019 }
7020 \ifx\@pdfproducer\relax
7021 \def\@pdfproducer{dviwindo + Distiller}%
7022 \fi
7023 \def\PDF@FinishDoc{%
7024 \Hy@UseMaketitleInfos
7025 \special{PDF: Keywords \@pdfkeywords}%
7026 \special{PDF: Title \@pdftitle}%
7027 \special{PDF: Creator \@pdfcreator}%
7028 \ifx\@pdfcreationdate\@empty
7029 \else
7030 \special{PDF: CreationDate \@pdfcreationdate}%
7031 \fi
7032 \ifx\@pdfmoddate\@empty
7033 \else
7034 \special{PDF: ModDate \@pdfmoddate}%
7035 \fi
7036 \special{PDF: Author \@pdfauthor}%
7037 \ifx\@pdfproducer\relax
7038 \else
7039 \special{PDF: Producer \@pdfproducer}%
7040 \fi
7041 \special{PDF: Subject \@pdfsubject}%
7042 \Hy@DisableOption{pdfauthor}%
7043 \Hy@DisableOption{pdftitle}%
7044 \Hy@DisableOption{pdfsubject}%
7045 \Hy@DisableOption{pdfcreator}%
7046 \Hy@DisableOption{pdfcreationdate}%
7047 \Hy@DisableOption{pdfmoddate}%
7048 \Hy@DisableOption{pdfproducer}%
7049 \Hy@DisableOption{pdfkeywords}%
7050 }
7051 \def\PDF@SetupDoc{%
7052 \ifx\@baseurl\@empty
7053 \else
7054 \special{PDF: Base \@baseurl}%
7055 \fi
7056 \ifx\@pdfpagescrop\@empty\else
7057 \special{PDF: BBox \@pdfpagescrop}%
7058 \fi
7059 \def\Hy@temp{}%

```

```

7060 \ifx\@pdfstartpage\@empty
7061 \else
7062 \ifx\@pdfstartview\@empty
7063 \else
7064 \edef\Hy@temp{%
7065     ,Page=\@pdfstartpage
7066     ,View=\@pdfstartview
7067 }%
7068 \fi
7069 \fi
7070 \edef\Hy@temp{%
7071     \noexpand\pdfmark{%
7072         pdfmark=/DOCVIEW,%
7073         PageMode=/\@pdfpagemode
7074     }\Hy@temp
7075 }%
7076 }%
7077 \Hy@temp
7078 \ifx\@pdfpagescrop\@empty
7079 \else
7080 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7081 \fi
7082 \edef\Hy@temp{%
7083     \ifHy@toolbar\else /HideToolbar true\fi
7084     \ifHy@menubar\else /HideMenubar true\fi
7085     \ifHy>windowui\else /HideWindowUI true\fi
7086     \ifHy@fitwindow /FitWindow true\fi
7087     \ifHy@centerwindow /CenterWindow true\fi
7088     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7089     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7090     \Hy@UseNameKey{Direction}\@pdfdirection
7091     \Hy@UseNameKey{ViewArea}\@pdfviewarea
7092     \Hy@UseNameKey{ViewClip}\@pdfviewclip
7093     \Hy@UseNameKey{PrintArea}\@pdfprintarea
7094     \Hy@UseNameKey{PrintClip}\@pdfprintclip
7095     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7096     \Hy@UseNameKey{Duplex}\@pdfduplex
7097     \ifx\@pdfpicktraybypdfsize\@empty
7098     \else
7099         /PickTrayByPDFSize \@pdfpicktraybypdfsize
7100     \fi
7101     \ifx\@pdfprintpagerange\@empty
7102     \else
7103         /PrintPageRange[\@pdfprintpagerange]%
7104     \fi
7105     \ifx\@pdfnumcopies\@empty
7106     \else
7107         /NumCopies \@pdfnumcopies
7108     \fi
7109 }%
7110 \pdfmark{pdfmark=/PUT,%
7111     Raw={%
7112         \string{Catalog\string}<<%
7113         \ifx\Hy@temp\@empty
7114         \else
7115             /ViewerPreferences<<\Hy@temp>>%
7116         \fi

```

```

7117      \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7118      \ifx\@pdflang\@empty
7119      \else
7120      /Lang(\@pdflang)%
7121      \fi
7122      >>%
7123  }%
7124 }%
7125 }
7126 </dviwindo>
7127 <*dviptfm>

```

46.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

7128 \newsavebox{\pdfm@box}
7129 \def\@pdfm@mark#1{\special{pdf:#1}}
7130 \def\@pdfm@dest#1{%
7131   \Hy@SaveLastskip
7132   \beginingroup
7133   \Hy@pstringdef\Hy@pstringDest{#1}%
7134   \def\x{XYZ}%
7135   \ifx\x\@pdfview
7136     \def\x{XYZ @xpos @ypos null}%
7137   \else
7138     \def\x{FitH}%
7139     \ifx\x\@pdfview
7140       \def\x{FitH @ypos}%
7141     \else
7142       \def\x{FitBH}%
7143       \ifx\x\@pdfview
7144         \def\x{FitBH @ypos}%
7145       \else
7146         \def\x{FitV}%
7147         \ifx\x\@pdfview
7148           \def\x{FitV @xpos}%
7149         \else
7150           \def\x{FitBV}%
7151           \ifx\x\@pdfview
7152             \def\x{FitBV @xpos}%
7153           \else
7154             \def\x{Fit}%
7155             \ifx\x\@pdfview
7156               \let\x\@pdfview
7157             \else
7158               \def\x{FitB}%
7159               \ifx\x\@pdfview
7160                 \let\x\@pdfview
7161               \else
7162                 \def\x{FitR}%
7163                 \ifx\x\@pdfview
7164                   \Hy@Warning{'pdfview=FitR' is not supported}%
7165                   \def\x{XYZ @xpos @ypos null}%
7166                 \else
7167                   \onelevel@sanitize\@pdfview
7168                   \Hy@Warning{Unknown value '\@pdfview' for pdfview}%
7169                   \def\x{XYZ @xpos @ypos null}%

```

```

7170             \fi
7171         \fi
7172     \fi
7173 \fi
7174 \fi
7175 \fi
7176 \fi
7177 \fi
7178 \pdfmark{dest (\Hy@pstringDest) [@thispage /\x]]}%
7179 \endgroup
7180 \Hy@RestoreLastskip
7181 }
7182 \providecommand*\pdfview{XYZ}
7183 \providecommand*\pdfborder{0 0 1}
7184 \providecommand*\pdfborderstyle{}
7185 \def\hyper@anchor#1{%
7186     \pdfmark{dest{#1}}%
7187 }
7188 \def\hyper@anchorstart#1{%
7189     \Hy@activeanchortrue
7190     \pdfmark{dest{#1}}%
7191 }
7192 \def\hyper@anchorend{%
7193     \Hy@activeanchorfalse
7194 }
7195 \def\Hy@undefinedname{UNDEFINED}
7196 \def\hyper@linkstart#1#2{%
7197     \protected@edef\Hy@testname{#2}%
7198     \ifx\Hy@testname\empty
7199         \let\Hy@testname\Hy@undefinedname
7200     \else
7201         \Hy@pstringdef\Hy@testname\Hy@testname
7202     \fi
7203     \pdfmark{%
7204         bann<<%
7205             /Type/Annot%
7206             /Subtype/Link%
7207             \Hy@setpdfborder
7208             \expandafter\ifx\csname @#1bordercolor\endcsname\relax
7209             \else
7210                 /C[\csname @#1bordercolor\endcsname]%
7211             \fi
7212             /A<<%
7213                 /S/GoTo%
7214                 /D(\Hy@testname)%
7215             >>%
7216         >>%
7217     }%
7218     \expandafter\Hy@colorlink\csname @#1color\endcsname
7219 }
7220 \def\hyper@linkend{%
7221     \Hy@endcolorlink
7222     \pdfmark{eann}%
7223 }
7224 \def\hyper@link#1#2#3{%
7225     \hyper@linkstart{#1}{#2}#3\hyper@linkend
7226 }

```

```

7227 \def\hyper@linkfile#1#2#3{%
7228   \Hy@pstringdef\Hy@pstringF{#2}%
7229   \Hy@pstringdef\Hy@pstringD{#3}%
7230   \leavevmode
7231   \@pdfm@mark{%
7232     bann<<%
7233     /Type/Annot%
7234     /Subtype/Link%
7235     \Hy@setpdfborder
7236     \ifx\@filebordercolor\relax
7237     \else
7238       /C[\@filebordercolor]%
7239     \fi
7240     /A<<%
7241     /S/GoToR%
7242     /F(\Hy@pstringF)%
7243     /D\ifx\@#3\@0 \@pdfstartview\else(\Hy@pstringD)\fi
7244     \Hy@SetNewWindow
7245     >>%
7246     >>%
7247   }%
7248   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7249   \@pdfm@mark{eann}%
7250 }
7251 \def\hyper@launch run:#1\@#2#3{% filename, anchor text linkname
7252   \Hy@pstringdef\Hy@pstringF{#1}%
7253   \Hy@pstringdef\Hy@pstringP{#3}%
7254   \leavevmode
7255   \@pdfm@mark{%
7256     bann<<%
7257     /Type/Annot%
7258     /Subtype/Link%
7259     \Hy@setpdfborder
7260     \ifx\@runbordercolor\relax
7261     \else
7262       /C[\@runbordercolor]%
7263     \fi
7264     /A<<%
7265     /S/Launch%
7266     /F(\Hy@pstringF)%
7267     \Hy@SetNewWindow
7268     \ifx\@#3\@%
7269     \else
7270       /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
7271     \fi
7272     >>%
7273     >>%
7274   }%
7275   \Hy@colorlink\@runcolor#2\Hy@endcolorlink
7276   \@pdfm@mark{eann}%
7277 }
7278 \def\hyper@linkurl#1#2{%
7279   \Hy@pstringdef\Hy@pstringURI{#2}%
7280   \leavevmode
7281   \@pdfm@mark{%
7282     bann<<%
7283     /Type/Annot%

```

```

7284     /Subtype/Link%
7285     \Hy@setpdfborder
7286     \ifx\@urlbordercolor\relax
7287     \else
7288         /C[\@urlbordercolor]%
7289     \fi
7290     /A<<%
7291     /S/URI%
7292     /URI(\Hy@pstringURI)%
7293     >>%
7294     >>%
7295 }%
7296 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7297 \@pdfm@mark{eann}%
7298 }
7299 \def\Acrobatmenu#1#2{%
7300     \leavevmode
7301     \@pdfm@mark{%
7302         bann<<%
7303         /Type/Annot%
7304         /Subtype/Link%
7305         /A<<%
7306         /S/Named%
7307         /N/#1%
7308         >>%
7309         \Hy@setpdfborder
7310         \ifx\@menubordercolor\relax
7311         \relax
7312         /C[\@menubordercolor]%
7313     \fi
7314     >>%
7315 }%
7316 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
7317 \@pdfm@mark{eann}%
7318 }
7319 \ifx\@pdfproducer\relax
7320 \def\@pdfproducer{dvipdfm}%

```

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

```

7321 \begingroup\expandafter\expandafter\expandafter\endgroup
7322 \expandafter\ifx\csname XeTeXversion\endcsname\relax
7323 \else
7324     \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
7325 \fi
7326 \fi
7327 \def\PDF@FinishDoc{%
7328     \Hy@UseMaketitleInfos
7329     \@pdfm@mark{%
7330         docinfo<<%
7331         /Title(\@pdftitle)%
7332         /Subject(\@pdfsubject)%
7333         /Creator(\@pdfcreator)%
7334         \ifx\@pdfcreationdate\empty
7335         \else
7336             /CreationDate(\@pdfcreationdate)%
7337         \fi
7338         \ifx\@pdfmoddate\empty
7339         \else

```



```

7340         /ModDate(\@pdfmoddate)%
7341     \fi
7342     /Author(\@pdfauthor)%
7343     \ifx\@pdfproducer\relax
7344     \else
7345         /Producer(\@pdfproducer)%
7346     \fi
7347     /Keywords(\@pdfkeywords)%
7348     >>%
7349 }%
7350 \Hy@DisableOption{pdfauthor}%
7351 \Hy@DisableOption{pdftitle}%
7352 \Hy@DisableOption{pdfsubject}%
7353 \Hy@DisableOption{pdfcreator}%
7354 \Hy@DisableOption{pdfcreationdate}%
7355 \Hy@DisableOption{pdfmoddate}%
7356 \Hy@DisableOption{pdfproducer}%
7357 \Hy@DisableOption{pdfkeywords}%
7358 }

7359 \def\PDF@SetupDoc{%
7360     \edef\Hy@temp{%
7361         \ifHy@toolbar\else /HideToolbar true\fi
7362         \ifHy@menubar\else /HideMenubar true\fi
7363         \ifHy@windowui\else /HideWindowUI true\fi
7364         \ifHy@fitwindow /FitWindow true\fi
7365         \ifHy@centerwindow /CenterWindow true\fi
7366         \ifHy@displaydoctitle /DisplayDocTitle true\fi
7367         \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7368         \Hy@UseNameKey{Direction}\@pdfdirection
7369         \Hy@UseNameKey{ViewArea}\@pdfviewarea
7370         \Hy@UseNameKey{ViewClip}\@pdfviewclip
7371         \Hy@UseNameKey{PrintArea}\@pdfprintarea
7372         \Hy@UseNameKey{PrintClip}\@pdfprintclip
7373         \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7374         \Hy@UseNameKey{Duplex}\@pdfduplex
7375         \ifx\@pdfpicktraybypdfsize\@empty
7376         \else
7377             /PickTrayByPDFSize \@pdfpicktraybypdfsize
7378         \fi
7379         \ifx\@pdfprintpagerange\@empty
7380         \else
7381             /PrintPageRange[\@pdfprintpagerange]%
7382         \fi
7383         \ifx\@pdfnumcopies\@empty
7384         \else
7385             /NumCopies \@pdfnumcopies
7386         \fi
7387     }%
7388     \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7389     \@pdfm@mark{%
7390         docview<<%
7391         \ifx\@pdfstartpage\@empty
7392         \else
7393             \ifx\@pdfstartview\@empty
7394             \else
7395                 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
7396             \fi

```

```

7397 \fi
7398 \ifx\@baseurl\@empty
7399 \else
7400 /URI<</Base(\Hy@pstringB)>>%
7401 \fi
7402 /PageMode/\@pdfpagemode
7403 \ifx\Hy@temp\@empty
7404 \else
7405 /ViewerPreferences<<\Hy@temp>>%
7406 \fi
7407 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7408 \ifx\@pdflang\@empty
7409 \else
7410 /Lang(\@pdflang)%
7411 \fi
7412 >>%
7413 }%
7414 \ifx\@pdfpagescrop\@empty
7415 \else
7416 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
7417 \fi
7418 }
7419 </dvipdfm>

```

46.6 VTeX typesetting system

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

```

7420 <*vtexhtml>
7421 \RequirePackage{vtexhtml}
7422 \newif\if@Localurl
7423 \def\PDF@FinishDoc{}
7424 \def\PDF@SetupDoc{%
7425 \ifx\@baseurl\@empty
7426 \else
7427 \special{!direct <base href="\@baseurl">}%
7428 \fi
7429 }
7430 \def\@urltype{url}
7431 \def\hyper@link#1#2#3{%
7432 \leavevmode
7433 \special{!direct <a href=\hyper@quote\hyper@hash#2\hyper@quote>}%
7434 #3%
7435 \special{!direct </a>}%
7436 }
7437 \def\hyper@linkurl#1#2{%
7438 \begingroup
7439 \hyper@chars
7440 \leavevmode
7441 \MathBSuppress=1\relax
7442 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
7443 #1%
7444 \MathBSuppress=0\relax
7445 \special{!direct </a>}%
7446 \endgroup
7447 }
7448 \def\hyper@linkfile#1#2#3{%

```

```

7449 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
7450 }
7451 \def\hyper@linkstart#1#2{%
7452   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
7453     \@Localurltrue
7454     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
7455   \else
7456     \@Localurlfalse
7457     \begingroup
7458     \hyper@chars
7459     \special{!aref #2}%
7460   \endgroup
7461 \fi
7462 }
7463 \def\hyper@linkend{%
7464   \if@Localurl
7465     \special{!endaref}%
7466   \else
7467     \special{!direct </a>}%
7468   \fi
7469 }
7470 \def\hyper@anchorstart#1{%
7471   \Hy@SaveLastskip
7472   \begingroup
7473     \hyper@chars
7474     \special{!aname #1}%
7475     \special{!direct <a name=\hyper@quote#1\hyper@quote>}%
7476   \endgroup
7477   \Hy@activeanchortrue
7478 }
7479 \def\hyper@anchorend{%
7480   \special{!direct </a>}%
7481   \Hy@activeanchorfalse
7482   \Hy@RestoreLastskip
7483 }
7484 \def\hyper@anchor#1{%
7485   \Hy@SaveLastskip
7486   \begingroup
7487     \let\protect=\string
7488     \hyper@chars
7489     \leavevmode
7490     \special{!aname #1}%
7491     \special{!direct <a name=\hyper@quote #1\hyper@quote>}%
7492   \endgroup
7493   \Hy@activeanchortrue
7494   \bgroup\anchor@spot\egroup
7495   \special{!direct </a>}%
7496   \Hy@activeanchorfalse
7497   \Hy@RestoreLastskip
7498 }
7499 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
7500 \def\@endForm{}
7501 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
7502   \typeout{Sorry, TeXpider does not yet support FORM gauges}%
7503 }
7504 \def\@TextField[#1]#2{% parameters, label
7505   \typeout{Sorry, TeXpider does not yet support FORM text fields}%

```

```

7506 }
7507 \def\@CheckBox[#1]#2{% parameters, label
7508 \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
7509 }
7510 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
7511 \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
7512 }
7513 \def\@PushButton[#1]#2{% parameters, label
7514 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
7515 }
7516 \def\@Reset[#1]#2{%
7517 \typeout{Sorry, TeXpider does not yet support FORMs}%
7518 }
7519 \def\@Submit[#1]#2{%
7520 \typeout{Sorry, TeXpider does not yet support FORMs}%
7521 }
7522 \</vtexhtml>
7523 \<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.

```

7524 \ifx\mediaheight\@undefined
7525 \else
7526 \ifx\mediaheight\relax
7527 \else
7528 \ifHy@setpagesize
7529 \providecommand*\VTeXInitMediaSize{%
7530 \ifundefined{stockwidth}{%
7531 \ifdim\paperheight>0pt %
7532 \setlength\mediaheight\paperheight
7533 \fi
7534 \ifdim\paperheight>0pt %
7535 \setlength\mediawidth\paperwidth
7536 \fi
7537 }{%
7538 \ifdim\stockheight>0pt %
7539 \setlength\mediaheight\stockheight
7540 \fi
7541 \ifdim\stockwidth>0pt %
7542 \setlength\mediawidth\stockwidth
7543 \fi
7544 }%
7545 }%
7546 \AtBeginDocument{\VTeXInitMediaSize}%
7547 \fi
7548 \Hy@DisableOption{setpagesize}%
7549 \fi
7550 \fi

```

Older versions of VTeX require xyz in lower case.

```

7551 \providecommand*\@pdfview{xyz}
7552 \providecommand*\@pdfborder{0 0 1}
7553 \providecommand*\@pdfborderstyle{}
7554 \let\CurrentBorderColor\@linkbordercolor
7555 \def\hyper@anchor#1{%
7556 \Hy@SaveLastskip
7557 \beginngroup

```

```

7558 \let\protect=\string
7559 \hyper@chars
7560 \special{!aname #1;\@pdfview}%
7561 \endgroup
7562 \Hy@activeanchortrue
7563 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7564 \Hy@activeanchorfalse
7565 \Hy@RestoreLastskip
7566 }
7567 \def\hyper@anchorstart#1{%
7568 \Hy@SaveLastskip
7569 \begingroup
7570 \hyper@chars
7571 \special{!aname #1;\@pdfview}%
7572 \endgroup
7573 \Hy@activeanchortrue
7574 }
7575 \def\hyper@anchorend{%
7576 \Hy@activeanchorfalse
7577 \Hy@RestoreLastskip
7578 }
7579 \def\@urltype{url}
7580 \def\Hy@undefinedname{UNDEFINED}
7581 \def\hyper@linkstart#1#2{%
7582 \Hy@pstringdef\Hy@pstringURI{#2}%
7583 \expandafter\Hy@colorlink\csname @#1color\endcsname
7584 \@ifundefined{#@#1bordercolor}{%
7585 \let\CurrentBorderColor\relax
7586 }{%
7587 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
7588 }%
7589 \def\Hy@tempa{#1}%
7590 \ifx\Hy@tempa\@urltype
7591 \special{!%
7592 \aef <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
7593 a=<%
7594 \Hy@setpdfborder
7595 \ifx\CurrentBorderColor\relax
7596 \else
7597 /C [\CurrentBorderColor]%
7598 \fi
7599 >%
7600 }%
7601 \else
7602 \protected@edef\Hy@testname{#2}%
7603 \ifx\Hy@testname\@empty
7604 \let\Hy@testname\Hy@undefinedname
7605 \fi
7606 \special{!%
7607 \aef \Hy@testname;%
7608 a=<%
7609 \Hy@setpdfborder
7610 \ifx\CurrentBorderColor\relax
7611 \else
7612 /C [\CurrentBorderColor]%
7613 \fi
7614 >%

```

```

7615 }%
7616 \fi
7617 }
7618 \def\hyper@linkend{%
7619 \special{!endaref}%
7620 \Hy@endcolorlink
7621 }
7622 \def\hyper@linkfile#1#2#3{%
7623 \leavevmode
7624 \special{!%
7625   aref <%
7626   \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
7627   f=#2>#3;%
7628   a=<%
7629   \Hy@setpdfborder
7630   \ifx\@filebordercolor\relax
7631   \else
7632   /C [\@filebordercolor]%
7633   \fi
7634   >%
7635 }%
7636 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7637 \special{!endaref}%
7638 }
7639 \def\hyper@linkurl#1#2{%
7640 \begingroup
7641 \Hy@pstringdef\Hy@pstringURI{#2}%
7642 \hyper@chars
7643 \leavevmode
7644 \special{!%
7645   aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
7646   a=<%
7647   \Hy@setpdfborder
7648   \ifx\@urlbordercolor\relax
7649   \else
7650   /C [\@urlbordercolor]%
7651   \fi
7652   >%
7653 }%
7654 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7655 \special{!endaref}%
7656 \endgroup
7657 }
7658 \def\hyper@link#1#2#3{%
7659 \@ifundefined{#1bordercolor}{%
7660 \let\CurrentBorderColor\relax
7661 }{%
7662 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
7663 }%
7664 \leavevmode
7665 \protected@edef\Hy@testname{#2}%
7666 \ifx\Hy@testname\@empty
7667 \let\Hy@testname\Hy@undefinedname
7668 \fi
7669 \special{!%
7670   aref \Hy@testname;%
7671   a=<%

```

```

7672 \Hy@setpdfborder
7673 \ifx\CurrentBorderColor\relax
7674 \else
7675 /C [\CurrentBorderColor]%
7676 \fi
7677 >%
7678 }%
7679 \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
7680 \special{!endaref}%
7681 }
7682 \def\hyper@image#1#2{%
7683 \hyper@linkurl{#2}{#1}%
7684 }
7685 \def\@hyper@launch run:#1\#2#3{%
7686 \Hy@pstringdef\Hy@pstringF{#1}%
7687 \Hy@pstringdef\Hy@pstringP{#3}%
7688 \leavevmode
7689 \special{!aref %
7690 <u=%
7691 /Type/Action%
7692 /S/Launch%
7693 /F(\Hy@pstringF)%
7694 \Hy@SetNewWindow
7695 \ifx\#3\else /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>\fi%
7696 >;%
7697 a=<%
7698 \Hy@setpdfborder
7699 \ifx\@runbordercolor\relax
7700 \else
7701 /C[\@runbordercolor]%
7702 \fi
7703 >%
7704 }%
7705 \Hy@colorlink\@runcolor#2\Hy@endcolorlink
7706 \special{!endaref}%
7707 }
7708 \def\Acrobatmenu#1#2{%
7709 \leavevmode
7710 \special{!%
7711 aref <u=/S /Named /N /#1>;%
7712 a=<%
7713 \Hy@setpdfborder
7714 \ifx\@menubordercolor\relax
7715 \else
7716 /C[\@menubordercolor]%
7717 \fi
7718 >%
7719 }%
7720 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
7721 \special{!endaref}%
7722 }

```

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

The code below makes sense for $\text{\texttt{V\TeX}}$ 7.02 or later.

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

```

7723 \ifnum\Hy@VTeXversion<702 %
7724 \else
7725 \def\hyper@pagetransition{%

```

```

7726 \ifx\@pdfpagetransition\relax
7727 \else
7728 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

7729 \else
7730 \hvtex@parse@trans\@pdfpagetransition
7731 \fi
7732 \fi
7733 }%

```

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

Syntax of VT_EX \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:

```

7734 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
7735 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
7736 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
7737 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
7738 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
7739 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
7740 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

7741 \def\hvtex@par@dimension{/Dm}%
7742 \def\hvtex@par@direction{/Di}%
7743 \def\hvtex@par@duration{/D}%
7744 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

7745 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}%

```

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

```

7746 \def\hvtex@gettoken@#1 #2\@nil{%
7747 \edef\hvtex@token{#1}%
7748 \edef\hvtex@buffer{#2}%
7749 }%
7750 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

7751 \let\hvtex@trans@code\@empty
7752 \let\hvtex@param@dimension\@empty

```



```

7753 \let\hvtex@param@direction\@empty
7754 \let\hvtex@param@duration\@empty
7755 \let\hvtex@param@motion\@empty
7756 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

7757 \hvtex@gettoken
7758 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

7759 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

7760 \else
7761 \hvtex@gettoken
7762 \fi
7763 \fi
7764 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

7765 \hvtex@trans@params
7766 }%

```

Reentrant macro to parse optional parameters.

```

7767 \def\hvtex@trans@params{%
7768 \ifx\hvtex@buffer\@empty
7769 \else
7770 \hvtex@gettoken
7771 \let\hvtex@trans@par\hvtex@token
7772 \ifx\hvtex@buffer\@empty
7773 \else
7774 \hvtex@gettoken
7775 \ifx\hvtex@trans@par\hvtex@par@duration

```

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

```

7776 \let\hvtex@param@duration\hvtex@token
7777 \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

7778 \expandafter\edef\expandafter\hvtex@param@motion
7779 \expandafter{\expandafter\@gobble\hvtex@token}%
7780 \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

7781 \expandafter\edef\expandafter\hvtex@param@dimension
7782 \expandafter{\expandafter\@gobble\hvtex@token}%
7783 \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).

```

7784 \let\hvtex@param@direction\hvtex@token
7785 \fi\fi\fi\fi
7786 \fi
7787 \fi
7788 \ifx\hvtex@buffer\@empty
7789 \let\next\hvtex@produce@trans
7790 \else
7791 \let\next\hvtex@trans@params
7792 \fi
7793 \next
7794 }%

```

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

```

7795 \def\hvtex@produce@trans{%
7796   \let\vtex@trans@special\@empty
7797   \if S\hvtex@trans@code
7798     \edef\vtex@trans@special{\hvtex@trans@code
7799       \hvtex@param@dimension\hvtex@param@motion}%
7800   \else\if B\hvtex@trans@code
7801     \edef\vtex@trans@special{%
7802       \hvtex@trans@code\hvtex@param@dimension
7803     }%
7804   \else\if X\hvtex@trans@code
7805     \edef\vtex@trans@special{%
7806       \hvtex@trans@code\hvtex@param@motion
7807     }%
7808   \else\if W\hvtex@trans@code
7809     \edef\vtex@trans@special{%
7810       \hvtex@trans@code\hvtex@param@direction
7811     }%
7812   \else\if D\hvtex@trans@code
7813     \let\vtex@trans@special\hvtex@trans@code
7814   \else\if R\hvtex@trans@code
7815     \let\vtex@trans@special\hvtex@trans@code
7816   \else\if G\hvtex@trans@code
7817     \edef\vtex@trans@special{%
7818       \hvtex@trans@code\hvtex@param@direction
7819     }%
7820   \fi\fi\fi\fi\fi\fi
7821   \ifx\vtex@trans@special\@empty
7822   \else
7823     \ifx\hvtex@param@duration\@empty
7824     \else
7825       \setlength{\dimen@}{\hvtex@param@duration\p}%

```

I'm not guilty of possible overflow.

```

7826     \multiply\dimen@\@m
7827     \edef\vtex@trans@special{%
7828       \vtex@trans@special,\strip@pt\dimen@
7829     }%
7830   \fi

```

And all the mess is just for this.

```

7831   \special{!trans \vtex@trans@special}%
7832   \fi
7833 }%
7834 \def\hyper@pageduration{%
7835   \ifx\@pdfpageduration\relax
7836   \else
7837     \ifx\@pdfpageduration\@empty
7838     \special{!duration-}%
7839   \else
7840     \special{!duration \@pdfpageduration}%
7841   \fi
7842   \fi
7843 }%
7844 \def\hyper@pagehidden{%
7845   \ifHy@useHidKey

```

```

7846     \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
7847   \fi
7848 }%
7849 \g@addto@macro\Hy@EveryPageBoxHook{%
7850   \hyper@pagetransition
7851   \hyper@pageduration
7852   \hyper@pagehidden
7853 }%
7854 \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

```

7855 \ifx\@pdfproducer\relax
7856   \def\@pdfproducer{VTeX}%
7857   \ifnum\Hy@VTeXversion>\z@
7858     \count@\VTeXversion
7859     \divide\count@ 100 %
7860     \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
7861     \multiply\count@ -100 %
7862     \advance\count@\VTeXversion
7863     \edef\@pdfproducer{%
7864       \@pdfproducer
7865       .\ifnum\count@<10 0\fi\the\count@
7866       \ifx\VTeXOS\@undefined\else
7867         \ifnum\VTeXOS>0 %
7868           \ifnum\VTeXOS<6 %
7869             \space(
7870             \ifcase\VTeXOS
7871             \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
7872             \fi
7873           )%
7874         \fi
7875       \fi
7876     \fi
7877     ,\space
7878     \ifnum\OpMode=\@ne PDF\else PS\fi
7879     \space backend%
7880     \ifx\gexmode\@undefined\else
7881       \ifnum\gexmode>\z@\space with GeX\fi
7882     \fi
7883   }%
7884 \fi
7885 \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).

```

7886 \def\PDF@SetupDoc{%
7887   \ifx\@pdfpagescrop\@empty
7888   \else
7889     \special{!pdfinfo b=<\@pdfpagescrop>}%
7890   \fi
7891   \ifx\@pdfstartpage\@empty
7892   \else
7893     \ifx\@pdfstartview\@empty
7894     \else
7895       \special{!onopen Page\@pdfstartpage}%
7896     \fi
7897   \fi
7898   \special{!pdfinfo p=</\@pdfpagemode>}%
7899   \ifx\@baseurl\@empty
7900   \else
7901     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
7902   \fi
7903   \special{!pdfinfo v=<<<%
7904     \ifHy@toolbar\else /HideToolbar true\fi
7905     \ifHy@menubar\else /HideMenubar true\fi
7906     \ifHy@windowui\else /HideWindowUI true\fi
7907     \ifHy@fitwindow /FitWindow true\fi
7908     \ifHy@centerwindow /CenterWindow true\fi
7909     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7910     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7911     \Hy@UseNameKey{Direction}\@pdfdirection
7912     \Hy@UseNameKey{ViewArea}\@pdfviewarea
7913     \Hy@UseNameKey{ViewClip}\@pdfviewclip
7914     \Hy@UseNameKey{PrintArea}\@pdfprintarea
7915     \Hy@UseNameKey{PrintClip}\@pdfprintclip
7916     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7917     \Hy@UseNameKey{Duplex}\@pdfduplex
7918     \ifx\@pdfpicktraybypdfsize\@empty
7919     \else
7920       /PickTrayByPDFSize \@pdfpicktraybypdfsize
7921     \fi
7922     \ifx\@pdfprintpagerange\@empty
7923     \else
7924       /PrintPageRange[\@pdfprintpagerange]%
7925     \fi
7926     \ifx\@pdfnumcopies\@empty
7927     \else
7928       /NumCopies \@pdfnumcopies

```

```

7929 \fi
7930 >>>}%
7931 \ifx\@pdfpagelayout\@empty
7932 \else
7933 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
7934 \fi
7935 }%
7936 \def\PDF@FinishDoc{%
7937 \Hy@UseMaketitleInfos
7938 \special{!pdfinfo a=<\@pdfauthor>}%
7939 \special{!pdfinfo t=<\@pdftitle>}%
7940 \special{!pdfinfo s=<\@pdfsubject>}%
7941 \special{!pdfinfo c=<\@pdfcreator>}%
7942 \ifx\@pdfproducer\relax
7943 \else
7944 \special{!pdfinfo r=<\@pdfproducer>}%
7945 \fi
7946 \special{!pdfinfo k=<\@pdfkeywords>}%
7947 \Hy@DisableOption{pdfauthor}%
7948 \Hy@DisableOption{pdftitle}%
7949 \Hy@DisableOption{pdfsubject}%
7950 \Hy@DisableOption{pdfcreator}%
7951 \Hy@DisableOption{pdfcreationdate}%
7952 \Hy@DisableOption{pdfmoddate}%
7953 \Hy@DisableOption{pdfproducer}%
7954 \Hy@DisableOption{pdfkeywords}%
7955 }
7956 </vtx>

```

46.7 Fix for Adobe bug number 466320

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

```

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

```

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

```

7957 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
7958 <package>\providecommand*\Hy@DistillerDestFix{}
7959 <*pdfmark | dviwindo>
7960 \def\Hy@DistillerDestFix{%
7961 \begingroup
7962 \let\x\literalps@out

```

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

```

7963 \ifnum \@ifundefined{OpMode}{0}{}%
7964 \ifundefined{gexmode}{0}{%
7965 \ifnum\gexmode>0 \OpMode\else 0\fi
7966 }}>1 %
7967 \def\x##1{%
7968 \immediate\special{!=##1}%
7969 }%
7970 \fi

```

```

7971 \x{%
7972 /product where{%
7973   pop %
7974   product(Distiller)search{%
7975     pop pop pop %
7976     version(.)search{%
7977       exch pop exch pop%
7978       (3011)eq{%
7979         gsave %
7980         newpath 0 0 moveto closepath clip%
7981         /Courier findfont 10 scalefont setfont %
7982         72 72 moveto(.)show %
7983         grestore%
7984       }if%
7985     }{pop}ifelse%
7986   }{pop}ifelse%
7987 }if%
7988 }%
7989 \endgroup
7990 }
7991 </pdfmark | dviwindo>

```

46.8 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

```

```

7992 <*pdfmark | dvipdf>
7993 \def\hyper@anchor#1{%
7994   \Hy@SaveLastskip
7995   \beginngroup
7996     \pdfmark[\anchor@spot]{%
7997       pdfmark=/DEST,%
7998       linktype=anchor,%
7999       View=/\@pdfview \@pdfviewparams,%
8000       DestAnchor={#1}%
8001     }%
8002   \endgroup
8003   \Hy@RestoreLastskip
8004 }
8005 <*dvipdf>
8006 \def\hyper@anchorstart#1{\Hy@activeanchortrue}
8007 \def\hyper@anchorend{\Hy@activeanchorfalse}
8008 \def\hyper@linkstart#1#2{%
8009   \expandafter\Hy@colorlink\csname @#1color\endcsname
8010   \xdef\hyper@currentanchor{#2}%
8011 }

```

```

8012 \def\hyper@linkend{%
8013   \Hy@endcolorlink
8014 }
8015 </dvipdf>
8016 <*pdfmark>
8017 \@ifundefined{hyper@anchorstart}{\endinput}
8018 \def\hyper@anchorstart#1{%
8019   \Hy@SaveLastskip
8020   \literalps@out{H.S}%
8021   \xdef\hyper@currentanchor{#1}%
8022   \Hy@activeanchortrue
8023 }
8024 \def\hyper@anchorend{%
8025   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
8026   \pdfmark{%
8027     pdfmark=/DEST,%
8028     linktype=anchor,%
8029     View=/\@pdfview \@pdfviewparams,%
8030     DestAnchor=\hyper@currentanchor,%
8031   }%
8032   \Hy@activeanchorfalse
8033   \Hy@RestoreLastskip
8034 }
8035 \def\hyper@linkstart#1#2{%
8036   \ifHy@breaklinks
8037   \else
8038     \leavevmode\hbox\bgroup
8039     \fi
8040     \expandafter\Hy@colorlink\csname @#1color\endcsname
8041     \literalps@out{H.S}%
8042     \xdef\hyper@currentanchor{#2}%
8043     \gdef\hyper@currentlinktype{#1}%
8044 }
8045 \def\hyper@linkend{%
8046   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
8047   \@ifundefined{@\hyper@currentlinktype bordercolor}{%
8048     \let\Hy@tempcolor\relax
8049   }{%
8050     \edef\Hy@tempcolor{%
8051       \csname @\hyper@currentlinktype bordercolor\endcsname
8052     }%
8053   }%
8054   \pdfmark{%
8055     pdfmark=/ANN,%
8056     linktype=link,%
8057     Subtype=/Link,%
8058     Dest=\hyper@currentanchor,%
8059     AcroHighlight=\@pdfhighlight,%
8060     Border=\@pdfborder,%
8061     BorderStyle=\@pdfborderstyle,%
8062     Color=\Hy@tempcolor,%
8063     Raw=H.B%
8064   }%
8065   \Hy@endcolorlink
8066   \ifHy@breaklinks
8067   \else
8068     \egroup

```

```

8069 \fi
8070 }
8071 < *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.

```

8072 \beginngroup
8073 \catcode'P=12 %
8074 \catcode'T=12 %
8075 \lowercase{\endgroup
8076 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
8077 }
8078 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
8079 < /pdfmark>

```

\hyper@pagetransition

```

8080 \def\hyper@pagetransition{%
8081 \ifx\@pdfpagetransition\relax
8082 \else
8083 \ifx\@pdfpagetransition\@empty
8084 % 1. Does an old entry have to be deleted?
8085 % 2. If 1=yes, how to delete?
8086 \else
8087 \pdfmark{%
8088 pdfmark=/PUT,%
8089 Raw={%
8090 \string{ThisPage\string}%
8091 <</Trans << /S /\@pdfpagetransition\space >> >>%
8092 }%
8093 }%
8094 \fi
8095 \fi
8096 }

```

\hyper@pageduration

```

8097 \def\hyper@pageduration{%
8098 \ifx\@pdfpageduration\relax
8099 \else
8100 \ifx\@pdfpageduration\@empty
8101 % 1. Does an old entry have to be deleted?
8102 % 2. If 1=yes, how to delete?
8103 \else
8104 \pdfmark{%
8105 pdfmark=/PUT,%
8106 Raw={%
8107 \string{ThisPage\string}%
8108 <</Dur \@pdfpageduration>>%
8109 }%
8110 }%
8111 \fi
8112 \fi
8113 }

```

\hyper@pagehidden

```

8114 \def\hyper@pagehidden{%

```



```

8115 \ifHy@useHidKey
8116 \pdfmark{%
8117 pdfmark=/PUT,%
8118 Raw={%
8119 \string{ThisPage\string}%
8120 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
8121 }%
8122 }%
8123 \fi
8124 }

8125 \g@addto@macro\Hy@EveryPageBoxHook{%
8126 \hyper@pagetransition
8127 \hyper@pageduration
8128 \hyper@pagehidden
8129 }

8130 </pdfmark>
8131 \def\hyper@image#1#2{%
8132 \hyper@linkurl{#2}{#1}%
8133 }
8134 \def\Hy@undefinedname{UNDEFINED}
8135 \def\hyper@link#1#2#3{%
8136 \ifundefined{@#1bordercolor}{%
8137 \let\Hy@tempcolor\relax
8138 }{%
8139 \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
8140 }%
8141 \begingroup
8142 \protected@edef\Hy@testname{#2}%
8143 \ifx\Hy@testname\@empty
8144 \let\Hy@testname\Hy@undefinedname
8145 \fi
8146 <*dvipdf>
8147 \pdfmark[{#3}]{%
8148 pdfmark=/LNK,%
8149 },%
8150 linktype={#1},%
8151 AcroHighlight=\pdfhighlight,%
8152 Border=\pdfborder,%
8153 BorderStyle=\pdfborderstyle,%
8154 Color=\Hy@tempcolor,%
8155 Dest=\Hy@testname
8156 }%
8157 </dvipdf>
8158 <*pdfmarkbase>
8159 \pdfmark[{#3}]{%
8160 Color=\Hy@tempcolor,%
8161 linktype={#1},%
8162 AcroHighlight=\pdfhighlight,%
8163 Border=\pdfborder,%
8164 BorderStyle=\pdfborderstyle,%
8165 pdfmark=/ANN,%
8166 Subtype=/Link,%
8167 Dest=\Hy@testname
8168 }%
8169 </pdfmarkbase>
8170 \endgroup
8171 }

```

```

8172 \newtoks\pdf@docset
8173 \def\PDF@FinishDoc{%
8174   \Hy@UseMaketitleInfos
8175   \let\Hy@temp\@empty
8176   \ifx\@pdfcreationdate\@empty
8177   \else
8178     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
8179   \fi
8180   \ifx\@pdfmoddate\@empty
8181   \else
8182     \expandafter\def\expandafter\Hy@temp\expandafter{%
8183       \Hy@temp
8184       ModDate=\@pdfmoddate,%
8185     }%
8186   \fi
8187   \ifx\@pdfproducer\relax
8188   \else
8189     \expandafter\def\expandafter\Hy@temp\expandafter{%
8190       \Hy@temp
8191       Producer=\@pdfproducer,%
8192     }%
8193   \fi
8194   \expandafter
8195   \pdfmark\expandafter{%
8196     \Hy@temp
8197     pdfmark=/DOCINFO,%
8198     Title=\@pdftitle,%
8199     Subject=\@pdfsubject,%
8200     Creator=\@pdfcreator,%
8201     Author=\@pdfauthor,%
8202     Keywords=\@pdfkeywords
8203   }%
8204   \Hy@DisableOption{pdfauthor}%
8205   \Hy@DisableOption{pdftitle}%
8206   \Hy@DisableOption{pdfsubject}%
8207   \Hy@DisableOption{pdfcreator}%
8208   \Hy@DisableOption{pdfcreationdate}%
8209   \Hy@DisableOption{pdfmoddate}%
8210   \Hy@DisableOption{pdfproducer}%
8211   \Hy@DisableOption{pdfkeywords}%
8212 }
8213 \def\PDF@SetupDoc{%
8214   \def\Hy@temp{}%
8215   \ifx\@pdfstartpage\@empty
8216   \else
8217     \ifx\@pdfstartview\@empty
8218     \else
8219       \edef\Hy@temp{%
8220         ,Page=\@pdfstartpage
8221         ,View=\@pdfstartview
8222       }%
8223     \fi
8224   \fi
8225   \edef\Hy@temp{%
8226     \noexpand\pdfmark{%
8227       pdfmark=/DOCVIEW,%
8228       PageMode=/\@pdfpagemode

```

```

8229     \Hy@temp
8230   }%
8231 }%
8232 \Hy@temp
8233 \ifx\@pdfpagescrop\@empty
8234 \else
8235   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
8236 \fi
8237 \edef\Hy@temp{%
8238   \ifHy@toolbar\else /HideToolbar true\fi
8239   \ifHy@menubar\else /HideMenubar true\fi
8240   \ifHy>windowui\else /HideWindowUI true\fi
8241   \ifHy@fitwindow /FitWindow true\fi
8242   \ifHy@centerwindow /CenterWindow true\fi
8243   \ifHy@displaydoctitle /DisplayDocTitle true\fi
8244   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8245   \Hy@UseNameKey{Direction}\@pdfdirection
8246   \Hy@UseNameKey{ViewArea}\@pdfviewarea
8247   \Hy@UseNameKey{ViewClip}\@pdfviewclip
8248   \Hy@UseNameKey{PrintArea}\@pdfprintarea
8249   \Hy@UseNameKey{PrintClip}\@pdfprintclip
8250   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8251   \Hy@UseNameKey{Duplex}\@pdfduplex
8252   \ifx\@pdfpicktraybypdfsize\@empty
8253   \else
8254     /PickTrayByPDFSize \@pdfpicktraybypdfsize
8255   \fi
8256   \ifx\@pdfprintpagerange\@empty
8257   \else
8258     /PrintPageRange[\@pdfprintpagerange]%
8259   \fi
8260   \ifx\@pdfnumcopies\@empty
8261   \else
8262     /NumCopies \@pdfnumcopies
8263   \fi
8264 }%
8265 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8266 \pdfmark{%
8267   pdfmark=/PUT,%
8268   Raw={%
8269     \string{Catalog\string}<<%
8270     \ifx\Hy@temp\@empty
8271     \else
8272       /ViewerPreferences<<\Hy@temp>>%
8273     \fi
8274     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8275     \ifx\@pdflang\@empty
8276     \else
8277       /Lang(\@pdflang)%
8278     \fi
8279     \ifx\@baseurl\@empty
8280     \else
8281       /URI<</Base(\Hy@pstringB)>>%
8282     \fi
8283   >>%
8284 }%
8285 }%

```

```

8286 }
8287 </pdfmark | dvipdf>
8288 <*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.

```

8289 \newif\ifHy@pdfmarkerror
8290 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
8291 \def\pdfmark@[#1]#2{%
8292   \Hy@pdfmarkerrorfalse
8293   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
8294   \@processme
8295   \let\pdf@type\relax
8296   \setkeys{PDF}{#2}%
8297   \ifHy@pdfmarkerror
8298   \else
8299     \ifx\pdf@type\relax
8300       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
8301       \ifx\#1\%
8302         \else
8303           \pdf@rect{#1}%
8304         \fi
8305       \else
8306         \ifx\#1\%
8307         <*pdfmarkbase>
8308           \literalps@out{%
8309             [\the\pdf@toks\space\pdf@type\space pdfmark%
8310             ]%
8311         </pdfmarkbase>
8312         <dvipdf> \literalps@out{/ANN >>}%
8313         \else
8314           \@ifundefined{@\pdf@linktype color}{%
8315             \Hy@colorlink\@linkcolor
8316           }{%
8317             \expandafter\Hy@colorlink
8318               \csname @\pdf@linktype color\endcsname
8319           }%
8320           \pdf@rect{#1}%
8321         <*pdfmarkbase>
8322           \literalps@out{%
8323             [\the\pdf@toks\space\pdf@type\space pdfmark%
8324             ]%
8325         </pdfmarkbase>
8326         <dvipdf> \literalps@out{/ANN >>}%
8327           \Hy@endcolorlink
8328         \fi
8329       \fi
8330     \fi
8331 }

```

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}

8332 \newsavebox{\pdf@box}
8333 \providecommand*{\Hy@setouterhbox}{\sbox}
8334 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
8335 \def\Hy@DEST{/DEST}
8336 \def\pdf@rect#1{%
8337 <dvipdf> \literalps@out{/ANN \pdf@type\space\the\pdf@toks\space <<}&#1%
8338 \leavevmode
8339 \ifHy@breaklinks
8340 \Hy@setouterhbox\pdf@box{#1}%
8341 \else
8342 \sbox\pdf@box{#1}%
8343 \fi
8344 \dimen@ht\pdf@box
8345 \ifdim\dp\pdf@box=\z@
8346 \literalps@out{H.S}%
8347 \else
8348 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
8349 \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...).

```
8350 \ifHy@breaklinks
8351 \expandafter\Hy@breaklinksunhbox
8352 \else
8353 \expandafter\box
8354 \fi
8355 \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

8356 \ifdim\dimen@=\z@
8357 \literalps@out{H.R}%
8358 \else
8359 \raise\dimen@\hbox{\literalps@out{H.R}}%
8360 \fi
8361 \ifx\pdf@type\Hy@DEST
8362 \else
8363 \pdf@addtoksx{H.B}%
8364 \fi
8365 }
```

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.

```
8366 \newtoks\pdf@toks
8367 \newtoks\pdf@defaulttoks
8368 \pdf@defaulttoks={}
8369 \def\pdf@addtoks#1#2{%
8370 \edef\@processme{\pdf@toks{\the\pdf@toks\space /#2 #1}}%
8371 \@processme
```

```

8372 }
8373 \def\pdf@addtoksx#1{%
8374   \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
8375   \@processme
8376 }
8377 \def\PDFdefaults#1{%
8378   \pdf@defaulttoks={#1}%
8379 }

```

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

```

8380 % what is the type of pdfmark?
8381 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
8382 % what is the link type?
8383 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
8384 \def\pdf@linktype{link}
8385 % parameter is a stream of PDF
8386 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
8387 % parameter is a name
8388 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
8389 % parameter is a array
8390 \define@key{PDF}{Border}{%
8391   \edef\Hy@temp{#1}%
8392   \ifx\Hy@temp\@empty
8393   \else
8394     \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
8395   \fi
8396 }
8397 \let\Hy@BorderArrayPatch\@empty
8398 % parameter is a dictionary
8399 \define@key{PDF}{BorderStyle}{%
8400   \edef\Hy@temp{#1}%
8401   \ifx\Hy@temp\@empty
8402   \else
8403     \pdf@addtoks{<<#1>>}{BS}%
8404   \fi
8405 }
8406 % parameter is a array
8407 \define@key{PDF}{Color}{%
8408   \ifx\relax#1\relax
8409   \else
8410     \pdf@addtoks{[#1]}{Color}% hash-ok
8411   \fi
8412 }
8413 % parameter is a string
8414 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
8415 % parameter is a integer
8416 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
8417 % parameter is a array
8418 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
8419 % parameter is a string
8420 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
8421 % parameter is a string or file
8422 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
8423 % parameter is a destination
8424 \define@key{PDF}{Dest}{%
8425   \Hy@pstringdef\Hy@pstringDest{#1}%
8426   \ifx\Hy@pstringDest\@empty
8427     \Hy@pdfmarkerrortrue

```

```

8428 \Hy@Warning{Destination with empty name ignored}%
8429 \else
8430 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
8431 \fi
8432 }
8433 \define@key{PDF}{DestAnchor}{%
8434 \Hy@pstringdef\Hy@pstringDest{#1}%
8435 \ifx\Hy@pstringDest\@empty
8436 \Hy@pdfmarkerrortrue
8437 \Hy@Warning{Destination with empty name ignored}%
8438 \else
8439 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
8440 \fi
8441 }
8442 % parameter is a string
8443 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
8444 % parameter is a string
8445 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
8446 % parameter is a int
8447 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
8448 % parameter is a name
8449 \define@key{PDF}{AcroHighlight}{%
8450 \begingroup
8451 \edef\x{#1}%
8452 \expandafter\endgroup\ifx\x\@empty
8453 \else
8454 \pdf@addtoks{#1}{H}%
8455 \fi
8456 }
8457 % parameter is a string
8458 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
8459 % parameter is a string
8460 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
8461 % parameter is a string
8462 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
8463 % parameter is a string
8464 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
8465 % parameter is a Boolean
8466 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
8467 % parameter is a integer or name
8468 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
8469 % parameter is a name
8470 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
8471 % parameter is a string
8472 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
8473 % parameter is a array
8474 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
8475 % parameter is a integer
8476 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
8477 % parameter is a name
8478 \pdfmarkbase\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
8479 \dvipdf\define@key{PDF}{Subtype}{\pdf@addtoks{#1}{}}
8480 % parameter is a string
8481 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
8482 % parameter is a string
8483 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
8484 % parameter is a string

```

```

8485 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
8486 % parameter is an array
8487 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
8488 % parameter is a string
8489 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

8490 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
8491 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
8492 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
8493 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
8494 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
8495 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
8496 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
8497 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
8498 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
8499 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
8500 </pdfmarkbase | dvipdf>
8501 <*pdfmark | dvipdf>
8502 \def\Acrobatmenu#1#2{%
8503   \pdfmark[#{#2}] {%
8504     linktype=menu,%
8505     pdfmark=/ANN,%
8506     AcroHighlight=@pdfhighlight,%
8507     Border=@pdfborder,%
8508     BorderStyle=@pdfborderstyle,%
8509     Action={<< /Subtype /Named /N /#1 >>},%
8510     Subtype=/Link%
8511   }%
8512 }

```

And now for some useful examples:

```

8513 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
8514 \def\PDFNextPage@[#1]#2{%
8515   \pdfmark[#{#2}] {%
8516     #1,%
8517     Border=@pdfborder,%
8518     BorderStyle=@pdfborderstyle,%
8519     Color=.2 .1 .5,%
8520     pdfmark=/ANN,%
8521     Subtype=/Link,%
8522     Page=/Next%
8523   }%
8524 }
8525 \def\PDFPreviousPage{%
8526   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}]%
8527 }
8528 \def\PDFPreviousPage@[#1]#2{%
8529   \pdfmark[#{#2}] {%
8530     #1,%
8531     Border=@pdfborder,%
8532     BorderStyle=@pdfborderstyle,%
8533     Color=.4 .4 .1,%
8534     pdfmark=/ANN,%
8535     Subtype=/Link,%
8536     Page=/Prev%
8537   }%
8538 }

```



```

8539 \def\PDFOpen#1{%
8540   \pdfmark{#1,pdfmark=/DOCVIEW}%
8541 }

```

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

```

8542 \def\hyper@linkurl#1#2{%
8543   \begingroup
8544     \Hy@pstringdef\Hy@pstringURI{#2}%
8545     \hyper@chars
8546     \leavevmode
8547   \pdfmarkbase
8548     \pdfmark[{#1}]{%
8549       pdfmark=/ANN,%
8550       linktype=url,%
8551       AcroHighlight=\@pdfhighlight,%
8552       Border=\@pdfborder,%
8553       BorderStyle=\@pdfborderstyle,%
8554       Color=\@urlbordercolor,%
8555       Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
8556       Subtype=/Link%
8557     }%
8558   \pdfmarkbase
8559   \dvipdf
8560     \pdfmark[{#1}]{%
8561       pdfmark=/LNK,%
8562       linktype=url,%
8563       AcroHighlight=\@pdfhighlight,%
8564       Border=\@pdfborder,%
8565       BorderStyle=\@pdfborderstyle,%
8566       Color=\@urlbordercolor,%
8567       Action={URI /URI <\Hy@hstringURI>}%
8568     }%
8569   \dvipdf
8570   \endgroup
8571 }
8572 \def\hyper@linkfile#1#2#3{%
8573   \begingroup
8574     \Hy@pstringdef\Hy@pstringF{#2}%
8575     \Hy@pstringdef\Hy@pstringD{#3}%
8576     \leavevmode
8577   \pdfmark
8578     \pdfmark[{#1}]{%
8579       pdfmark=/ANN,%
8580       Subtype=/Link,%
8581       AcroHighlight=\@pdfhighlight,%
8582       Border=\@pdfborder,%
8583       BorderStyle=\@pdfborderstyle,%
8584       linktype=file,%
8585       Color=\@filebordercolor,%
8586       Action={%
8587         <<%
8588           /S/GoToR%
8589           \Hy@SetNewWindow
8590           /F(\Hy@pstringF)%
8591           /D\ifx\#3\[\[O \@pdfstartview]\else(\Hy@pstringD)cvn\fi
8592         >>%
8593       }%
8594     }%

```

```

8595 </pdfmark>
8596 <*dvipdf>
8597   \pdfmark[{#1}]{%
8598     pdfmark=/LNK,%
8599     linktype=file,%
8600     AcroHighlight=\@pdfhighlight,%
8601     Border=\@pdfborder,%
8602     BorderStyle=\@pdfborderstyle,%
8603     Color=\@filebordercolor,%
8604     Action={%
8605       <<%
8606         /S/GoToR%
8607         \Hy@SetNewWindow
8608         /F(\Hy@pstringF)%
8609         /D\ifx\#3\ [0 \@pdfstartview]\else(\Hy@pstringD)cvn\fi
8610       >>%
8611     }%
8612   }%
8613 </dvipdf>
8614 \endgroup
8615 }
8616 \def\@hyper@launch run:#1\#2#3{%
8617   \begingroup
8618     \Hy@pstringdef\Hy@pstringF{#1}%
8619     \Hy@pstringdef\Hy@pstringP{#3}%
8620     \leavevmode
8621 <*pdfmark>
8622   \pdfmark[{#2}]{%
8623     pdfmark=/ANN,%
8624     Subtype=/Link,%
8625     AcroHighlight=\@pdfhighlight,%
8626     Border=\@pdfborder,%
8627     BorderStyle=\@pdfborderstyle,%
8628     linktype=run,%
8629     Color=\@runbordercolor,%
8630     Action={%
8631       <<%
8632         /S/Launch%
8633         \Hy@SetNewWindow
8634         /F(\Hy@pstringF)%
8635         \ifx\#3\%
8636         \else
8637           /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8638         \fi
8639       >>%
8640     }%
8641   }%
8642 </pdfmark>
8643 <*dvipdf>
8644   \pdfmark[{#2}]{%
8645     pdfmark=/LNK,%
8646     linktype=file,%
8647     AcroHighlight=\@pdfhighlight,%
8648     Border=\@pdfborder,%
8649     BorderStyle=\@pdfborderstyle,%
8650     Color=\@filebordercolor,%
8651     Action={%

```

```

8652      <<%
8653      /S/GoToR%
8654      \Hy@SetNewWindow
8655      /F(\Hy@pstringF)%
8656      \ifx\|#3\%
8657      \else
8658      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8659      \fi
8660      >>%
8661    }%
8662  }%
8663 </dvipdf>
8664 \endgroup
8665 }
8666 </pdfmark | dvipdf>

```

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

46.9 Rokicki's dvips

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

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

```

8667 <*dvips>
8668 \input{pdfmark.def}%
8669 \ifx\@pdfproducer\relax
8670   \def\@pdfproducer{dvips + Distiller}%
8671 \fi
8672 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
8673 \def\headerps@out#1{\special{! #1}}%
8674 \providecommand*\@pdfborder{0 0 1}
8675 \providecommand*\@pdfborderstyle{}
8676 \providecommand*\@pdfview{XYZ}
8677 \providecommand*\@pdfviewparams{ H.V}
8678 \def\Hy@BorderArrayPatch{BorderArrayPatch}
8679 \AtBeginShipoutFirst{%
8680   \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.

```

8681 /DvipsToPDF{72.27 mul Resolution div} def%
8682 /PDFToDvips{72.27 div Resolution mul} def%
8683 /BPToDvips{72 div Resolution mul}def%

```

The values inside the /Boder array are not taken literally, but interpreted by ghostscript using the resolution of the dvi driver. I don't know how other distiller programs behaves in this manner.

```

8684    /BorderArrayPatch{%
8685      [exch{%
8686        dup dup type/integertype eq exch type/realtype eq or%
8687        {BPToDvips}if%
8688      }forall]%
8689    }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.

```

8690    /HyperBorder {1 PDFToDvips} def%
8691    /H.V {pdf@hoff pdf@voff null} def%
8692    /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

```

8693    /H.S {%
8694      currentpoint %
8695      HyperBorder add /pdf@lly exch def %
8696      dup DvipsToPDF 72 add /pdf@hoff exch def %
8697      HyperBorder sub /pdf@llx exch def%
8698    } def%
```

The calculation of upper left y is done without raising the point in \TeX , by simply adding on the current `\baselineskip` to the current y . This is usually too much, so we remove a notional 2 points.

We have to see what the current `baselineskip` is, and convert it to the dvips coordinate system.

Argument: `baselineskip` in pt. The x and y coordinates of the current point, minus the `baselineskip`

```

8699    /H.L {%
8700      2 sub dup%
8701      /HyperBasePt exch def %
8702      PDFToDvips /HyperBaseDvips exch def %
8703      currentpoint %
8704      HyperBaseDvips sub /pdf@ury exch def%
8705      /pdf@urx exch def%
8706    } def%
8707    /H.A {%
8708      H.L %
8709      % |pdf@voff| = the distance from the top of the page to a point
8710      % |\baselineskip| above the current point in PDF coordinates
8711      currentpoint exch pop %
8712      vsize 72 sub exch DvipsToPDF %
8713      HyperBasePt sub % baseline skip
8714      sub /pdf@voff exch def%
8715    } def%
8716    /H.R {%
8717      currentpoint %
8718      HyperBorder sub /pdf@ury exch def %
8719      HyperBorder add /pdf@urx exch def %
8720      % |pdf@voff| = the distance from the top of the page to the current point, in
8721      % PDF coordinates
8722      currentpoint exch pop vsize 72 sub %
8723      exch DvipsToPDF sub /pdf@voff exch def%
8724    } def %
```

```

8725     systemdict /pdfmark known%
8726     {%
8727         userdict /?pdfmark systemdict /exec get put%
8728     }{%
8729         userdict /?pdfmark systemdict /pop get put %
8730         userdict /pdfmark systemdict /cleartomark get put%
8731     }%
8732     ifelse%
8733 }%
8734 }
8735 \AfterBeginDocument{%
8736     \ifx\special@paper\@empty\else
8737         \ifHy@setpagesize
8738             \special{papersize=\special@paper}%
8739         \fi
8740         \Hy@DisableOption{setpagesize}%
8741     \fi
8742 }
8743 </dvips>

```

46.10 VTeX's vtexpdfmark driver

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

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

```

8744 <*vtexpdfmark>
8745 \input{pdfmark.def}%
8746 \ifx\@pdfproducer\relax
8747     \ifnum\OpMode=\@one
8748         \def\@pdfproducer{VTeX}%
8749     \else
8750         \def\@pdfproducer{VTeX + Distiller}%
8751     \fi
8752 \fi
8753 \def\literalps@out#1{\special{pS:#1}}%
8754 \def\headerps@out#1{\immediate\special{pS:#1}}%
8755 \providecommand*\@pdfborder{0 0 1}
8756 \providecommand*\@pdfborderstyle{}
8757 \providecommand*\@pdfview{XYZ}
8758 \providecommand*\@pdfviewparams{ H.V}
8759 \AtBeginShipoutFirst{%
8760     \headerps@out{%
8761         /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.

```

8762     /HyperBorder {1} def%
8763     /H.V {pdf@hoff pdf@voff null} def%
8764     /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: $\text{pdf@lly} = Y_c - \text{HyperBorder}$, $\text{pdf@hoff} = X_c + 72$, $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

8765     /H.S {%
8766         currentpoint %

```

```

8767     HyperBorder sub%
8768     /pdf@lly exch def %
8769     dup 72 add /pdf@hoff exch def %
8770     HyperBorder sub%
8771     /pdf@llx exch def%
8772 } def%

```

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

```

8773 /H.L {%
8774     2 sub%
8775     /HyperBasePt exch def %
8776     currentpoint %
8777     HyperBasePt add HyperBorder add%
8778     /pdf@ury exch def %
8779     HyperBorder add%
8780     /pdf@urx exch def%
8781 } def%
8782 /H.A {%
8783     H.L %
8784     currentpoint exch pop %
8785     vsize 72 sub exch %
8786     HyperBasePt add add%
8787     /pdf@voff exch def%
8788 } def%

```

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

```

8789 /H.R {%
8790     currentpoint %
8791     HyperBorder add%
8792     /pdf@ury exch def %
8793     HyperBorder add%
8794     /pdf@urx exch def %
8795     currentpoint exch pop vsize 72 sub add%
8796     /pdf@voff exch def%
8797 } def %
8798 systemdict /pdfmark known%
8799 {%
8800     userdict /?pdfmark systemdict /exec get put%
8801 }{%
8802     userdict /?pdfmark systemdict /pop get put %
8803     userdict /pdfmark systemdict /cleartomark get put%
8804 }%
8805 ifelse%
8806 }%
8807 }
8808 </vtexpdfmark>

```

46.11 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.

```
8809 <*textures>
8810 \begingroup
8811   \obeylines %
8812   \gdef\Hy@ps@CR{\noexpand
8813     }%
8814 \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`.

```
8815 \def\literalps@out#1{%
8816   \special{postscript 0 0 transform}%
8817   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
8818 }%
8819 %
```

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.

```
8820 \def\headerps@out#1{%
8821   \special{%
8822     prepostscript TeXdict begin\Hy@ps@CR
8823       #1\Hy@ps@CR
8824     end%
8825   }%
8826 }%
8827 %
```

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.

```
8828 \AtBeginShipoutFirst{%
8829   \headerps@out{%
8830     /betterpdfmark {%
8831       systemdict begin %
8832         dup /BP eq%
8833         {cleartomark gsave nulldevice []}%
8834         {dup /EP eq%
8835           {cleartomark cleartomark grestore}%
8836           {cleartomark}}%
8837         ifelse%
8838       }ifelse %
8839     end%
8840   }def\Hy@ps@CR
8841   __pdfmark__ not{/pdfmark /betterpdfmark load def}if %
8842   systemdict /pdfmark known%
8843   {%
8844     userdict /?pdfmark systemdict /load get put%
8845   }{%
8846     userdict /?pdfmark systemdict /pop get put%
```

```

8847    }%
8848    ifelse%
8849    }% end of \headerps@out
8850}% end of \AtBeginShipoutFirst
8851%
8852\input{pdfmark.def}%
8853%
8854\ifx\@pdfproducer\relax
8855  \def\@pdfproducer{Textures + Distiller}%
8856\fi
8857\providecommand*\@pdfborder{0 0 1}
8858\providecommand*\@pdfborderstyle{}
8859\providecommand*\@pdfview{XYZ}
8860\providecommand*\@pdfviewparams{ H.V}
8861%

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called pdf@llx pdf@lly pdf@urx pdf@ury, which are the coordinates of the bounding rectangle of the link, and pdf@hoff pdf@voff which are the PDF page offsets. The Rect pair are called at the LL and UR corners of a box known to \TeX .

```

8862\headerps@out{%

```

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

```

8863  /vsize {\Hy@pageheight} def%
8864  /DvipsToPDF {} def%
8865  /PDFToDvips {} def%
8866  /BPToDvips {} def%
8867  /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
8868  /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
8869  /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
8870  /H.S {%
8871    currentpoint %
8872    HyperBorder add /pdf@lly exch def %
8873    dup DvipsToPDF 72 add /pdf@hoff exch def %
8874    HyperBorder sub /pdf@llx exch def%
8875  } def\Hy@ps@CR
8876  /H.L {%
8877    2 sub %
8878    PDFToDvips /HyperBase exch def %
8879    currentpoint %
8880    HyperBase sub /pdf@ury exch def%
8881    /pdf@urx exch def%
8882  } def\Hy@ps@CR
8883  /H.A {%
8884    H.L %
8885    currentpoint exch pop %
8886    vsize 72 sub exch DvipsToPDF %
8887    HyperBase sub % baseline skip
8888    sub /pdf@voff exch def%
8889  } def\Hy@ps@CR
8890  /H.R {%
8891    currentpoint %
8892    HyperBorder sub /pdf@ury exch def %
8893    HyperBorder add /pdf@urx exch def %
8894    currentpoint exch pop vsize 72 sub %
8895    exch DvipsToPDF sub /pdf@voff exch def%
8896  } def\Hy@ps@CR

```



```

8897 }
8898 \AfterBeginDocument{%
8899   \ifHy@colorlinks
8900     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
8901   \fi
8902 }

```

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.

```

8903 \expandafter\let\expandafter\keepPDF@SetupDoc
8904   \csname PDF@SetupDoc\endcsname
8905 \def\PDF@SetupDoc{%
8906   \ifx\@baseurl\@empty
8907   \else
8908     \special{html:<base href="\@baseurl">}%
8909   \fi
8910   \keepPDF@SetupDoc
8911 }
8912 \def\hyper@anchor#1{%
8913   \Hy@SaveLastskip
8914   \begingroup
8915     \let\protect=\string
8916     \special{html:<a name=\hyper@quote #1\hyper@quote>}%
8917   \endgroup
8918   \Hy@activeanchortrue
8919   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8920   \special{html:</a>}%
8921   \Hy@activeanchorfalse
8922   \Hy@RestoreLastskip
8923 }
8924 \def\hyper@anchorstart#1{%
8925   \Hy@SaveLastskip
8926   \begingroup
8927     \hyper@chars
8928     \special{html:<a name=\hyper@quote#1\hyper@quote>}%
8929   \endgroup
8930   \Hy@activeanchortrue
8931 }
8932 \def\hyper@anchorend{%
8933   \special{html:</a>}%
8934   \Hy@activeanchorfalse
8935   \Hy@RestoreLastskip
8936 }
8937 \def\@urltype{url}
8938 \def\hyper@linkstart#1#2{%
8939   \expandafter\Hy@colorlink\csname @#1color\endcsname
8940   \def\Hy@tempa{#1}%
8941   \ifx\Hy@tempa\@urltype
8942     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
8943   \else
8944     \begingroup
8945       \hyper@chars
8946       \special{html:<a href=\hyper@quote\##2\hyper@quote>}%
8947     \endgroup
8948   \fi
8949 }
8950 \def\hyper@linkend{%

```

```

8951 \special{html:</a>}}%
8952 \Hy@endcolorlink
8953 }
8954 \def\hyper@linkfile#1#2#3{%
8955 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
8956 }
8957 \def\hyper@linkurl#1#2{%
8958 \leavevmode
8959 \ifHy@raiselinks
8960 \setbox\@tempboxa=\color@hbox #1\color@endbox
8961 \@linkdim\dp\@tempboxa
8962 \lower\@linkdim\hbox{%
8963 \hyper@chars
8964 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
8965 }%
8966 \Hy@colorlink\@urlcolor#1%
8967 \@linkdim\ht\@tempboxa
8968 \advance\@linkdim by -6.5\p@
8969 \raise\@linkdim\hbox{\special{html:</a>}}%
8970 \Hy@endcolorlink
8971 \else
8972 \begingroup
8973 \hyper@chars
8974 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
8975 \Hy@colorlink\@urlcolor#1%
8976 \special{html:</a>}}%
8977 \Hy@endcolorlink
8978 \endgroup
8979 \fi
8980 }
8981 \def\hyper@link#1#2#3{%
8982 \hyper@linkurl{#3}{\##2}%
8983 }
8984 \def\hyper@image#1#2{%
8985 \begingroup
8986 \hyper@chars
8987 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
8988 \endgroup
8989 }
8990 </textures>

```

46.12 dvipsone

```

8991 % \subsection{dvipsone driver}
8992 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
8993 % |\special| commands.
8994 <*dvipsone>
8995 \providecommand*\@pdfborder{0 0 1}
8996 \providecommand*\@pdfborderstyle{}
8997 \input{pdfmark.def}%
8998 \ifx\@pdfproducer\relax
8999 \def\@pdfproducer{dvipsone + Distiller}%
9000 \fi
9001 \def\literalps@out#1{\special{ps:#1}}%
9002 \def\headerps@out#1{\special{! #1}}%
9003 \def\PDF@FinishDoc{%
9004 \Hy@UseMaketitleInfos

```

```

9005 \special{PDF: Keywords \@pdfkeywords}%
9006 \special{PDF: Title \@pdftitle}%
9007 \special{PDF: Creator \@pdfcreator}%
9008 \ifx\@pdfcreationdate\@empty
9009 \else
9010   \special{PDF: CreationDate \@pdfcreationdate}%
9011 \fi
9012 \ifx\@pdfmoddate\@empty
9013 \else
9014   \special{PDF: ModDate \@pdfmoddate}%
9015 \fi
9016 \special{PDF: Author \@pdfauthor}%
9017 \ifx\@pdfproducer\relax
9018 \else
9019   \special{PDF: Producer \@pdfproducer}%
9020 \fi
9021 \special{PDF: Subject \@pdfsubject}%
9022 \Hy@DisableOption{pdfauthor}%
9023 \Hy@DisableOption{pdftitle}%
9024 \Hy@DisableOption{pdfsubject}%
9025 \Hy@DisableOption{pdfcreator}%
9026 \Hy@DisableOption{pdfcreationdate}%
9027 \Hy@DisableOption{pdfmoddate}%
9028 \Hy@DisableOption{pdfproducer}%
9029 \Hy@DisableOption{pdfkeywords}%
9030 }
9031 \def\PDF@SetupDoc{%
9032   \def\Hy@temp{}%
9033   \ifx\@pdfstartpage\@empty
9034   \else
9035     \ifx\@pdfstartview\@empty
9036     \else
9037       \edef\Hy@temp{%
9038         ,Page=\@pdfstartpage
9039         ,View=\@pdfstartview
9040       }%
9041     \fi
9042   \fi
9043   \edef\Hy@temp{%
9044     \noexpand\pdfmark{%
9045       pdfmark=/DOCVIEW,%
9046       PageMode=/\@pdfpagemode
9047     }\Hy@temp
9048   }%
9049 }%
9050 \Hy@temp
9051 \ifx\@pdfpagescrop\@empty
9052 \else
9053   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9054 \fi
9055 \edef\Hy@temp{%
9056   \ifHy@toolbar\else /HideToolbar true\fi
9057   \ifHy@menubar\else /HideMenubar true\fi
9058   \ifHy>windowui\else /HideWindowUI true\fi
9059   \ifHy@fitwindow /FitWindow true\fi
9060   \ifHy@centerwindow /CenterWindow true\fi
9061   \ifHy@displaydoctitle /DisplayDocTitle true\fi

```

```

9062 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9063 \Hy@UseNameKey{Direction}\@pdfdirection
9064 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9065 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9066 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9067 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9068 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9069 \Hy@UseNameKey{Duplex}\@pdfduplex
9070 \ifx\@pdfpicktraybypdfsize\@empty
9071 \else
9072 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9073 \fi
9074 \ifx\@pdfprintpagerange\@empty
9075 \else
9076 /PrintPageRange[\@pdfprintpagerange]%
9077 \fi
9078 \ifx\@pdfnumcopies\@empty
9079 \else
9080 /NumCopies \@pdfnumcopies
9081 \fi
9082 }%
9083 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9084 \pdfmark{%
9085 pdfmark=/PUT,%
9086 Raw={%
9087 \string{Catalog\string}<<%
9088 \ifx\Hy@temp\@empty
9089 \else
9090 /ViewerPreferences<<\Hy@temp>>%
9091 \fi
9092 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9093 \ifx\@pdflang\@empty
9094 \else
9095 /Lang(\@pdflang)%
9096 \fi
9097 \ifx\@baseurl\@empty
9098 \else
9099 /URI<</Base(\Hy@pstringB)>>%
9100 \fi
9101 >>%
9102 }%
9103 }%
9104 }
9105 \providecommand*\@pdfview{XYZ}
9106 \providecommand*\@pdfviewparams{ %
9107 gsave revscl currentpoint grestore %
9108 72 add exch pop null exch null%
9109 }
9110 \def\Hy@BorderArrayPatch{BorderArrayPatch}

```

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

```
9111 \special{headertext=%
```

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

```

9112 /DvipsToPDF { 65781 div } def%
9113 /PDFToDvips { 65781 mul } def%
9114 /BPToDvips{65781 mul}def%
9115 /HyperBorder { 1 PDFToDvips } def%
9116 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def%

```

The values inside the /Boder array are not taken literally, but interpreted by ghostscript using the resolution of the dvi driver. I don't know how other distiller programs behaves in this manner.

```

9117 /BorderArrayPatch{%
9118   [exch{%
9119     dup dup type/integertype eq exch type/realtype eq or%
9120     {BPToDvips}if%
9121   }forall]%
9122 }def%
9123 /H.S {%
9124   currentpoint %
9125   HyperBorder add /pdf@lly exch def %
9126   dup DvipsToPDF 72 add /pdf@hoff exch def %
9127   HyperBorder sub /pdf@llx exch def%
9128 } def%
9129 /H.L {%
9130   2 sub %
9131   PDFToDvips /HyperBase exch def %
9132   currentpoint %
9133   HyperBase sub /pdf@ury exch def%
9134   /pdf@urx exch def%
9135 } def%
9136 /H.A {%
9137   H.L %
9138   currentpoint exch pop %
9139   HyperBase sub % baseline skip
9140   DvipsToPDF /pdf@voff exch def%
9141 } def%
9142 /H.R {%
9143   currentpoint %
9144   HyperBorder sub /pdf@ury exch def %
9145   HyperBorder add /pdf@urx exch def %
9146   currentpoint exch pop DvipsToPDF /pdf@voff exch def%
9147 } def %
9148 systemdict%
9149 /pdfmark known%
9150 {%
9151   userdict /?pdfmark /exec load put%
9152 }{%
9153   userdict /?pdfmark /pop load put %
9154   userdict /pdfmark systemdict /cleartomark get put%
9155 }%
9156 ifelse%
9157 }
9158 </dvipsone>
9159 <*dvipdf>
9160 \def\literalps@out#1{\special{pdf: #1}}%
9161 \providecommand*\@pdfborder{0 0 1}
9162 \providecommand*\@pdfborderstyle{}
9163 </dvipdf>

```

46.13 TeX4ht

```

9164 <*tex4ht>
9165 \@ifpackageloaded{tex4ht}{%
9166   \typeout{hyperref tex4ht: tex4ht already loaded}%
9167 }{%
9168   \RequirePackage[hTeX4ht]{tex4ht}%
9169 }
9170 \hyperlinkfileprefix{}
9171 \def\PDF@FinishDoc{}
9172 \def\PDF@SetupDoc{%
9173   \ifx\@baseurl\@empty
9174   \else
9175     \special{t4ht=<base href="\@baseurl">}%
9176   \fi
9177 }
9178 \def\hyper@anchor#1{%
9179   \Hy@SaveLastskip
9180   \begingroup
9181     \let\protect=\string
9182     \special{t4ht=<a name=\hyper@quote #1\hyper@quote>}%
9183   \endgroup
9184   \Hy@Activeanchortrue
9185   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9186   \special{t4ht=</a>}%
9187   \Hy@Activeanchorfalse
9188   \Hy@RestoreLastskip
9189 }
9190 \def\hyper@anchorstart#1{%
9191   \Hy@SaveLastskip
9192   \begingroup
9193     \hyper@chars\special{t4ht=<a name=\hyper@quote#1\hyper@quote>}%
9194   \endgroup
9195   \Hy@Activeanchortrue
9196 }
9197 \def\hyper@anchorend{%
9198   \special{t4ht=</a>}%
9199   \Hy@Activeanchorfalse
9200   \Hy@RestoreLastskip
9201 }
9202 \def\@urltype{url}
9203 \def\hyper@linkstart#1#2{%
9204   \expandafter\Hy@colorlink\csname @#1color\endcsname
9205   \def\Hy@tempa{#1}%
9206   \ifx\Hy@tempa\@urltype
9207     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
9208   \else
9209     \begingroup
9210       \hyper@chars
9211       \special{t4ht=<a href=\hyper@quote\##2\hyper@quote>}%
9212     \endgroup
9213   \fi
9214 }
9215 \def\hyper@linkend{%
9216   \special{t4ht=</a>}%
9217   \Hy@endcolorlink
9218 }
9219 \def\hyper@linkfile#1#2#3{%
9220   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%

```

```

9221 }
9222 \def\hyper@linkurl#1#2{%
9223   \leavevmode
9224   \ifHy@raiselinks
9225     \setbox\@tempboxa=\color@hbox #1\color@endbox
9226     \@linkdim\dp\@tempboxa
9227     \lower\@linkdim\hbox{%
9228       \begingroup
9229         \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
9230     \endgroup
9231   }%
9232   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9233   \@linkdim\ht\@tempboxa
9234   \advance\@linkdim by -6.5\p@
9235   \raise\@linkdim\hbox{\special{t4ht=</a>}}%
9236 \else
9237   \begingroup
9238   \hyper@chars
9239   \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
9240   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9241   \special{t4ht=</a>}}%
9242 \endgroup
9243 \fi
9244 }
9245 \def\hyper@link#1#2#3{%
9246   \hyper@linkurl{#3}{\##2}%
9247 }
9248 \def\hyper@image#1#2{%
9249   \begingroup
9250   \hyper@chars
9251   \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}}%
9252 \endgroup
9253 }
9254 \let\autoref\ref
9255 \ifx \rEfLiNK \UnDef
9256   \def\rEfLiNK #1#2{#2}%
9257 \fi
9258 \def\backref#1{}
9259 </tex4ht>
9260 <*tex4htcfg>
9261 \IfFileExists{\jobname.cfg}{\endinput}{}
9262 \Preamble{html}
9263   \begin{document}%
9264 \EndPreamble
9265 \def\TeX{TeX}
9266 \def\OMEGA{\Omega}
9267 \def\LaTeX{LaTeX}
9268 \def\LaTeXe{\LaTeX2e}
9269 \def\eTeX{e-TeX}
9270 \def\MF{Metafont}
9271 \def\MP{Metapost}
9272 </tex4htcfg>

```

47 Driver-specific form support

47.1 pdfmarks

```

9273 <*pdfmark>

```

```

9274 \long\def \@Form[#1]{%
9275 \AtBeginShipoutFirst{%
9276   \headerps@out{%
9277 [%
9278   /_objdef{pdfDocEncoding}%
9279   /type/dict%
9280 /OBJ pdfmark%
9281 [%
9282   {pdfDocEncoding}%
9283   <<%
9284     /Type/Encoding%
9285     /Differences [%
9286       24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
9287       /tilde %
9288       39/quotesingle %
9289       96/grave %
9290       128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
9291       /fraction/guilsinglleft/guilsinglright/minus/perthousand%
9292       /quotedblbase/quotedblleft/quotedblright/quoteleft%
9293       /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
9294       /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
9295       164/currency %
9296       166/brokenbar %
9297       168/dieresis/copyright/ordfeminine %
9298       172/logicalnot/.notdef/registered/macron/degree/plusminus%
9299       /twosuperior/threesuperior/acute/mu %
9300       183/periodcentered/cedilla/onesuperior/ordmasculine %
9301       188/onequarter/onehalf/threequarters %
9302       192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
9303       /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
9304       /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
9305       /Ocircumflex/Otilde/Odieresis/multiply/Slash/Ugrave%
9306       /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
9307       /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
9308       /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
9309       /iacute/icircumflex/idieresis/eth/ntilde/ograve/oacute%
9310       /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
9311       /ucircumflex/udieresis/yacute/thorn/ydieresis%
9312   ]%
9313   >>%
9314 /PUT pdfmark%
9315 [%
9316   /_objdef{ZaDb}%
9317   /type/dict%
9318 /OBJ pdfmark%
9319 [%
9320   {ZaDb}%
9321   <<%
9322     /Type/Font%
9323     /Subtype/Type1%
9324     /Name/ZaDb%
9325     /BaseFont/ZapfDingbats%
9326   >>%
9327 /PUT pdfmark%
9328 [%
9329   /_objdef{Helv}%
9330   /type/dict%

```



```

9331 /OBJ pdfmark%
9332 [%
9333   {Helv}%
9334   <<%
9335     /Type/Font%
9336     /Subtype/Type1%
9337     /Name/Helv%
9338     /BaseFont/Helvetica%
9339     /Encoding{pdfDocEncoding}%
9340   >>%
9341 /PUT pdfmark%
9342 [%
9343   /_objdef{aform}%
9344   /type/dict%
9345 /OBJ pdfmark%
9346 [%
9347   /_objdef{afields}%
9348   /type/array%
9349 /OBJ pdfmark%
9350 {%
9351   [%
9352     /BBox[0 0 100 100]%
9353     /_objdef{Check}%
9354   /BP pdfmark %
9355   1 0 0 setrgbcolor%
9356   /ZapfDingbats 80 selectfont %
9357   20 20 moveto%
9358   (4)show%
9359   [/EP pdfmark%
9360   [%
9361     /BBox[0 0 100 100]%
9362     /_objdef{Cross}%
9363   /BP pdfmark %
9364   1 0 0 setrgbcolor%
9365   /ZapfDingbats 80 selectfont %
9366   20 20 moveto%
9367   (8)show%
9368   [/EP pdfmark%
9369   [%
9370     /BBox[0 0 250 100]%
9371     /_objdef{Submit}%
9372   /BP pdfmark %
9373   0.6 setgray %
9374   0 0 250 100 rectfill %
9375   1 setgray %
9376   2 2 moveto %
9377   2 98 lineto %
9378   248 98 lineto %
9379   246 96 lineto %
9380   4 96 lineto %
9381   4 4 lineto %
9382   fill %
9383   0.34 setgray %
9384   248 98 moveto %
9385   248 2 lineto %
9386   2 2 lineto %
9387   4 4 lineto %

```

```

9388 246 4 lineto %
9389 246 96 lineto %
9390 fill%
9391 /Helvetica 76 selectfont %
9392 0 setgray %
9393 8 22.5 moveto%
9394 (Submit)show%
9395 [/EP pdfmark%
9396 [%
9397   /BBox[0 0 250 100]%
9398   /_objdef{SubmitP}%
9399 /BP pdfmark %
9400 0.6 setgray %
9401 0 0 250 100 rectfill %
9402 0.34 setgray %
9403 2 2 moveto %
9404 2 98 lineto %
9405 248 98 lineto %
9406 246 96 lineto %
9407 4 96 lineto %
9408 4 4 lineto %
9409 fill %
9410 1 setgray %
9411 248 98 moveto %
9412 248 2 lineto %
9413 2 2 lineto %
9414 4 4 lineto %
9415 246 4 lineto %
9416 246 96 lineto %
9417 fill%
9418 /Helvetica 76 selectfont %
9419 0 setgray %
9420 10 20.5 moveto%
9421 (Submit)show%
9422 [/EP pdfmark%
9423 } ?pdfmark%
9424 [%
9425 {aform}%
9426 <<%
9427   /Fields{afields}%
9428   /DR<<%
9429     /Font<<%
9430       /ZaDb{ZaDb}%
9431       /Helv{Helv}%
9432     >>%
9433   >>%
9434   /DA(/Helv 10 Tf 0 g)%
9435   /CO{corder}%
9436   /NeedAppearances true%
9437 >>%
9438 /PUT pdfmark%
9439 [%
9440 {Catalog}%
9441 <<%
9442   /AcroForm{aform}%
9443 >>%
9444 /PUT pdfmark%

```

```

9445 [%
9446   /_objdef{corder}%
9447   /type/array%
9448 /OBJ pdfmark% dps
9449 }}%
9450   \setkeys{Form}{#1}%
9451 }
9452 \def\@endForm{}
9453 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9454   \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
9455 }
9456 \def\@TextField[#1]#2{% parameters, label
9457   \def\Fld@name{#2}%
9458   \def\Fld@default{}%
9459   \let\Fld@value\@empty
9460   \def\Fld@width{\DefaultWidthofText}%
9461   \def\Fld@height{%
9462     \ifFld@multiline
9463       \DefaultHeightofTextMultiline
9464     \else
9465       \DefaultHeightofText
9466     \fi
9467   }%
9468   \begingroup
9469     \Field@toks={ }%
9470     \expandafter\HyField@SetKeys\expandafter{%
9471       \DefaultOptionsofText,#1%
9472     }%
9473     \HyField@FlagsText
9474     \ifFld@hidden\def\Fld@width{1sp}\fi
9475     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
9476     \LayoutTextField{#2}{%
9477       \Hy@escapeform\PDFForm@Text
9478       \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
9479         pdfmark=/ANN,Raw={\PDFForm@Text}%
9480       }%
9481     }%
9482   \endgroup
9483 }
9484 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9485   \def\Fld@name{#2}%
9486   \let\Fld@default\relax
9487   \let\Fld@value\relax
9488   \def\Fld@width{\DefaultWidthofChoiceMenu}%
9489   \def\Fld@height{\DefaultHeightofChoiceMenu}%
9490   \begingroup
9491     \Fld@menulength=0 %
9492     \@tempdima\z@
9493     \@for\@curropt:=#3\do{%
9494       \expandafter\Fld@checkequals\@curropt==\%
9495       \Hy@StepCount\Fld@menulength
9496       \settowidth{\@tempdimb}{\@currDisplay}%
9497       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
9498     }%
9499     \advance\@tempdima by 15\p@
9500     \Field@toks={ }%
9501   \begingroup

```

```

9502     \HyField@SetKeys{#1}%
9503 \edef\x{\endgroup
9504     \noexpand\expandafter
9505     \noexpand\HyField@SetKeys
9506     \noexpand\expandafter{%
9507     \expandafter\noexpand\csname DefaultOptionsof%
9508     \ifFld@radio
9509     Radio%
9510     \else
9511     \ifFld@combo
9512     \ifFld@popdown
9513     PopdownBox%
9514     \else
9515     ComboBox%
9516     \fi
9517     \else
9518     ListBox%
9519     \fi
9520     \fi
9521     \endcsname
9522     }%
9523 } \x
9524 \HyField@SetKeys{#1}%
9525 \ifFld@hidden\def\Fld@width{1sp}\fi
9526 \ifx\Fld@value\relax
9527     \let\Fld@value\Fld@default
9528 \fi
9529 \LayoutChoiceField{#2}{%
9530     \ifFld@radio
9531     \HyField@FlagsRadioButton
9532     @@Radio{#3}%
9533     \else
9534     \begingroup
9535     \HyField@FlagsChoice
9536     \ifdim\Fld@width<\@tempdima
9537     \ifdim\@tempdima<1cm\@tempdima1cm\fi
9538     \edef\Fld@width{\the\@tempdima}%
9539     \fi
9540     \ifFld@combo
9541     \else
9542     \@tempdima=\the\Fld@menulength\Fld@charsize
9543     \advance\@tempdima by \Fld@borderwidth bp %
9544     \advance\@tempdima by \Fld@borderwidth bp %
9545     \edef\Fld@height{\the\@tempdima}%
9546     \fi
9547     @@ListBox{#3}%
9548     \endgroup
9549     \fi
9550     }%
9551 \endgroup
9552 }
9553 \def\@@Radio#1{%
9554     \Fld@listcount=0 %
9555     \for\@curropt:=#1\do{%
9556     \expandafter\Fld@checkequals\@curropt==\%
9557     \Hy@StepCount\Fld@listcount
9558     \currDisplay\space

```

```

9559 \Hy@escapeform\PDFForm@Radio
9560 \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
9561 pdfmark=/ANN,%
9562 Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
9563 } % deliberate space between radio buttons
9564 }%
9565 }
9566 \newcount\Fld@listcount
9567 \def\@@Listbox#1{%
9568 \HyField@PDFChoices{#1}%
9569 \Hy@escapeform\PDFForm@List
9570 \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
9571 pdfmark=/ANN,Raw={\PDFForm@List}%
9572 }%
9573 }
9574 \def\@PushButton[#1]#2{% parameters, label
9575 \def\Fld@name{#2}%
9576 \begingroup
9577 \Field@toks={ }%
9578 \expandafter\HyField@SetKeys\expandafter{%
9579 \DefaultOptionsofPushButton,#1%
9580 }%
9581 \HyField@FlagsPushButton
9582 \ifFld@hidden\def\Fld@width{1sp}\fi
9583 \LayoutPushButtonField{%
9584 \Hy@escapeform\PDFForm@Push
9585 \pdfmark[\MakeButtonField{#2}]{%
9586 pdfmark=/ANN,Raw={\PDFForm@Push}%
9587 }%
9588 }%
9589 \endgroup
9590 }
9591 \def\@Submit[#1]#2{%
9592 \Field@toks={ }%
9593 \def\Fld@width{\DefaultWidthofSubmit}%
9594 \def\Fld@height{\DefaultHeightofSubmit}%
9595 \begingroup
9596 \expandafter\HyField@SetKeys\expandafter{%
9597 \DefaultOptionsofSubmit,#1%
9598 }%
9599 \HyField@FlagsPushButton
9600 \HyField@FlagsSubmit
9601 \ifFld@hidden\def\Fld@width{1sp}\fi
9602 \Hy@escapeform\PDFForm@Submit
9603 \pdfmark[\MakeButtonField{#2}]{%
9604 pdfmark=/ANN,%
9605 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
9606 }%
9607 \endgroup
9608 }
9609 \def\@Reset[#1]#2{%
9610 \Field@toks={ }%
9611 \def\Fld@width{\DefaultWidthofReset}%
9612 \def\Fld@height{\DefaultHeightofReset}%
9613 \begingroup
9614 \expandafter\HyField@SetKeys\expandafter{%
9615 \DefaultOptionsofReset,#1%

```

```

9616 }%
9617 \HyField@FlagsPushButton
9618 \ifFld@hidden\def\Fld@width{1sp}\fi
9619 \Hy@escapeform\PDFForm@Reset
9620 \pdfmark[\MakeButtonField{#2}]{%
9621 pdfmark=/ANN,Raw={\PDFForm@Reset}%
9622 }%
9623 \endgroup
9624 }
9625 \def\@CheckBox[#1]#2{% parameters, label
9626 \def\Fld@name{#2}%
9627 \def\Fld@default{0}%
9628 \begingroup
9629 \def\Fld@width{\DefaultWidthofCheckBox}%
9630 \def\Fld@height{\DefaultHeightofCheckBox}%
9631 \Field@toks={ }%
9632 \expandafter\HyField@SetKeys\expandafter{%
9633 \DefaultOptionsofCheckBox,#1%
9634 }%
9635 \HyField@FlagsCheckBox
9636 \ifFld@hidden\def\Fld@width{1sp}\fi
9637 \LayoutCheckField{#2}{%
9638 \Hy@escapeform\PDFForm@Check
9639 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
9640 pdfmark=/ANN,Raw={\PDFForm@Check}%
9641 }%
9642 }%
9643 \endgroup
9644 }
9645 \pdfmark

```

47.2 dvipdf

```

9646 \def\@Form[#1]{\typeout{Sorry, I do not support FORMs}}
9647 \def\@endForm{}
9648 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9649 \typeout{Sorry, dvipdf does not support FORM gauges}%
9650 }
9651 \def\@TextField[#1]#2{% parameters, label
9652 \typeout{Sorry, dvipdf does not support FORM text fields}%
9653 }
9654 \def\@CheckBox[#1]#2{% parameters, label
9655 \typeout{Sorry, dvipdf does not support FORM checkboxes}%
9656 }
9657 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9658 \typeout{Sorry, dvipdf does not support FORM choice menus}%
9659 }
9660 \def\@PushButton[#1]#2{% parameters, label
9661 \typeout{Sorry, dvipdf does not support FORM pushbuttons}%
9662 }
9663 \def\@Reset[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
9664 \def\@Submit[#1]#2{\typeout{Sorry, dvipdf does not support FORMs}}
9665 \def\@Form[#1]{\typeout{Sorry, dvipdf does not support FORMs}}
9666 \def\@endForm{}

```

47.3 HyperTeX

```

9667 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
9668 \def\@endForm{}

```

```

9669 \def\@endForm{}
9670 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9671   \typeout{Sorry, HyperTeX does not support FORM gauges}%
9672 }
9673 \def\@TextField[#1]#2{% parameters, label
9674   \typeout{Sorry, HyperTeX does not support FORM text fields}%
9675 }
9676 \def\@CheckBox[#1]#2{% parameters, label
9677   \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
9678 }
9679 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9680   \typeout{Sorry, HyperTeX does not support FORM choice menus}%
9681 }
9682 \def\@PushButton[#1]#2{% parameters, label
9683   \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
9684 }
9685 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
9686 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
9687 \</hypertext>

```

47.4 TeX4ht

```

9688 \<tex4ht>
9689 \def\@Form[#1]{%
9690   \setkeys{Form}{#1}%
9691   \HCode{<form action="\Form@action" method="\Form@method">}%
9692 }
9693 \def\@endForm{\HCode{</form>}}
9694 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9695   \typeout{Sorry, TeX4ht does not support gauges}%
9696 }
9697 \def\@TextField[#1]#2{% parameters, label
9698   \let\Hy@reserved@a\@empty
9699   \def\Fld@name{#2}%
9700   \def\Fld@default{}%
9701   \bgroup
9702     \Field@toks={ }%
9703     \setkeys{Field}{#1}%
9704     \HCode{<label for="\Fld@name">#2</label>}%
9705     \ifFld@password
9706       \@@PasswordField
9707     \else
9708       \@@TextField
9709     \fi
9710   \egroup
9711 }
9712 \def\@@PasswordField{%
9713   \HCode{%
9714     <input type="password" %
9715       id="\Fld@name" %
9716       name="\Fld@name" %
9717       \ifFld@hidden type="hidden" \fi
9718       value="\Fld@default" %
9719       \the\Field@toks
9720     >%
9721   }%
9722 }
9723 \def\@@TextField{%

```

```

9724 \ifFld@multiline
9725   \HCode{<textarea %
9726     \ifFld@readonly readonly \fi
9727     id="\Fld@name" %
9728     name="\Fld@name" %
9729     \ifFld@hidden type="hidden" \fi
9730     \the\Field@toks>%
9731   }%
9732   \Fld@default
9733   \HCode{</textarea>}%
9734 \else
9735   \HCode{<input type="textbox" %
9736     \ifFld@readonly readonly \fi
9737     id="\Fld@name" %
9738     name="\Fld@name" %
9739     \ifFld@hidden type="hidden" \fi
9740     value="\Fld@default" %
9741     \the\Field@toks>%
9742   }%
9743 \fi
9744 }
9745 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9746   \def\Fld@name{#2}%
9747   \def\Fld@default{}%
9748   \let\Hy@reserved@a\relax
9749   \begingroup
9750     \expandafter\Fld@findlength#3\\%
9751     \Field@toks={ }%
9752     \setkeys{Field}{#1}%
9753     #2%
9754     \ifFld@radio
9755       \expandafter\@@Radio#3\\%
9756     \else
9757       \expandafter\@@Menu#3\\%
9758     \fi
9759   \endgroup
9760 }
9761 \def\Fld@findlength#1\\{%
9762   \Fld@menulength=0 %
9763   \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
9764 }
9765 \def\@@Menu#1\\{%
9766   \HCode{<select size="\the\Fld@menulength" %
9767     name="\Fld@name" %
9768     \the\Field@toks>%
9769   }%
9770   \@for\@curropt:=#1\do{%
9771     \expandafter\Fld@checkequals\@curropt==\\%
9772     \HCode{<option %
9773       \ifx\@curropt\Fld@default selected \fi
9774       value="\@currValue">\@currDisplay</option>%
9775     }%
9776   }%
9777   \HCode{</select>}%
9778 }
9779 \def\@@Radio#1\\{%
9780   \@for\@curropt:=#1\do{%

```



```

9781 \expandafter\Fld@checkequals\@curropt==\\%
9782 \HCode{<input type="radio" %
9783 \ifx\@curropt\Fld@default checked \fi
9784 name="\Fld@name" %
9785 value="\@currValue" %
9786 \the\Fld@toks>%
9787 }%
9788 \@currDisplay
9789 }%
9790 }
9791 \def\@PushButton[#1]#2{% parameters, label
9792 \def\Fld@name{#2}%
9793 \bgroup
9794 \Field@toks={ }%
9795 \setkeys{Field}{#1}%
9796 \HCode{<input type="button" %
9797 name="\Fld@name" %
9798 value="#2" %
9799 \the\Fld@toks>%
9800 }%
9801 \HCode{</button>}%
9802 \egroup
9803 }
9804 \def\@Submit[#1]#2{%
9805 \HCode{<button type="submit">#2</button>}%
9806 }
9807 \def\@Reset[#1]#2{%
9808 \HCode{<button type="reset">#2</button>}%
9809 }
9810 \def\@CheckBox[#1]#2{% parameters, label
9811 \let\Hy@reserved@a\@empty
9812 \def\Fld@name{#2}%
9813 \def\Fld@default{0}%
9814 \bgroup
9815 \Field@toks={ }%
9816 \setkeys{Field}{#1}%
9817 \HCode{<input type="checkbox" %
9818 \ifFld@checked checked \fi
9819 \ifFld@disabled disabled \fi
9820 \ifFld@readonly readonly \fi
9821 name="\Fld@name" %
9822 \ifFld@hidden type="hidden" \fi
9823 value="\Fld@default" %
9824 \the\Fld@toks>%
9825 #2%
9826 }%
9827 \egroup
9828 }
9829 </tex4ht>

```

47.5 pdfTeX

```

9830 <*pdftex>
9831 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
9832 \typeout{Sorry, pdftex does not support FORM gauges}%
9833 }
9834 \def\MakeFieldObject#1#2{\sbox0{#1}%
9835 \immediate\pdfxform0 %

```

```

9836 \expandafter\edef\csname #2Object\endcsname{%
9837 \the\pdflastxform\space 0 R%
9838 }%
9839 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}}%
9840 }%
9841 \def\@Form[#1]{%
9842 \@ifundefined{textcolor}{\let\textcolor@gobble}{}}%
9843 \setkeys{Form}{#1}%
9844 \ifnum\pdftexversion>13 %
9845 \pdfrefobj\OBJ@pdfdocencoding
9846 \pdfrefobj\OBJ@ZaDb
9847 \pdfrefobj\OBJ@Helv
9848 \pdfrefobj\OBJ@acroform
9849 \fi
9850 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
9851 \MakeFieldObject%

```

Same as \ding{123} of package pifont.

```

9852 \begingroup
9853 \fontfamily{pzd}%
9854 \fontencoding{U}%
9855 \fontseries{m}%
9856 \fontshape{n}%
9857 \selectfont
9858 \char123 %
9859 \endgroup
9860 }{Ding}%
9861 \MakeFieldObject%
9862 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
9863 }{Submit}%
9864 \MakeFieldObject%
9865 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
9866 }{SubmitP}%
9867 }
9868 \def\@endForm{}
9869 \def\@TextField[#1]#2{% parameters, label
9870 \def\Fld@name{#2}%
9871 \def\Fld@default{}%
9872 \let\Fld@value\@empty
9873 \def\Fld@width{\DefaultWidthofText}%
9874 \def\Fld@height{%
9875 \ifFld@multiline
9876 \DefaultHeightofTextMultiline
9877 \else
9878 \DefaultHeightofText
9879 \fi
9880 }%
9881 \begingroup
9882 \Field@toks={ }%
9883 \expandafter\HyField@SetKeys\expandafter{%
9884 \DefaultOptionsofText,#1%
9885 }%
9886 \PDFForm@Name
9887 \HyField@FlagsText
9888 \ifFld@hidden\def\Fld@width{1sp}\fi
9889 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
9890 \LayoutTextField{#2}%
9891 \Hy@escapeform\PDFForm@Text

```

```

9892      \pdfstartlink user {\PDFForm@Text}\relax
9893      \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
9894    }%
9895  \endgroup
9896 }
9897 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
9898   \def\Fld@name{#2}%
9899   \let\Fld@default\relax
9900   \let\Fld@value\relax
9901   \def\Fld@width{\DefaultWidthofChoiceMenu}%
9902   \def\Fld@height{\DefaultHeightofChoiceMenu}%
9903   \begingroup
9904     \Fld@menulength=0 %
9905     \@tempdima\z@
9906     \@for\@curropt:=#3\do{%
9907       \expandafter\Fld@checkequals\@curropt==\%
9908       \Hy@StepCount\Fld@menulength
9909       \settowidth{\@tempdimb}{\@currDisplay}%
9910       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
9911     }%
9912     \advance\@tempdima by 15\p@
9913     \Field@toks={ }%
9914     \begingroup
9915       \HyField@SetKeys{#1}%
9916     \edef\x{\endgroup
9917       \noexpand\expandafter
9918       \noexpand\HyField@SetKeys
9919       \noexpand\expandafter{%
9920         \expandafter\noexpand\cname DefaultOptionsof%
9921         \ifFld@radio
9922           Radio%
9923         \else
9924           \ifFld@combo
9925             \ifFld@popdown
9926               PopdownBox%
9927             \else
9928               ComboBox%
9929             \fi
9930           \else
9931             ListBox%
9932           \fi
9933         \fi
9934       \endcsname
9935     }%
9936   }\x
9937   \HyField@SetKeys{#1}%
9938   \PDFForm@Name
9939   \ifFld@hidden\def\Fld@width{1sp}\fi
9940   \ifx\Fld@value\relax
9941     \let\Fld@value\Fld@default
9942   \fi
9943   \LayoutChoiceField{#2}{%
9944     \ifFld@radio
9945       \HyField@FlagsRadioButton
9946       \@@Radio{#3}%
9947     \else
9948       \begingroup

```

```

9949         \HyField@FlagsChoice
9950         \ifdim\Fld@width<\@tempdima
9951             \ifdim\@tempdima<1cm\@tempdima1cm\fi
9952             \edef\Fld@width{\the\@tempdima}%
9953         \fi
9954         \ifFld@combo
9955         \else
9956             \@tempdima=\the\Fld@menulength\Fld@charsize
9957             \advance\@tempdima by \Fld@borderwidth bp %
9958             \advance\@tempdima by \Fld@borderwidth bp %
9959             \edef\Fld@height{\the\@tempdima}%
9960         \fi
9961         \@@ListBox{#3}%
9962     \endgroup
9963 \fi
9964 }%
9965 \endgroup
9966 }
9967 \def\@@Radio#1{%
9968     \Fld@listcount=0 %
9969     \for\@curropt:=#1\do{%
9970         \expandafter\Fld@checkequals\@curropt==\\%
9971         \Hy@StepCount\Fld@listcount
9972         \currDisplay\space
9973         \leavevmode
9974         \Hy@escapeform\PDFForm@Radio
9975         \pdfstartlink user {%
9976             \PDFForm@Radio
9977             /AP<<%
9978             /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.

```

9979             /\@currValue\space \DingObject
9980             >>%
9981             >>%
9982         }%
9983         \relax
9984         \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
9985         \space % deliberate space between radio buttons
9986     }%
9987 }
9988 \newcount\Fld@listcount
9989 \def\@@ListBox#1{%
9990     \HyField@PDFChoices{#1}%
9991     \leavevmode
9992     \Hy@escapeform\PDFForm@List
9993     \pdfstartlink user {\PDFForm@List}\relax
9994     \MakeChoiceField{\Fld@width}{\Fld@height}%
9995     \pdfendlink
9996 }
9997 \def\@PushButton[#1]#2{% parameters, label
9998     \def\Fld@name{#2}%
9999     \begingroup
10000     \Field@toks={ }%
10001     \expandafter\HyField@SetKeys\expandafter{%
10002         \DefaultOptionsofPushButton,#1%

```

```

10003     }%
10004     \PDFForm@Name
10005     \HyField@FlagsPushButton
10006     \ifFld@hidden\def\Fld@width{1sp}\fi
10007     \LayoutPushButtonField{%
10008         \leavevmode
10009         \Hy@escapeform\PDFForm@Push
10010         \pdfstartlink user {\PDFForm@Push}\relax
10011         \MakeButtonField{#2}%
10012         \pdfendlink
10013     }%
10014 \endgroup
10015 }
10016 \def\@Submit[#1]#2{%
10017     \Field@toks={ }%
10018     \def\Fld@width{\DefaultWidthofSubmit}%
10019     \def\Fld@height{\DefaultHeightofSubmit}%
10020     \begingroup
10021         \expandafter\HyField@SetKeys\expandafter{%
10022             \DefaultOptionsofSubmit,#1%
10023         }%
10024         \HyField@FlagsPushButton
10025         \HyField@FlagsSubmit
10026         \ifFld@hidden\def\Fld@width{1sp}\fi
10027         \leavevmode
10028         \Hy@escapeform\PDFForm@Submit
10029         \pdfstartlink user {%
10030             \PDFForm@Submit
10031             /AP<</N \SubmitObject/D \SubmitPObject>>%
10032         }%
10033         \relax
10034         \MakeButtonField{#2}%
10035         \pdfendlink
10036     \endgroup
10037 }
10038 \def\@Reset[#1]#2{%
10039     \Field@toks={ }%
10040     \def\Fld@width{\DefaultWidthofReset}%
10041     \def\Fld@height{\DefaultHeightofReset}%
10042     \begingroup
10043         \expandafter\HyField@SetKeys\expandafter{%
10044             \DefaultOptionsofReset,#1%
10045         }%
10046         \HyField@FlagsPushButton
10047         \ifFld@hidden\def\Fld@width{1sp}\fi
10048         \leavevmode
10049         \Hy@escapeform\PDFForm@Reset
10050         \pdfstartlink user {\PDFForm@Reset}\relax
10051         \MakeButtonField{#2}%
10052         \pdfendlink
10053     \endgroup
10054 }
10055 \def\@CheckBox[#1]#2{% parameters, label
10056     \def\Fld@name{#2}%
10057     \def\Fld@default{0}%
10058     \begingroup
10059         \def\Fld@width{\DefaultWidthofCheckBox}%

```

```

10060 \def\Fld@height{\DefaultHeightofCheckBox}%
10061 \Field@toks={ }%
10062 \expandafter\HyField@SetKeys\expandafter{%
10063 \DefaultOptionsofCheckBox,#1%
10064 }%
10065 \PDFForm@Name
10066 \HyField@FlagsCheckBox
10067 \ifFld@hidden\def\Fld@width{1sp}\fi
10068 \LayoutCheckField{#2}{%
10069 \Hy@escapeform\PDFForm@Check
10070 \pdfstartlink user {\PDFForm@Check}\relax
10071 \MakeCheckField{\Fld@width}{\Fld@height}%
10072 \pdfendlink
10073 }%
10074 \endgroup
10075 }
10076 \pdfobj {%
10077 <<%
10078 /Type/Encoding%
10079 /Differences[%
10080 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
10081 /ring/tilde %
10082 39/quotesingle %
10083 96/grave %
10084 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10085 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
10086 /quotedblbase/quotedblleft/quotedblright/quoteleft%
10087 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
10088 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
10089 164/currency %
10090 166/brokenbar %
10091 168/dieresis/copyright/ordfeminine %
10092 172/logicalnot/.notdef/registered/macron/degree/plusminus%
10093 /twosuperior/threesuperior/acute/mu %
10094 183/periodcentered/cedilla/onesuperior/ordmasculine %
10095 188/onequarter/onehalf/threequarters %
10096 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
10097 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
10098 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
10099 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
10100 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
10101 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
10102 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
10103 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
10104 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
10105 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
10106 ]%
10107 >>%
10108 }
10109 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
10110 \pdfobj{%
10111 <<%
10112 /Type/Font%
10113 /Subtype/Type1%
10114 /Name/ZaDb%
10115 /BaseFont/ZapfDingbats%
10116 >>%

```

```

10117 }
10118 \edef\OBJ@ZaDb{\the\pdflastobj}
10119 \pdfobj{%
10120   <<%
10121     /Type/Font%
10122     /Subtype/Type1%
10123     /Name/Helv%
10124     /BaseFont/Helvetica%
10125     /Encoding \OBJ@pdfdocencoding\space 0 R%
10126   >>%
10127 }
10128 \edef\OBJ@Helv{\the\pdflastobj}
10129 \pdfobj{%
10130   <<%
10131     /Fields []%
10132     /DR<<%
10133       /Font<<%
10134         /ZaDb \OBJ@ZaDb\space 0 R%
10135         /Helv \OBJ@Helv\space 0 R%
10136       >>%
10137     >>%
10138     /DA(/Helv 10 Tf 0 g)%
10139     /NeedAppearances true%
10140   >>%
10141 }
10142 \edef\OBJ@acroform{\the\pdflastobj}
10143 </pdftex>

```

47.6 dvipdfm

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

```

10144 < *dvipdfm >

```

\@Gauge

```

10145 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10146   \typeout{Sorry, dvipdfm does not support FORM gauges}%
10147 }

```

\@Form

```

10148 \def\@Form[#1]{%
10149   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
10150   \setkeys{Form}{#1}%
10151   \@pdfm@mark{obj @afields []}%
10152   \@pdfm@mark{obj @corder []}%
10153   \@pdfm@mark{%
10154     obj @aform <<%
10155       /Fields @afields%
10156       /DR<<%
10157         /Font<<%
10158           /ZaDb @OBJ@ZaDb%
10159           /Helv @OBJ@Helv%
10160         >>%
10161       >>%
10162       /DA(/Helv 10 Tf 0 g)%
10163       /CO @corder%
10164       /NeedAppearances true%

```

```

10165     >>%
10166   }%
10167   \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
10168 }

\@endForm

10169 \def\@endForm{}

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

10170 \def\dvipdfm@setdim{%
10171   height \the\ht\pdfm@box\space
10172   width \the\wd\pdfm@box\space
10173   depth \the\dp\pdfm@box\space
10174 }

\HyField@AnnotCount

10175 \newcount\HyField@AnnotCount
10176 \HyField@AnnotCount=\z@

\HyField@AdvanceAnnotCount

10177 \def\HyField@AdvanceAnnotCount{%
10178   \global\advance\HyField@AnnotCount\@ne
10179 }

\HyField@TheAnnotCount

10180 \def\HyField@TheAnnotCount{%
10181   \the\HyField@AnnotCount
10182 }

\@TextField

10183 \def\@TextField[#1]#2{% parameters, label
10184   \def\Fld@name{#2}%
10185   \def\Fld@default{}%
10186   \let\Fld@value\@empty
10187   \def\Fld@width{\DefaultWidthofText}%
10188   \def\Fld@height{%
10189     \ifFld@multiline
10190       \DefaultHeightofTextMultiline
10191     \else
10192       \DefaultHeightofText
10193     \fi
10194   }%
10195   \begingroup
10196     \Fld@toks={ }%
10197     \expandafter\HyField@SetKeys\expandafter{%
10198       \DefaultOptionsofText,#1%
10199     }%
10200     \PDFForm@Name
10201     \HyField@FlagsText
10202     \ifFld@hidden\def\Fld@width{1sp}\fi
10203     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
10204     \setbox\pdfm@box=\hbox{%
10205       \MakeTextField{\Fld@width}{\Fld@height}%
10206     }%
10207     \HyField@AdvanceAnnotCount
10208     \LayoutTextField{#2}{%

```



```

10209      \Hy@escapeform\PDFForm@Text
10210      \@pdfm@mark{%
10211          ann @text\HyField@TheAnnotCount\space
10212          \dvipdfm@setdim << \PDFForm@Text >>%
10213      }%
10214  }%
10215  \unhbox\pdfm@box
10216  \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
10217  % record in @afields array
10218  \endgroup
10219 }

```

\@ChoiceMenu

```

10220 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10221   \def\Fld@name{#2}%
10222   \let\Fld@default\relax
10223   \let\Fld@value\relax
10224   \def\Fld@width{\DefaultWidthofChoiceMenu}%
10225   \def\Fld@height{\DefaultHeightofChoiceMenu}%
10226   \begingroup
10227     \Fld@menulength=0 %
10228     \@tempdima\z@
10229     \@for\@curropt:=#3\do{%
10230       \expandafter\Fld@checkequals\@curropt==\%
10231       \Hy@StepCount\Fld@menulength
10232       \settowidth{\@tempdimb}{\@currDisplay}%
10233       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10234     }%
10235     \advance\@tempdima by 15\p@
10236     \Field@toks={ }%
10237     \begingroup
10238       \HyField@SetKeys{#1}%
10239     \edef\x{\endgroup
10240       \noexpand\expandafter
10241       \noexpand\HyField@SetKeys
10242       \noexpand\expandafter{%
10243         \expandafter\noexpand\cename DefaultOptionsof%
10244         \ifFld@radio
10245           Radio%
10246         \else
10247           \ifFld@combo
10248             \ifFld@popdown
10249               PopdownBox%
10250             \else
10251               ComboBox%
10252             \fi
10253           \else
10254             ListBox%
10255           \fi
10256         \fi
10257       \endcsname
10258     }%
10259   }\x
10260   \HyField@SetKeys{#1}%
10261   \PDFForm@Name
10262   \ifFld@hidden\def\Fld@width{1sp}\fi
10263   \ifx\Fld@value\relax

```

```

10264     \let\Fld@value\Fld@default
10265     \fi
10266     \LayoutChoiceField{#2}{%
10267     \ifFld@radio
10268         \HyField@FlagsRadioButton
10269         \@@Radio{#3}%
10270     \else
10271         \beginngroup
10272         \HyField@FlagsChoice
10273         \ifdim\Fld@width<\@tempdima
10274             \ifdim\@tempdima<1cm\@tempdima1cm\fi
10275             \edef\Fld@width{\the\@tempdima}%
10276         \fi
10277         \ifFld@combo
10278         \else
10279             \@tempdima=\the\Fld@menulength\Fld@charsize
10280             \advance\@tempdima by \Fld@borderwidth bp %
10281             \advance\@tempdima by \Fld@borderwidth bp %
10282             \edef\Fld@height{\the\@tempdima}%
10283         \fi
10284         \@@ListBox{#3}%
10285     \endgroup
10286     \fi
10287 }%
10288 \endgroup
10289 }

```

\@@Radio

```

10290 \def\@@Radio#1{%
10291     \Fld@listcount=0 %
10292     \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
10293     \@for\@curropt:=#1\do{%
10294         \expandafter\Fld@checkequals\@curropt==\%
10295         \Hy@StepCount\Fld@listcount
10296         \@currDisplay\space
10297         \leavevmode
10298         \Hy@escapeform\PDFForm@Radio
10299         \ifnum\Fld@listcount=1 %
10300             \HyField@AdvanceAnnotCount
10301         \fi
10302         \@pdfm@mark{%
10303             ann \ifnum\Fld@listcount=1 @radio\HyField@TheAnnotCount\space\fi
10304             \dvi pdfm@setdim
10305             <<%
10306             \PDFForm@Radio
10307             /AP<</N<</\@currValue /null>>>>%
10308             >>%
10309         }%
10310         \unhcopy\pdfm@box\space% deliberate space between radio buttons
10311         \ifnum\Fld@listcount=1 %
10312             \@pdfm@mark{put @afields @radio\HyField@TheAnnotCount}%
10313         \fi
10314     }%
10315 }

```

\Fld@listcount

```

10316 \newcount\Fld@listcount

```

\@@ListBox

```
10317 \def\@@ListBox#1{%
10318   \HyField@PDFChoices{#1}%
10319   \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
10320   \leavevmode
10321   \Hy@escapeform\PDFForm@List
10322   \HyField@AdvanceAnnotCount
10323   \@pdfm@mark{%
10324     ann @list\HyField@TheAnnotCount\space
10325     \dvipdfm@setdim
10326     <<\PDFForm@List>>%
10327   }%
10328   \unhbox\pdfm@box
10329   \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
10330 }
```

\@PushButton

```
10331 \def\@PushButton[#1]#2{% parameters, label
10332   \def\Fld@name{#2}%
10333   \begingroup
10334     \Field@toks={ }%
10335     \expandafter\HyField@SetKeys\expandafter{%
10336       \DefaultOptionsofPushButton,#1%
10337     }%
10338     \PDFForm@Name
10339     \HyField@FlagsPushButton
10340     \ifFld@hidden\def\Fld@width{1sp}\fi
10341     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10342     \HyField@AdvanceAnnotCount
10343     \LayoutPushButtonField{%
10344       \leavevmode
10345       \Hy@escapeform\PDFForm@Push
10346       \@pdfm@mark{%
10347         ann @push\HyField@TheAnnotCount\space
10348         \dvipdfm@setdim
10349         <<\PDFForm@Push>>%
10350       }%
10351     }%
10352     \unhbox\pdfm@box
10353     \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
10354   \endgroup
10355 }
```

\@Submit

```
10356 \def\@Submit[#1]#2{%
10357   \Field@toks={ }%
10358   \def\Fld@width{\DefaultWidthofSubmit}%
10359   \def\Fld@height{\DefaultHeightofSubmit}%
10360   \begingroup
10361     \expandafter\HyField@SetKeys\expandafter{%
10362       \DefaultOptionsofSubmit,#1%
10363     }%
10364     \HyField@FlagsPushButton
10365     \HyField@FlagsSubmit
10366     \ifFld@hidden\def\Fld@width{1sp}\fi
10367     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10368     \leavevmode
```

```

10369 \Hy@escapeform\PDFForm@Submit
10370 \HyField@AdvanceAnnotCount
10371 \@pdfm@mark{%
10372     ann @submit\HyField@TheAnnotCount\space
10373     \dvipdfm@setdim
10374     <<\PDFForm@Submit>>%
10375 }%
10376 \unhbox\pdfm@box%
10377 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
10378 \endgroup
10379 }

```

\@Reset

```

10380 \def\@Reset[#1]#2{%
10381     \Field@toks={ }%
10382     \def\Fld@width{\DefaultWidthofReset}%
10383     \def\Fld@height{\DefaultHeightofReset}%
10384     \begingroup
10385     \expandafter\HyField@SetKeys\expandafter{%
10386         \DefaultOptionsofReset,#1%
10387     }%
10388     \HyField@FlagsPushButton
10389     \ifFld@hidden\def\Fld@width{1sp}\fi
10390     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
10391     \leavevmode
10392     \Hy@escapeform\PDFForm@Reset
10393     \HyField@AdvanceAnnotCount
10394     \@pdfm@mark{%
10395         ann @reset\HyField@TheAnnotCount\space
10396         \dvipdfm@setdim
10397         <<\PDFForm@Reset>>%
10398     }%
10399     \unhbox\pdfm@box
10400     \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
10401     \endgroup
10402 }

```

\@CheckBox

```

10403 \def\@CheckBox[#1]#2{% parameters, label
10404     \def\Fld@name{#2}%
10405     \def\Fld@default{0}%
10406     \begingroup
10407         \def\Fld@width{\DefaultWidthofCheckBox}%
10408         \def\Fld@height{\DefaultHeightofCheckBox}%
10409         \Field@toks={ }%
10410         \expandafter\HyField@SetKeys\expandafter{%
10411             \DefaultOptionsofCheckBox,#1%
10412         }%
10413         \PDFForm@Name
10414         \HyField@FlagsCheckBox
10415         \ifFld@hidden\def\Fld@width{1sp}\fi
10416         \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
10417         \HyField@AdvanceAnnotCount
10418         \LayoutCheckField{#2}{%
10419             \Hy@escapeform\PDFForm@Check
10420             \@pdfm@mark{%
10421                 ann @check\HyField@TheAnnotCount\space

```

```

10422         \dvipdfm@setdim
10423         <<\PDFForm@Check>>%
10424     }%
10425     \unhbox\pdfm@box
10426     \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
10427 }%
10428 \endgroup
10429 }

10430 \@pdfm@mark{obj @OBJpdfdocencoding%
10431 <<%
10432     /Type/Encoding%
10433     /Differences[%
10434         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
10435         39/quotesingle %
10436         96/grave %
10437         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10438         /fraction/guilsinglleft/guilsinglright/minus/perthousand%
10439         /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
10440         /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
10441         /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
10442         164/currency %
10443         166/brokenbar %
10444         168/dieresis/copyright/ordfeminine %
10445         172/logicalnot/.notdef/registered/macron/degree/plusminus%
10446         /twosuperior/threesuperior/acute/mu %
10447         183/periodcentered/cedilla/onesuperior/ordmasculine %
10448         188/onequarter/onehalf/threequarters %
10449         192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
10450         /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
10451         /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
10452         /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
10453         /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
10454         /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
10455         /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
10456         /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
10457         /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
10458         /thorn/ydieresis%
10459     ]%
10460 >>%
10461 }

10462 \@pdfm@mark{obj @OBJZaDb%
10463 <<%
10464     /Type/Font%
10465     /Subtype/Type1%
10466     /Name/ZaDb%
10467     /BaseFont/ZapfDingbats%
10468 >>%
10469 }

10470 \@pdfm@mark{obj @OBJHelv%
10471 <<%
10472     /Type/Font%
10473     /Subtype/Type1%
10474     /Name/Helv%
10475     /BaseFont/Helvetica%
10476     /Encoding @OBJpdfdocencoding%
10477 >>%
10478 }

```

10479 \langle /dvipdfm \rangle

47.7 Common forms part

10480 \langle *pdfform \rangle

\Hy@escapestring

```
10481 \begingroup\expandafter\expandafter\expandafter\endgroup
10482 \expandafter\ifx\csname pdfescapestring\endcsname\relax
10483   \let\Hy@escapestring\@firstofone
10484   \def\Hy@escapeform#1{%
10485     \ifHy@escapeform
10486       \def\Hy@escapestring##1{%
10487         \noexpand\Hy@escapestring{\noexpand##1}%
10488       }%
10489       \edef\Hy@temp{#1}%
10490       \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
10491       \def\Hy@escapestring##1{%
10492         \@ifundefined{Hy@esc@\string##1}{%
10493           ##1%
10494           \ThisShouldNotHappen
10495         }{%
10496           \csname Hy@esc@\string##1\endcsname
10497         }%
10498       }%
10499     \else
10500       \let\Hy@escapestring\@firstofone
10501     \fi
10502   }%
10503   \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
10504     \ifx\#3\%
10505     \else
10506       \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
10507       \Hy@ReturnAfterFi{%
10508         \Hy@@escapeform#3\@nil
10509       }%
10510     \fi
10511   }%
10512 \else
10513   \def\Hy@escapeform#1{%
10514     \ifHy@escapeform
10515       \let\Hy@escapestring\pdfescapestring
10516     \else
10517       \let\Hy@escapestring\@firstofone
10518     \fi
10519   }%
10520   \Hy@escapeform{}}%
10521 \fi
```

\PDFForm@Name

```
10522 \def\PDFForm@Name{%
10523   \begingroup
10524     \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
10525       \ifHy@unicode
10526         \Hy@unicodedefalse
10527       \fi
10528     \fi
```

```

10529     \pdfstringdef\Hy@gtemp\Fld@name
10530 \endgroup
10531 \let\Fld@name\Hy@gtemp
10532 }

```

\PDFForm@Check

```

10533 \def\PDFForm@Check{%
10534   /Subtype/Widget%
10535   \Fld@annotflags
10536   /T(\Fld@name)%
10537   /FT/Btn%
10538   \Fld@flags
10539   /Q \Fld@align
10540   /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
10541   /MK<<%
10542     \ifnum\Fld@rotation=\z@
10543     \else
10544       /R \Fld@rotation
10545     \fi
10546     \ifx\Fld@bordercolor\relax
10547     \else
10548       /BC[\Fld@bordercolor]%
10549     \fi
10550     \ifx\Fld@bcolor\relax
10551     \else
10552       /BG[\Fld@bcolor]%
10553     \fi
10554     /CA(\Hy@escapestring{\Fld@cbsymbol})%
10555   >>%
10556   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
10557     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10558   /H/P%
10559   \ifFld@checked /V/Yes\else /V/Off\fi
10560 }

```

\PDFForm@Push

```

10561 \def\PDFForm@Push{%
10562   /Subtype/Widget%
10563   \Fld@annotflags
10564   /T(\Fld@name)%
10565   /FT/Btn%
10566   \HyField@flags
10567   /H/P%
10568   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10569   /MK<<%
10570     \ifnum\Fld@rotation=\z@
10571     \else
10572       /R \Fld@rotation
10573     \fi
10574     \ifx\Fld@bordercolor\relax
10575     \else
10576       /BC[\Fld@bordercolor]%
10577     \fi
10578   >>%
10579   /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick})>>%
10580 }

```

\Fld@additionalactions

```
10581 \def\Fld@@additionalactions{%
K input (keystroke) format
10582 \ifx\Fld@keystroke@code\@empty
10583 \else
10584 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
10585 \fi
F display format
10586 \ifx\Fld@format@code\@empty
10587 \else
10588 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
10589 \fi
V validation
10590 \ifx\Fld@validate@code\@empty
10591 \else
10592 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
10593 \fi
C calculation
10594 \ifx\Fld@calculate@code\@empty
10595 \else
10596 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
10597 \fi
Fo receiving the input focus
10598 \ifx\Fld@onfocus@code\@empty
10599 \else
10600 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
10601 \fi
Bl loosing the input focus (blurred)
10602 \ifx\Fld@onblur@code\@empty
10603 \else
10604 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
10605 \fi
D pressing the mouse button (down)
10606 \ifx\Fld@onmousedown@code\@empty
10607 \else
10608 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
10609 \fi
U releasing the mouse button (up)
10610 \ifx\Fld@onmouseup@code\@empty
10611 \else
10612 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
10613 \fi
E cursor enters the annotation's active area.
10614 \ifx\Fld@onenter@code\@empty
10615 \else
10616 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
10617 \fi
X cursor exits the annotation's active area.
10618 \ifx\Fld@onexit@code\@empty
10619 \else
10620 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
```



```

10621 \fi
10622 }
10623 \def\Fld@additionalactions{%
10624 \if-\Fld@@additionalactions-%
10625 \else
10626 /AA<<\Fld@@additionalactions>>%
10627 \fi
10628 }

```

\PDFForm@List

```

10629 \def\PDFForm@List{%
10630 /Subtype/Widget%
10631 \Fld@annotflags
10632 /T(\Fld@name)%
10633 /FT/Ch%
10634 \Fld@flags
10635 /Q \Fld@align
10636 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10637 /MK<<%
10638 \ifnum\Fld@rotation=\z@
10639 \else
10640 /R \Fld@rotation
10641 \fi
10642 \ifx\Fld@bordercolor\relax
10643 \else
10644 /BC[\Fld@bordercolor]%
10645 \fi
10646 \ifx\Fld@bcolor\relax
10647 \else
10648 /BG[\Fld@bcolor]%
10649 \fi
10650 >>%
10651 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
10652 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10653 \Fld@choices
10654 \Fld@additionalactions
10655 }

```

\PDFForm@Radio

```

10656 \def\PDFForm@Radio{%
10657 /Subtype/Widget%
10658 \Fld@annotflags
10659 /T(\Fld@name)%
10660 /FT/Btn%
10661 \Fld@flags
10662 /H/P%
10663 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10664 /MK<<%
10665 \ifnum\Fld@rotation=\z@
10666 \else
10667 /R \Fld@rotation
10668 \fi
10669 \ifx\Fld@bordercolor\relax
10670 \else
10671 /BC[\Fld@bordercolor]%
10672 \fi
10673 \ifx\Fld@bcolor\relax

```

```

10674     \else
10675         /BG[\Fld@bcolor]%
10676     \fi
10677     /CA(H)%
10678 >>%
10679 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
10680     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10681 \ifx\@currValue\Fld@default
10682     /V/\Fld@default
10683 \else
10684     /V/Off%
10685 \fi
10686 \Fld@additionalactions
10687 }

```

\PDFForm@Text

```

10688 \def\PDFForm@Text{%
10689 /Subtype/Widget%
10690 \Fld@annotflags
10691 /T(\Fld@name)%
10692 /FT/Tx%
10693 \Fld@flags
10694 /Q \Fld@align
10695 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
10696 /MK<<%
10697     \ifnum\Fld@rotation=\z@
10698     \else
10699         /R \Fld@rotation
10700     \fi
10701     \ifx\Fld@bordercolor\relax
10702     \else
10703         /BC[\Fld@bordercolor]%
10704     \fi
10705     \ifx\Fld@bcolor\relax
10706     \else
10707         /BG[\Fld@bcolor]%
10708     \fi
10709 >>%
10710 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
10711     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
10712 /DV(\Hy@escapestring{\Fld@default})%
10713 /V(\Hy@escapestring{\Fld@value})%
10714 \Fld@additionalactions
10715 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
10716 }

```

\PDFForm@Submit

```

10717 \def\PDFForm@Submit{%
10718 /Subtype/Widget%
10719 \Fld@annotflags
10720 /T(\Fld@name)%
10721 /FT/Btn%
10722 \Fld@flags
10723 /H/P%
10724 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10725 /MK<<%
10726     \ifnum\Fld@rotation=\z@

```

```

10727     \else
10728         /R \Fld@rotation
10729     \fi
10730     \ifx\Fld@bordercolor\relax
10731     \else
10732         /BC[\Fld@bordercolor]%
10733     \fi
10734 >>%
10735 /A<<%
10736 /S/SubmitForm%
10737 /F<<%
10738 /FS/URL%
10739 /F(\Hy@escapestring{\Form@action})%
10740 >>%
10741 \Fld@submitflags
10742 >>%
10743 }

```

\PDFForm@Reset

```

10744 \def\PDFForm@Reset{%
10745 /Subtype/Widget%
10746 \Fld@annotflags
10747 /T(\Fld@name)%
10748 /FT/Btn%
10749 \Fld@flags
10750 /H/P%
10751 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
10752 /MK<<%
10753     \ifnum\Fld@rotation=\z@
10754     \else
10755         /R \Fld@rotation
10756     \fi
10757     \ifx\Fld@bordercolor\relax
10758     \else
10759         /BC[\Fld@bordercolor]%
10760     \fi
10761 % /CA (Clear)
10762 % /AC (Done)
10763 >>%
10764 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
10765 /A<</S/ResetForm>>%
10766 }

10767 </pdfform>
10768 <*package>

```

48 Bookmarks in the PDF file

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

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```

10769 \def\phantomsection{%
10770   \Hy@GlobalStepCount\Hy@linkcounter
10771   \xdef\@currentHref{section*.\the\Hy@linkcounter}%
10772   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
10773 }
10774 \</package>

```

48.1 Bookmarks

```

10775 \<*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.pdf and slides.pdf in the doc directory of hyperref.

```

10776 \def\Hy@writebookmark#1#2#3#4#5{%
10777   % section number, text, label, level, file
10778   \ifx\WriteBookmarks\relax%
10779   \else
10780     \ifnum#4>\Hy@bookmarksdepth\relax
10781     \else
10782       \@writetorep{#1}{#2}{#3}{#4}{#5}%
10783     \fi
10784   \fi
10785 }
10786 \def\Hy@currentbookmarklevel{0}
10787 \def\Hy@numberline#1{#1 }
10788 \def\@writetorep#1#2#3#4#5{%
10789   \begingroup
10790     \edef\Hy@tempa{#5}%
10791     \ifx\Hy@tempa\Hy@bookmarkstype
10792       \edef\Hy@level{#4}%
10793       \ifx\Hy@levelcheck Y%
10794         \@tempcnta\Hy@level\relax
10795         \advance\@tempcnta by -1 %
10796         \ifnum\Hy@currentbookmarklevel<\@tempcnta
10797           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
10798           \advance\@tempcnta by 1 %
10799           \Hy@Warning{%
10800             Difference (\the\@tempcnta) between bookmark levels is %
10801             greater \MessageBreak than one, level fixed%
10802           }%
10803           \@tempcnta\Hy@currentbookmarklevel
10804           \advance\@tempcnta by 1 %
10805           \edef\Hy@level{\the\@tempcnta}%
10806         \fi
10807       \else
10808         \global\let\Hy@levelcheck Y%
10809       \fi
10810       \global\let\Hy@currentbookmarklevel\Hy@level
10811       \@tempcnta\Hy@level\relax
10812       \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
10813       \advance\@tempcnta by -1 %
10814       \edef\Hy@tempa{#3}%
10815       \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
10816       \ifx\Hy@tempa\Hy@tempb

```

```

10817      \Hy@Warning{%
10818          The anchor of a bookmark and its parent's must not%
10819          \MessageBreak be the same. Added a new anchor%
10820      }%
10821      \phantomsection
10822  \fi
10823  \ifHy@bookmarksnumbered
10824      \let\numberline\Hy@numberline
10825      \let\partnumberline\Hy@numberline
10826      \let\chapternumberline\Hy@numberline
10827  \else
10828      \let\numberline\@gobble
10829      \let\partnumberline\@gobble
10830      \let\chapternumberline\@gobble
10831  \fi
10832  \pdfstringdef\Hy@tempa{#2}%
10833  \if@files
10834      \protected@write\@outlinefile{}{%
10835          \protect\BOOKMARK
10836              [\Hy@level] [\@bookmarkopenstatus{\Hy@level}]{#3}%
10837              {\Hy@tempa}{\Hy@tempb}%
10838      }%
10839  \fi
10840  \fi
10841  \endgroup
10842 }

```

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

```

10843 \newcommand{\currentpdfbookmark}{%
10844     \pdfbookmark[\Hy@currentbookmarklevel]%
10845 }
10846 \newcommand{\subpdfbookmark}{%
10847     \@tempcnta\Hy@currentbookmarklevel
10848     \Hy@StepCount\@tempcnta
10849     \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
10850 }
10851 \newcommand{\belowpdfbookmark}[2]{%
10852     \@tempcnta\Hy@currentbookmarklevel
10853     \Hy@StepCount\@tempcnta
10854     \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
10855     \advance\@tempcnta by -1 %
10856     \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
10857 }

```

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.

```

10858 \renewcommand\pdfbookmark[3][0]{%
10859     \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
10860     \hyper@anchorstart{#3.#1}\hyper@anchorend
10861 }
10862 \def\BOOKMARK{\@ifnextchar[{\@BOOKMARK}{\@BOOKMARK[1] [-]}}
10863 \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 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.

```
10864 \*vtex)
```

```
10865 \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.

```
10866 \begingroup
10867   \catcode'\'=12 %
10868   \ifnum\Hy@VTeXversion<650 %
10869     \catcode'\=12 %
10870     \gdef\hv@pdf@char#1#2#3{%
10871       \char
10872       \ifcase'#1#2#3 %
10873         "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
10874         \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
10875         \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
10876         \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
10877         \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
10878         \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
10879         \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
10880         \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
10881         \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
10882         \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
10883         \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
10884         \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
10885         \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
10886         \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
10887         \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
10888         \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
10889         \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
10890         \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
10891         \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
10892         \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
10893         \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
10894         \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
10895         \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
10896         \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
10897         \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
10898         \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
10899         \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
10900         \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
10901         \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
10902         \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
10903         \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
10904         \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
10905       \fi
10906     }%
10907   \else
10908     \gdef\hv@pdf@char{\char'}%
10909   \fi
10910 \endgroup
```

\@@BOOKMARK

```
10911 \def\@@BOOKMARK[#1][#2]#3#4#5{%
10912   \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
```

```

10913 \edef\@mycount{\the\@serial@counter}%
10914 \Hy@StepCount\@serial@counter
10915 \edef\@parcount{%
10916   \expandafter\ifx\csname @count@#5\endcsname\relax
10917     0%
10918   \else
10919     \csname @count@#5\endcsname
10920   \fi
10921 }%
10922 \immediate\special{%
10923   !outline #3;p=\@parcount,i=\@mycount,%
10924   s=\ifx#2-c\else o\fi,t=#4%
10925 }%
10926 }%

```

\ReadBookmarks

```

10927 \def\ReadBookmarks{%
10928   \begingroup
10929     \def\O{\hv@pdf@char 0}%
10930     \def\1{\hv@pdf@char 1}%
10931     \def\2{\hv@pdf@char 2}%
10932     \def\3{\hv@pdf@char 3}%
10933     \def\({}%
10934     \def\)}%
10935     \def\do##1{%
10936       \ifnum\the\catcode'##1=\active
10937         \@makeother##1%
10938       \fi
10939     }%
10940     \dospecials
10941     \InputIfFileExists{\jobname.out}{\}{}%
10942   \endgroup
10943   \ifx\WriteBookmarks\relax
10944   \else
10945     \if@filesw
10946       \newwrite\@outlinefile
10947       \immediate\openout\@outlinefile=\jobname.out\relax
10948       \ifHy@typexml
10949         \immediate\write\@outlinefile{<relaxxml>\relax}%
10950       \fi
10951     \fi
10952   \fi
10953 }

10954 </vtex>
10955 <*\vtex>
10956 \def\ReadBookmarks{%
10957   \begingroup
10958     \escapechar='\\%
10959     \let\escapechar\@gobble %
10960     \def\@@BOOKMARK[##1][##2]##3##4##5{\calc@bm@number{##5}}%
10961     \InputIfFileExists{\jobname.out}{\}{}%
10962     \ifx\WriteBookmarks\relax
10963       \global\let\WriteBookmarks\relax
10964     \fi
10965     \def\@@BOOKMARK[##1][##2]##3##4##5{%
10966       \def\Hy@temp{##4}%

```

```

10967 <*pdfTex>
10968     \Hy@pstringdef\Hy@pstringName{##3}%
10969     \Hy@OutlineName{}\Hy@pstringName{%
10970         ##2\check@bm@number{##3}%
10971     }{%
10972         \expandafter\strip@prefix\meaning\Hy@temp
10973     }%
10974 </pdfTex>
10975 <*pdfmark>
10976     \Hy@pstringdef\Hy@pstringName{##3}%
10977     \pdfmark{%
10978         pdfmark=/OUT,%
10979         Count={##2\check@bm@number{##3}},%
10980         Dest={\Hy@pstringName},%
10981         Title=\expandafter\strip@prefix\meaning\Hy@temp
10982     }%
10983 </pdfmark>
10984 <*dvipdfm>
10985     \Hy@pstringdef\Hy@pstringName{##3}%
10986     \@pdfm@mark{%
10987         outline \ifHy@DvipdfmxOutlineOpen
10988             [%
10989             \ifnum##21>\z@
10990             \else
10991             -%
10992             \fi
10993             ] %
10994             \fi
10995             ##1<<%
10996             /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
10997             /A<<%
10998             /S/GoTo%
10999             /D(\Hy@pstringName)%
11000             >>%
11001             >>%
11002         }%
11003 </dvipdfm>
11004     }%
11005     {%
11006         \def\WriteBookmarks{0}%
11007         \InputIfFileExists{\jobname.out}{-}{-}%
11008     }%
11009     {%\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
11010     \ifx\WriteBookmarks\relax
11011     \else
11012         \if@filesW
11013             \newwrite\@outlinefile
11014             \immediate\openout\@outlinefile=\jobname.out\relax
11015             \ifHy@typexml
11016                 \immediate\write\@outlinefile{<relaxxml>\relax}%
11017             \fi
11018             \fi
11019         \fi
11020     \endgroup
11021 }
11022 <*pdfTex>
11023 \def\Hy@OutlineName#1#2#3#4{%

```



```

11024 \pdfoutline goto name{#2}count#3{#4}%
11025 }
11026 </pdfTeX>
11027 \def\check@bm@number#1{%
11028 \expandafter\ifx\csname B_#1\endcsname\relax
11029 0%
11030 \else
11031 \csname B_#1\endcsname
11032 \fi
11033 }
11034 \def\calc@bm@number#1{%
11035 \@tempcnta=\check@bm@number{#1}\relax
11036 \advance\@tempcnta by 1 %
11037 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
11038 }
11039 </!vTeX>

11040 \ifHy@implicit
11041 \else
11042 \expandafter\endinput
11043 \fi

11044 </outlines>
11045 <*outlines | hypertex>

11046 \let\H@old@ssect\@ssect
11047 \def\@ssect#1#2#3#4#5{%
11048 \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
11049 \phantomsection
11050 }
11051 \let\H@old@schapter\@schapter
11052 \def\@schapter#1{%
11053 \H@old@schapter{#1}%
11054 \begingroup
11055 \let\@mkboth\@gobbletwo
11056 \Hy@GlobalStepCount\Hy@linkcounter
11057 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11058 \Hy@raisedlink{%
11059 \hyper@anchorstart{\@currentHref}\hyper@anchorend
11060 }%
11061 \endgroup
11062 }

```

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:

```

11063 \@ifundefined{@chapter}{-}{%
11064 \let\Hy@org@chapter\@chapter
11065 \def\@chapter{%
11066 \def\Hy@next{%
11067 \Hy@GlobalStepCount\Hy@linkcounter
11068 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11069 \Hy@raisedlink{%
11070 \hyper@anchorstart{\@currentHref}\hyper@anchorend
11071 }%
11072 }%
11073 \ifnum\c@secnumdepth>\m@ne
11074 \@ifundefined{if@mainmatter}%
11075 \iftrue{\csname if@mainmatter\endcsname}%

```

```

11076         \let\Hy@next\relax
11077         \fi
11078     \fi
11079     \Hy@next
11080     \Hy@org@chapter
11081 }%
11082 }

11083 \let\H@old@part\@part
11084 \begingroup\expandafter\expandafter\expandafter\endgroup
11085 \expandafter\ifx\csname chapter\endcsname\relax
11086     \let\Hy@secnum@part\z@
11087 \else
11088     \let\Hy@secnum@part\m@ne
11089 \fi
11090 \def\@part{%
11091     \ifnum\Hy@secnum@part>\c@secnumdepth
11092         \phantomsection
11093     \fi
11094     \H@old@part
11095 }

11096 \let\H@old@spart\@spart
11097 \def\@spart#1{%
11098     \H@old@spart{#1}%
11099     \Hy@GlobalStepCount\Hy@linkcounter
11100     \xdef\@currentHref{part*.\the\Hy@linkcounter}%
11101     \Hy@raisedlink{%
11102         \hyper@anchorstart{\@currentHref}\hyper@anchorend
11103     }%
11104 }

11105 \let\H@old@sect\@sect
11106 \def\@sect#1#2#3#4#5#6[#7]#8{%
11107     \ifnum #2>\c@secnumdepth
11108         \Hy@GlobalStepCount\Hy@linkcounter
11109         \xdef\@currentHref{section*.\the\Hy@linkcounter}%
11110     \fi
11111     \H@old@sect{#1}-{#2}-{#3}-{#4}-{#5}-{#6}[#{7}]{#8}%
11112     \ifnum #2>\c@secnumdepth
11113         \Hy@raisedlink{%
11114             \hyper@anchorstart{\@currentHref}\hyper@anchorend
11115         }%
11116     \fi
11117 }

11118 </outlines | hypertex>
11119 <*outlines>

11120 \expandafter\def\csname Parent-4\endcsname{}
11121 \expandafter\def\csname Parent-3\endcsname{}
11122 \expandafter\def\csname Parent-2\endcsname{}
11123 \expandafter\def\csname Parent-1\endcsname{}
11124 \expandafter\def\csname Parent0\endcsname{}
11125 \expandafter\def\csname Parent1\endcsname{}
11126 \expandafter\def\csname Parent2\endcsname{}
11127 \expandafter\def\csname Parent3\endcsname{}
11128 \expandafter\def\csname Parent4\endcsname{}

11129 </outlines>

```

49 Compatibility with koma-script classes

11130 \langle *outlines | hypertex \rangle

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.

```
11131 \def\Hy@tempa{%
11132   \def\@addchap[##1]##2{%
11133     \typeout{##2}%
11134     \if@twoside
11135       \mkboth{##1}{}%
11136     \else
11137       \mkboth{}{##1}%
11138     \fi
11139     \addtocontents{lof}{\protect\addvspace{10\p@}}%
11140     \addtocontents{lot}{\protect\addvspace{10\p@}}%
11141     \Hy@GlobalStepCount\Hy@linkcounter
11142     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11143     \Hy@raisedlink{%
11144       \hyper@anchorstart{\@currentHref}\hyper@anchorend
11145     }%
11146     \if@twocolumn
11147       \topnewpage[\@makeschapterhead{##2}]%
11148     \else
11149       \@makeschapterhead{##2}%
11150       \@afterheading
11151     \fi
11152     \addcontentsline{toc}{chapter}{##1}%
11153   }%
11154 }
11155 \@ifclassloaded{scrbook}{%
11156   \@ifclasslater{scrbook}{2001/01/01}{%
11157     \let\Hy@tempa\@empty
11158   }{}%
11159 }{%
11160   \@ifclassloaded{scrreprt}{%
11161     \@ifclasslater{scrreprt}{2001/01/01}{%
11162       \let\Hy@tempa\@empty
11163     }{}%
11164   }{%
11165     \let\Hy@tempa\@empty
11166   }%
11167 }%
11168 \Hy@tempa
11169  $\rangle$ outlines | hypertex $\rangle$ 
```

50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek oberdiek@ruf.uni-freiburg.de

50.1 PD1 encoding

```
11170  $\langle$ *pdlenc $\rangle$ 
11171 \DeclareFontEncoding{PD1}{}{}
```

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

```
11172 \DeclareTextCommand{\textLF}{PD1}{\012} % line feed
```

```

11173 \DeclareTextCommand{\textCR}{PD1}{\015} % carriage return
11174 \DeclareTextCommand{\textHT}{PD1}{\011} % horizontal tab
11175 \DeclareTextCommand{\textBS}{PD1}{\010} % backspace
11176 \DeclareTextCommand{\textFF}{PD1}{\014} % formfeed

```

Accents

```

11177 \DeclareTextAccent{\'}{PD1}{\textgrave}
11178 \DeclareTextAccent{\'}{PD1}{\textacute}
11179 \DeclareTextAccent{\`}{PD1}{\textcircumflex}
11180 \DeclareTextAccent{\~}{PD1}{\texttilde}
11181 \DeclareTextAccent{\"}{PD1}{\textdieresis}
11182 \DeclareTextAccent{\r}{PD1}{\textring}
11183 \DeclareTextAccent{\v}{PD1}{\textcaron}
11184 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
11185 \DeclareTextAccent{\c}{PD1}{\textcedilla}
11186 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textgrave}
11187 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
11188 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textcircumflex}
11189 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
11190 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textdieresis}
11191 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
11192 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textcaron}
11193 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
11194 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
11195 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}

```

Accent glyph names

```

11196 \DeclareTextCommand{\textbreve}{PD1}{\030} % breve
11197 \DeclareTextCommand{\textcaron}{PD1}{\031} % caron
11198 \DeclareTextCommand{\textcircumflex}{PD1}{\032} % circumflex
11199 \DeclareTextCommand{\textdotaccent}{PD1}{\033} % dotaccent
11200 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034} % hungarumlaut
11201 \DeclareTextCommand{\textogonek}{PD1}{\035} % ogonek
11202 \DeclareTextCommand{\textring}{PD1}{\036} % ring
11203 \DeclareTextCommand{\texttilde}{PD1}{\037} % tilde

```

\040: space

\041: exclam

```

11204 \DeclareTextCommand{\textquotedbl}{PD1}{\string"} % quotedbl \042

```

```

11205 \DeclareTextCommand{\textnumbersign}{PD1}{\043} % numbersign

```

```

11206 \DeclareTextCommand{\textdollar}{PD1}{\044} % dollar

```

```

11207 \DeclareTextCommand{\textpercent}{PD1}{\045} % percent

```

```

11208 \DeclareTextCommand{\textampersand}{PD1}{\046} % ampersand

```

\047: quotesingle

```

11209 \DeclareTextCommand{\textparenleft}{PD1}{\string\({} % parenleft \050

```

```

11210 \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

```

11211 \DeclareTextCommand{\textless}{PD1}{<} % less \074

```

\075: equal

```

11212 \DeclareTextCommand{\textgreater}{PD1}{>} % greater \076

```

\077: question
\100: at
\101... \132: A...Z
\133: bracketleft
11213 \DeclareTextCommand{\textbackslash}{PD1}{\134} % backslash
\135: bracketright
11214 \DeclareTextCommand{\textasciicircum}{PD1}{\136} % asciicircum
11215 \DeclareTextCommand{\textunderscore}{PD1}{\137} % underscore
11216 \DeclareTextCommand{\textgrave}{PD1}{\140} % grave
\141... \172: a...z
11217 \DeclareTextCompositeCommand{.}{PD1}{i}{i} % i
11218 \DeclareTextCommand{\textbraceleft}{PD1}{\173} % braceleft
11219 \DeclareTextCommand{\textbar}{PD1}{|} % bar
11220 \DeclareTextCommand{\textbraceright}{PD1}{\175} % braceright
11221 \DeclareTextCommand{\textasciitilde}{PD1}{\176} % asciitilde
No glyph \177 in PDFDocEncoding.
11222 \DeclareTextCommand{\textbullet}{PD1}{\200} % bullet
11223 \DeclareTextCommand{\textdagger}{PD1}{\201} % dagger
11224 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202} % daggerdbl
11225 \DeclareTextCommand{\textellipsis}{PD1}{\203} % ellipsis
11226 \DeclareTextCommand{\textemdash}{PD1}{\204} % emdash
11227 \DeclareTextCommand{\textendash}{PD1}{\205} % endash
11228 \DeclareTextCommand{\textflorin}{PD1}{\206} % florin
11229 \DeclareTextCommand{\textfractionmark}{PD1}{\207} % fraction, \207
11230 \DeclareTextCommand{\guilsinglleft}{PD1}{\210} % guilsinglleft
11231 \DeclareTextCommand{\guilsinglright}{PD1}{\211} % guilsinglright
11232 \DeclareTextCommand{\textminus}{PD1}{-} % minus, \212
11233 \DeclareTextCommand{\textperthousand}{PD1}{\213} % perthousand
11234 \DeclareTextCommand{\quotedblbase}{PD1}{\214} % quotedblbase
11235 \DeclareTextCommand{\textquotedblleft}{PD1}{\215} % quotedblleft
11236 \DeclareTextCommand{\textquotedblright}{PD1}{\216} % quotedblright
11237 \DeclareTextCommand{\textquoteleft}{PD1}{\217} % quoteleft
11238 \DeclareTextCommand{\textquoteright}{PD1}{\220} % quoteright
11239 \DeclareTextCommand{\quotesinglbase}{PD1}{\221} % quotesinglbase
11240 \DeclareTextCommand{\texttrademark}{PD1}{\222} % trademark
11241 \DeclareTextCommand{\textfi}{PD1}{\223} % fi ?? \223
11242 \DeclareTextCommand{\textfl}{PD1}{\224} % fl ?? \224
11243 \DeclareTextCommand{\L}{PD1}{\225} % Lslash, \225
11244 \DeclareTextCommand{\OE}{PD1}{\226} % OE
11245 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227} % Scaron
11246 \DeclareTextCompositeCommand{\Y}{PD1}{Y}{\230} % Ydieresis
11247 \DeclareTextCommand{\IJ}{PD1}{\230}
11248 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231} % Zcaron, \231
11249 \DeclareTextCommand{\i}{PD1}{\232} % dotlessi, \232
11250 \DeclareTextCommand{\l}{PD1}{\233} % lslash, \233
11251 \DeclareTextCommand{\oe}{PD1}{\234} % oe
11252 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235} % scaron
11253 \DeclareTextCompositeCommand{\v}{PD1}{z}{\236} % zcaron, 236
No glyph \237 in PDFDocEncoding.
The euro \240 is inserted in version 1.3 of the pdf specification.
11254 \DeclareTextCommand{\texteuro}{PD1}{\240} % Euro
11255 \DeclareTextCommand{\textexclamdown}{PD1}{\241} % exclamdown
11256 \DeclareTextCommand{\textcent}{PD1}{\242} % cent
11257 \DeclareTextCommand{\textsterling}{PD1}{\243} % sterling
11258 \DeclareTextCommand{\textcurrency}{PD1}{\244} % currency
11259 \DeclareTextCommand{\textyen}{PD1}{\245} % yen

```

11260 \DeclareTextCommand{\textbrokenbar}{PD1}{\246} % brokenbar
11261 \DeclareTextCommand{\textsection}{PD1}{\247} % section
11262 \DeclareTextCommand{\textdieresis}{PD1}{\250} % dieresis
11263 \DeclareTextCommand{\textcopyright}{PD1}{\251} % copyright
11264 \DeclareTextCommand{\textordfeminine}{PD1}{\252} % ordfeminine
11265 \DeclareTextCommand{\guillemotleft}{PD1}{\253} % guillemotleft
11266 \DeclareTextCommand{\textlogicalnot}{PD1}{\254} % logicalnot

No glyph \255 in PDFDocEncoding.

11267 \DeclareTextCommand{\textregistered}{PD1}{\256} % registered
11268 \DeclareTextCommand{\textmacron}{PD1}{\257} % macron
11269 \DeclareTextCommand{\textdegree}{PD1}{\260} % degree
11270 \DeclareTextCommand{\textplusminus}{PD1}{\261} % plusminus
11271 \DeclareTextCommand{\texttwosuperior}{PD1}{\262} % twosuperior
11272 \DeclareTextCommand{\textthreesuperior}{PD1}{\263} % threesuperior
11273 \DeclareTextCommand{\textacute}{PD1}{\264} % acute
11274 \DeclareTextCommand{\textmu}{PD1}{\265} % mu
11275 \DeclareTextCommand{\textparagraph}{PD1}{\266} % paragraph
11276 \DeclareTextCommand{\textperiodcentered}{PD1}{\267} % periodcentered
11277 \DeclareTextCommand{\textcedilla}{PD1}{\270} % cedilla
11278 \DeclareTextCommand{\textonesuperior}{PD1}{\271} % onesuperior
11279 \DeclareTextCommand{\textordmasculine}{PD1}{\272} % ordmasculine
11280 \DeclareTextCommand{\guillemotright}{PD1}{\273} % guillemotright
11281 \DeclareTextCommand{\textonequarter}{PD1}{\274} % onequarter
11282 \DeclareTextCommand{\textonehalf}{PD1}{\275} % onehalf
11283 \DeclareTextCommand{\textthreequarters}{PD1}{\276} % threequarters
11284 \DeclareTextCommand{\textquestiondown}{PD1}{\277} % questiondown
11285 \DeclareTextCompositeCommand{\'}{PD1}{A}{\300} % Agrave
11286 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301} % Acute
11287 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302} % Acircumflex
11288 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303} % Atilde
11289 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304} % Adieresis
11290 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305} % Aring
11291 \DeclareTextCommand{\AE}{PD1}{\306} % AE
11292 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307} % Ccedilla
11293 \DeclareTextCompositeCommand{\'}{PD1}{E}{\310} % Egrave
11294 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311} % Eacute
11295 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312} % Ecircumflex
11296 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313} % Edieresis
11297 \DeclareTextCompositeCommand{\'}{PD1}{I}{\314} % Igrave
11298 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315} % Iacute
11299 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316} % Icircumflex
11300 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317} % Idieresis
11301 \DeclareTextCommand{\DH}{PD1}{\320} % Eth
11302 \DeclareTextCommand{\DJ}{PD1}{\320} % Eth
11303 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321} % Ntilde
11304 \DeclareTextCompositeCommand{\'}{PD1}{O}{\322} % Ograve
11305 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323} % Oacute
11306 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324} % Ocircumflex
11307 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325} % Otilde
11308 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326} % Odieresis
11309 \DeclareTextCommand{\textmultiply}{PD1}{\327} % multiply
11310 \DeclareTextCommand{\O}{PD1}{\330} % Oslash
11311 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331} % Ugrave
11312 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332} % Uacute
11313 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333} % Ucircumflex
11314 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334} % Udieresis
11315 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335} % Yacute

```

```

11316 \DeclareTextCommand{\TH}{PD1}{\336} % Thorn
11317 \DeclareTextCommand{\ss}{PD1}{\337} % germandbls
11318 \DeclareTextCompositeCommand{\'}{PD1}{a}{\340} % agrave
11319 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341} % aacute
11320 \DeclareTextCompositeCommand{\`}{PD1}{a}{\342} % acircumflex
11321 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343} % atilde
11322 \DeclareTextCompositeCommand{"}{PD1}{a}{\344} % adieresis
11323 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345} % aring
11324 \DeclareTextCommand{\ae}{PD1}{\346} % ae
11325 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347} % ccedilla
11326 \DeclareTextCompositeCommand{\'}{PD1}{e}{\350} % egrave
11327 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351} % eacute
11328 \DeclareTextCompositeCommand{\`}{PD1}{e}{\352} % ecircumflex
11329 \DeclareTextCompositeCommand{"}{PD1}{e}{\353} % edieresis
11330 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
11331 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354} % igrave
11332 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
11333 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355} % iacute
11334 \DeclareTextCompositeCommand{\`}{PD1}{i}{\356} % icircumflex
11335 \DeclareTextCompositeCommand{\`}{PD1}{i}{\356} % icircumflex
11336 \DeclareTextCompositeCommand{"}{PD1}{i}{\357} % idieresis
11337 \DeclareTextCompositeCommand{"}{PD1}{i}{\357} % idieresis
11338 \DeclareTextCommand{\dh}{PD1}{\360} % eth
11339 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361} % ntilde
11340 \DeclareTextCompositeCommand{\'}{PD1}{o}{\362} % ograve
11341 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363} % oacute
11342 \DeclareTextCompositeCommand{\`}{PD1}{o}{\364} % ocircumflex
11343 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365} % otilde
11344 \DeclareTextCompositeCommand{"}{PD1}{o}{\366} % odieresis
11345 \DeclareTextCommand{\textdivide}{PD1}{\367} % divide
11346 \DeclareTextCommand{\o}{PD1}{\370} % oslash
11347 \DeclareTextCompositeCommand{\'}{PD1}{u}{\371} % ugrave
11348 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372} % uacute
11349 \DeclareTextCompositeCommand{\`}{PD1}{u}{\373} % ucircumflex
11350 \DeclareTextCompositeCommand{"}{PD1}{u}{\374} % udieresis
11351 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375} % yacute
11352 \DeclareTextCommand{\th}{PD1}{\376} % thorn
11353 \DeclareTextCompositeCommand{"}{PD1}{y}{\377} % ydieresis
11354 \DeclareTextCommand{\ij}{PD1}{\377}

```

Glyphs that consist of several characters.

```

11355 \DeclareTextCommand{\SS}{PD1}{SS}
11356 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

11357 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
11358 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
11359 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
11360 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
11361 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
11362 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
11363 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
11364 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

11365 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
11366 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
11367 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
11368 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}

```

```
11369 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
11370 \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;

```
11371 \DeclareTextCompositeCommand{\k}{PD1}{a}{a} % aogonek
11372 \DeclareTextCompositeCommand{\'}{PD1}{c}{c} % cacute
11373 \DeclareTextCompositeCommand{\k}{PD1}{e}{e} % eogonek
11374 \DeclareTextCompositeCommand{\'}{PD1}{n}{n} % nacute
11375 \DeclareTextCompositeCommand{\'}{PD1}{s}{s} % sacute
11376 \DeclareTextCompositeCommand{\'}{PD1}{z}{z} % zacute
11377 \DeclareTextCompositeCommand{\.}{PD1}{z}{z} % zdot
11378 \DeclareTextCompositeCommand{\k}{PD1}{A}{A} % Aogonek
11379 \DeclareTextCompositeCommand{\'}{PD1}{C}{C} % Cacute
11380 \DeclareTextCompositeCommand{\k}{PD1}{E}{E} % Eogonek
11381 \DeclareTextCompositeCommand{\'}{PD1}{N}{N} % Nacute
11382 \DeclareTextCompositeCommand{\'}{PD1}{S}{S} % Sacute
11383 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z} % Zacute
11384 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z} % Zdot
```

```
11385 </pdlenc>
```

50.2 PU encoding

```
11386 <*puenc>
11387 \DeclareFontEncoding{PU}{-}{-}
```

50.2.1 Basic Latin

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

```
11388 \DeclareTextCommand{\textLF}{PU}{\80\012} % line feed
11389 \DeclareTextCommand{\textCR}{PU}{\80\015} % carriage return
11390 \DeclareTextCommand{\textHT}{PU}{\80\011} % horizontal tab
11391 \DeclareTextCommand{\textBS}{PU}{\80\010} % backspace
11392 \DeclareTextCommand{\textFF}{PU}{\80\014} % formfeed
```

Accents

```
11393 \DeclareTextAccent{\'}{PU}{\textgrave}
11394 \DeclareTextAccent{\'}{PU}{\textacute}
11395 \DeclareTextAccent{\^}{PU}{\textcircumflex}
11396 \DeclareTextAccent{\~}{PU}{\texttilde}
11397 \DeclareTextAccent{\"}{PU}{\textdieresis}
11398 \DeclareTextAccent{\r}{PU}{\textring}
11399 \DeclareTextAccent{\v}{PU}{\textcaron}
11400 \DeclareTextAccent{\.}{PU}{\textdotaccent}
11401 \DeclareTextAccent{\c}{PU}{\textcedilla}
11402 \DeclareTextAccent{\U}{PU}{\textbreve}
11403 \DeclareTextAccent{\C}{PU}{\textdoublegrave}
11404 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textgrave}
11405 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
11406 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textcircumflex}
11407 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
11408 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textdieresis}
11409 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
11410 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textcaron}
11411 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
11412 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
11413 \DeclareTextCompositeCommand{\U}{PU}{\@empty}{\textbreve}
11414 \DeclareTextCompositeCommand{\C}{PU}{\@empty}{\textdoublegrave}
11415 \DeclareTextCommand{\=}{PU}[1]{\TextSymbolUnavailable{\={#1}}#1}
```



```

11416 \DeclareTextCommand{\H}{PU}[1]{\TextSymbolUnavailable{\H{#1}}#1}
11417 \DeclareTextCommand{\k}{PU}[1]{\TextSymbolUnavailable{\k{#1}}#1}
11418 \DeclareTextCommand{\u}{PU}[1]{\TextSymbolUnavailable{\u{#1}}#1}

Accent glyph names
11419 \DeclareTextCommand{\textbreve}{PU}{\80\030} % breve
11420 \DeclareTextCommand{\textcaron}{PU}{\80\031} % caron
11421 \DeclareTextCommand{\textcircumflex}{PU}{\80\032} % circumflex
11422 \DeclareTextCommand{\textdotaccent}{PU}{\80\033} % dotaccent
11423 \DeclareTextCommand{\texthungarumlaut}{PU}{\80\034} % hungarumlaut
11424 \DeclareTextCommand{\textogonek}{PU}{\80\035} % ogonek
11425 \DeclareTextCommand{\textring}{PU}{\80\036} % ring
11426 \DeclareTextCommand{\texttilde}{PU}{\80\037} % tilde
11427 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017} % double grave

\040: space
\041: exclam

11428 \DeclareTextCommand{\textquotedbl}{PU}{\string"} % quotedbl \80\042
11429 \DeclareTextCommand{\textnumbersign}{PU}{\80\043} % numbersign
11430 \DeclareTextCommand{\textdollar}{PU}{\80\044} % dollar
11431 \DeclareTextCommand{\textpercent}{PU}{\80\045} % percent
11432 \DeclareTextCommand{\textampersand}{PU}{\80\046} % ampersand

\047: quotesingle

11433 \DeclareTextCommand{\textparenleft}{PU}{\80\050} % parenleft
11434 \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

11435 \DeclareTextCommand{\textless}{PU}{<} % less \80\074
\075: equal

11436 \DeclareTextCommand{\textgreater}{PU}{>} % greater \80\076

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

11437 \DeclareTextCommand{\textbackslash}{PU}{\80\134} % backslash
\135: bracketright

11438 \DeclareTextCommand{\textasciicircum}{PU}{\80\136} % asciicircum
11439 \DeclareTextCommand{\textunderscore}{PU}{\80\137} % underscore
11440 \DeclareTextCommand{\textgrave}{PU}{\80\140} % grave

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

11441 \DeclareTextCompositeCommand{.}{PU}{i}{i} % i
11442 \DeclareTextCommand{\j}{PU}{j} % jdotless
11443 \DeclareTextCommand{\textbraceleft}{PU}{\80\173} % braceleft
11444 \DeclareTextCommand{\textbar}{PU}{|} % bar
11445 \DeclareTextCommand{\textbraceright}{PU}{\80\175} % braceright
11446 \DeclareTextCommand{\textasciitilde}{PU}{\80\176} % asciitilde

No glyph \177 in PDFDocEncoding.

```

50.2.2 Latin-1 Supplement

```
11447 \DeclareTextCommand{\textminus}{PU}{-} % minus, \80\212
11448 \DeclareTextCommand{\textfi}{PU}{fi} % fi ?? \80\223
11449 \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.

```
11450 \DeclareTextCommand{\OE}{PU}{OE} % OE
11451 \DeclareTextCommand{\oe}{PU}{oe} % oe
```

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

```
11452 \DeclareTextCommand{\textexclamdown}{PU}{\80\241} % exclamdown
11453 \DeclareTextCommand{\textcent}{PU}{\80\242} % cent
11454 \DeclareTextCommand{\textsterling}{PU}{\80\243} % sterling
11455 \DeclareTextCommand{\textcurrency}{PU}{\80\244} % currency
11456 \DeclareTextCommand{\textyen}{PU}{\80\245} % yen
11457 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246} % brokenbar
11458 \DeclareTextCommand{\textsection}{PU}{\80\247} % section
11459 \DeclareTextCommand{\textdieresis}{PU}{\80\250} % dieresis
11460 \DeclareTextCommand{\textcopyright}{PU}{\80\251} % copyright
11461 \DeclareTextCommand{\textordfeminine}{PU}{\80\252} % ordfeminine
11462 \DeclareTextCommand{\guillemotleft}{PU}{\80\253} % guillemotleft
11463 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254} % logicalnot
```

No glyph \255 in PDFDocEncoding.

```
11464 \DeclareTextCommand{\textregistered}{PU}{\80\256} % registered
11465 \DeclareTextCommand{\textmacron}{PU}{\80\257} % macron
11466 \DeclareTextCommand{\textdegree}{PU}{\80\260} % degree
11467 \DeclareTextCommand{\textplusminus}{PU}{\80\261} % plusminus
11468 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262} % twosuperior
11469 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263} % threesuperior
11470 \DeclareTextCommand{\textacute}{PU}{\80\264} % acute
11471 \DeclareTextCommand{\textmu}{PU}{\80\265} % mu
11472 \DeclareTextCommand{\textparagraph}{PU}{\80\266} % paragraph
11473 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267} % periodcentered
11474 \DeclareTextCommand{\textcedilla}{PU}{\80\270} % cedilla
11475 \DeclareTextCommand{\textonesuperior}{PU}{\80\271} % onesuperior
11476 \DeclareTextCommand{\textordmasculine}{PU}{\80\272} % ordmasculine
11477 \DeclareTextCommand{\guillemotright}{PU}{\80\273} % guillemotright
11478 \DeclareTextCommand{\textonequarter}{PU}{\80\274} % onequarter
11479 \DeclareTextCommand{\textonehalf}{PU}{\80\275} % onehalf
11480 \DeclareTextCommand{\textthreequarters}{PU}{\80\276} % threequarters
11481 \DeclareTextCommand{\textquestiondown}{PU}{\80\277} % questiondown
11482 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300} % Agrave
11483 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301} % Aacute
11484 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302} % Acircumflex
11485 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303} % Atilde
11486 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304} % Adieresis
11487 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305} % Aring
11488 \DeclareTextCommand{\AE}{PU}{\80\306} % AE
11489 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307} % Ccedilla
11490 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310} % Egrave
11491 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311} % Eacute
11492 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312} % Ecircumflex
11493 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313} % Edieresis
11494 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314} % Igrave
11495 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315} % Iacute
11496 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316} % Icircumflex
```

```

11497 \DeclareTextCompositeCommand{"}{PU}{I}{\80\317} % Idieresis
11498 \DeclareTextCommand{\DH}{PU}{\80\320} % Eth
11499 \DeclareTextCompositeCommand{~}{PU}{N}{\80\321} % Ntilde
11500 \DeclareTextCompositeCommand{'}{PU}{O}{\80\322} % Ograve
11501 \DeclareTextCompositeCommand{'}{PU}{O}{\80\323} % Oacute
11502 \DeclareTextCompositeCommand{^}{PU}{O}{\80\324} % Ocircumflex
11503 \DeclareTextCompositeCommand{~}{PU}{O}{\80\325} % Otilde
11504 \DeclareTextCompositeCommand{"}{PU}{O}{\80\326} % Odieresis
11505 \DeclareTextCommand{\textmultiply}{PU}{\80\327} % multiply
11506 \DeclareTextCommand{\O}{PU}{\80\330} % Oslash
11507 \DeclareTextCompositeCommand{'}{PU}{U}{\80\331} % Ugrave
11508 \DeclareTextCompositeCommand{'}{PU}{U}{\80\332} % Uacute
11509 \DeclareTextCompositeCommand{^}{PU}{U}{\80\333} % Ucircumflex
11510 \DeclareTextCompositeCommand{"}{PU}{U}{\80\334} % Udieresis
11511 \DeclareTextCompositeCommand{'}{PU}{Y}{\80\335} % Yacute
11512 \DeclareTextCommand{\TH}{PU}{\80\336} % Thorn
11513 \DeclareTextCommand{\ss}{PU}{\80\337} % germandbls
11514 \DeclareTextCompositeCommand{'}{PU}{a}{\80\340} % agrave
11515 \DeclareTextCompositeCommand{'}{PU}{a}{\80\341} % aacute
11516 \DeclareTextCompositeCommand{^}{PU}{a}{\80\342} % acircumflex
11517 \DeclareTextCompositeCommand{~}{PU}{a}{\80\343} % atilde
11518 \DeclareTextCompositeCommand{"}{PU}{a}{\80\344} % adieresis
11519 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345} % aring
11520 \DeclareTextCommand{\ae}{PU}{\80\346} % ae
11521 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347} % ccedilla
11522 \DeclareTextCompositeCommand{'}{PU}{e}{\80\350} % egrave
11523 \DeclareTextCompositeCommand{'}{PU}{e}{\80\351} % eacute
11524 \DeclareTextCompositeCommand{^}{PU}{e}{\80\352} % ecircumflex
11525 \DeclareTextCompositeCommand{"}{PU}{e}{\80\353} % edieresis
11526 \DeclareTextCompositeCommand{'}{PU}{i}{\80\354} % igrave
11527 \DeclareTextCompositeCommand{'}{PU}{i}{\80\354} % igrave
11528 \DeclareTextCompositeCommand{'}{PU}{i}{\80\355} % iacute
11529 \DeclareTextCompositeCommand{'}{PU}{i}{\80\355} % iacute
11530 \DeclareTextCompositeCommand{^}{PU}{i}{\80\356} % icircumflex
11531 \DeclareTextCompositeCommand{~}{PU}{i}{\80\356} % icircumflex
11532 \DeclareTextCompositeCommand{"}{PU}{i}{\80\357} % idieresis
11533 \DeclareTextCompositeCommand{"}{PU}{i}{\80\357} % idieresis
11534 \DeclareTextCommand{\dh}{PU}{\80\360} % eth
11535 \DeclareTextCompositeCommand{~}{PU}{n}{\80\361} % ntilde
11536 \DeclareTextCompositeCommand{'}{PU}{o}{\80\362} % ograve
11537 \DeclareTextCompositeCommand{'}{PU}{o}{\80\363} % oacute
11538 \DeclareTextCompositeCommand{^}{PU}{o}{\80\364} % ocircumflex
11539 \DeclareTextCompositeCommand{~}{PU}{o}{\80\365} % otilde
11540 \DeclareTextCompositeCommand{"}{PU}{o}{\80\366} % odieresis
11541 \DeclareTextCommand{\textdivide}{PU}{\80\367} % divide
11542 \DeclareTextCommand{\o}{PU}{\80\370} % oslash
11543 \DeclareTextCompositeCommand{'}{PU}{u}{\80\371} % ugrave
11544 \DeclareTextCompositeCommand{'}{PU}{u}{\80\372} % uacute
11545 \DeclareTextCompositeCommand{^}{PU}{u}{\80\373} % ucircumflex
11546 \DeclareTextCompositeCommand{"}{PU}{u}{\80\374} % udieresis
11547 \DeclareTextCompositeCommand{'}{PU}{y}{\80\375} % yacute
11548 \DeclareTextCommand{\th}{PU}{\80\376} % thorn
11549 \DeclareTextCompositeCommand{"}{PU}{y}{\80\377} % ydieresis
11550 \DeclareTextCommand{\ij}{PU}{\80\377}

```

Glyphs that consist of several characters.

```
11551 \DeclareTextCommand{\SS}{PU}{SS}
```

Aliases (german.sty)

```

11552 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
11553 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
11554 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
11555 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
11556 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
11557 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
11558 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
11559 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

11560 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
11561 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
11562 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
11563 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
11564 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

50.2.3 Latin Extended-A

```

11565 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% Amacron
11566 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% amacron
11567 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% Abreve
11568 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% abreve
11569 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% Aogonek
11570 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% aogonek
11571 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% Cacute
11572 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% cacute
11573 \DeclareTextCompositeCommand{\~}{PU}{C}{\81\010}% Ccircumflex
11574 \DeclareTextCompositeCommand{\~}{PU}{c}{\81\011}% ccircumflex
11575 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% Cdot
11576 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% cdot
11577 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% Ccaron
11578 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% ccaron
11579 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% Dcaron
11580 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% dcaron
11581 \DeclareTextCommand{\DJ}{PU}{\81\020}% Dslash
11582 \DeclareTextCommand{\dj}{PU}{\81\021}% dslash
11583 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% Emacron
11584 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% emacron
11585 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% Ebreve
11586 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% ebreve
11587 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% Edot
11588 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% edot
11589 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% Eogonek
11590 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% eogonek
11591 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% Ecaron
11592 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% ecaron
11593 \DeclareTextCompositeCommand{\~}{PU}{G}{\81\034}% Gcircumflex
11594 \DeclareTextCompositeCommand{\~}{PU}{g}{\81\035}% gcircumflex
11595 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% Gbreve
11596 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% gbreve
11597 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% Gdot
11598 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% gdot
11599 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% Gcedilla
11600 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% gcedilla
11601 \DeclareTextCompositeCommand{\~}{PU}{H}{\81\044}% Hcircumflex
11602 \DeclareTextCompositeCommand{\~}{PU}{h}{\81\045}% hcircumflex
11603 \DeclareTextCommand{\textHslash}{PU}{\81\046}% Hslash
11604 \DeclareTextCommand{\textHslash}{PU}{\81\047}% hslash
11605 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% Itilde

```

```

11606 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde
11607 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051} % itilde
11608 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052} % Imacron
11609 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053} % imacron
11610 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053} % imacron
11611 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054} % Ibreve
11612 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
11613 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055} % ibreve
11614 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056} % Iogonek
11615 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
11616 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057} % iogonek
11617 \DeclareTextCompositeCommand{.}{PU}{I}{\81\060} % Idot
11618 \DeclareTextCommand{\i}{PU}{\81\061} % idotless
11619 % IJlig
11620 % ijlig
11621 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064} % Jcircumflex
11622 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
11623 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065} % jcircumflex
11624 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066} % Kcedilla
11625 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067} % kcedilla
11626 % kgreen
11627 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071} % Lacute
11628 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072} % lacute
11629 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073} % Lcedilla
11630 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074} % lcedilla
11631 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075} % Lcaron
11632 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076} % lcaron
11633 % L middle dot
11634 % l middle dot
11635 \DeclareTextCommand{\L}{PU}{\81\101} % Lslash
11636 \DeclareTextCommand{\l}{PU}{\81\102} % lslash
11637 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103} % Nacute
11638 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104} % nacute
11639 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105} % Ncedilla
11640 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106} % ncedilla
11641 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107} % Ncaron
11642 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110} % ncaron
11643 % n apostrophe
11644 \DeclareTextCommand{\NG}{PU}{\81\112} % NG
11645 \DeclareTextCommand{\ng}{PU}{\81\113} % ng
11646 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114} % Omacron
11647 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115} % omacron
11648 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116} % Obreve
11649 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117} % obreve
11650 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120} % Odoubleacute
11651 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121} % odoubleacute
11652 \DeclareTextCommand{\OE}{PU}{\81\122} % OE
11653 \DeclareTextCommand{\oe}{PU}{\81\123} % oe
11654 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124} % Racute
11655 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125} % racute
11656 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126} % Rcedilla
11657 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127} % rcedilla
11658 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130} % Rcaron
11659 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131} % rcaron
11660 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132} % Sacute
11661 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133} % sacute
11662 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134} % Scircumflex

```

```

11663 \DeclareTextCompositeCommand{\~}{PU}{s}{\81\135} % scircumflex
11664 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136} % Scedilla
11665 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137} % scedilla
11666 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140} % Scaron
11667 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141} % scaron
11668 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142} % Tcedilla
11669 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143} % tcedilla
11670 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144} % Tcaron
11671 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145} % tcaron
11672 \DeclareTextCommand{\textTslash}{PU}{\81\146} % Tslash
11673 \DeclareTextCommand{\texttslash}{PU}{\81\147} % tslash
11674 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150} % Utilde
11675 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151} % utilde
11676 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152} % Umacron
11677 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153} % umacron
11678 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154} % Ubreve
11679 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155} % ubreve
11680 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156} % Uring
11681 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157} % uring
11682 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160} % Udoubleacute
11683 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161} % udoubleacute
11684 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162} % Uogonek
11685 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163} % uogonek
11686 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164} % Wcircumflex
11687 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165} % wcircumflex
11688 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166} % Ycircumflex
11689 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167} % ycircumflex
11690 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170} % Ydieresis
11691 \DeclareTextCommand{\IJ}{PU}{\81\170}
11692 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171} % Zacute
11693 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172} % zacute
11694 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173} % Zdot
11695 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174} % zdot
11696 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175} % Zcaron
11697 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176} % zcaron

```

50.2.4 Latin Extended-B

```

11698 \DeclareTextCommand{\textflorin}{PU}{\81\222} % florin
11699 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315} % Acaron
11700 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316} % acaron
11701 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317} % Icaron
11702 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
11703 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320} % icaron
11704 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321} % Ocaron
11705 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322} % ocaron
11706 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323} % Ucaron
11707 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324} % ucaron
11708 \DeclareTextCommand{\textGslash}{PU}{\81\344} % Gslash
11709 \DeclareTextCommand{\textgslash}{PU}{\81\345} % gslash
11710 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346} % Gcaron
11711 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347} % gcaron
11712 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350} % Kcaron
11713 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351} % kcaron
11714 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352} % Oogonek
11715 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353} % oogonek

```

50.2.5 Greek

```

11716 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}
11717 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}
11718 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}
11719 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}
11720 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}
11721 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}
11722 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}
11723 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}
11724 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}
11725 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}
11726 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}
11727 \DeclareTextCommand{\textAlpha}{PU}{\83\221}
11728 \DeclareTextCommand{\textBeta}{PU}{\83\222}
11729 \DeclareTextCommand{\textGamma}{PU}{\83\223}
11730 \DeclareTextCommand{\textDelta}{PU}{\83\224}
11731 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}
11732 \DeclareTextCommand{\textZeta}{PU}{\83\226}
11733 \DeclareTextCommand{\textEta}{PU}{\83\227}
11734 \DeclareTextCommand{\textTheta}{PU}{\83\230}
11735 \DeclareTextCommand{\textIota}{PU}{\83\231}
11736 \DeclareTextCommand{\textKappa}{PU}{\83\232}
11737 \DeclareTextCommand{\textLambda}{PU}{\83\233}
11738 \DeclareTextCommand{\textMu}{PU}{\83\234}
11739 \DeclareTextCommand{\textNu}{PU}{\83\235}
11740 \DeclareTextCommand{\textXi}{PU}{\83\236}
11741 \DeclareTextCommand{\textOmicron}{PU}{\83\237}
11742 \DeclareTextCommand{\textPi}{PU}{\83\240}
11743 \DeclareTextCommand{\textRho}{PU}{\83\241}
11744 \DeclareTextCommand{\textSigma}{PU}{\83\243}
11745 \DeclareTextCommand{\textTau}{PU}{\83\244}
11746 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}
11747 \DeclareTextCommand{\textPhi}{PU}{\83\246}
11748 \DeclareTextCommand{\textChi}{PU}{\83\247}
11749 \DeclareTextCommand{\textPsi}{PU}{\83\250}
11750 \DeclareTextCommand{\textOmega}{PU}{\83\251}
11751 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}
11752 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}
11753 \DeclareTextCompositeCommand{\'}{PU}{\textalpha}{\83\254}
11754 \DeclareTextCompositeCommand{\'}{PU}{\textepsilon}{\83\255}
11755 \DeclareTextCompositeCommand{\'}{PU}{\texteta}{\83\256}
11756 \DeclareTextCompositeCommand{\'}{PU}{\textiota}{\83\257}
11757 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}
11758 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}
11759 \DeclareTextCommand{\textalpha}{PU}{\83\261}
11760 \DeclareTextCommand{\textbeta}{PU}{\83\262}
11761 \DeclareTextCommand{\textgamma}{PU}{\83\263}
11762 \DeclareTextCommand{\textdelta}{PU}{\83\264}
11763 \DeclareTextCommand{\textepsilon}{PU}{\83\265}
11764 \DeclareTextCommand{\textzeta}{PU}{\83\266}
11765 \DeclareTextCommand{\texteta}{PU}{\83\267}
11766 \DeclareTextCommand{\texttheta}{PU}{\83\270}
11767 \DeclareTextCommand{\textiota}{PU}{\83\271}
11768 \DeclareTextCommand{\textkappa}{PU}{\83\272}
11769 \DeclareTextCommand{\textlambda}{PU}{\83\273}
11770 \DeclareTextCommand{\textmu}{PU}{\83\274}
11771 \DeclareTextCommand{\textnu}{PU}{\83\275}
11772 \DeclareTextCommand{\textxi}{PU}{\83\276}

```

```

11773 \DeclareTextCommand{\textomicron}{PU}{\83\277}
11774 \DeclareTextCommand{\textpi}{PU}{\83\300}
11775 \DeclareTextCommand{\textrho}{PU}{\83\301}
11776 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}
11777 \DeclareTextCommand{\textsigma}{PU}{\83\303}
11778 \DeclareTextCommand{\texttau}{PU}{\83\304}
11779 \DeclareTextCommand{\textupsilon}{PU}{\83\305}
11780 \DeclareTextCommand{\textphi}{PU}{\83\306}
11781 \DeclareTextCommand{\textchi}{PU}{\83\307}
11782 \DeclareTextCommand{\textpsi}{PU}{\83\310}
11783 \DeclareTextCommand{\textomega}{PU}{\83\311}
11784 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}
11785 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}
11786 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}
11787 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}
11788 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}
11789 %\DeclareTextCommand{\textvartheta}{PU}{\83\321}
11790 %\DeclareTextCommand{\textvarphi}{PU}{\83\325}
11791 %\DeclareTextCommand{\textvarpi}{PU}{\83\326}
11792 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}
11793 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}
11794 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}
11795 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}
11796 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}
11797 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}
11798 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}
11799 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}
11800 %\DeclareTextCommand{\textvarkappa}{PU}{\83\360}
11801 %\DeclareTextCommand{\textvarrho}{PU}{\83\361}

```

50.2.6 Cyrillic

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names.

```

11802 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% IO
11803 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}%
11804 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% DJE
11805 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% GJE
11806 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% ukrainian IE
11807 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% DZE
11808 \DeclareTextCommand{\CYRII}{PU}{\84\006}% byelorussian-ukrainian I
11809 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% YI
11810 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% JE
11811 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% LJE
11812 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% NJE
11813 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% TSHE
11814 \DeclareTextCompositeCommand{'}{PU}{\CYRK}{\84\014}% KJE
11815 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% short U
11816 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% DZHE
11817 \DeclareTextCommand{\CYRA}{PU}{\84\020}% A
11818 \DeclareTextCommand{\CYRB}{PU}{\84\021}% BE
11819 \DeclareTextCommand{\CYRV}{PU}{\84\022}% VE
11820 \DeclareTextCommand{\CYRG}{PU}{\84\023}% GHE
11821 \DeclareTextCommand{\CYRD}{PU}{\84\024}% DE
11822 \DeclareTextCommand{\CYRE}{PU}{\84\025}% IE
11823 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% ZHE
11824 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% ZE
11825 \DeclareTextCommand{\CYRI}{PU}{\84\030}% I

```



```

11826 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% short I
11827 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}%
11828 \DeclareTextCommand{\CYRK}{PU}{\84\032}% KA
11829 \DeclareTextCommand{\CYRL}{PU}{\84\033}% EL
11830 \DeclareTextCommand{\CYRM}{PU}{\84\034}% EM
11831 \DeclareTextCommand{\CYRN}{PU}{\84\035}% EN
11832 \DeclareTextCommand{\CYRO}{PU}{\84\036}% O
11833 \DeclareTextCommand{\CYRP}{PU}{\84\037}% PE
11834 \DeclareTextCommand{\CYRR}{PU}{\84\040}% ER
11835 \DeclareTextCommand{\CYRS}{PU}{\84\041}% ES
11836 \DeclareTextCommand{\CYRT}{PU}{\84\042}% TE
11837 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U
11838 \DeclareTextCommand{\CYRF}{PU}{\84\044}% EF
11839 \DeclareTextCommand{\CYRH}{PU}{\84\045}% HA
11840 \DeclareTextCommand{\CYRC}{PU}{\84\046}% TSE
11841 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% CHE
11842 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% SHA
11843 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% SHCHA
11844 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% HARD SIGN
11845 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% YERU
11846 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% SOFT SIGN
11847 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% E
11848 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% YU
11849 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% YA
11850 \DeclareTextCommand{\cyr a}{PU}{\84\060}% a
11851 \DeclareTextCommand{\cyr b}{PU}{\84\061}% be
11852 \DeclareTextCommand{\cyr v}{PU}{\84\062}% ve
11853 \DeclareTextCommand{\cyr g}{PU}{\84\063}% ghe
11854 \DeclareTextCommand{\cyr d}{PU}{\84\064}% de
11855 \DeclareTextCommand{\cyr e}{PU}{\84\065}% ie
11856 \DeclareTextCommand{\cyr zh}{PU}{\84\066}% zhe
11857 \DeclareTextCommand{\cyr z}{PU}{\84\067}% ze
11858 \DeclareTextCommand{\cyr i}{PU}{\84\070}% i
11859 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% short i
11860 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\071}%
11861 \DeclareTextCommand{\cyr k}{PU}{\84\072}% ka
11862 \DeclareTextCommand{\cyr l}{PU}{\84\073}% el
11863 \DeclareTextCommand{\cyr m}{PU}{\84\074}% em
11864 \DeclareTextCommand{\cyr n}{PU}{\84\075}% en
11865 \DeclareTextCommand{\cyr o}{PU}{\84\076}% o
11866 \DeclareTextCommand{\cyr p}{PU}{\84\077}% pe
11867 \DeclareTextCommand{\cyr r}{PU}{\84\100}% er
11868 \DeclareTextCommand{\cyr s}{PU}{\84\101}% es
11869 \DeclareTextCommand{\cyr t}{PU}{\84\102}% te
11870 \DeclareTextCommand{\cyr u}{PU}{\84\103}% u
11871 \DeclareTextCommand{\cyr f}{PU}{\84\104}% ef
11872 \DeclareTextCommand{\cyr h}{PU}{\84\105}% ha
11873 \DeclareTextCommand{\cyr c}{PU}{\84\106}% tse
11874 \DeclareTextCommand{\cyr ch}{PU}{\84\107}% che
11875 \DeclareTextCommand{\cyr sh}{PU}{\84\110}% sha
11876 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% shcha
11877 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% hard sign
11878 \DeclareTextCommand{\cyrery}{PU}{\84\113}% yeru
11879 \DeclareTextCommand{\cyr sftsn}{PU}{\84\114}% soft sign
11880 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% e
11881 \DeclareTextCommand{\cyr yu}{PU}{\84\116}% yu
11882 \DeclareTextCommand{\cyr ya}{PU}{\84\117}% ya

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11883 \DeclareTextCommand{\cyrjo}{PU}{\84\121}% io
11884 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}%
11885 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% dje
11886 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% gje
11887 \DeclareTextCommand{\cyrje}{PU}{\84\124}% ukrainian ie
11888 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% dze
11889 \DeclareTextCommand{\cyrrii}{PU}{\84\126}% byelorussian-ukrainian i
11890 \DeclareTextCommand{\cyrji}{PU}{\84\127}% yi
11891 \DeclareTextCommand{\cyrje}{PU}{\84\130}% je
11892 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% lje
11893 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% nje
11894 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% tshe
11895 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% kje
11896 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% short u
11897 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% dzhe
11898 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% OMEGA
11899 \DeclareTextCommand{\cyromega}{PU}{\84\141}% omega
11900 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% YAT
11901 \DeclareTextCommand{\cyrjat}{PU}{\84\143}% yat
11902 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% iotified E
11903 \DeclareTextCommand{\cyriote}{PU}{\84\145}% iotified e
11904 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% little YUS
11905 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% little yus
11906 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% iotified little YUS
11907 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% iotified little yus
11908 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% big YUS
11909 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% big yus
11910 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% iotified big YUS
11911 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% iotified big yus
11912 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% KSI
11913 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% ksi
11914 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% PSI
11915 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% psi
11916 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% FITA
11917 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% fita
11918 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% IZHITSA
11919 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% izhitsa
11920 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% IZHITSA double grave
11921 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% izhitsa double grave
11922 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% UK
11923 \DeclareTextCommand{\cyruk}{PU}{\84\171}% uk
11924 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% round OMEGA
11925 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% round omega
11926 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% OMEGA titlo
11927 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% omega titlo
11928 \DeclareTextCommand{\CYROT}{PU}{\84\176}% OT
11929 \DeclareTextCommand{\cyrot}{PU}{\84\177}% ot
11930 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% KOPPA
11931 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% koppa
11932 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% thousands sign
11933 %\DeclareTextCommand{\COMBINING TITLO}{PU}{\84\203}% COMBINING TITLO
11934 %\DeclareTextCommand{\COMBINING PALATALIZATION}{PU}{\84\204}% COMBINING PALATALIZATION
11935 %\DeclareTextCommand{\COMBINING DASIA PNEUMATA}{PU}{\84\205}% COMBINING DASIA PNEUMATA
11936 %\DeclareTextCommand{\COMBINING PSILI PNEUMATA}{PU}{\84\206}% COMBINING PSILI PNEUMATA
11937 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% GHE upturn
11938 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% ghe upturn
11939 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% GHE stroke

11940 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% ghe stroke
11941 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% GHE middle hook
11942 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% ghe middle hook
11943 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% ZHE descender
11944 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% zhe descender
11945 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% ZE descender
11946 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% ze descender
11947 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% KA descender
11948 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% ka descender
11949 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% KA vertical stroke
11950 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% ka vertical stroke
11951 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% KA stroke
11952 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% ka stroke
11953 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% bashkir KA
11954 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% bashkir ka
11955 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% EN descender
11956 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% en descender
11957 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% ligature EN GHE
11958 \DeclareTextCommand{\cyrng}{PU}{\84\245}% ligature en ghe
11959 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% PE middle hook
11960 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% pe middle hook
11961 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% abkhasian HA
11962 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% abkhasian ha
11963 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% ES descender
11964 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% es descender
11965 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% TE descender
11966 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% te descender
11967 \DeclareTextCommand{\CYRY}{PU}{\84\256}% straight U
11968 \DeclareTextCommand{\cyr}{PU}{\84\257}% straight u
11969 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% straight U stroke
11970 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% straight u stroke
11971 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% HA descender
11972 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% ha descender
11973 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% ligature TE TSE
11974 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% ligature te tse
11975 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% CHE descender
11976 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% che descender
11977 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% CHE vertical stroke
11978 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% che vertical stroke
11979 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% SHHA
11980 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% shha
11981 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% abkhasian CHE
11982 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% abkhasian che
11983 \DeclareTextCommand{\CYRABCHDSC}{PU}{\84\276}% abkhasian CHE descender
11984 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% abkhasian che descender
11985 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% palochka
11986 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% ZHE breve
11987 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% zhe breve
11988 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% KA hook
11989 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% ka hook
11990 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% EN hook
11991 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% en hook
11992 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% khakassian CHE
11993 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% khakassian che
11994 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% A breve
11995 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% a breve
11996 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% A diaeresis

11997 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% a diaeresis
 11998 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% ligature A IE
 11999 \DeclareTextCommand{\cyrae}{PU}{\84\325}% ligature a ie
 12000 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% IE breve
 12001 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% ie breve
 12002 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% SCHWA
 12003 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% schwa
 12004 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% SCHWA diaeresis
 12005 \DeclareTextCompositeCommand{"}{PU}{\cyrschwa}{\84\333}% schwa diaeresis
 12006 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% ZHE diaeresis
 12007 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% zhe diaeresis
 12008 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% ZE diaeresis
 12009 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% ze diaeresis
 12010 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% abkhasian DZE
 12011 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% abkhasian dze
 12012 \DeclareTextCompositeCommand{\=}{PU}{\CYRI}{\84\342}% I macron
 12013 \DeclareTextCompositeCommand{\=}{PU}{\cyri}{\84\343}% i macron
 12014 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% I diaeresis
 12015 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% i diaeresis
 12016 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% O diaeresis
 12017 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% o diaeresis
 12018 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% barred O
 12019 \DeclareTextCommand{\cyrotd}{PU}{\84\351}% barred o
 12020 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% barred O diaeresis
 12021 \DeclareTextCompositeCommand{"}{PU}{\cyrotd}{\84\353}% barred o diaeresis
 12022 \DeclareTextCompositeCommand{\=}{PU}{\CYRU}{\84\356}% U macron
 12023 \DeclareTextCompositeCommand{\=}{PU}{\cyru}{\84\357}% u macron
 12024 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U diaeresis
 12025 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% u diaeresis
 12026 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U double acute
 12027 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% u double acute
 12028 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% CHE diaeresis
 12029 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% che diaeresis
 12030 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% YERU diaeresis
 12031 \DeclareTextCompositeCommand{"}{PU}{\cyrery}{\84\371}% yeru diaeresis

50.2.7 Symbols

12032 \DeclareTextCommand{\textendash}{PU}{\9040\023} % endash
 12033 \DeclareTextCommand{\textemdash}{PU}{\9040\024} % emdash
 12034 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030} % quoteleft
 12035 \DeclareTextCommand{\textquoteright}{PU}{\9040\031} % quoteright
 12036 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032} % quotesinglbase
 12037 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034} % quotedblleft
 12038 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035} % quotedblright
 12039 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036} % quotedblbase
 12040 \DeclareTextCommand{\textdagger}{PU}{\9040\040} % dagger
 12041 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041} % daggerdbl
 12042 \DeclareTextCommand{\textbullet}{PU}{\9040\042} % bullet
 12043 \DeclareTextCommand{\textellipsis}{PU}{\9040\046} % ellipsis
 12044 \DeclareTextCommand{\textperthousand}{PU}{\9040\060} % perthousand
 12045 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061} % pertenthousand
 12046 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071} % guilsinglleft
 12047 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072} % guilsinglright
 12048 \DeclareTextCommand{\textfractionmark}{PU}{\9040\104} % fraction slash
 12049 \DeclareTextCommand{\texteuro}{PU}{\9040\254} % Euro
 12050 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}

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12051 \DeclareTextCommand{\textnumero}{PU}{\9041\026}
12052 \DeclareTextCommand{\texttrademark}{PU}{\9041\042} % trademark
12053 %\DeclareTextCommand{\cyrlangle}{PU}{\9043\051}
12054 %\DeclareTextCommand{\cyrrangle}{PU}{\9043\052}

12055 </puenc>

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50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

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12056 <*puvnenc>

12057 \DeclareTextCommand{\abreve}{PU}{\81\003}
12058 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
12059 \DeclareTextCommand{\dj}{PU}{\81\021}
12060 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
12061 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
12062 \DeclareTextCommand{\ohorn}{PU}{\81\241}
12063 \DeclareTextCommand{\uhorn}{PU}{\81\260}
12064 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
12065 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
12066 \DeclareTextCommand{\DJ}{PU}{\81\020}
12067 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
12068 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
12069 \DeclareTextCommand{\OHORN}{PU}{\81\240}
12070 \DeclareTextCommand{\UHORN}{PU}{\81\257}

12071 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
12072 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
12073 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
12074 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
12075 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
12076 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
12077 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
12078 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
12079 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
12080 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
12081 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
12082 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
12083 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
12084 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}
12085 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}
12086 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}
12087 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}
12088 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}
12089 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}
12090 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}
12091 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}
12092 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}
12093 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}
12094 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}
12095 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}
12096 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}
12097 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}
12098 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}
12099 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}
12100 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}
12101 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}
12102 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}

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12103 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}
12104 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}
12105 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}
12106 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}
12107 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}
12108 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}
12109 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}
12110 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}
12111 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}
12112 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}
12113 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}
12114 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}
12115 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}
12116 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}
12117 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}
12118 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}
12119 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}
12120 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}
12121 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}
12122 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}
12123 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}
12124 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}
12125 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}
12126 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}
12127 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}
12128 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}
12129 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}
12130 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}
12131 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}
12132 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}
12133 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}
12134 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}
12135 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}
12136 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}
12137 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}
12138 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}
12139 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}
12140 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}
12141 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}
12142 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}
12143 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}
12144 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}
12145 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}
12146 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}
12147 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}
12148 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}
12149 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}
12150 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}
12151 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}
12152 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}
12153 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}
12154 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}
12155 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}
12156 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}
12157 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}
12158 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}
12159 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}

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12160 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}
12161 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}
12162 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}
12163 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}
12164 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}
12165 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}
12166 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}
12167 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}
12168 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}
12169 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}
12170 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}
12171 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}
12172 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}
12173 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}
12174 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}
12175 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
12176 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
12177 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
12178 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}
12179 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
12180 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
12181 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}
12182 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
12183 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
12184 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
12185 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
12186 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}
12187 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
12188 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
12189 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
12190 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
12191 </puvnenc>

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50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

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12192 <*puarenc>
12193 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LETTER HAMZA
12194 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADDA A
12195 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA A
12196 \DeclareTextCommand{\wawhamza}{PU}{\86\044} % 0624;afii57412;ARABIC LETTER WAW WITH HAMZA AE
12197 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HA
12198 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
12199 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF
12200 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH
12201 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA
12202 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH
12203 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH
12204 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM
12205 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH
12206 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH
12207 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL
12208 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL
12209 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH
12210 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN
12211 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN

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12212 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN
12213 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD
12214 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD
12215 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH
12216 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH
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12218 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN
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12232 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN
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12242 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF
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12245 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ

12246 </puarenc>

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12251 </check>

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